



# Evaluation of Disaster Mitigation and Preparedness Project in Western Mongolia

Full Report

Oxfam GB Programme Evaluation

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I would like to thank the Aimag and Soum Governors and Government officials, officers of all the above mentioned soums.

Great help and assistance were provided by Mr Gerry Ganaba, Disaster Management Coordinator, Ms. Ouyntugs Surenjav, Project Manager and Ms. Munkhchimeg, Project local coordinator and Mr. Tuya, driver

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## **Acronyms**

ADRA – Adventist Development and Relief Agency

CVA – Capacity and Vulnerability Analysis

DFA – Aimag Department of Food and Agriculture

DMP – Disaster Mitigation and Preparedness Project in Western Mongolia

EMD- Aimag Emergency Management Division

FGD – Focus Group Discussion

MDG – Millennium Development Goals

MFA - Ministry of Food and Agriculture of Mongolia

NEMA- National Emergency Management Agency

PRA – Participatory Rural Appraisal

## Executive summary

In May 2004, ADRA Mongolia implemented a thirty two (32) months project entitled “Disaster Mitigation and Preparedness in Western Mongolia” with grant funding from Oxfam-GB. The project was implemented in three vulnerable soums namely Ider, Tudevtei, Yaruu soum, Zavkhan aimag. Project beneficiaries are herders that had been affected by the zud in 1999 to 2001 and drought that followed during those years.

The project aimed to strengthen the resistance of poor herders and other residents of three soums (counties) in Zavkhan Province, western Mongolia, in the face of winter disasters. This is achieved by improving access to irrigation, hay and fodder, developing improved food and income alternatives and by increasing the skills and knowledge of herders and local officials. ADRA Mongolia implements the project by integrating and extending the activities of four its programs: food security, micro-finance, and disaster relief and well restoration.

Funding and project structure is such that the micro-finance, bio-intensive gardening and well components of the project are financed by a variety of donors. The components got underway in 2003 and each finished at different stages of the Oxfam funded disaster component, compressing irrigation research, herder and official training and the development of hay and fodder cooperatives. Although each component could be run as a stand-alone project, the integration done in this project was such that each component compliments the others. Cost sharing reduces spending; there are beneficiaries who cross-over components, staff in each component is aware of other components and often share tasks.

Project goal: to develop, in the communities of three soums of Zavkhan aimag, greater resilience to disaster producing events.

Specific objectives of the project:

- ✓ The areas of maximum potential for grazing, hay production and gardening in 3 soums of Zavkhan aimag will be known
- ✓ There will be adequate water supply, skills and other resources available to herder communities of 3 soums for autumn grazing, hay making and gardening in identified priority areas
- ✓ The herder will practice good pasture and stock management
- ✓ Sources of income will be diversified
- ✓ The capacity of local government to prepare for, mitigate against and respond and recover from disaster-producing events will be increased

The project has completed its activities in December 31, 2006.

Upon completion of the project ADRA Mongolia office hired a consultant for conducting impact evaluation of this project. The assignment with one month duration started on February 1, 2007. The objectives of the impact evaluation are to assess the achievements

of the project in terms of its specific objectives, its impact and effects, sustainability and replicability, and relevance of the project outputs to development priorities and needs.

The evaluation methodology employed the desk review, focus group discussions, and interview with key informants, including herders, rural citizens, soum, aimag and national government officials and representatives of donor and humanitarian organizations implementing their programs and projects in the project respective areas. The Consultant made desk review first, learning the project proposals and annual project progress and final reports. Then the consultant made a 12-day trip to Zavkhan province center and three soums (county) Ider, Yaruu and Tudevtei to meet project beneficiaries, partners, local non-cooperative herders and local government officials. Ms. Munkhchimeg, project local coordinator, accompanied the consultant during the field trip. The team has met in total 90 persons (Appendix 1), among them 37 members of 8 cooperatives, 8 non-cooperative herders and vegetable growers, 36 soum, aimag and national government representatives and 8 persons of various donor agencies that are assisting in Zavkhan aimag through their projects and programs. Among these persons met 36 were women and 53 men. The evaluation data was collected using face to face meeting with individual cooperative members, where the other members live far from each others and was not possible to communicate. In Ider soum, first a semi-structured interview with the soum governor and his staff was organized as well focus group discussion (FGD) with members of Darkhan-Uul cooperative separately.



In order to make the objective assessment and to ensure reliable data collection as well to facilitate exchange of information and cooperation among local government officials, herders and cooperative members, the consultant has organized participatory rural appraisal (PRA) meeting. The meeting included governor, his staff, and cooperative members as well non-coop herders and unemployed people. The participants divided into 3 groups: local governments, cooperative members, and non-coop herders, individuals and discussed achievements, benefits and prospects of cooperatives created with project assistance. This approach was very helpful not only for reliable data obtaining, but also



to understand as well to further support all the benefits and potentials of such a structure by governments officials and the other herders participated in the meeting.

In Tudevtei soum, a FGD meeting was organized for 2 cooperatives together so that to compare activities and current achievements. This arrangement facilitated impartial data collection and allows all participants to review activities themselves and see comparatively benefits and find more efficient ways of their

cooperation. Interview of key persons, such as governor, food and agriculture officer, governor's office manager took place.

In Yaruu, FGD took place with each of three cooperatives, due to distinct locations of the cooperatives, followed by interview with soum officials and observation through visits individual members' households. Upon return to Uliastai the aimag center, individual meeting with key informants such as Aimag deputy governor, heads of departments and division responsible for policy making, coordination, relief and winter disaster reduction within the aimag. A thorough discussion took place with each of interviewers regarding the changes caused by the Disaster mitigation and preparedness project.



All the findings through meeting, discussion and participatory analysis, observation and official statistics provide outstanding achievements of the project goal and its specific objectives. The first objective was achieved in the project first year, areas for grazing, hay production and gardening in 3 soums were identified in close cooperation with soum officials, land managers and herder groups. Certificates for possession and land use were handed in to all herder groups-beneficiaries that ensured the right to access to resources.

Second objectives have been achieved through inventory of all wells and water sources and prioritizing the wells to be repaired and providing access to water for irrigation of areas for gardening, hay and fodder making.

Intensive training series have been organized systematically among local herder groups, unemployed people, and those willing to learn and join their efforts. Also local government officials have been trained together with heads of herder groups in developing and implementing disaster mitigation, preparedness and contingency plans in a practical way.

As results of the project efforts, 8 herder groups have been formed and which later on the third year transformed into cooperatives. The structures were built in a way that poor herders or unemployed people come together on their own willingness, based on their knowledge and skills developed through the various trainings organized by the project staff.

As the evaluation found, the cooperatives through their intensive work efforts have made a significant contribution to the local economic development, local supply of food and fodder, which are vital for reducing risks of winter disaster zud and summer droughts. 116 members of these eight cooperatives with their 374 family members have greatly benefited from the project activities, through diversifying their incomes and most

importantly, created 116 additional job positions that bring sustainability to local economy and livelihoods of these families.

Their lives are improved significantly in social, economic and mental terms. The project has a very big potential for replication, considering its achievements in improving livelihoods of the poor in remote rural areas in a relatively short period. The project initiated vegetable growing, hay and fodder making businesses bring sustainable work places for many of poor herders allowing them to diversify their income and prosperity to local economy and thus, decreasing significantly the risks and vulnerability of local communities to zud and droughts.

# Introduction

## ***Background***

In May 2004, ADRA Mongolia implemented a thirty two (32) months project entitled “Disaster Mitigation and Preparedness in Western Mongolia” with grant funding from Oxfam-GB. The project was implemented in three vulnerable soums namely Ider, Tudevtei, Yaruu soum, Zavkhan aimag. Project beneficiaries are herders that had been affected by the zud in 1999 to 2001 and drought that followed during those years.

The project aimed to strengthen the resistance of poor herders and other residents of three soums (counties) in Zavkhan Province, western Mongolia, in the face of winter disasters. This is achieved by improving access to irrigation, hay and fodder, developing improved food and income alternatives and by increasing the skills and knowledge of herders and local officials. ADRA Mongolia implements the project by integrating and extending the activities of four its programs: food security, micro-finance, and disaster relief and well restoration.

Funding and project structure is such that the micro-finance, bio-intensive gardening and well components of the project are financed by a variety of donors. The components got underway in 2003 and each finished at different stages of the Oxfam funded disaster component, comprising irrigation research, herder and official training and the development of hay and fodder cooperatives. Although each component could be run as a stand-alone project, the integration done in this project was such that each component compliments each others. Cost sharing reduces spending; there are beneficiaries who cross-over components, staff in each component is aware of other components and often share tasks.

The project has completed its activities by the December 2006.

Project goal: to develop, in the communities of three soums of Zavkhan aimag, greater resilience to disaster producing events.

Specific objectives of the project:

- ✓ The areas of maximum potential for grazing, hay production and gardening in 3 soums of Zavkhan aimag will be known
- ✓ There will be adequate water supply, skills and other resources available to herder communities of 3 soums for autumn grazing, hay making and gardening in identified priority areas
- ✓ The herder will practice good pasture and stock management
- ✓ Sources of income will be diversified
- ✓ The capacity of local government to prepare for, mitigate against and respond and recover from disaster-producing events will be increased

### ***Project Impact Evaluation***

Upon completion of the project ADRA Mongolia office hired a consultant for conducting impact evaluation of this project. The assignment with one month duration started on February 1, 2007.

### ***Objectives of the evaluation***

The evaluation should assess the achievements of the project in terms of its specific objectives. The key questions of the evaluation include:

#### *Impact and Effect*

- To determine to what extent did the project caused changes (project impact and effect) in the coping mechanisms and reduced the vulnerabilities of target communities?
  - Were the original objectives appropriate and have they been achieved?
  - What have been the constraints to the achievement of these objectives?
  - What is the impact of the interventions; in particular with regard to the humanitarian beneficiaries the project team interacted with, and with regard to the humanitarian actors at different levels?
  - What concrete results or outputs have been produced?
- To determine to what extent did the project caused changes (project impact and effect) in the coping mechanisms and reduced the vulnerabilities of target communities?
  - Has the project complemented government's effort in strengthening capacities of local disaster committees?
  - Has it improved disaster preparedness, mitigation, emergency response and coordination?
  - What has been the response from the national and local government actors to these efforts?
  - What has been the response of other humanitarian actors to this intervention within the aimag?
  - What are the main findings?
  - What can be learned from the project?

