

Rural livelihoods and access to forest resources in Mongolia:

Methodology and case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum and Baynlig Soum



New Zealand Nature Institute
Initiative for People Centered Conservation

2006



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

Livelihood Support Programme (LSP)

An inter-departmental programme for improving support for enhancing livelihoods of the rural poor.

Rural livelihoods and access to forest resources in Mongolia:

Methodology and case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum and Baynlig Soum

**New Zealand Nature Institute
Initiative for People Centered Conservation**

2006

Cover photographs by New Zealand Nature Institute

This paper was prepared under contract with the Food and Agriculture Organization of the United Nations (FAO). The positions and opinions presented are those of the authors alone, and are not intended to represent the views of FAO.

This paper was prepared for FAO's Forestry Policy and Institutions Service, Development Law Service and Sub-programme 3.1 ("Access to natural resources") of the Livelihood Support Programme.

The Livelihood Support Programme

The Livelihood Support Programme (LSP) evolved from the belief that FAO could have a greater impact on reducing poverty and food insecurity, if its wealth of talent and experience were integrated into a more flexible and demand-responsive team approach.

The LSP works through teams of FAO staff members, who are attracted to specific themes being worked on in a sustainable livelihoods context. These cross-departmental and cross-disciplinary teams act to integrate sustainable livelihoods principles in FAO's work, at headquarters and in the field. These approaches build on experiences within FAO and other development agencies.

The programme is functioning as a testing ground for both team approaches and sustainable livelihoods principles.

Email: lsp@fao.org

Access to natural resources sub-programme

Access by the poor to natural resources (land, forests, water, fisheries, pastures, etc.), is essential for sustainable poverty reduction. The livelihoods of rural people without access, or with very limited access to natural resources are vulnerable because they have difficulty in obtaining food, accumulating other assets, and recuperating after natural or market shocks or misfortunes.

The main goal of this sub-programme is to build stakeholder capacity to improve poor people's access to natural resources through the application of sustainable livelihood approaches. The sub-programme is working in the following thematic areas:

1. *Sustainable livelihood approaches in the context of access to different natural resources*
2. *Access to natural resources and making rights real*
3. *Livelihoods and access to natural resources in a rapidly changing world*

This paper describes the methodology used for field studies undertaken in five rural areas of Mongolia (Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum) covering all ecological zones from montane and northern taiga forest to arid forest in the Gobi. The studies were designed, with the sustainable livelihoods approach as the analytical framework, to contribute to knowledge on forest-people interaction.

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1 Background	1
1.2 Challenges and risks	4
2. METHODOLOGY	6
2.1 Sampling	6
2.2 Field research tools and techniques	7
2.3 Process for team preparation	8
2.4 Field schedule per site	9
2.5 Processes to facilitate participatory analysis and learning	10
2.6 Presentation of outputs	15
REFERENCES	16
3. TSENKHER SOUM.....	19
3.1 Overview	19
3.2 Brief summary of findings	19
3.3 Analysis.....	21
4. ULAAN UUL SOUM.....	34
4.1 Overview	34
4.2 Brief summary of findings	34
4.3 Analysis.....	36
5. BINDER SOUM.....	48
5.1 Overview	48
5.2 Brief summary of findings	50
5.3 Analysis.....	53
6. TESHIG SOUM.....	69
6.1 Overview	69
6.2 Basic information	71
6.3 Brief summary of findings	71
6.4 Analysis.....	72
7. BAYNLIG SOUM.....	109
7.1 Overview	109
7.2 Brief summary of findings	110
7.3 Analysis.....	112

1. INTRODUCTION

This paper represents part of an area of work in support of enhancing access to land and forest resources in support of rural livelihoods in Mongolia. Information on the work is provided through a series of LSP Working Papers.

- 30: Improving the legal framework for participatory forestry: Issues and options for Mongolia by Jon Lindsay, James Wingard and Zoljargal Manaljav.
- 31: Depleting natural wealth – perpetuating poverty: Rural livelihoods and access to forest resources in Mongolia by New Zealand Nature Institute.
- 32: Rural livelihoods and access to forest resources in Mongolia: Methodology and case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum and Baynlig Soum.

While extensive and systematic work has been undertaken on rangeland and livestock issues in Mongolia, a knowledge gap existed on the links between rural livelihoods and forest resources.

FAO, through the Livelihood Support Programme (Sub-programme 3.1 “Access to natural resources”) contracted NZNI/IPECON to design and undertake a study on the role that forests currently play in livelihoods and on the potential roles that forests could play if local communities acquire stronger access to and use of the resources. Findings of the study support the formulation of policy recommendations by the project TCP/MON/2903 on Participatory Forestry in Mongolia. The objective of the project is “to develop an enabling framework to encourage the active participation of stakeholders, more specifically the rural population, in forest management to improve their livelihoods through sustainable forest utilization.” The central focus of the TCP project is on developing and testing a “participatory forestry concept,” in essence a conceptual and strategic framework for enabling and designing local forest management by community-based groups.

1.1 Background

Approximately 11 percent of Mongolia’s territory is forested land, located mainly in northern parts of the country in the Khangai, Khentii, Sayan and Altai Mountains and submountain areas. Most of the forests are inaccessible due to the lack of roads and the mountain relief pattern. Though the contribution of the forestry sector is relatively small in direct economic terms, the important contribution of forests to the protection of soil, range-lands, water resources, wildlife and for climate amelioration is widely recognised.

Forest management in Mongolia has been beset by a wide range of problems, particularly in the post transition era which has witnessed a significant increase in the rate of deforestation. Financial and human capacity within the sector is very low, both in absolute terms and especially when the wide geographical distribution and inaccessibility of the resource is taken into account. The lack of effective controls and absence of incentives for lawful behaviour means that a high percentage of forest-related activities are illegal and destructive. Forests are also highly vulnerable to threats from fires, drought and pest.

In this context, the need for greater engagement of local people in forest management is evident. As in many countries around the world, one of the main impediments to this approach in Mongolia is an unfavourable legal framework. Steps need to be taken to deepen and strengthen the rights that local people have over forest resources, so that they have a clear “ownership” interest in the sustainable management of those resources.

It is also clear that the challenge of enhancing community involvement is to some extent different in a country like Mongolia than in many other parts of the world where community-based strategies have gained prominence in recent years. Population densities are low and communities are usually dispersed and mobile, given the predominant dependence on grazing. Incentives for collective action are therefore perhaps less obvious than in some countries where the importance, feasibility and potential benefits of local management are underscored by intense competition over scarce resources that have traditionally played a large role in the livelihoods of local people. In Mongolia, the challenge is rather to define new ways for local populations to utilize the relatively untapped potential of relatively abundant forest resources.

At the same time, there are different types of communities in or around some forest areas of Mongolia, so the shape of community-based management approaches will likely need to vary considerably depending on the context. For example, a number of settlements originated as centres of the forest processing industry with a very heavy dependence of local inhabitants on that industry. With the virtual collapse of most forest-based enterprises in recent years, these communities have suffered greatly. There remains a high dependence on forest based activities, but often carried out in a haphazard, informal or illegal manner by individuals or small groups.

There have been a number of experiments over the last decade with various community-based forest management activities. A Government Resolution on “National Forest Programme” encourages the implementation of a policy of Participatory Forest Management in Mongolia. Under this framework about 22 “community forestry” pilot initiatives have been established in Selenge (16), Arkhangai (2), Bulgan(2), Khentii (1), and Tuv (1). However, these initiatives have encountered a wide range of institutional, legal and conceptual limitations. These limitations could perhaps be summed up by the following two observations:

- The initiatives are focused almost entirely on protection and regeneration of forests, as opposed to local management and use, with consequently little emphasis on how forests could provide local benefits that would serve as sustainable long-term incentives for involvement through enhanced livelihoods;
- The legal framework for local activities suffers from the same limitations and is also full of ambiguities that make the formation and operation of local groups difficult. While both the Forest Law and Land Law appear to provide mechanisms for leasing forest land, these are to some extent weakened by confusions and contradictions elsewhere in the same laws. It is, in short, unclear under the current legal framework that local groups can obtain ownership or long-term secure and exclusive rights to manage and exploit local forest resources.

The TCP project is thus predicated on the conviction that there is a need to step back from (or, more accurately, to complement) ground level initiatives, and to focus on conceptualizing and designing strategies for improving the enabling environment. Its main outputs have included the development of a draft Participatory Forestry Concept Paper, a strategy document for improving and moving forward with participatory forestry on a larger scale. This Concept Paper was the result of an extensive consultative process both at national level and at community level in five selected sites in Mongolia’s forested regions.

At the same, in the analytical and consultative work leading up to the development of the concept, several important knowledge gaps concerning the relationship of forests to local livelihoods have been noted. In general, little systematic study of this relationship has taken place. There has been very extensive work in Mongolia on livelihoods issues, carried out by FAO and others, mainly focusing on rangeland and livestock issues. That learning so far has not penetrated the forestry sector to a great degree. And yet, it is clear that the appropriate design of participatory forestry mechanisms, policies and laws requires a solid understanding of the relationship between people and resource, the extent to which the resource is or could

be important for improving livelihoods, and the actual aspirations and incentives of concerned communities in this regard. Hence, it has been decided that the further development of the TCP project recommendations would be greatly strengthened by research designed to fill this knowledge gap and to provide a more robust understanding of Mongolian forest-people interaction by application of livelihoods analysis.”