#### *Sustainability and Replicability*

- To what extent can the approaches, methods and tools developed by the project be used /adopted by future ADRA disaster preparedness and mitigation project?

- What is the potential for replication of project activities and approaches within ADRA and in other similar projects in Mongolia?
- What were the constraints?
- What degree of coherence and complementarity with other actors implementing similar objectives did the project provide?
- To what extent can the positive outputs produced by the project continue in the communities after the project?
  - Did the project increase local capacity?
  - What were the constraints?
  - To what extent did capacity building occur?
  - To what extent can the positive outputs produced by the project continue in the communities after the project?
- Building on the achievements of Disaster Preparedness and Mitigation Project, what other interventions and strategies specifically addressing livelihood and poverty reduction, can be implemented in the programme area?

*Relevance of Disaster Preparedness and Mitigation Project to Development Priorities and Needs*

- To evaluate the methods and strategies adopted and pursued by the project to implement the project purpose and goal
  - What has been the quality of these methods and of the findings?
  - What are the main findings?
  - What can be learned from the processes?
  - To what extent has the context influenced choice in terms of success or failure of the methods used?
  - To determine appropriateness of intervention to community needs and priorities
  - Clarify and logical consistency between inputs, activities, outputs and progress towards achievement of objectives (quality and timeframe)
- To determine to what extent did the project complement government efforts in strengthening capacities of local communities for disaster management. How has it improved disaster preparedness, emergency response and coordination?

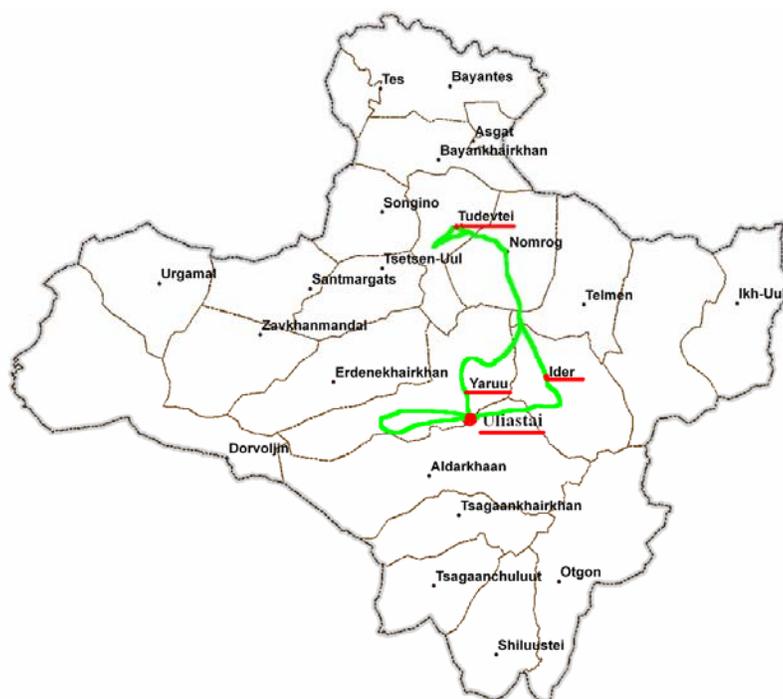
***Evaluation Methodology***

Upon contract signing with Mr. Gerard Ganaba, Disaster Management Coordinator, of ADRA Mongolia office, the consultant started desk review of materials provided by Ms. Oyntugs, Oxfam project manager. The following materials were reviewed:

- Original project proposal
- Final project narrative report for project year one

- Final report project year two
- Quarterly Progress report 1 June to 31 August 206
- Project proposal- Updated narrative for year two
- Project proposal- Updated narrative for year three

The field team that consists of Mr. Erdenesaikhan, evaluation consultant, Mrs. Munkhchimeg, project local coordinator and Mr. Tuya, driver, has traveled about 1300 kilometers and visited project 3 soums Ider, Yaruu and Tudevtei (Map 1.) to meet with project direct beneficiaries and indirect beneficiaries and local governments.



**Map 1. Trips made during the evaluation mission**

While working in the Zavkhan aimag and in Ulaanbaatar, the consultant has met in total 90 persons (Appendix 1), among them 37 members of 8 cooperatives, 8 non-cooperative herders and vegetable growers, 36 soum, aimag and national government representatives and 8 persons of various donor agencies that are assisting in Zavkhan aimag through their projects and programs. Among these persons met 36 were women and 53 men. The consultant tried to take a gender balance strategy among cooperative interviewed. However, long distance and limited timing did not allow keeping the balance. So, where allowed, this was compensated by letting more opportunity to express their mind by women participants.

The evaluation data was collected using face to face meeting with individual cooperative members, where the other members live far from each others and was not possible to

communicate. In Ider soum, first a semi-structured interview with the soum governor and his staff was organized as well focus group discussion (FGD) with members of Darkhan-Uul cooperative separately.

In order to make the objective assessment and to ensure reliable data collection as well to facilitate exchange of information and cooperation among local government officials, herders and cooperative members, the consultant has organized participatory rural appraisal (PRA) meeting. The meeting included governor, his staff, and cooperative members as well non-coop herders and unemployed people. The participants divided into 3 groups: local governments, cooperative members, and non-coop herders, individuals and discussed achievements, benefits and prospects of cooperatives created with project assistance. This approach was very helpful not only for reliable data obtaining, but also to understand as well to further support all the benefits and potentials of such a structure by governments officials and the other herders participated in the meeting.

In Tudevtei soum, the FGD meeting was organized for 2 cooperatives together so that to compare activities and current achievements. This arrangement facilitated impartial data collection and let all participants to review activities themselves and see comparatively benefits and find more efficient ways of their cooperation. Interview of key persons, such as governor, food and agriculture officer, governor's office manager took place after the FGD.

In Yaruu, FGD took place with each of three cooperatives, due to distinct locations of the cooperatives, followed by interview with soum officials and observation through visits individual members' households. Photos of FGD and PRAs are in the appendix 5. All the materials of these FGD and PRA (in Mongolian only) will be provided to ADRA office.

Upon return to Uliastai the aimag center, individual meeting with key informants such as Aimag deputy governor, heads of departments and division responsible for policy making, coordination, relief and winter disaster reduction within the aimag. A thorough discussion took place with each of interviewers regarding the changes caused by the Zud project.

Aimag and soum official statistics of 2004 - 2006 on agricultural and livestock products for these three soums were analyzed as independent data sources. As well, evidence of achievements such as certificates awarded on the aimag or soum level open fairs (exhibition) by the cooperatives and soum, bagh governors were also considered to evaluate the project impact and effects.

## Discussion and Findings

### *Impact and Effect*

#### *Project achievements in increasing the disaster coping mechanisms and reducing the vulnerabilities of target communities*

The Disaster mitigation and preparedness in Western Mongolia project was implemented in Ider, Yaruu and Tudevtei soums of Zavkhan aimag for three years from May 2004 to December 2006. The project was funded from Oxfam, United Kingdom. Its goal and original objectives were:

Goal: to develop, in the communities of three soums of Zavkhan aimag, greater resilience to disaster producing events.

Specific objectives:

- ✓ The areas of maximum potential for grazing, hay production and gardening in 3 soums of Zavkhan aimag will be known
- ✓ There will be adequate water supply, skills and other resources available to herder communities of 3 soums for autumn grazing, hay making and gardening in identified priority areas
- ✓ The herder will practice good pasture and stock management
- ✓ Sources of income will be diversified
- ✓ The capacity of local government to prepare for, mitigate against and respond and recover from disaster-producing events will be increased

The above listed project specific objectives are contextually reflect the policy direction and efforts of Mongolian government to stabilize its livestock based economy and make sustainable herders livelihoods. Although number of policy documents has been issued by the GoM after the severe sequences of zuds in recent years to increase the resilience of herders and rural citizens, its impacts are very low at soum and bagh levels due to weak enforcement and economic inability.

The specific objectives of DMP project sought to assist those poor herders who lost their animals and their livelihoods through offering various trainings on gardening, hay and fodder making, pasture and risk management. The project objectives fully filled in the gaps existing in the government social, economic and environmental policies and programs.

It is a pleasure to note that all the proposed specific objectives have been achieved exclusively.

Here is a short review of what the project had achieved:

The first objective has been achieved through the following outputs:

- A capacity and vulnerability analysis (CVA) techniques have been applied in project first year and through which the project team has identified capacities and vulnerabilities of target herders groups. The key advantage in using CVA is that it acknowledges and builds on what already exists in the community. CVA exercises revealed that the herders feel vulnerable as a result of a lack of support from the soum preparedness system and lack of access to use the land.
- The soum officials participated in these exercises well understood the situation as well project objectives and proposed outputs. As a result, the eight cooperatives all have from the first year the land allocated by the soum's citizen's representative hural (a local parliament) through active facilitation by the project team for vegetable growing, hay and fodder making.
- The project team in assistance with soum agronomist, land manager and with direct involvement of cooperative members has identified suitable land for beneficiaries and consequently some of cooperatives already have got a land possession certificate, which legally ensures for long-term usage of this land. In addition, some of soum government officials such as Yaruu, have made a decision not collect land use tax as well, income taxes from three cooperatives running their business, until they became self- sufficient. This measure greatly encouraged the project beneficiaries.

The second objective has been achieved through the following outputs:

- The eight cooperatives all have access to water resources due to the well restoration project that was funded by CIDA. The project has restored two deep pumping wells and one simple well in autumn pasture in Ider soum. In Tudevtei soum, three deep pumping wells are restored and in Yaruu two pasture simple wells were restored for use on irrigation of hay and fodder making, gardening areas. In addition, the project has supplied irrigation systems and pumps to 5 cooperatives to aid in the distribution of water to planted areas.
- The restored wells have been transferred to cooperatives, which are responsible to manage and maintain the wells. Relevant trainings on water usage management, repair and maintenance of well equipment have been organized for the respective cooperatives

The third objective has been achieved through the following outputs:

- The instructional manual on stock and pasture management for the herding community was developed collectively by professionals and researchers of various government agricultural organizations, academia in collaboration with herders communities
- Three series of trainings on stock management, animal husbandry, pasture management, fodder planting and animal feeding were organized for the project beneficiaries-herders throughout the project period based on the instructional manual, which were distributed to all herders groups well before the training started. Also, the training of local government officials of three soums on disaster preparedness and migration coordination to ensure

sustainable use of the pasturelands and prevent overgrazing was organized in the second year.

The fourth objective has been achieved through the following outputs:

- Within the project, 7 tractors, 6 trailers, 5 hay cutters, 4 rakes, 5 irrigation systems, 5 ploughs, 4 seeders, 4 welders, 3 water pumps have been distributed to 7 cooperatives for their business activities (Appendix 2). Equipment for one cooperative was supported with funding from other donor agency. As the project strategy defined, equipment and capital inputs have been handed in to cooperatives on micro-lending basis so that portion of income generated with the use of equipment used to pay back to ADRA office. Repayment schemes for the agricultural equipment have been worked out with all cooperatives and repayment will continue until the end of 2007. As the evaluation consultant witnessed, the project's micro-lending strategy worked very well for cooperative members to feel their true ownership of the work they are doing.
- The herder groups established in project first year for production of hay, fodder and vegetable gardens became independent cooperatives –legal entities of Mongolia in the last year of the project. Total 8 cooperatives with 116 members are functioning to date in project three soums and produce vegetables, make hay and fodders for consumption among members as well selling extra products to local markets (Appendix 3).

The fifth objective has been achieved through the following outputs:

- Series of training session is organized for local government representatives and herder group leaders on disaster management, preparedness and mitigation of consequences.
- Training was also organized for local government officials on a soum disaster contingency plan as well a migration plan between soums and nearby aimags in March 2005
- Upon the trainings organized the soum level contingency plans have been worked out by the soum governments and reviewed and approved by the aimag disaster management authority

### *Constraints*

Through desk review interview with key informants, focus group discussions and observation the consultant found the following constraints were to the achievement of these objectives.

- ✓ Psychology of herders to cooperate and work together. The groups were formed voluntarily based on their common views, to make certain time consuming works together in order to save time and resources, distance between households, willingness to join their efforts to overcome difficulties. To the

question regarding problems encountered, cooperative members expressed that many people in a group at first year were somehow skeptic, shy and unconfident with the objectives of the group due to lack of knowledge, skills and experience.

- ✓ Many herders were skeptic specially towards gardening activity. Ill-planned and unprofessional gardening attempts in these areas during the socialist period were the major cause.

With active involvement of the project team through focused training, cooperative management skill building and the professional and technical supports the difficulties were gradually disappeared after the members have got first results of their joint work as a team.

- ✓ Local government officials physiologically not always ready to support bottom up initiatives. Although some officials told that the project did make a revolution in relationship between herders and the government representatives through establishing a working and lively attitude, an inherited top down command manner is still kept with most of officials, hindering effective relationship with potential clients
- ✓ High turnover of human resources of the soum government, trained through the project, within the soum due to political instability

### ***The impact of interventions to the humanitarian beneficiaries***

Through the project's three-year intervention, the following types of impacts have been observed among 35.6% of direct beneficiaries of 8 cooperatives, which met with the evaluation team in these three soums:

1. Economic impact (the statistics are taken from aimag official statistics bulletin of 2004, 2005 and 2006).
  - Before 1990s, in some of project soums was practiced a limited crop production led by the former socialist collective, which was supported and subsidized by the state. With collapse of the system this was abandoned. Through the project, the crop production and gardening activities demonstrated feasibility and benefits of these businesses in the region and are becoming alternative sources of income to the local citizens. This change is occurring in relatively short period with great support provided by the project team. All 8 cooperatives produced 62.7% of total oats in 2005 and 76.6% in 2006 in



these 3 soums and which consist 16.6% and 32.% of aimag total fodder production in respective years.

- Volume of hay made increased by 40.2 % in 2006 in Ider soum and by 56.8% in Tudevtei compared to 2004 (the cooperative households comprise 3.8% of total Tudevtei households)
- Potato production increased 4.3 times in Ider soum alone
- Vegetable production increased 3.7 times in Tudevtei
- By joining the project cooperative members have greatly benefited in the economic terms; every member is able to collect enough hay and fodder for feeding their animals in case of zud (Appendix 4). In addition, extra hay and fodder is prepared for selling to other non-coop herders, which bring more income.
- Gardening has brought more diversified food sources to families and thus, provides healthy foods and saves herder's basic food ingredients such as meat, flour and rice. Mr. Jadambaa, Darkhan-Uul cooperative of Ider soum shares his family's kitchen (5 family members) budget change with introduction of vegetables:



Annual food products consumed	Changes with vegetable ingredients
Meat (one horse and one cow per year) start consuming from November previous year and approx out in May	Meat is saved in 3 month. E.g. meat is enough until August (dried meat)
6 bags of flour consumed. One bag equals 25 kg	One less bagh flour is used
-	Vegetable ration improves stomach digestion system and high feeling of satisfaction with food

- Cooperative members have built a root cellar to keep their extra vegetables and processed products for longer time conservation
- Have a certificate to posses a land parcel collectively
- Possess ability to work on the tractor and tools to process crop and hay making
- Able to manage with family/cooperative budget and accounting
- Cooperatives have agricultural equipment purchased on loan basis for hay and fodder making, irrigation, vegetable growing. As the project strategy defined, equipment and capital inputs have been handed in to cooperatives on micro-lending basis so that portion of income generated

with the use of equipment used to pay back to ADRA office account. Repayment schemes for the agricultural equipment have been worked out with all cooperatives and repayment continues until the end of 2007. At project third year, ADRA Office decided to transfer back all the amount of repayment to the bank account of the cooperatives, provided that if particular cooperative paid back 70% of the cost of leased equipment. This decision very encouraged the cooperative and they are very enthusiastic for their future plans.

- After all, ability to resist natural disaster is greatly improved among cooperative members

## 2. Social impact

- Unemployment in rural area is a big socio-economic issue in Mongolia. Many herders after they lost animals from the zud in 1999-2002 moved to urban areas looking for jobs in urban areas, which they are totally not prepared as they lack the appropriate skills. This internal migration put more pressure to the soum or urban center. This also created additional problems such as the increased of alcoholism, crime, diseases, urban pollutions etc. With the project intervention, 116 job places have been created in these 3 soums supplying local markets secure vegetable foods (Much of vegetables are imported from China often skipping or avoiding border quality inspection procedures, which causes diseases and thus, creating risks to food security).
- Through discussion with cooperative members, local government officials and observation the consultant identified that majority of cooperative members were victims of the consecutive zud of 1999-2002 and had a few animals or not at all at the start of the project (Appendix 4: column with post-zud livestock). Compared to the post-zud period, the coops have more social and leisure time, which created due to tripled increase in labor productivity through technological intervention, collective work and rational work distribution among coop members. For example Mr. Sumya (Yaruu soum) has family of 4; spouse and two children. Before joining the cooperative, he and his wife was able to make hay in size of two ox-carts or 500 kg for feeding young animals in case if winter gets hard. He could not afford to make enough hay for his animals and a warm tent from his sheep wools due to time consuming daily work duties. With cooperative, he prepared hay in 2.5 tn, fodder 0.5 tn, 2 warm tents from his sheep wools as preparation to 2006 winter. Also, his family eats vegetable grown on their fields.
- A Secondary school social worker in Ider soum shared his observation that positive changes occurred among students whose parents are coop members; better prepared with pens, pencils and other accessories for successful study.
- The social welfare officer of Tudevtei soum provided some statistics on unemployment situation. In 2001, portion of registered unemployed among population was 4.44% (96 unemployed compared to population

of 2163) and the situation in 2006 is changed positively (14 unemployed with population of 2008) and the portion becomes 0.74%, unemployment rate thus decreased by 3.7 points e.g. 39 persons got job in 3 cooperatives and this fact illustrates project direct contribution to the local employment market.

### 3. Psychological impact

- Every beneficiary, the consultant met, expressed that they became self-confident and very optimistic considering their knowledge, skills and tools acquired through the project, compared to the post-zud period.
- Participation in various trainings, seminars as well meeting with other cooperative members to discuss their work/business plans and activities all these events provided a good opportunity for the members to express their mind and to speak out, thus developed skills in negotiation and agreement. Coop members emphasized that negotiating skill was very necessary for strengthening relationship and mutual trust between cooperative members for further success and sustainability. This caused a big change in the way of thinking of most of cooperative members, which was not imaginable before project intervention for a lonely herder.
- The project through its activities demonstrated the advantages of teamwork to the citizens and herders. As noticed by the Ider soum government officials, the project did make a very positive change in the relationship and type of cooperation between the citizens and the local government, through its beneficiaries. Some of government officials for example, the food & agriculture officer understand better his/her role in what service the citizens especially cooperatives are expecting.



### ***Project contributions to the government's effort in strengthening capacities of local disaster management staffs***

*Improvements in the disaster preparedness, mitigation, emergency response and coordination at all levels of government*

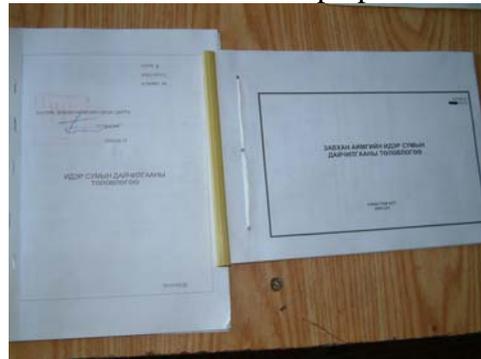
The fourth objective of the project was to strengthen the capacity of local government to prepare for, mitigate against and respond and recover from disaster-producing events.