Experiences of the author from participatory practice with rural communities in Mongolia provide additional insights that qualify the above statements on the subject of communities and collective action in Mongolia:

- The incentive for collective action among pastoral communities may not be less obvious in Mongolia than in other countries. Pasture land, state owned and grazed by private herds, became a de-facto open-access resource in the 1990s due to a lack of regulation by local government and due to an increase in households turning to subsistence herding. In this situation, aggravated by less available pasture due to lack of pasture water supply, grazing land became a scarcer resource. The need of pastoralists for mobility, as a strategy for sustainable drylands management, provided an important incentive for community organization and collective action, firstly to coordinate pasture utilization and facilitate mobility, and secondly to develop strategies of livelihood diversification (Schmidt 2005).

The following points, from reports on field research since 2000, should also be considered in the design of the study, and may serve as hypotheses to be tested in the field:

- Non-timber forest products are important for the poor, both for subsistence and income generation as the poor lack the means for transportation and processing of timber products.

In recent years, non-timber forest resources have been heavily exploited, with serious threat to the resource and damage to forest areas. Pine nut collection is one example for this. In the Eastern Khentii, non-timber forest products appear to have become an important income source for local communities as well as outsiders due to lack of opportunities for herders to add value to their products and reach markets and due to lack of other income opportunities for urban people (Martin Velsen-Zerweck 1998). For the western Khentii, non-timber forest product collection is described by Hartwig (2003). Both authors point out the unsustainable practices and threat to the resources, both for plant and animal non-timber forest products. In the Selenge Aimag study, non-timber forest products are found to be mainly used by the local poor. These reports suggest that non-timber forest products are not an “untapped resource” but an already threatened resource. (Likewise, the unsustainable harvest of timber resources and the missing out on economic opportunity due to lack of value addition and export of unprocessed wood, has been documented (World Bank/WWF 2002).

- A probably marked difference of communities in areas with commercial forestry before 1990, namely the Western Khentii region. Hartwig (2003) observed a lack of traditional knowledge about non-timber forest resources, and the natural environment in general among the local community in a study area in Selenge Aimag. In contrast, local communities that traditionally utilize pasture and forest resources in the Eastern Khentii, have a deeply spiritual connection to the land, natural resources and the forest, and more intimate knowledge of the environment. The same is true for herders, at least traditional herders and the older generation, in the steppe and desert steppe. The difference is likely a result of “artificially” created populations in commercial forestry areas, such as in the Western Khentii region. Findings from there may not be representative for the whole of Mongolia.
- Forest resources in “traditional” areas, may be more than natural capital. This may be comparable to the suggestion by Morton and Meadows (2000) that livestock in pastoral communities is more than natural capital, but (also) social capital.

- Even in communities and local areas where commercial forestry plays an important role in the local economy, pastoralism still may be the most important source of income for a majority of households across several strata of wealth.
- Mongolia is a primarily pastoral economy, the importance of sustainable forest management for sustainable pasture management is to be further explored. Linkages pastoralism and forest use (traditional sylvopastoralist resource management system) need to be explored.

Participatory Poverty Assessments (Participatory Living Standards Assessment, World Bank, National Statistics Office of Mongolia, 2000, and Participatory Poverty Assessment PAA, Worldbank and ADB, 2004-ongoing) are contributing the following findings relevant to the study topic:

- Significant changes in livelihood sources have occurred in the 1990s
- Multiple sources of insecurity and vulnerability have emerged
- Changes in livelihood strategies and in strategies for coping with and adapting to insecurity have emerged
- A complex and differentiated profile of poverty is emerging
- Rural-urban linkages, and social networks that link communities, are important aspects in livelihood strategies
- A diversity of formal and informal labor markets and safety nets exists

Objectives: To facilitate learning about individual and household-level livelihoods and livelihood dynamics, particularly poverty and forest linkages, by using the Sustainable Livelihoods approach as the analytical framework.

To this end, conduct participatory analysis, and conventional research, to learn about

- availability and accessibility of livelihood resources
- livelihood strategies, their combinations and outcomes
- formal and informal institutional arrangements, and their linkages, that facilitate, or inhibit, strategies and outcomes.

1.2 Challenges and risks

In Mongolia, PRA in rural areas requires considerable logistics and planning. A feasible meeting place, at one household camp site, must be found, agreed with the household. The weather may not allow outside work, and a ger (felt tent) may be small for all participants to fit. As herders households are scattered, some of the participants need support with transport, otherwise only those with means of transport will attend.

Because of the distances, and because of peoples' workloads and the nature of livestock herding, it is not feasible to ask people to stay for a second day, or to come back next day. Therefore the analysis for the community profile needs to be managed in one day, as well as other exercises that generate learning about livelihood strategies through a group process (asset mapping, seasonal calendars, timelines). It is not feasible, for example, to regularly meet with one focus group, because in a pastoral setting, the group members will be scattered again.

The team leader and several members have extensive experience working with herder communities in Mongolia's Gobi where distances between households are the largest

countrywide, and are able to plan accordingly. However, this aspect has to be factored into field schedules and expectations.

Besides the logistical challenges of field work in Mongolia, the field research team has to prepare for and be aware of other challenges for this study. The “only” benefits for participants in participatory learning during field research is that their perceptions will have a greater chance to inform policy formulation. While this is a potentially considerable benefit it is not immediately tangible.

In some of the study sites, participatory rural appraisals may already have been undertaken in the framework of donor projects and where expectations of people have not been fulfilled, where people may feel that PRA served only the purpose of information extraction, without follow-up and benefits for local communities. In fact, several team members are used to participatory practice that emphasizes local, collective action as the main outcome following participatory analysis.

Preparation and Mitigation

1. Address challenges and risks in preparatory team discussions and training
2. Informing all stakeholders (government and non-government) of the objective, approach and schedule of the field research.
3. To give something back to participants for their time, sharing of information and input, provide food/refreshments for the day, support with transport. Share experiences from other communities in Mongolia that have organized for collective action to improve their livelihoods and manage natural resources sustainably. Share materials such as community newsletter, documentaries, show films, etc. If the situation is appropriate, these may also be used to initiate group discussions.
4. For efficient logistics and safety, travel in 2 vehicles, carry communications equipment (Sat Phone), GPS, First Aid, appropriate field equipment.

2. METHODOLOGY

The methodology was designed, within the limited scope of the study, to optimize opportunities to shed light on key connections and linkages; it was not suggested that the study could capture all aspects.

The study takes a very predominantly qualitative approach designed to capture an in-depth picture among a small sample (of the population) on the topic of forest and livelihood linkages. True to the nature of qualitative research, the field study design allows for flexibility while adhering to guidelines to cover key issues and enable cross-checking between different tools of participatory analysis and respondents.

The sampling (selection of sites, groups, households, participants in different interviews and exercises) follows both purposive sampling (such as analyzing livelihoods in different wealth strata identified in participatory analysis) as well as random sampling principles (such as interviewing households within one stratum). This, and the use of structured interviews and questionnaires adds a quantitative aspect to the study, although it remains to be seen how reliable and useful data from such surveys will prove.

2.1 Sampling

The selection of regions, local areas and communities is guided by

- the intention to capture diversity of ecology, agro-ecology and of community profiles,
- the intention to capture rural-urban linkages
- to capture links of sustainable forest management – sustainable pasture management
- the need to balance sample size (participating communities), expected level and depth of analysis, and the available time frame and resources.

Aimags (provinces)

The following sites were proposed: a site in Khentii (mountain forest steppe/taiga forest), a site in Arkhangai (mountain forest steppe/high mountain), and a site in Bayankhongor (desert steppe). The Bayankhongor site is suggested in order to include a saxaul forest site. Saxaul forest is significant for the livelihoods of local communities as a resource for livestock, for pastoral risk management, and for prevention of land-degradation. It is currently used unsustainably as fuel-wood, and other linkages (traditional ecological knowledge, medicinal and other use of plants associated with saxaul forest) have not been studied comprehensively. Being an important resource for camel, Saxaul forests are significant in the context of conservation of animal genetic resources (number of domestic camels is declining at an alarming rate). Camels play a very significant role in the livelihood of herders (camel milk products, medicinal properties of camel milk, camel meat, camel wool, means of transportation, use in community based tourism, role in facilitating mobility and thus crucial for sustainable pastoralism). Saxaul forest is depleted to more than 50 percent in Mongolia, whereas coniferous forest is depleted to less than 10 percent (Crisp et al 2004). As a livelihood asset, saxaul may be equally important for herders in the desert steppe as coniferous forests are for local herder and other communities in the forest steppe.

Soums (districts)

Soums (districts) in the Aimags (provinces) were selected during the training/preparation period in consultation with consultants to the project *TCPIMONI2903*, other resource persons, and the field research team, based on the guiding principles mentioned above.