According to the Mongolian law on disaster protection, each of aimag, soum and bagh governor is responsible for disaster preparedness mitigation and emergency

responses and coordination at the administrative unit level. Within the soum governor's staff, the office manager is responsible in preparation and application of soum level disaster management plan in case of a disaster. Under the manager, a food and agriculture officer, a medical doctor, veterinarian are responsible to deal with the zud disaster. These three soums are the worst hit by the consecutive zud events in 1999-2000 and it is worth to note that the soum officials have been better prepared to the sudden winter phenomena and are well aware what action should everyone take in case of winter disaster.

The consultant has met with all soum governors (except Yaruu soum governor), deputy governors, office manager and other officials in project three soums to discuss about soum level anti-zud preparedness status, its plans and understanding about the situation by the relevant staff as well project contribution to the winter preparedness. All the interviewers were enthusiastically responded to the impact provided by the project activities.

Each of soums has updated its disaster management plan according to the requirements provided through the project trainings and re-identified staff responsibility. In Ider soum, disaster management field based practical training was organized with involvement of the aimag Disaster Management Division (ADMD) after the project organized its training in disaster preparedness. In Yaruu, a similar practical training is planned in the second quarter of 2007. Within its planned activities, the project has organized 2 times trainings for local government officials in charge of disaster preparedness, mitigation and emergency responses and coordination. In total, 18 local officials have improved their knowledge on disaster management through the project.



The project contribution to the local disaster preparedness was obvious; In Tudevtei soum there are 3 project induced cooperatives and during the hay making season, project provided tractors have been best used to harvest hay for almost all inhabitants of this soum. The performance of a tractor is 7 times higher than a hand harvesting and this saves much of valuable time during the autumn busy season and resources of herders. The cooperatives earn additional income by

assisting neighboring herders to make hay. Also, fodder planted and harvested within the cooperatives greatly contributes to the winter preparation in local areas. The

herders buy vigorously the fodder from the cooperatives due to its high nutritious content and it is natural and cost less in this area (Appendix 3).

The pasture management trainings organized for cooperatives in three soums was influential in increasing the disaster management capability within the three respective soums. Herders named this training as one of the most interesting training series, on which they made herbs collecting and exploring various plant species occurred in the fields. They are now able to classify their seasonal pastures and develop a plan to herd livestock in order to avoid overgrazing and keep resource in case of heavy winter situation.

*Responses from the national and local government actors to the project efforts*

Through the project advocacy and training on disaster preparedness and migration coordination, the beneficiary soums and the aimag government have made arrangements for migration of herders to seek good pasture within and/or inter-soum as well inter-aimag territories in case of zud disaster. Provisions of medical and other governmental services for those migrating herders in other soum and aimag territories have also been arranged in autumn and agreements were made between the soums and aimags along the potential migration pathways.

Project achievements of capacity building of the cooperatives and increasing local disaster preparedness have constantly been shared with other actors working in this region at the council meeting of the aimag governor's office. Aimag branch of Mongolian Red Cross Society has been actively participated in project training session on disaster preparedness.



As lessons taken from the project, the aimag department of food and agriculture through the facilitation of the Ministry of Food and Agriculture sells the tractors on discounted price to the aimag herders for increasing their resilience against winter disasters.

Considering the project achievements in the soum level of disaster preparedness, the aimag governor's office and aimag disaster management division jointly plans to



carry out similar disaster preparedness training in other soums of Zavkhan aimag. In with Dr. Dash, chief, high commissioner of the National Emergency Management Agency (NEMA), he highly valued the contribution of the project in improving the local disaster management capacity and emphasized the importance of knowledge and skills of individual citizens during the

disaster occurrences to save own life and to assist others to save their life.

### *Responses of other humanitarian actors to the project intervention*

The project intervention at community level has been as good example for other humanitarian organizations such as the World Vision and Mercy Corps, International NGOs. World Vision branch with the project jointly organized capacity building training for soum unemployed people on gardening in Ider soum.

Sustainable livelihood project of the World Bank and the Government of Mongolia has taken lessons of the project to train first the beneficiaries before distribution of equipment to them and applied consequently to its project.

### ***Main Findings***

The project objectives have been very appropriate for increasing resilience of affected communities especially 116 poor herders and citizens against losing their livestock –a source of income, allowing them to acquire knowledge, skills and tools necessary for increasing capacity to resist any of disasters, diversifying their sources of income and ensuring sustainable means of living.

The impact of intervention was very high at community level: social and economic status of 374 family members of these eight communities have been incredibly increased in relatively short period. 116 cooperative members possess knowledge, skills, equipments and alternative to this region, methods to generate income and improve livelihoods and increase resilience against winter disaster.

Impact to local economy is high: 8 cooperatives provide majority of fodder resources to the herders of these three soums (62.7% and 76.6% of total fodder harvested in 2005 and 2006 respectively in these three soums) and major hay making and vegetable growing entities in these soums.



Increased disaster management capacity:

Through series of training and skill building practices soum level disaster management staffs have greatly improved their knowledge and soum contingency and disaster management plans have been developed and tested.

### *Lessons Learned*

In meeting with all stakeholders related with DMP project, the consultant felt that the project staff has to increase interaction with the national, and aimag governments. It needs to continually coordinate and communicate its activities, achievements and best practices. It would be useful also to interact with public media for information dissemination, advocacy of their achievements and best practices to share with others.

Training content on disaster management is still has civil defense orientation and more local context and scenarios related with zud, drought, human and animal diseases should be worked out and reflected in soum level contingency plans.

## ***Sustainability and Replicability***

### ***Opportunity to apply the approaches, methods and tools developed by the project to a future project***

*Potential for replication of project activities and approaches within ADRA and in other similar projects in Mongolia*

The project strategies, approaches and methods that have been applied throughout the Disaster Mitigation and Preparedness in Western Mongolia project have been carefully analyzed in terms of effectiveness, suitability and potential for replication. The field findings have also been co-analyzed in this regard. The following key aspects are considered:

#### *Needs assessment*

Capacities and Vulnerability Analysis (CVA) was employed from the project start to identify the vulnerabilities of the beneficiary communities and their associated capacities. As stipulated in the project document, the key advantage of using CVA approach was that it acknowledges and builds on what already exists in the community. Adapted to Mongolian rural context, the CVA method was very workable from this point, considering the high satisfaction of the project beneficiaries as well the project outputs and outcomes.

#### *The cooperative strategies*

ADRA has an extensive work experience and strong network of experts on cooperative development. Through the project activity on cooperative formation and development, the project has developed specific strategies for each type of cooperatives within its target areas whether it is vegetable growing, hay and fodder making or water resources. The strategies were very clear, developed in detail and time bound. For example, beneficiaries were selected first to work as herder groups and upon time the most promising and proved to work as team groups were provided further support ensuring long term sustainability of established teams. Naturally formed teams with various supports from the projects are formed as cooperative and officially registered at the third year of the project.

The project targeted those herders willing to leave representatives and workers with fewer herds in one place to manage the vegetable fields while the others take on the herding duties. The detailed model of division of labor was feasible and successful in vegetable growing and hay fodder making herder groups.

#### *Training and input strategies*

The training was a large part of the project and prospective members were trained on team building, and technical training over a period of months, before gaining access to major inputs. Systematic and comprehensive trainings with practical skill building have provided solid knowledge, skills and tools for these cooperatives. Savings were also required to be made during the initial training period in order to offset the costs of major inputs, and to guarantee the investment of each of individual into the cooperative. Each technology/knowledge introduced followed with handbooks, manuals and tested throughout the project life ADRA's visible inputs were small and the results were directly and clearly linked to beneficiary effort

The project success was ensured from the beginning, in conformity with a Mongolian proverb "if the starting point is right, then it ends correctly". All these strategies and approaches applied for this project were very appropriate and adapted to the local conditions. Ownership by the beneficiaries is ensured step by step trainings and micro-lending strategies on agricultural equipment provided. The methods and strategies were closely linked with each other and effectively functioned to fulfill the project objectives. Compared to strategies and applied methods of similar ongoing projects of other development and donor organizations such as World Bank, UNDP, GTZ, the ADRA project "Disaster mitigation and preparedness in Western Mongolia" is very effective and has a big potential for replication throughout Mongolian countryside, especially at grass root levels.

The flexible planning mechanism with annual proposal that reflects the actual and expressed needs of beneficiaries as well local partners and the effective monitoring and evaluation systems that established throughout the project, which ensured expected results, all contributed successfully to the achievements of the project objectives.

To note that the all these strategies, methods, implementation mechanisms were inseparable parts of a whole system, which could establish the organization.

#### *Possible constraints*

So far, there is no objective, activity or outputs have been observed that would hinder the project goal.

There observed a small constraint in the project design and implementation and which could be corrected with planning of further possible projects.

#### *Training of local officials on pasture management*

Favorable weather in last 3 years and increased awareness of herders in risk reduction has contributed to the increased number of livestock. This in turn puts pressure on productivity and carrying capacity of limited pastureland in a soum. Within the project

framework, pasture management training was organized three times among herders and cooperative members and which provided good insights to participants about seasonal utilization of pasture to avoid overgrazing and pasture degradation. However, those soum officials in charge of land resource management, pastureland and migration coordination were left outside of this kind of trainings, which upon increasing their knowledge and capacity could continue the project policy on pasture management from a cooperative level to a soum level.

### *Coherence and complimentarity with other actors implementing similar projects*

In Zavkhan aimag, about seven representatives of the international communities are implementing their projects and programs, which provide assistance in poverty reduction and sustainable use of natural resources within the aimag.

World bank supported Sustainable livelihood program has presence in every soum and its main focus is to restore the social service provisions through providing support in repairing schools, hospitals and dormitories. In Tudevtei soum, a dormitory was repaired in 2005 and its heating system was renewed in 2006 with Sustainable livelihood program support.

World Vision has recently opened its aimag branch and nevertheless, jointly with Disaster Mitigation and Preparedness (DMP) project has organized a vegetable growing training in Ider soum in 2006, which doubled the effectiveness of the training and excluded duplication of activities.

Next to the DMP project, ADRA has also other projects, namely, economic support program, and food security and livestock risk reduction project, which supported by other donors and implemented in other soums of the aimag. Their activities and logistics are where possible, coordinated together with DMP project activities.

USAID/Mercy Corp Rural agrobusiness support program provides support in building and strengthening local training and business consultancy services in the aimag and its outputs may compliment DMP project produced cooperatives through providing variety of business and technical services.

Pasture Ecosystem Management program (Green gold) of the Swiss Development Cooperation Agency also supports through its project to strengthen the self-reliance of poor and vulnerable herders through productive and sustainable use of pastureland. It covers one soum in the aimag.

Activities of all these project and programs are coordinated by the aimag aid coordination council, which established in 2006 aiming to facilitate information sharing and better coordination and cooperation among in international communities present in the aimag. The council, headed by the Mr. Bayarlkhagva, aimag deputy governor and organizes quarterly meeting regularly for information exchange and sharing. Various exhibitions

have been organized by the projects to display the outputs and best agricultural practices publicly.

### ***Potentials of Continuation of Positive Outputs Produced by the Project***

#### *Local Capacity Increase*

##### *Physical capacity of cooperatives*

In order to define the capacity (meaning that a herder's economic capability to save one's livestock as well other alternative incomes that the herder may possess for a living if the winter shock occurs) of project beneficiaries after the project intervention, we first collected some baseline data through randomly selecting 17 members of eight cooperatives and interviewing and analyzing their living status before and after the consecutive zud events (Appendix 4).

Note that it is ambitious to identify a herder's economic status, considering the fact that the country does not have a common agreed methodology on poverty. The herders consider that if the number of livestock is below 200, the products from livestock is not sufficient to cover the family basic needs and additional income is vital to fill in the gaps in household budget. Livestock up to 500 cover only family basic needs and is not sufficient for future saving. If livestock number is 500 and up, the products derived from the livestock is sufficient and savings can be made for a living. The quantity terms play an important role because of a limited nutritional capacity of pasture vegetation, from which livestock takes energy.

Out of 17 questioned, 15 herders belonged to the category of herders with less than 200 livestock (Appendix 4: columns post-zud status and lost livestock during the zud) and which considered the poor and 2 belonged to the second category with livestock less than 500. All of the herders before 1999 (the year before consecutive zud events occurred) were belonged to a social class with sufficient incomes for living (Appendix 4: column pre-zud status) and they lost 47.2 – 100% of their livestock (column lost livestock during the zud), their only source of living. Most of them have not had a culture to prepare to harsh winter.

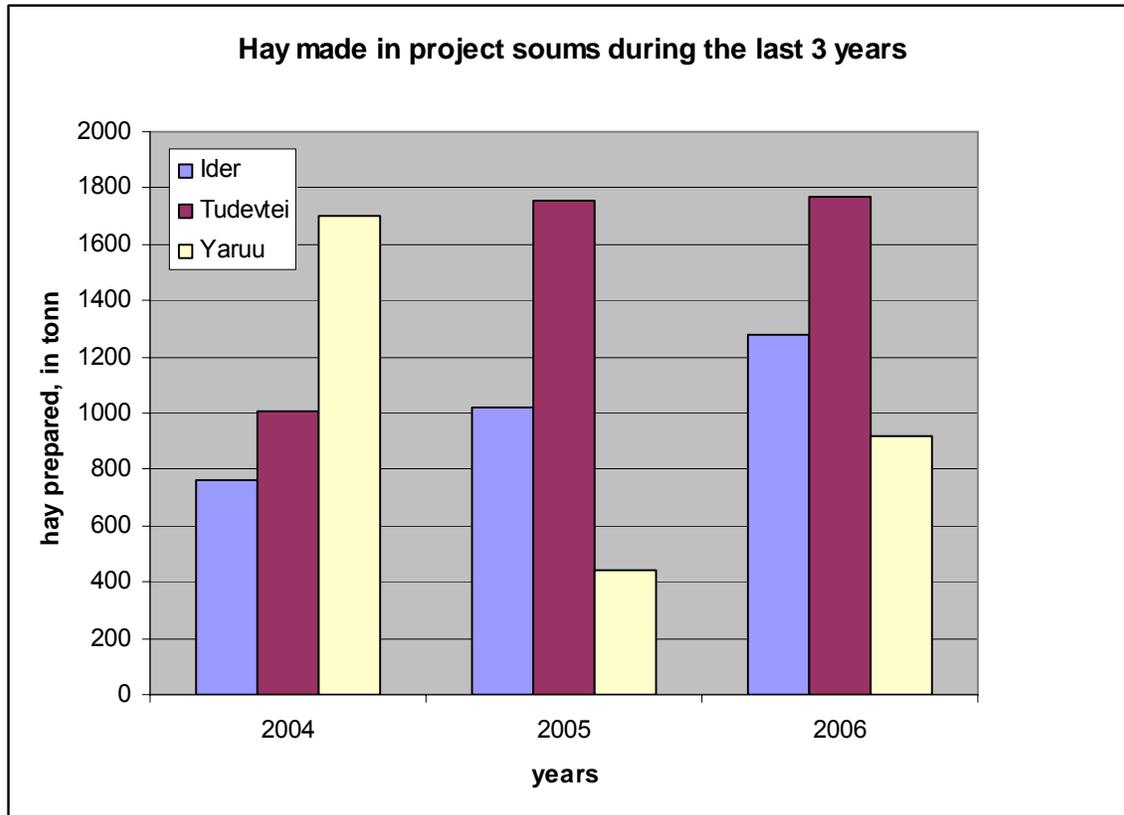
With the project intervention, significant changes have occurred with the living habitat of the cooperative members. Sufficient hay and fodder have been prepared (Appendix 4 column -winter preparation) for feeding their livestock during the period, when it is not possible to herd in pasture. The vegetable- an extra food ingredients, have been added to a traditional food stuff. Thus, saving and enriching the family budget. Knowledge and skills, gained through intensive training sessions, have been crucial in planning and organizing adequate pasture utilization and rotation, disaster mitigation measures and migration in close cooperation with bagh and soum officials.

### *Impact to bagh and soum level disaster preparedness capacity*

Disaster preparedness of a soum especially for zud is practically expressed in how much hay and fodder are prepared in the soum and whether these are enough to feed the soum animals in case if winter gets harsh and there is not possible to feed the animals through herding in pasture. Also, there are several measures such as making warm the animal shelters, animal migration plans, reservation and planned utilization of available pasture resources are accounted to the soum level preparedness.

Here are shown 2 graphs for illustration of soum level preparedness to the harsh winter and scales of contribution of cooperatives to the soum. The soum level hay and fodder data were acquired from the statistics department of the Zavkhan aimag. The cooperatives started producing their outputs from 2005 and year of 2004 was included to compare the previous year with project two years. Regarding the hay making graph, Ider and Tudevtei soums have made very good progress in hay prepared in last two years.

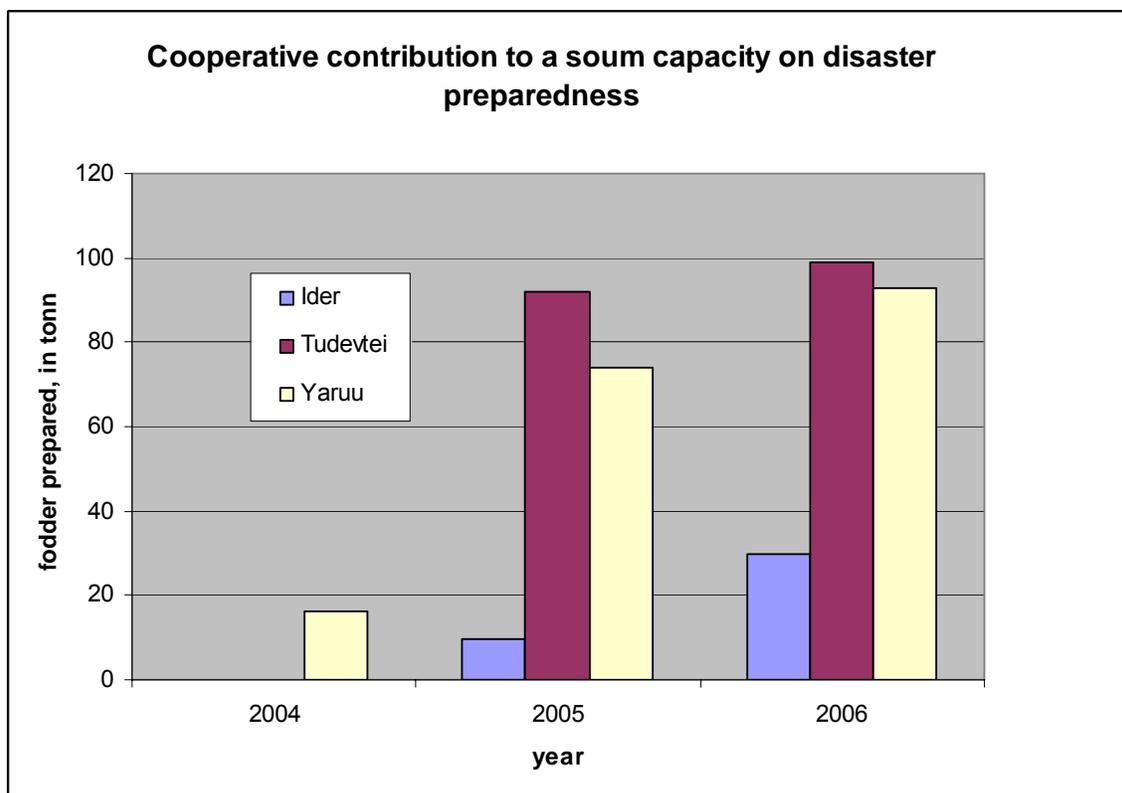
However, Yaruu soum shows reverse in hay making. Attempt to identify the causes of decreasing in hay making did not bring a success, because no one in the authorities could clear the reason. We assume this was an error in the statistics. In meeting with the cooperatives and soum government, both sides were emphasized the very good contribution of cooperatives in hay making. For example, Yesen Inder cooperative in Yaruu soum has assisted 50 % of the Jargalant Bagh herders or 70 herder households living in this area in hay making using their tractor and equipment, efficiency of which is seven times than the conventional hand cutting tools. This way, the cooperative earned additional income. Other cooperatives in project soums also helped neighboring herders in preparing hay for winter.