Bags (sub-districts)

It was proposed not to select local areas (bags) beforehand, but to travel to the areas, meet with local government, who will have been informed beforehand of the study, and then to select, in agreement with government and after explaining objectives and approach of the study, the local areas and communities. This was to avoid creation of expectations, both among local government and communities, and misunderstandings about the objective and opportunities. Based on previous experience, the field team considers it very important to thoroughly prepare local meetings to maximize the chance that participants in meetings for analysis and group discussions represent the wealth strata, gender, age, and other characteristics of the community profile (as opposed to the friends and relatives of the person inviting participants). Also, the interest of local communities to attend meetings organized by government tends to be generally low. Moreover, the visits to households to invite participants are a good opportunity for exploratory interviews and first learnings on local livelihoods and setting that may further inform the design of analysis and probing for information.

Communities

The unit of analysis, for the case studies to be prepared, is a community. In rural areas a community of households below bag level that “customarily” shares seasonal pastures and pasture water supplies, in urban (soum center, aimag center, capital city area) areas a similar size group of neighbourhood households, or a group of households that shares resources or norms, or identifies as a community for other reasons.

In each Soum, one Soum-center and one (or two if time allows) rural community was to be selected. In one of the two forest steppe sites, an aimag center community could be selected in addition, if time allows, for additional learning on rural-urban linkages. During training/review with the field research team, a community in or near the capital city could be selected for “practicing”, while not compromising the sincere intention and conduct of the exercise. With the inclusion of a (near) Ulaanbaatar site, findings from all rural and urban settings in Mongolia can inform the study report. In total, the field team should work with a minimum of 6 communities, probably 8-9 communities.

Bags and local communities were selected by the field research team in consultation with local government and other resource persons, based on the guiding principles laid out above.

Households

Households for household case studies (structured interviews, semi-structured interviews, livelihood analysis, in-depth interviews) were selected

- based on wealth strata of the community developed through wealth-ranking and well being grouping, households will be chosen purposively from certain strata and randomly within strata.

Individuals

Individuals were selected in case of key informants for interviews and randomly within focus groups for surveys.

2.2 Field research tools and techniques

In summary, the following tools and techniques of more conventional surveys and participatory rural appraisal were used by the field team.

- Conventional data collection through in-depth interviews with key informants, structured interviews for household case studies, questionnaires, from data bases of government and research institutions, and through literature study to define the

context of policy setting, politics, history, agro-ecology and natural environment, socio-economy, and macro-level processes

- Participatory Analysis in the field using visualization tools of diagramming including participatory mapping, cause-impact diagrams, seasonal calendars, ranking and scoring exercises, wealth ranking and well-being grouping, venn diagrams, changes and trends, timelines, transect walks (or rides in Mongolia), combined in sequences with semi-structured interviews with informants and focus groups, interviews/conversations with natural groups.

Presentations and discussions in plenary groups, and conversation with individuals, key informants for validation, cross-checking/triangulation.

The field team worked with a semi-structured check-list to ensure that key issues (identified during preparation) were being addressed; while the team had to bear in mind the significance of right sequencing of tools, sufficient flexibility to use appropriate tools to address issues that arise during field work will be maintained.

2.3 Process for team preparation

Familiarization

- Study literature/resources
- Compile information on local areas that is available in Ulaanbaatar (Maps, land use, forest inventories, demographic, etc.)

Team Training

The team training was based on principles of adult and experiential learning.

Session One - Introduction

- Introduction to objectives of the study, and forestry-livelihood issues in Mongolia
- Introduction to/up-date on FAO project concept and activities so far (invite project consultant TCPIMON/2903 on Participatory Forestry in Mongolia.
- Discuss/confirm key issues identified and hypotheses formulated so far

Session Two – SL Framework

- Introduction to SL framework as an analytical approach to livelihoods

Session Three – Review/Introduction to PRA/PLA

- History and Background of participatory research and action
- International and in-country experience
- 3 “pillars” of PRA (Attitudes and behavior, Sharing, Tools)

Session Four - Review of tools, visualization techniques, facilitation techniques

- semi-structured/structured interviews
- focus group discussions, natural groups, household/individual interviews
- transects
- listing, flow-diagrams and trees for impact analysis
- household livelihood analysis, matrix scoring
- mapping (social, natural resources, infrastructure, mobility)
- wealth ranking, well-being grouping
- seasonal calendars, time lines
- venn diagrams
- body language, open (not leading) leading questions, icebreakers, energizers

Session Five

- Sequencing of tools for different issues/analysis

- The processes of developing community profile, livelihood profile, institutional profile
- Identifying key linkages and developing the linkage profile
- Roles in team during field work (lead-facilitator, facilitators, process recorder, content recorder, environment setter)

Session Five

- Develop guidelines (issues) for semi-structured interviews
- Develop guidelines for sequencing of research tools
- Develop questionnaire, for household surveys
- Prepare recording sheets/tables to capture data and findings on community, livelihood and institutional profiles.

Session Six

- “Practice” at first field site (Ulaanbaatar) if feasible

Prepare field work

- Compile background information and maps for field work
- Logistics (transportation, communications, safety, field equipment, provisions, stationary, documentation/recording equipment and materials, funds, power supply)
- Schedule and Appointments

2.4 Field schedule per site

In practical terms, the fieldwork at one of the chosen sites looked like this:

Travel to field site

Day One

- Meet with local government
- data/information collection
- agree on study sites/communities

Day Two

- Proceed to study area
- invite participants
- exploratory interviews
- conversations with natural groups
- interviews with key informants if encountered
- exploratory transects/learning about the area

Day Three

- Community Meetings/PRA
- icebreaking/introduction of field team and purpose of the study, its opportunities and limitations.
- Focus Group Discussions, visualization exercises to learn about community profile
- team review and recording of learnings
- discuss selection of households of different livelihood strategies for interviews
- develop checklist for learning about household livelihood strategies

Day Four

- focus group discussions (if feasible), and household interviews on livelihood strategies
- team review and recording of learnings

Day Five

- continue research on livelihood strategies and complete recording, (in 3 tables on assets, vulnerability context, local institutions)
- Prepare/invite participants for community meeting at next site (rural or urban)

Day Six

- Community Meetings/PRA, Focus Group Discussions, Visualisations to learn about community profile
- team review and recording of learnings
- discuss selection of households of different livelihood strategies for interviews,
- Review checklist for learning about household livelihood strategies, and add newly learnt/emerged issues

Day Seven

- focus group discussions (if feasible), and household interviews on livelihood strategies
- team review and recording of learnings

Day Eight

- continue research on livelihood strategies and complete recording, (in 3 tables on assets, vulnerability context, local institutions)
- discuss and analyse all learnings/recording sheets from 2 study sites to get idea on institutions
- develop checklist on institutions
- identify what information on institutions is missing
- identify key informants
- plan methods (key informant interviews, life histories, case studies, conflict analysis, observation)

Day Nine

- research as planned to learn more about institutional profile
- Meet again with government, share/discuss findings, cross-check, invite comments

Day Ten

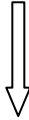
- Depart, travel

2.5 Processes to facilitate participatory analysis and learning

The following preliminary guidelines for the fieldwork were prepared:

- Community Profile
- Livelihood Profile
- Institutional Profile

Community profile

P R O C E S S 	Approach/Method/Tools <i>Discussions with key informants, government</i>	Objectives <i>Consensus building on objectives Learning about local issues, context Learning about social/economic groups</i>
	<ul style="list-style-type: none"> • <i>Mapping (natural resources, resource use, social)</i> • <i>Ranking resource use, activities, income sources, expenditures,</i> • <i>Wealth-ranking, well being grouping</i> • <i>Timelines, changes and trends analysis on resource use and resource conditions/availability, ranking/scoring on resource use</i> • <i>seasonal calendars of resource use/workloads, income and expenditure, access to credit</i> 	<i>Identify key resources and access to them, utilization</i> <i>Identify key groups/strata, and learn about livelihood strategies and their combinations</i>
	<ul style="list-style-type: none"> • <i>Flow-charts, trees</i> • <i>Venn diagrams</i> 	<i>Cause-impact analyses, (resource conditions, environmental, access to resources, legal)</i> <i>Recognize institutions/processes/rules</i>
	<ul style="list-style-type: none"> • <i>transects</i> 	<i>Validate findings, observe resource use, livelihood strategies, identify key informants, discussions with natural groups</i>
	<ul style="list-style-type: none"> • <i>Focus group interviews</i> • <i>Semi-structured interviews</i> • <i>Key informant interviews</i> 	<i>Deeper learning on livelihood strategies, and institutions</i>
	<ul style="list-style-type: none"> • <i>Plenary group discussions</i> • <i>presentations of working groups to plenary</i> 	<i>Validation, cross-checking</i>
<ul style="list-style-type: none"> • <i>Compile findings in recording sheet, analyse</i> 		

Draft checklist of issues for community profile

Resources

- Available natural resources to community
- Who uses them, who benefits, who no, why not
- Who protects/conserves them, how, why
- How are they used
- Where are they
- When are they available, accessible
- What is their state, change over time, future if present use continues
- What was traditional use
- What role forest sources play, which forest resources most important

Livelihoods

- Activities to support livelihoods
- Who involved in which activity (men/women, young/old, rich-poor)
- How many households and individuals depend on them
- Where and when do these activities take place

Structure of community

- How many households and persons
- Gender and age structure

Social, economic, ethnic/regional/cultural groups, how defined
Where do they live

History of community

How long does the community/neighbor hood exist, how did it originate
When did different groups settle/have been using the area
Changes of community over time, events, processes


Infrastructure of community

What services are available, and not
Who can access them
Fees for services

Local institutions

Which institutions exist, formal and informal, power relations
Which institutions relevant to forest use and protection
Who is affected by them, how
Changes of institutions
Future institutions?

Livelihood profiles

	Approach/Method/Tools	Objectives
P R O C E S S 	<ul style="list-style-type: none"> Well-being/wealth ranking 	Learn about local perceptions of well-being, ill-being, poverty, vulnerability
	<ul style="list-style-type: none"> Determine groups and subgroups 	Understand stratification and livelihood strategies
	<ul style="list-style-type: none"> Group households sample households (randomly, or a number of households from each group and subgroup) 	Select "representative" households for analysis
	<ul style="list-style-type: none"> Analyse learnings on livelihood strategies, and add new issues to checklist, discuss methods for analysis prepare and disseminate questionnaires? 	Cover as many issues as possible, and develop sound method
	<ul style="list-style-type: none"> Structured surveys/interviews 	Additional data (on livelihood assets) cross-checking
	<ul style="list-style-type: none"> semi-structured interviews focus group discussions 	In-depth learning on livelihood strategies
	<ul style="list-style-type: none"> mapping assets mapping mobility 	Livelihood assets Conflicts (?)between groups
	<ul style="list-style-type: none"> listing/ranking/scoring (visualization of problems, priorities) with focus groups and individual households, individuals 	Livelihood analysis
	<ul style="list-style-type: none"> trend analysis 	Changes in well-being, livelihood strategies
	<ul style="list-style-type: none"> seasonal calendars (income, assets, workloads) seasonal calendars by different household members seasonal calendars by female headed households 	Livelihood strategies
<ul style="list-style-type: none"> ranking (income sources, from different activities) ranking by different household members female headed households 		
Compile findings in recording sheet, analyse		

Draft checklist of issues for livelihood profile

Household information

Members, sex, age, health, dependency, residency, role in livelihood strategy

Human capital

Education, training, skills, knowledge

Natural capital

Land, forest resources, water, livestock resources are used

What for,

Terms of access !, constraints, problems, opportunities

Physical capital

Access to services, transport, marketing, etc.

Financial capital

Earnings, savings, access to credit

Other?

Social capital

Links to other households, organizations, contacts

Vulnerability, shocks, changes, coping

Seasonal patterns of activities, food supply,

Past crises and coping strategies

Long-term changes

Policies, institutions, processes


What organizations, processes relevant, participate in

Decision making processes

Who involved in decisions about forest (and other) resources use

Laws, rules, regulations that affect the household, how

Institutional profile

P R O C E S S 	<i>Approach/Methods/Tools</i>	<i>Objectives</i>
	<ul style="list-style-type: none"> • <i>List institutions from findings</i> • <i>Identify important institutions for livelihoods</i> • <i>Cross-check with other information/data</i> 	<ul style="list-style-type: none"> <i>Inventory of institutions</i> <i>Understand processes, and functions, role of institutions</i>
	<ul style="list-style-type: none"> • <i>Conclude checklist for institutional profile</i> 	
	<ul style="list-style-type: none"> • <i>Develop preliminary local institutional profile</i> • <i>Group institutions (formal/customary, formal/practical, inclusive/exclusive)</i> • <i>History of institutions</i> • <i>Identify key actors</i> • <i>Identify rules, norms, regulations</i> • <i>Identify knowledge gaps, and key informants</i> 	<ul style="list-style-type: none"> • <i>Understand power relations</i> • <i>Understand processes and dynamics</i> • <i>Learn about local realities of law application and law enforcement</i> • <i>Identify problems and opportunities for policy formulation</i>
	<ul style="list-style-type: none"> • <i>Key informant interviews</i> • <i>In-depth interviews</i> • <i>case studies, histories</i> • <i>refer back to Venn diagrams produced by focus groups,</i> • <i>venn diagrams by individuals</i> • <i>conflict analysis</i> 	<ul style="list-style-type: none"> • <i>Understand conflicts</i> • <i>Gain in-depth understanding of institutions/policies and livelihoods</i> • <i>Understand different stakeholders and their interests (current and future)</i> • <i>Identify gaps in policy framework</i>
<i>Compile data, develop institutional profile:</i> <ul style="list-style-type: none"> • <i>Most important features of institutions, and impacts/consequences</i> • <i>Links between institutions</i> • <i>Stakeholders</i> • <i>Who is affected by the institutions</i> 		

Draft checklist for institutional profile

Visible/invisible

Legality and legitimacy
 Formality and informality
 Level and geographic area

Objectives and activities

Capabilities and willingness
 Mandated/ad hoc objectives and activities
 Actual/future activities

Membership and participation

Conditions and contributions
 Rules and sanctions
 Decision-making and leadership

Details are to be developed during team preparation. For the study topic and in the Mongolian setting, the issues under Visibility – Invisibility will be particularly

important. Stakeholder and conflict analysis will be important tasks to generate learning relevant to policy recommendations.

Linkage profile

The challenge in developing the linkage profile is to compile and analyse sufficient information from the community and livelihood profiles to be able to identify key linkages while still at the field site, or better even while (pastoral) communities are still gathered, in order to probe further and validate findings.

This challenge has to be prepared for and each team member had to pay particular attention to this.

To gain an in-depth understanding of existing linkages, much analysis and discussion had to take place in the field (between working groups/meetings, and in the evenings). Time had to be spent for

- Developing draft linkage profiles
- Validate linkage profiles with focus groups
- Cross-check linkage profiles with key informants, semi-structured interviews

Identifying key linkages and drafting a linkage profile, was therefore addressed as a separate topic in the team training during preparation.

2.6 Presentation of outputs

Unlike in ongoing work in which several team members are involved in, the learnings of the participatory analysis in this study are not to be put into practice immediately and by the team. Rather, the challenge is to present them on the most effective way to policy-makers.

In order to maximize the impact of a presentation, the team had to make efforts to produce documentations of the fieldwork as much as possible. However, these could not compromise the process of analysis. Video, for example, while an important tool, could disturb the process. The team had to decide from case to case what is feasible.

An effective, and often practiced, method by the team is to invite participants from the local community to present findings, using the charts they produced themselves. It was important to select individuals that are confident enough to present to an audience in an outside setting; it will be best to bring at least 2 people from each community to support their confidence.

The presentation needed to produce both the raw documents (field charts), as well as several forms of presenting processed data and findings.

Presentation materials and tools:

- Video clips from analysis and presentations (group work)
- Photo displays
- Illustrated field reports
- Case studies, synthesis reports
- Powerpoint presentation

REFERENCES

- Crisp, N., John, D., Mullins, M. (2004): Mongolia Forestry Sector Review,-World Bank, Ulaanbaatar.
- Hartwig, J. (1998): Analyse der sozio-oekonomischen und institutionellen Rahmenbedingungen fuer die Nutzung von Nicht-Holz-Waldprodukten im Selenge Aimag, Chuder Sum. (Report for GTZ).
- Morton, J. and Meadows, N. (2000): Pastoralism and Sustainable Livelihoods: An Emerging Agenda,- Policy Series 11. Natural Resources Institute, University of Greenwich.
- Schmidt, S. (2005): Pastoral Community Organization, Livelihoods and Biodiversity Conservation in Mongolia's Southern Gobi Region,- Proceedings, Annual Meeting of the Society for Range Management, USA, 2004, Salt Lake City (in press).
- Velsen-Zerweck, M. (1998): Waldnutzungsformen in der oestlichen Randzone des Streng Geschuetzten Gebietes Chan Chentij in der Mongolei, Nicht-Holz-Produkte und ihre Bedeutung im Transformationsprozess - Diplomarbeit an der Forstwissenschaftlichen Fakultaeet der Georg-August-Universitaet Goettingen (unpublished thesis).
- World Bank, National Statistics Office (2000): Participatory Living Standards Assessment. Ulaanbaatar
- World Bank/WWF (2002): A report on Legal and Illegal Timber Trade in Mongolia. Worldbank/WWF Alliance Project.