This way, many herders in these areas have benefited indirectly from the project and in overall, the volume of hay made increased in each of soum.

Fodder preparation is very new to project two soums except Yaruu soum, in which fodder was produced 16 tons in 2004. Oat – the main fodder plant is proven as high nutritious fodder and herders are very interested in planting domestically and having in livestock ration.

During the 2005 and 2006, totally 280 tons of fodder has been produced by cooperatives in these three soums and it is becoming very good contribution to the food security and disaster preparedness in these soums. The cooperative members are very proud with their gained knowledge and skills acquired through planting, caring and harvesting oats, production of which ensures secure and sustainable incomes to the cooperatives. The project contributed irrigation systems, which works stable, guarantee from being influenced by the changed weather patterns and precipitation regimes in these dry regions.



*Social/organizational capacity- experience in working in cooperatives and as a group*

After the consecutive zud events, herders understood well that herding their animals is not reliable within the increased frequency of natural disasters such as winter zud and summer droughts and many of them are in the attempts to look various ways of living. However, current economic situation and government incapacity do not offer much of options. The Disaster mitigation and preparedness project through its systematic strategies and targeted objectives makes excellent contribution to the mind of herders and local governments.

With cooperatives established and functioning, local communities witnessed advantages and big potential of joining one's efforts and labor. They understood that through cooperating big achievements can be made and secure job places can be created. With the project intervention, 116 persons have got stable job places in eight cooperatives in these three soums and the cooperatives provide secure food and other goods to local markets and create resources that serve as basis for sustainable livelihoods in these three soums. Many local citizens start joining their labor in any kind of work that requires man power. For example, during the hay making, not only cooperative members but also non-coop herders have been helping each other in cutting, collecting and transporting hay as well repairing their animal winter shelters and wells. This type of cooperation was quite rare since 1990s when collapse of soviet structure occurred.

*Motivational/attitudinal capacity - commitment to change and willingness to adapt to new market economy*

In discussion with cooperative members and through observation the consultant felt the very big and positive mental changes occurred among cooperative members. All the members are very proud with their achievements and enthusiastic in their future. Their motivation and attitudes with each other positively influence the neighboring communities. The interviewers have been witnessed warmer relationship and attitudes among local citizens.

### *Constraints in Increasing Local Capacity*

While meeting with key local partners, the consultant observed inappropriate attitudes of some officials especially at soum and bagh levels. They were not motivated to work at management levels rather interested in personal gaining. Such a case barriers to some extent the relation between to the local government and the cooperative and decreases project efforts to improve local capacity

Increasing accountability of officials at national and local level is a challenge that faces Mongolia this time. One of possibilities that projects may help the government in dealing with accountability is to involve government officials, either local or national, through including the project outputs into the government annual plans, thus, increasing their interest/responsibility or connections with a particular project. However, more brainstorming discussion and strategies need in detail for implementation of this idea.

### *Current Level of Capacity Building, Occurred*

At the cooperative level, 57 members have been trained on cooperative development and accounting basics for their business. For pasture management, fodder preparation and utilization trainings in total 265 persons have attended from these three soums, including local government officials. Vegetable processing, conservation and various kitchen techniques were taught to 79 persons.



With visit to local food shops and families the consultant observed various products prepared by the cooperatives (locally bottled vegetables, including cucumber, carrots, cabbages and dairy products) and hand made wells in next to gardening fields, which are new land marks in this region.

Cooperative members also made very good benefit from the training on increased productivity of livestock. Through their knowledge and connections, cooperatives have bought a local breed of goats with high milk and cashmere outputs (Yaruu bayan tal cooperative), a racing horse breed (Maanit Budargana cooperative, Tudevtei soum), which would increase the assets value and help in decreasing pressure to pasture degradation.



Soum and aimag level officials in charge of disaster management have shared their contingency plans developed with project training. The trainings on disaster management, contingency planning and practical training were organized as scheduled and 23 people have improved their knowledge and skills.

The effectiveness of above training sessions was obvious and very high.

### *Long Term Sustainability of Outputs Produced by the Project*

Once the project goals and outputs were objectively based on the needs of local citizens and government priorities, the sustainability of the outputs are ensured to the great extend as well.

As many interviewers emphasized mental investment via various systematic trainings had been very useful and long term investment the project produced.

Project introduce fodder planting and harvesting output would be the sustainable and economically very effective and profitable way of doing business for the cooperatives.

Knowledge and skills gained through systematic training series, technical inputs through irrigation systems, tractors and other tools, high demand in the nutritious fodders in the region (especially increased interests among population in breeding and feeding racing horses by the fodder) create very favorable environment that ensures long term sustainability of this activity.

An irrigated hay making activity started with Yaruu Esen Indert cooperative promises very good prospective considering the climate change with a trend in dry climate and increased livestock numbers in this region. This is also in line with high priority of the government policies to reduce the effects of pasture degradation and disaster mitigation and preparedness.

With their success in the planned activities such as hay and fodder making, the cooperatives are paying attention in quality of their livestock. The trend eventually leads to intensive livestock sector development.

The hay/fodder activities as well vegetable gardening generate alternative income for herders and for local communities. All of this produces indirect effect in decreasing the migration rate of ex-herders to urban areas and development of local economy.

As project main goal declared, sustainability of above activities, induced by the project, creates enabling environment, which reduces winter disaster associated risks and ensures a path to local sustainable development

### *Other Possible Interventions and Strategies Specifically Addressing Livelihood and Poverty Reduction*

ADRA has extensive experience with bio-intensive agriculture, well rehabilitation, micro-finance and disaster planning at community level. This Disaster mitigation and preparedness project is very good illustration of this experience. With the current expertise in these fields and network of experts in Mongolia, it is appreciated if it extends

its locations geographically to assist those in remote areas. Produced through DMP a local community development model promises very good prospects for replication in isolated areas of Mongolia.

12 soums in Zavkhan are going to have electricity from Taisher Hydropower station by the end of 2007. One of intervention would be setting up an intensive training program on application of electricity for SME development. It is timely necessary for inhabitants especially poor families in these soums for greater impact to the poor.

## ***Relevance of Disaster Preparedness and Mitigation Project to Development Priorities and Needs***

The objectives, strategies and outputs of the Disaster Mitigation and Preparedness (DMP) project have been in line with targets of the goal 1 "Eradicate extreme poverty and hunger" and the goal 7 "Environmental sustainability" of the United Nations Millennium Development Goals.

The Government of Mongolia has developed the National Development Strategy and the National Policy on Food and Agriculture in 2003. Also, the Principles of Regional Development was adopted subsequently the Regional Development Program in 2003. Intensive Livestock Sector Development Support Program, Livestock Quality Programs are reference documents that guide the development directive of the Mongolian livestock sector. DMP is very consistent with mentioned policy documents and reflects as a model of local implementation of these policies.

### *Relevance of a needs assessment method*

Capacities and Vulnerability Analysis (CVA) was employed from the project start to identify the vulnerabilities of the beneficiary communities and their associated capacities. The key advantage of CVA approach was that it acknowledges and builds on what already exists in the community. Adapted to Mongolian rural context, the CVA method was very effective in identifying the core needs of herders, their weakness in disaster preparedness, lack of knowledge and skills to mitigate, deal with and reduce the consequences of zud and drought disasters. The beneficiaries have high satisfaction with the project outputs and outcomes.

### *Relevance of cooperative strategies*

ADRA is very experienced on cooperative development. Through the project activity on cooperative formation and development, the project has developed specific strategies for each type of cooperatives within its target areas whether it is vegetable growing, hay and

fodder making or water resources. The strategies were very clear, developed in detail and time bound. For example, beneficiaries were selected first to work as herder groups and upon time the most promising and proved to work as team groups were provided further support ensuring long term sustainability of established teams. Naturally formed teams with various supports from the projects are formed as cooperative and officially registered at the third year of the project.

The project targeted those herders willing to leave representatives and workers with fewer herds in one place to manage the vegetable fields while the others take on the herding duties. The detailed model of division of labor was feasible and successful in vegetable growing and hay fodder making herder groups.

#### *Relevance of training and input strategies*

The training was a large part of the project and prospective members were trained on team building, and technical training over a period of months, before gaining access to major inputs. Savings were also required to be made during the initial training period in order to offset the costs of major inputs, and to guarantee the investment of each of individual into the cooperative. ADRA's visible inputs were small and the results were directly and clearly linked to beneficiary effort, which provided background to the beneficiaries to feel their true ownership on this project.

#### *Appropriateness of intervention to community needs and priorities*

The project implementation structure is put in a way that was consistently checking the community needs on monthly and quarterly basis and reflecting the changes in need through redeveloping the annual proposal and implementing it. This approach is very flexible and truly reflects the needs and priorities of beneficiaries compared with other donor implemented projects and programs. In order to effectively implement the approach, absolute understanding and mutual trust between funding and implementation organizations is prerequisite and the project case illustrates the best example.

#### *Clarity and logical consistency between inputs, activities, outputs and progress towards achievement of objectives*

Project inputs, activities and outputs were very clear for all stakeholders and common understanding by all, served as basis for successful cooperation between parties.

The flexible planning mechanism with annual proposal that reflects the actual and expressed needs of beneficiaries as well local partners and the effective monitoring and evaluation systems that established throughout the project, which ensured expected results, all contributed successfully to the achievements of the project objectives.

To emphasize that all the strategies, methods, implementation mechanisms were inseparable parts of a whole system, which completed successfully bringing to the region a sustainability model of community development.

### ***Recommendations***

The consultant emphasizes on the following findings, while evaluating the impact of Disaster mitigation and preparedness project:

- The project objectives have been very appropriate for increasing resilience of affected communities especially 116 poor herders and citizens against losing their livestock –a source of income, allowing them to acquire knowledge, skills and tools necessary for increasing capacity to resist any of disasters, diversifying their sources of income and ensuring sustainable means of living.
- The impact of intervention was very high at community level: social and economic status of 374 family members of these eight communities have been incredibly increased in relatively short period. 116 cooperative members possess knowledge, skills, equipments and alternative to this region, methods to generate income and improve livelihoods and increase resilience against winter disaster.
- Impact to local economy is high: 8 cooperatives provide majority of fodder resources to the herders of these three soums (62.7% and 76.6% of total fodder harvested in 2005 and 2006 respectively in these three soums) and major hay making and vegetable growing entities in these soums.
- Project introduced a sustainable land use model at local herder community level. All these models are in line with the government policies on poverty alleviation, environment protection, sustainable development, intensive agriculture development and all these lead to increased resilience of local communities against winter disasters. That are:
  - Rehabilitation model of degraded pastureland through developing irrigated hay making area on the example of Yesen Indert Cooperative, Yaruu soum
  - Rational labor sharing among herders and improving their livelihoods through combination of traditional herding and vegetable growing businesses based on cooperative actions – a model of semi herder livelihoods on the example of Yaruu bayan tal cooperative
  - Support to intensive livestock sector development - Fodder making on irrigated fields, which is very new and prospective business in around bigger urban places. I envisioned that most of cooperatives built through the project will eventually concentrate on fodder production. The model is with Oigony khishig, Tudevtei, Darkhan Uul, Ider

- Increased disaster management capacity: through series of training and skill building practices soum level disaster management staffs have greatly improved their knowledge and soum contingency and disaster management plans have been developed and tested.

Considering project's excellent achievements in improving livelihoods of the poor and developing alternative livelihood options for local communities, which proved very effective and innovative, the consultant recommends the following measures to advocate and replicate the best practices found through the project:

- Disseminate the rehabilitation model of degraded pastureland through developing irrigated hay making area on the example of Yesen Indert Cooperative, Yaruu soum
- Disseminate and replicate a model on Rational labor sharing of herders for livestock breeding and gardening
- Introduce and replicate fodder making on irrigated fields

All of these models can be replicated in priority areas (prone to zud and drought areas as well highly degraded areas) in Mongolia in combination of other expertise fields of ADRA Mongolia. The implementation strategies and methods applied in DMP project is strongly recommended for replication.

## **APPENDIX 1**

Ider soum:

### Met cooperative members:

Mr. Batmunkh G, head of Sevjidbalbarkhairkhan Cooperative (bagh governor)  
Ms. Adya N., Member of Sevjidbalbarkhairkhan Cooperative  
Ms. Tserenbadam Ch. Member of Sevjidbalbarkhairkhan Cooperative

Mr. Renchin, head of Darkhan Uul Cooperative  
Mr. Jadambaa, member of Darkhan Uul Cooperative  
Ms. Jijgee, member of Darkhan Uul Cooperative  
Mr. Altangerel, member of Darkhan Uul Cooperative  
Mr. Amarbayar, member of Darkhan Uul Cooperative  
Mr. Munkhbayar, member of Darkhan Uul Cooperative  
Mr. Munkhbat , member of Darkhan Uul Cooperative

### Met local government:

Mr. Bayantur T, soum governor  
Mr. Batchuluun D., head of local citizen representative hural (LCH)  
Ms. Amgalan D. soum doctor  
Mr. Enkhee T. Ranger  
Mr. Davaanyam, soum governor's office manager  
Mr. Bayanmunkh N., secretary LCH  
Mr. Sainbayar Ch., social worker of soum's secondary school  
Ms. Purevjav D., Darkhan Bagh Veterinarian  
Mr. Surmaajav S., social welfare officer  
Ms. Erdenechimeg L., teacher

### Non-coop citizens met

Ms. Densmaa B., herder, Darkhan Uul bagh  
Ms. Bayartogtoh D., unemployed, Manuustai bagh  
Ms. Yanjinlham O., herder, Manuustai bagh  
Mr. Nyamjav H., herder, Darkhan Uul bagh

24 persons

### Tudevtei soum

#### Met cooperatives:

Ms. Bolortsetseg B., Khuliin Tsagaan Ovoo Cooperative heads

Ms. Tuvshinjargal D., Khuliin Tsagaan Ovoo Cooperative member  
Mr. Bayanbat T., Khuliin Tsagaan Ovoo Cooperative member  
Mr. Dorjderem Sh., Khuliin Tsagaan Ovoo Cooperative member  
Ms. Erdenechimeg N., Khuliin Tsagaan Ovoo Cooperative member

Ms. Khajidmaa J., Maanit budargana Cooperative head  
Mr. Batbayar D., Maanit budargana Cooperative member  
Mr. Tumurchudur Ts., Maanit budargana Cooperative member

Mr. Batjargal J., Oigony khishig Cooperative head  
Ms. Narangerel N., Oigony khishig cooperative member  
Ms. Erdenetsetseg O., Oigony khishig cooperative member  
Ms. Sumya B., Oigony khishig cooperative member  
Mr. Damdinsuren B., Oigony khishig cooperative member  
Ms. Tumbaash Ts., Oigony khishig cooperative member

Ms. Otgonbayar D., project local coordinator

#### Soum government met

Mr. Otgonbayar Ts., soum governor  
Ms. Tsetsegee D., deputy soum governor, local representative of Household Livelihood Support Program of World Bank and GoM  
Mr. Badamragchaa O., environmental inspector  
Ms. Nansalma D., food & agriculture officer  
Ms. Erdenetsetseg D., veterinarian  
Mr. Lhagvasuren D., soum governor's office manager band member of Maanit Budargana Cooperative  
Mr. Batbayar D., social welfare officer  
Mr. Ganbayar Ch., Argalant bagh governor

23 persons met

#### Yaruu soum

##### Met cooperative members

Mr. Natsagdorj D., Yoson Indert Cooperative head  
Ms. Nanjidmadaa B., Yoson Indert Cooperative member  
Mr. Budkhuu D., Yoson Indert Cooperative member  
Mr. Uvgunkhuu S., Yoson Indert Cooperative member  
Mr. Demberel M., Yoson Indert Cooperative member  
Ms. Norjmaa .,D., Yoson Indert Cooperative member  
Ms. Altantsetseg D., Yoson Indert Cooperative member  
Mr. Sumya U., Yoson Indert Cooperative member

Mr. Luvsanjav Ts., non coop herder

Mr. Chimedtseren B., Yaruu Bayantal cooperative head  
Mr. Dorjsuren S., Yaruu Bayantal cooperative member  
Mr. Enkhtuvshin Sh., Yaruu Bayantal cooperative member

Mr. Gungaa B., Sartuul sambarai cooperative head  
Ms. ChimedtserenT., Sartuul sambarai cooperative member

Mr. Erdenebat D., non-coop herder  
Mr. Nyam-Osor S., non-coop herder  
Ms. Jargalsaikhan D., non-coop vegetable grower and part-time herder

Soum government met

Mr. Damdinsuren, Of Local Citizen Representative Hural (LCH)  
Mr. Makhmedrii D., Soum Governor's Office Manager  
Ms. Tserennadmid B., Soum Deputy Governor  
Ms. Altantsetseg O., Social Welfare Officer  
Ms. Dorj-Orlom L., Food & Agriculture Officer  
Mr. Sukhbaatar B., Environmental Inspector

23 persons

Aimag government & relevant agencies met

Mr. Bayarlhagva Kh., Deputy Governor of Zavkhan Aimag  
Mr. Purevdorj, Statistics Division Head  
Mr. Tumorhuyag Ts., Deputy Head, Aimag Department of Food & Agriculture  
Mr. Purevdorj, Head of Veterinary & Sanitation Lab, Aimag Department of Food & Agriculture  
Mr. Buyandalai B., Head, Division of Policy & Coordination of Social Welfare  
Mr. Enkhbayar, Head, Aimag Emergency Management Division (EMD)  
Mr. Bold, Deputy Head, EMD  
Mr. Baasanjav D., Head, Emergency Resources Branch

Projects and Programs of Donors & International Development Agencies and NGOs presented in Zavkhan

Ms. Saranchimeg O., World Vision INGO Branch Manager  
Mr. Ulziisaikhan B., Rural Agrobusiness Support Program Representative,  
Ms. Myagmarjav, Sustainable Livelihood Project (World Bank) Aimag Branch Office  
Mr. Enebish B., Mongolian Red Cross Society Aimag Branch Head  
Ms. Khajidsuren B., ADRA Aimag Branch Manager  
Ms. Tsetsegmaa B., Loan Specialist, Economic Support Program, ADRA Aimag Branch

Ms. Batbileg Ts., GTZ Renewable Energy Application Support Project  
Mr. Erdenetsogt J., ADRA/ECHO Livestock Risk Reduction and Food Project

National government officials met

Dr. Dash P., Chief, High Commissioner, National Emergency Management Agency of Mongolia

Dr. Batsuuri N., State Secretary, Ministry of Food and Agriculture (MFA) of Mongolia

Ms. Burmaa B., Head of Crops, Technology & Agricultural Machinery Division, MFA

Ms. Ulziibayar N., Program officer, International Cooperation Division, MFA

In total 90 persons met

## APPENDIX 2

### List of agricultural equipment provided by the Disaster Mitigation and preparedness project, Jan 2007

Soum name	Name of cooperatives	Equipments 1USD = 1185Tugrugs									Total /USD/
		Tractor (1009.6)	Trailer (224.8a)	Hay cutter (497.8)	Rake (447.2)	Irrigation system (170.1)	Plough (36.4)	Seeder (130.1)	Welder (113.4)	Water pump (221.7)	
Ider	Yaruu Bayantal	1	1			1					2352
	Sartuul sambarai	1	1			1	1	1		1	848
	Esun indert	1	1	1			1	1	1		2012
Tudevtei	Maanit Budargana	1	1	1	1	1	1		1	1/533.7/	3033
	Khulyyn tsagaan ovoo	1 /786.4/	1 /free of charge/	1	1	1		1	1	1	2367
Yaruu	Ider Darkhan-Uul	1	1	1	1	1	1	1	1	1	2851
	Sevjidbalbar Khairkhan	1	1	1	1		1				2216
<b>Total</b>		<b>7</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>4</b>	<b>3</b>	<b>15678</b>