Other Resource Materials

The research team is used further resource materials, available on-line and at NZNI office:

- Bishop, J.T. (1998): The Economics of Non-Timber Forest Benefits,- Gatekeeper Series, 98/01. IIED. London
- Borrini-Feyerabend, G. (ed) (1997): A Process Companion, -Beyond Fences, Seeking Social Sustainability in Conservation, Volume 1. IUCN.
- Borrini-Feyerabend, G. (ed) (1997): A Resource book,- Beyond Fences, Seeking Social Sustainability in Conservation, Volume 2. IUCN
- Chandrasekharan, C. (August, 2001): Toward a national forest program for Mongolia,- National Forest Program Development, SPPD/MON/00/304
- Cooper, L. and Narangerel, G. (1994): Historical matrices: a method for monitoring changes in seasonal consumption patterns in Mongolia, - PLA Notes, Issues 20, pp. 124-126, IIED. London.
- Cooper, L. and Narangerel, G. (1994): Pastoral production in Mongolia from a gender perspective,- RRA Notes, Issue 20, pp. 115-123, IIED. London.
- Enkhsaikhan, D., Batsukh, N., Otgonsuren, B. (2003): Forest study of the Khan Khukhii Mountain Range,- WWF, Forest Management Project Center.
- Enkhbat, A., Togtbaatar, J. (1997): Forests and Forest Management on Mongolia,- Rap Publication, 97/04. FAO. Bangkok Thailand.
- Fisher, R.J., Schmidt, K., Steenhof, B. and Akenshaev, N. (May 2004): Poverty and Forestry: A case study of Kyrgyzstan with reference to other countries in the West and Central Asia,- LSP Working paper 13, FAO.
- Guy, S. and Andrew, S. Inglis, (Feb, 1999): Tips for trainers: Introducing the 'H-form' - a method for monitoring and evaluation,- PLA Notes 99/34. IIED. London.
- IIED (Feb, 1999): A brief guide to training participatory methods in the field,- PLA Notes Issue 34. IIED. London.
- IIED (October 2000): Popular Communications,- PLA Notes, 2000/39, IIED. London.
- IIED (Feb 1999): Learning from analysis,- PLA Notes, 1999/34, IIED. London.
- IIED (May 1992): Special Issue on Applications of Wealth Ranking,- RRA Notes, Number 15.

Japan Forest Technical Association (JAFTA), and Asia Aerial Survey Co.,Ltd (March, 1994): The Forest Resources Management Study on Selenge Aimak, Mongolia,- Inception Report. JICA. Ministry of Nature and Environment, Government of Mongolia.

Japan Forest Technical Association (JAFTA) and Asia Air Survey CO.,LTD. (Jan, 1995): The Forest Resources Management Study on Selenge Aimak, Mongolia,- JICA. Ministry of Nature and Environment, Government of Mongolia.

Jaakko Poyry Consulting Oy. (Nov, 1995): Forestry Sector Strategic Development Study in Mongolia,- Ministry of Foreign Affairs.

Johnson, C. A, Rules, norms and the pursuit of Sustainable livelihoods,- IDS Working Paper 52

Krause, G., Rieger, G., Kamal Kar (Sep 1998): Project Appraisal on Sustainable Use of Forest Resource and Nature Conservation in the Western zone of the Chan Chentei Strictly Protected Area,- Luso Consult, Hamburg

Mearns, R. Shombodon,D., Narangerel, G. Tuul, U. Enkhamgalan, A., Myagmarjav, B., Bayanjargal, A., Bekhsuren, B.(1994): Natural resource mapping and seasonal variations and stresses in Mongolia, PRA Notes, Issue 20, 95-103, IIED. London.

Mearns, R. and Bayartsog, D. (1994): Institution ranking and social mapping in rural Mongolia,- RRA Notes, Issue 20, pp. 154-156, IIED. London.

Mearns, R., Sustaining Livelihoods on Mongolia's Pastoral Commons: Insights from a Participatory Poverty Assessment

Messerschmidt, D.A. (1995): Rapid Appraisal for Community Forestry: The RA Process and Rapid Diagnostic Tools,- IIED Participatory Methodology Series. International Institute for Environment and Development, London.

Nhira, C., Sibongile, B., Peter, G., Mangono, J.J., Crispen, M. (1998): Contesting inequality in access to forests, - Policy that works for forests and people Series, 98/05. Forestry Commission, Centre for Applied Social Sciences University Zimbabwe, IIED. Zimbabwe.

Pretty, N.J., Guijt, I., Scoones, I., Thompson, J., (1995): A Trainer Guide for Participatory Learning and Action,- Participatory Methodology series, IIED. London.

Pradhan, R. (Feb 2005): Ethnographic Method for the Study of Collective Action and Property Rights,- presented at the training course for South Asia researchers and Practitioners On Natural Resource Management and Institutions

Scoones, I.: Sustainable Rural Livelihoods a Framework for Analysis,- IDS Working Paper 72

Tsogtbaatar, J. (2004): Deforestation and reforestation needs in Mongolia,- Forest and Ecology Management 201 (2004) 57-63. ELSEVIER

Tungalag, U. (2004): The participatory forestry concept paper of Mongolia,- Draft report

Drafts, Amendments on Laws

-----(2003): Amendments to the law on Environmental Protection, Natural resources, Environmental Impact Assessments, Special Protected Areas, Bufferzone, Fuana, Forest, and Hunting,- Mongolian Law

-----(1995): Regulation on Planning and Financing Reforestation and Forestry Works,- Minister of Environment and Minister of Finance, Annex 1 to the order No.166/258 issued in1995 Mongolia.

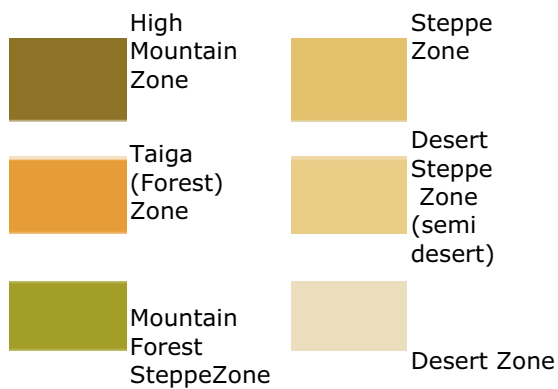
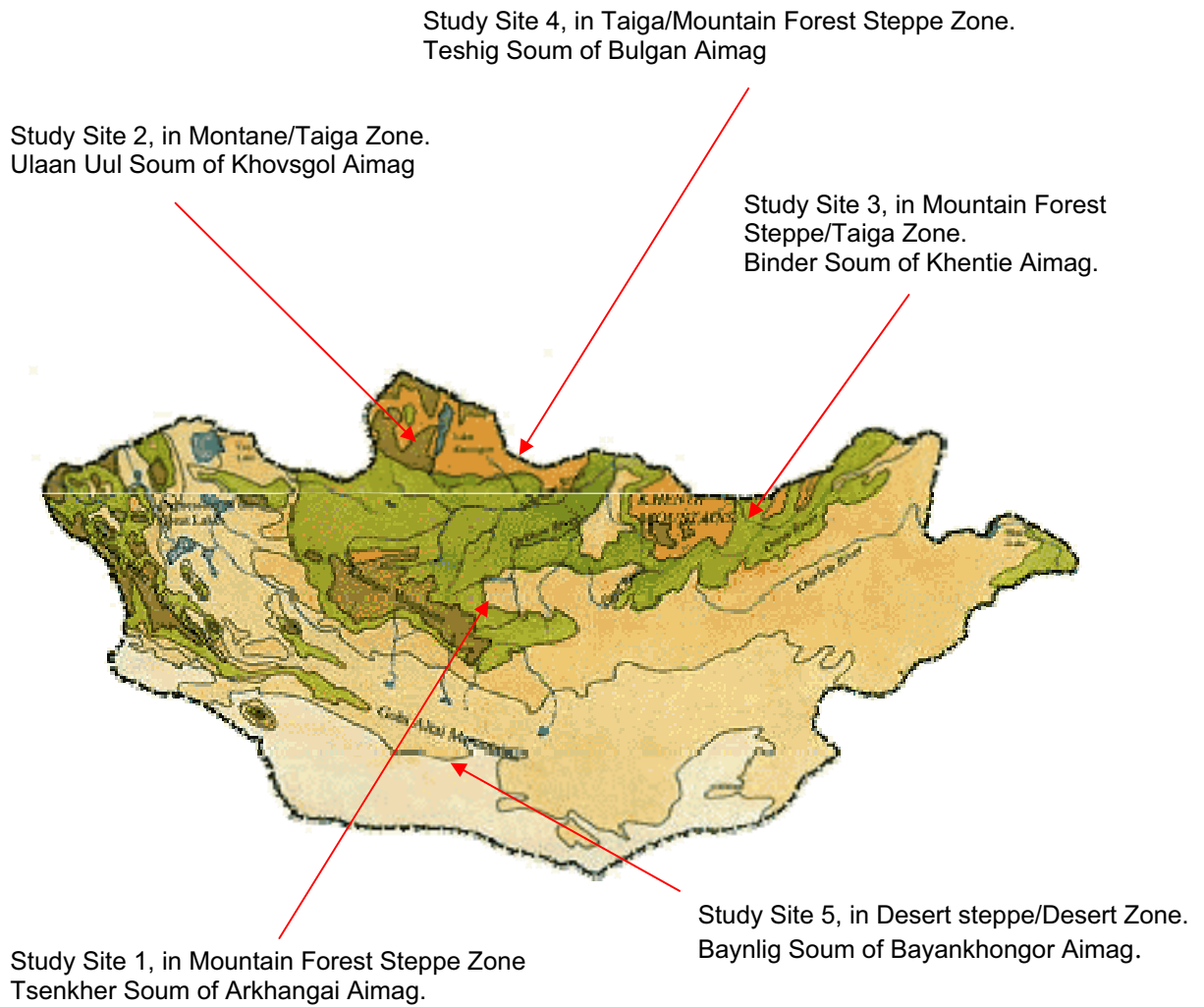
CDs

CAPRI (2004): Publications/Bibliography/Projects,- CGRAR System-wide Program on Collective Action and Poverty Rights 1995-2003, International Food Policy Research Institute.

IUCN (2004): Community Involvement in Forest Management in Eastern and Southern Africa, - A Compendium of Resources for Practitioners. IUCN.

IDS (2003): Sustainable Livelihoods Distance Learning Guide,-www.livelihoods.org. IDS

IIED (2004) Participatory Learning and Action,- PLA Notes 1988-2001. IIED.



Source of Map: Forests and Forest Management in Mongolia: A Field Guide

3. TSENKHER SOUM

3.1 Overview

As provided by Soum Government officials:

Territory: approx. 330.000 ha, steppe and forest steppe zone

- Pasture: 235.700 ha
- Haymaking area: 5.800 ha
- Farming (vegetable fields): 2.500 ha
- Forest: 79.200 ha, zoned as Protection Forest according to Soum government officials
- Goldmining licenses: 5.200 ha

Total Population: 5467

- Households: 1498
- Herder households: 986
- Households with more than 100 livestock: 256
- Households with more than 1000 livestock: 3
- Household with no livestock: 111
- Very poor households: 319 (including the 111 hh without livestock)

Livestock

- Camels: 22
- Horses: 12.472
- Cows (yak mainly): 12.632
- Sheep: 35.620
- Goats: 32.175

Other

- 2 gold mining companies are operating in the soum: Mongol Gazar and Altan Dornod.
- 3 saw mills (2 in soum center, 1 in Tsetserleg Bag).
- The Soum also has one felt shoe factory, 2 veterinary services, 30 shops, 2 tour operators, Pharmacy, post office, bank, 8 cooperatives (savings and credit, livestock, trade, forest).

Budget:

- Total annual budget of the Soum: 205.330.000 MNT
- Contribution to soum budget from state budget: 143.331.000 MNT
- Contribution to soum budget from local income: 28.502.000 MNT
- Soum generates income of 26.277.000 for Aimag budget.

3.2 Brief summary of findings

The largest previous impacts on forest resources, according to local citizens and government officials, have been large-scale logging by two state enterprises that operated from 1960-1990 and, more recently, fires that consumed large areas. A significant forest fire took place in 1978, when 3.000 ha of forest burnt in a fire lasting 56 days.

While the forest is zoned as Protection Forest, observations of recently cut trees, passing trucks with timber (3-4 trucks loaded with logs passed the campsite of the field team daily), activity of the sawmill during the field studies, group discussions, interviews with key informants, livelihood analysis, and calculations of local government income generated from timber, suggest that currently timber forest resources are harvested in significant amounts that exceed the legal limits by far.

The necessary procedure and payment to legally obtain permits for harvesting and processing timber prevent poor households, those without the monetary means or the relations to persons and institutions in power, to legally cut trees. However, most cutting of trees is undertaken by households that are poor or very poor, or at least livestock-poor. A number of livelihood strategies of the poor and very poor are based on harvesting, processing and trading timber. They include cutting trees, transporting logs by ox cart, working in the sawmill (cutting boards, clearing sawdust away, guarding the sawmill, maintaining equipment, loading trucks).

While these activities generate large portions of the household income of the poor and very poor, the benefits in absolute monetary terms are minute for the poor compared to profits made by traders and by local government selling logs. Livelihood analysis of numerous households indicate the comparative significance of logging for the household income of the poor who have no income from livestock, trading of value added products or other salaries.

Non-timber forest resources, both plants and wildlife, have played a growing role for local incomes since 1990. While berries are sold to local markets in Soum and Aimag, other resources are in high demand for the Chinese medicine market.

Information on collection of wildlife resources such as skins of small mammals, gland of musk deer, horn of red deer, and on occurrence and sightings of wildlife provided by local people suggest alarming decline in wildlife populations.

Berries and nuts contribute to incomes of both local households and outsiders. Demand on the Chinese market, and the non-existence of exclusive rights for local households to the resources provide no incentive for sustainable methods of harvesting.

Wood, predominantly larch, followed by pine and birch, is used for a large number of items used in the household and in livestock management. A group of men and women of the Tsetserleg Bag Center named 43 different items.

Both for timber and non-timber forest products, value addition by local communities who harvest the resources, is almost non-existent. Value addition is prevented by several factors including lack of tools or access to credit to buy tools (for woodworking for example), lack of power supply in rural areas, lack of opportunity to legally obtain timber, and a lack of opportunities to obtain required skills.

It is very apparent that local communities are potentially rich in natural capital, if an enabling legal framework for community based natural resource management was in place, and that they lack social and human capital. The field team encountered a relatively high rate of illiteracy in the study area of Tsetserleg Bag.

Among local herder households and government officials on bag and soum level alike, gold mining and its impacts on forest, water and pasture resources was perceived as the greatest single threat currently. "If you have to take something from us, take our livestock, just leave us a horse

for riding, but do not take our nature” (pasture, water, forest, and worshipping places). It takes a lot to make a Mongolian herdsman say “take our livestock”, but this quote by a local herder demonstrates the connection of local people to the land and its resources, and of course the understanding of these resources as the basis of livestock husbandry.

While so far social organization in the study area had existing rather formally and as a result of a top-down process of dividing households into “herder groups” facilitated by a donor funded project (IFAD), the threat of losing their crucial otor (reserve pasture) area, winter pastures, water sources and worshipping areas to gold mining, has prompted the local community of Tsetserleg Bag to organize themselves to preserve the resources their livelihood depends on.

Followed by Dzud (winter disaster), the issuance of licenses to mining companies and non-compliance to rehabilitation and mitigation requirements was perceived as the greatest vulnerability for local herder communities.

A large area of pasture and the entire water supply for a neighbouring valley had been lost in previous years due to mining operations of the same company planning to mine in Tsetserleg Bag. Already, protests of local people against the operation had prompted use of tear gas against the local community.

The legal framework governing the use of forest resources is ineffective at best, and, more likely, counterproductive to sustainable forest management. The recent restrictions in issuing permits for logging have not decreased but increased logging, since it drove prices for timber and timber products up in Aimag centers and in the capital city, Ulaanbaatar.

Moreover, the requirement of the soum to generate a certain percentage of its budget from local natural resources, while support from the central state budget is decreased, perpetuates illegal logging, since the confiscation and sale of illegally cut logs appears to be a major source of income for the soum government, and government officials.

Lack of law enforcement or weak enforcement further contribute to unregulated and illegal practices. Allocation of certain areas or trees for cutting appears to take place largely without verification by a ranger or inspector whether the logging indeed takes place at the allocated sites. Transportation and sale of illegally cut logs takes place on a large scale with little interference by law enforcement personnel.

Sale of confiscated logs and disbursement of funds generated from sales were repeatedly characterized as being little transparent for local citizens.

3.3 Analysis

A large amount of data and information, substantiating the brief summary above, was generated through interviews, group discussions and Participatory Rural Appraisal exercises, observations, transects and collection of statistical data.

A selection of data from charts and diagrams prepared by local workshop participants is presented here to illustrate the findings:

Figure 1: Social Map



Well Being Grouping

- Red - Better than average: 300-500 livestock, 23 hh
- Blue - Average: 100-250 livestock, 29 hh
- Green - Poor: Less than 50 livestock, 20 hh
- Black - Very poor: Many family members, no livestock, 1-2 hh

Table 1: List of Forest Resources used for local livelihoods, named by workshop participants

Plants	Wildlife	Other
Strawberry	Roe deer	Spring
Pine nut	Rabbit excrement	Mineral water
Pine wood	Ant hill	
Goose berry	Wild boar	
Black currant	Marmot	
Water lily	Fox	
Cranberry	Black grouse	
Mushroom	Wood grouse	
Birch	Squirrel	
Larch	Chipmunk	
Burnet	Wolf	
Rhodiola quadrifida = Altan gagnuur	Partridge	
Peony	Rabbit	
Plantain	Badger	
Jointweed		
Pheasant's eye		
Lichen		
Echinops L. =Morinii uruul		
Thermopsis sp.		
Blue berry		
Dry tree		
Common dill		

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

Cones of larch		
Outgrowth (knot) of tree trunk		
Resin of trees		
Borolzgono=Penthaphylloides sp.		
Red currant		
Padus asiatica		
Edelweiss		
Prickly Rose		
Onion		
Gentian		
Chodor ovs = Vicia amoena		
Stone lichen		
Nettle		
Pink		
Juniper		
Willow		

Table 2: Changes and Trends in natural resources occurrence, prepared by elderly men.
Score: 10 = maximum population size/occurrence of species/resource

	1950-1960	1960-1970	1970-1980	1980-1990	1990-2000	2000-2010
Forest	10	8	6	4	4	2
Roe deer	10	10	8	6	3	1
Musk deer	10	10	10	10	1	0
Wolf	10	10	10	10	10	10
Wild boar	10	10	10	8	4	3
Red deer	10	10	8	8	4	2
Rivers	10	10	10	9	5	1
Pine nuts	10	10	7	6	5	1
Berries	10	10	10	9	5	1
Medicinal plants	10	10	10	10	7	2
Marmots	10	10	10	10	7	2
Squirrel	10	10	10	10	6	3

Table 3: Time line prepared by elderly men..