### APPENDIX 3

#### Disaster mitigation and preparedness project Harvest 2006

Soum name	Name of herder's group	Feed / kg /			Vegetable / kg /								Total	
		1	2	3	4	5	6	7	8	9	10	11	Fodder	Vegetable
		fodder	alfalfa	hay	potato	cabbage	carrot	turnip	beet	onion	garlic	cucumber		
Ider	Darhan-uul	18000		25000	1200		70	500				25	43000	1795
	Sevjidbalbar Khairkhan	10000		21000	500		28	50				13	31000	591
<b>Total</b>		<b>28000</b>		<b>46000</b>	<b>1700</b>		<b>98</b>	<b>550</b>				<b>38</b>	<b>47000</b>	<b>2386</b>
Tudevte i	Oigonii Khishig	30000		75000	6000	15	500	3000	15	10	1	150	105000	9691
	Maanit budargana	18000		20000	1200	29	100	1000	12	5		5	38000	2351
	Khuliin tsgaan owoo	30000			500	19	15	30	2			2	30000	568
<b>Total</b>		<b>78000</b>		<b>95000</b>	<b>7700</b>	<b>63</b>	<b>615</b>	<b>4030</b>	<b>29</b>	<b>15</b>	<b>1</b>	<b>157</b>	<b>173000</b>	<b>126410</b>
Yaruu	Esun indert	17000		60000								30	77000	30
	Sartuul sambarai	23000		30000				52				18	53000	70
	Yaruu Bayantal	24000		15000	650	100	130	220					39000	1100
<b>Total</b>		<b>64000</b>		<b>105000</b>	<b>650</b>	<b>100</b>	<b>130</b>	<b>272</b>				<b>48</b>	<b>169000</b>	<b>1200</b>
<b>TOTAL</b>		<b>170000</b>		<b>246000</b>	<b>10050</b>	<b>163</b>	<b>843</b>	<b>4852</b>	<b>29</b>	<b>15</b>	<b>1</b>	<b>243</b>	<b>416000</b>	<b>16196</b>

## Continued APPENDIX 3

Disaster mitigation and preparedness project Harvest 2005													
Soum name	Name of herder's group	Feed / t /		Vegetable / t /								Total / t /	
		1	2	1	2	3	4	5	6	7	8	fodder	Vegetable
		fodder	hay	potato	cabbage	turnip	carrot	beet	redish	cucumber	gourd		
Ider	Darhan-uul	5	16	2,3	0	0,5	0			0,05	0,01	21	2,86
	Serven hairhan (Sevjid balbar hairhan)	4,5	10	0,4	0,05							14,5	0,45
<b>Total</b>		<b>9,5</b>	<b>26</b>	<b>2,7</b>	<b>0,05</b>	<b>0,5</b>	<b>0</b>			<b>0,05</b>	<b>0,01</b>	<b>35,5</b>	<b>3,3</b>
Tudevtei	Budargana (Maanit budargana)	32	37,5	2	0,8	1	0,05	0	0,02	0,02	0	69,5	3,89
	Shar nuruu (Huliin tsagaan ovoo)	30	35	1,5	0,02	0,6	0,03	0,01	0,05	0		65	2,21
	Ih urgats(Oigonii hishig)	14	15	3,5	0,8	3	0,3	0,1		0,02	0	29	7,72
<b>Total</b>		<b>76</b>	<b>87,5</b>	<b>7</b>	<b>1,62</b>	<b>4,6</b>	<b>0,38</b>	<b>0,11</b>	<b>0,07</b>	<b>0,04</b>		<b>163,5</b>	<b>13,8</b>
Yaruu	Yaruu bayan tal	3	15	0,8		0	0			0,05		18	0,85
	Sartuul sambarai	14	20	0,5	0	0,6	0,05			0,1		34	1,25
	Han jargalant (Esun indert)	7,5	55	0,05		0,2		0,003		0,02		62,5	0,27
<b>Total</b>		<b>24,5</b>	<b>90</b>	<b>1,35</b>		<b>0,8</b>	<b>0,05</b>	<b>0,003</b>		<b>0,2</b>		<b>114,5</b>	<b>2,4</b>

## APPENDIX 4

### Herders status of winter preparation

(#11,12 are non-cooperative herders and the others are members of cooperatives)

#	Soum name	Name of cooperative member	Pre-zud livestock	post zud livestock (2004)	livestock lost during the zud, in percentage	pre-zud winter preparation (1999)	winter preparation in 2006 (in tonn)
1	Yaruu	Mr. Uvgenkhuu, "Ysen Indert" cooperative	830 livestock out of which horse 100, cow 280, sheep & goats 450	172 livestock: horse 35, cow 17, sheep & goat 120	79,27%	250 kg hay only for young animals	hay-3.7 fodder-1.06
2	Yaruu	Mr.Demberel, "Ysen Indert" cooperative	583 livestock: horse 50, cow 83, sheep & goats 450	213 livestock: horse 10, cow 3, sheep & goats 200	63,46%	500 kg	hay-3.7 fodder-1.06
3	Yaruu	Ms. Norjmaa, "Ysen Indert" cooperative	620 livestock: horse 50, cow 70, sheep & goats 500	281 livestock: cow 31, sheep 250,	54,67%	No hay	hay-3.7 fodder-1.06
4	Yaruu	Ms. Altantsetseg, "Ysen Indert" cooperative	700 livestock: horse 30, cow 200, sheep & oats 470	203 livestock: horse 2, cow 1, sheep & goats 200	71%	500 kg	hay-3.7 fodder-1.06
5	Yaruu	Mr. Natsagdorj, "Ysen Indert" cooperative	200 толгой малтай: Том үхэр 160, Тугал, бяруу 40	9 cow	95,50%	250 kg	hay-3.7 fodder-1.06

6	Yaruu	Mr. Budkhuu, "Ysen Inder" cooperative	200 livestock: horse 30, cow 20, sheep & goats 150,	38 livestock: horse 5, cow 3, sheep & goats 30	81%	500 kg	hay-3.7 fodder-1.06
7	Yaruu	Mr. Sumya, "Ysen Inder" cooperative	250 livestock: horse 20, cow 20, sheep 200, goats 30	144 livestock: horse 15, goats 9, sheep 120	28%	250 kg	hay-3.7 fodder-1.06
8	Yaruu	Mr. Chimedtseren, "Yaruu bayan tal" cooperative	300 livestock: horse 60, cow 50, camel 3, sheep & goats 187	65 livestock: horse 13, cow 7, camel 1, sheep 30, goats 14	78,33%	no hay	hay-1.4 fodder-2.2
9	Yaruu	Mr. Dorjsuren, "Yaruu bayan tal" cooperative	250 livestock: horse 15, cow 14, camel 5, sheep 156, goats 60	132 livestock: horse 7, cow 10, sheep 75, goats 40	47,20%	no hay	hay-1.4 fodder-2.2
10	Yaruu	Mr. Enkhtuvshin, "Yaruu bayan tal" cooperative	100 livestock: horse 5, cow 5, sheep & horse 90	Мангуй	100%	no hay	hay-1.4 fodder-2.2
11	Yaruu	Mr. Erdenebat, non-coop herder	930 livestock: horse 60, cow 70, sheep 600, goats 200	173 livestock: horse 9, cow 10, sheep 160	81,40%	no hay	no hay
12	Yaruu	Mr. Nyam-Osor, non-coop herder	900 livestock	500 livestock	44,44%	no hay	buys hay, when necessary
13	Yaruu	Mr. Gungaa, "Sartuul sambarai" cooperative	400 livestock: horse 30, cow 40, sheep & goats 330	sheep & goats 100	75%	250 kg hay	hay-3.3 fodder-2.5
14	Tudevtei	Ms. Bolortsesteg, "Khuliin tsagaan ovoo" cooperative	215 livestock: horse 20, cow 45, sheep & goats 150	13 livestock: horse 3, cow 3, sheep 2, goats 5	93,95%		fodder-10
15	Tudevtei	Mr. Batjargal, "Oigonii khishig" cooperative	400 livestock	31 livestock: horse 2, cow 2, sheep & goats 27	92,25%	1tn hay	hay-10.7 fodder-4.2

16	Tudevtei	Ms. Narangerel, "Oigonii khishig " cooperative	200 livestock: horse 6 cow 27 sheep & goats 167	sheep 8	96%	no hay	hay-10.7 fodder-4.2
17	Tudevtei	Ms. Erdenetsetseg, "Oigonii khishig " cooperative	700 livestock: horse 55, cow 35, sheep & goats 610	38 livestock: horse 5 sheep 9, goats 24	94,57%	2 tn hay	hay-10.7 fodder-4.2
18	Tudevtei	Ms. Tumbaash, "Oigonii khishig " cooperative	230 livestock: horse 41 cow 30 sheep & goats 159	28 livestock: horse 5 cow 2 sheep & goats 21	87,82%	4 tn hay	hay-10.7 fodder-4.2
19	Tudevtei	Mr. Baatar, "Oigonii khishig " cooperative	417 livestock: horse 45 cow 22 sheep & goats 350	33 livestock: horse 3 cow 1 sheep & goats 29	92,08%	2 tn hay	hay-10.7 fodder-4.2

## APPENDIX 5

### POTHOS ON FOCUS GROUP DISCUSSIONS (FGD) AND PARTICIPATORY RURAL APPRAISAL (PRA)



FGD with Sevjid balbar Khairkhan cooperative head & members (Ider soum, Feb 4, 2007)



FGD with Sartuul Sambarai coop members and non-coop herders (Yaruu soum Feb 13, 2007)



FDG with members of Esen Indert coop, (Yaruu soum, 5 Feb, 2007)



A meeting with soum disaster management staff (Ider soum, 4 Feb 2007)



A PRA meeting with key stakeholders, including Darkhan Uul coop members, soum government officials, non-coop herders (14 persons, Ider soum 5 Feb, 2007)



A FGD meeting with 2 cooperative members of Oigony khishig and Maanit Budargana, 12 participants. (Tudevtei soum, 7 Feb, 2007)



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