Time	Events
1965	Hoof and mouth disease
1978	Big fire
1979	Fire
1980	Fire, Logging by prisoners, and soldiers of 151 st border military.
1982-1983	Zud, harsh winter
1987-1988	Zud
1993	Zud
2000-	Zud
2001-	Drought
2002-	Fire, and drought
2003	Fire
2003-2004	Zud and drought
1993-till now	Musk and red deer, marmots, squirrel, and pine nuts have been selling to China

1999	"Mongol Gazar"- gold mining company came
2000	"Altan Dornod" –gold mining company came
1961-2004	Sawmill started work

Figure 2: Flow chart of sale of logs

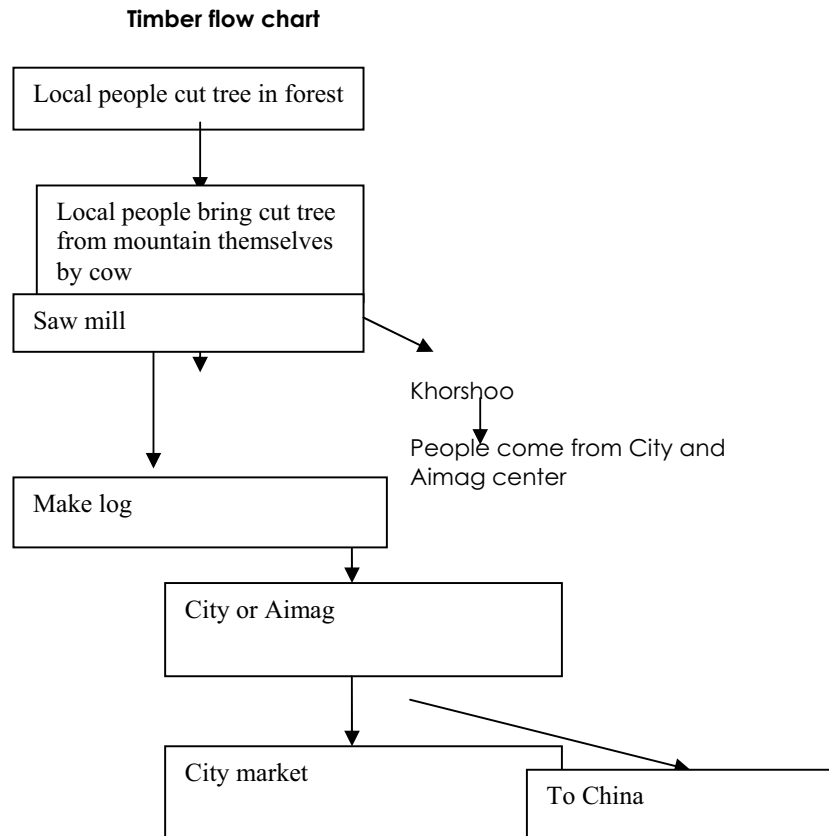


Figure 3: Problem Analysis, Impact on Forest Resources, prepared by elderly men, workshop participants.

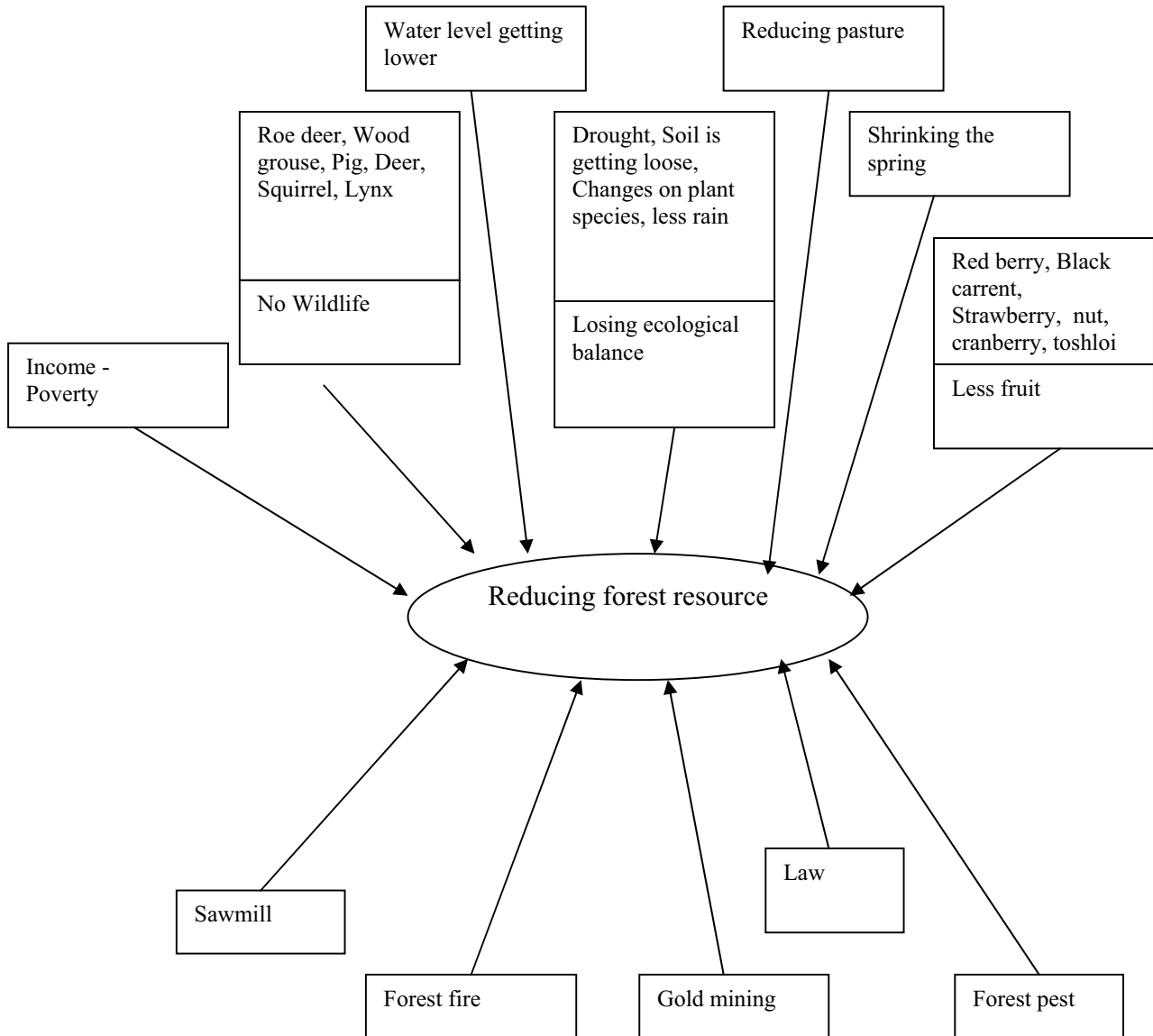


Table 4: Seasonal Calendar of Income of Local Households.

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Dairy products											5	
Livestock skin											2	
Cashmere				4								
Log												
Pension												
Nut									5			
Fruit							2	2				
Ger wooden part				1								

Scoring: highest 10

Table 5: Seasonal workload of women.

1	2	3	4	5	6	7	8	9	10	11	12
9	7	9	8	6	10	9	9	7	7	8	6
	Prepare Tsagaan sar (trad. new year)	young Livestock is borne	Young Livestock is borne	Move to spring place	Milking	Selling milk products	Hay making, move to autumn place	Prepare Winter place	Move to winter place	Prepare Winter meat	New year

Table 6: Pair wise ranking of most used natural resources.

	Tree	Water	Pine nut	Berries	Medicine plant	Caraway
Tree		Tree water	Tree	Tree	Tree	Tree
Water			Water	Water	Water	Water
Pine nut				Berries	Medicine plant	Caraway
Berries					Medicine plant	Caraway
Medicine plant						Caraway
Caraway						

Tree-5, Water-5, Caraway -3, Medicinal plants-2
 Note: trees were ranked equal with water in this exercise!

Table 7: Seasonal calendar of use of different natural resources.

	1	2	3	4	5	6	7	8	9	10	11	12
Larch	8	7	6	5	5	4	6	6	6	7	8	8
Water	8	8	6	6	5	5	8	8	7	8	8	7
Pine wood	8	8	8	8	8	8	8	8	8	8	8	8
Pine nut								3	8	8	4	
Strawberry							7	8				
Blue berry							8	8				
Cranberry	8	8	6	5			8	8	8		6	8
Gentiana algida pall	8	8	7	6	5				8	8	8	8
Gentian sp.	6	6	4	3				8				
Leaf of cranberry	8	8	6	5	4		2	1	1	1	4	5
Caraway	8	8	8	8	8	8	8	8	8	8	8	8
Thlaspi cochleariforme	8	8	8	8	8	8	8	8	8	8	8	8
Plantain	6	5	4	4	8	3	3	4	4	5	5	5

Figure 4: Venn diagram of Institutions – relevance of Institutions to households as perceived by workshop participants.

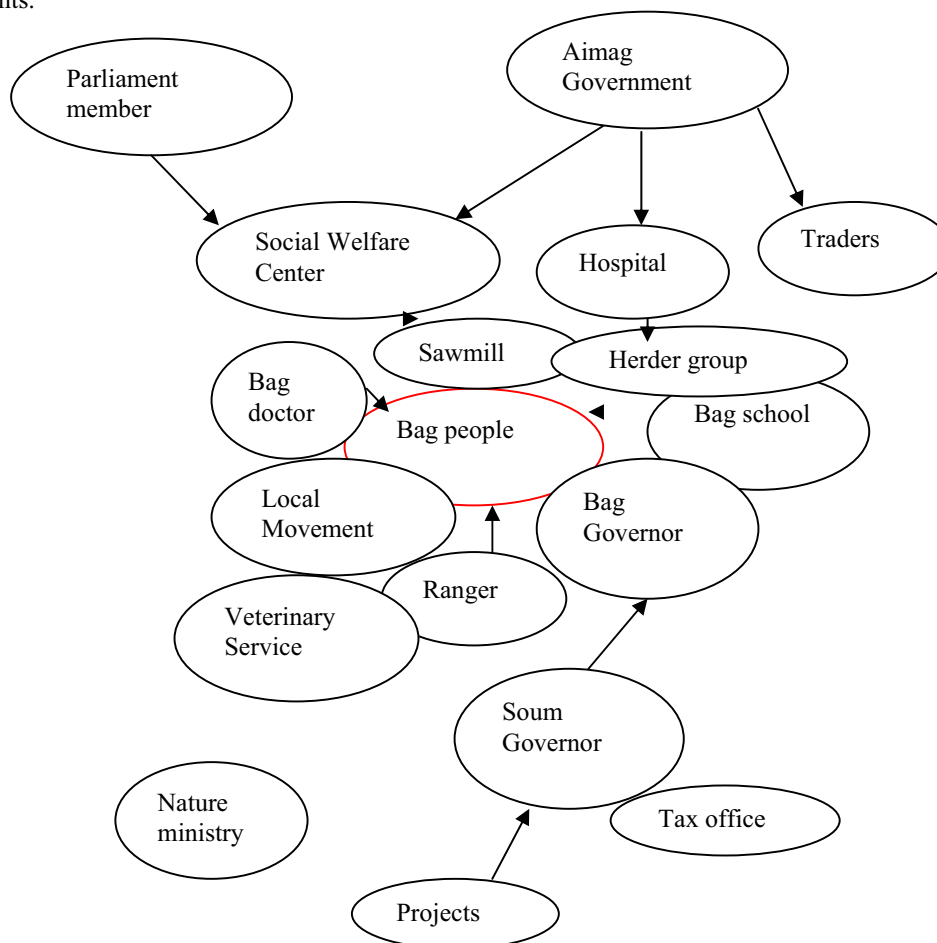


Table 8: Seasonal Work of three people:

Months	Activities		
	Mrs. A	Mr. B	Mrs. C
January	Sewing clothes & traditional boots	Logging	Sewing clothes & traditional boots
February	Tsagaan sar	Logging	Tsagaan sar
March		Fire wood preparation and selling	
April			
May	Planted vegetables		Planted vegetables
June		Logging	Start to milk mares
July	Sewing deels		Sewing deels
August	Milking	Hay making & collecting fruits and nuts	Milking
September	Milking	Hay making & collecting fruits and nuts	Milking
October	Milking	Logging	Milking
November	Winter food preparation	Winter food preparation and logging	Winter food preparation
December		Logging	

Table 9: Matrix Scoring, Natural Resources and their utilization, score 1-8
Prepared by a group of local men, age approx. 25-50

	Food	Fuel/fire	Shelter	Carpentry	Medical treatment	Livestock protection	Income
Black current	4						4
Cranberry					8		
Rhodiola					4		
Strawberry	4						
Pine nuts							8
Prickly rose	4						
Pine				8			8
Black cherry	6						
Wolf					4	8	4
Onion	8						
Larch		8	8	4			6
Burnet					8		
Red current	4						
Blue gentain					4		
Jointweed	8						
Goose berry	4						
Branches							
Onion sp	4						
Squirrel							8
Cacalia hastata					8		
Peony	4				4		
Marmota							6
Wild boar	4				4		
Musk deer							
Buga							
Goroos							
Roe deer							

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

Table 10: Seasonal Calendar of Income and Expenditure of local households, scoring 1-10.

Income

	Jan	Feb	March	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Income from	Logging			Cashmere	Cashmere		Selling airag		Selling berries	Selling nuts	Selling nuts	dairy products and livestock skin
score	4			4	10		4		7	6	8	10

Expenditure

	Jan	Feb	March	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Income from	Tsagan sar (Usually take loan)	Daily household expenditure	Household needs	Daily household expenditure	School graduation (Loan)	Naadam	School preparation		(take loan)		New year	Tsagan sar (Usually take loan)
score	2	10	3	8	4	5	5	8	3	3	3	5

Table 11: Pair wise ranking of Natural resources that are sold and generate household income. Tsenkher sum center of Arkhangai

Participants: 7 men, 6 women from poor households (according to Soum Government official) 23. June, 2005.

Note: resources ranked here pairwise were taken from matrix were natural resources were scored against various forms of utilization. The resources ranked here were scored for income and selling. **Blue is score, red is rank.**

		Onion (7)	Squirrel (8)	Prickly rose (3)	Fish (11)	Partridge (4)	Wild boar (5)	Wolf (14)	Ground squirrel (10)	Grass (13)	Fox (9)	Larch (17)	Corsac fox (9)	Black current (6)	Pine (15)	Cran berry (4)	Red current (2)	Red berry (10)	Pine nuts (16)
Onion (10)			Onion	Onion	Fish	Onion	Onion	Wolf	Onion	Grass	Fox	Larch	Onion	Onion	Pine	Cranberry	Red current	Red berry	Pine nuts
Squirrel (9)				Squirrel	Fish	Squirrel	Squirrel	Wolf	Squirrel	Grass	Squirrel	Larch	Squirrel	Black current	Pine	Squirrel	Squirrel	Red berry	Pine nuts

Prickly rose (14)				Fish	Partridge	Wild boar	Wolf	Prickly rose	Grass	Fox	Larch	Corsac fox	Black current	Pine	Cran berry	Prickly rose	Red berry	Pine nuts
Fish (6)				Fish	Fish	Wolf	Fish	Grass	Fish	Larch	Fish	Fish	Pine	Fish	Fish	Red berry	Pine nut	
Partridge (13)					Wild boar	Wolf	Partridge	Grass	Fox	Larch	Corsac	Black current	Pine	Partridge	Partridge	Red berry	Pine nuts	
Wild boar (12)						Wolf	Wolf	Grass	Fox	Larch	Corsac	Wild boar	Pine	Wild boar	Wild boar	Red berry	Pine nut	
Wolf (4)							Wolf	Grass	Wolf	Larch	Wolf	Wolf	Pine	Wolf	Wolf	Wolf	Pine nut	
Ground squirrel (16)								Grass	Fox	Larch	Corsac	Black current	Pine	Cran berry	Red current	Red berry	Pine nut	
Grasses (5)									Grass	Larch	Grass	Grass	Pine	Grass	Grass	Grass	Pine nut	
Fox (8)										Larch	Corsac	Fox	Pine	Fox	Fox	Fox	Pine nut	
Larch (1)											Larch	Larch	Larch	Larch	Larch	Larch	Larch	
Corsac fox (8)												Corsac fox	Pine	Corsac fox	Corsac fox	Corsac fox	Pine nut	
Black current (11)													Pine	Black current	Black current	Red berry	Pine nuts	

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

Pine (3)																		Pine	Pine	Pine	Pine nuts
Cranberry (13)																			Cranberry	Red berry	Pine nuts
Red current (15)																				Red berry	Pine nuts
Red berry (7)																					Pine nut
Pine nuts (2)																					

Table 12: Matrix Scoring of natural resources and their utilization. Prepared by poor households (2 men, 3 women, aged 35-45).

	For fare	Income	Food testing	Fodder	Building materials	Medical treatment	Food	Sell	Carpentry	Own use
Strawberry							1			
Onion			2							
Pinut		6					5	5		
Red berry		4						2		
Black current		4						3		
Pine		5						4	8	
Willow	2									
Red current		1								
Yellow gentian						3				
Cranberry		2				6		3		
Larch	8	5			8			5	5	
Gravel					4					
Burnet						3				
Sand					8					
Mushrooms						2	2			
Juniper										8
Corsac fox		1								

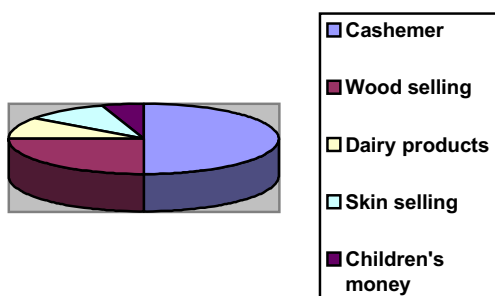
Rural livelihoods and access to forest resources in Mongolia

Ground squirrel								2		
Wolverine										
Red fox		1						2		
Wolf		4				2		3		
Chipmunks								1		
Hare										
Red deer										
Lynx								1		
Marmot										
Vulture										
Wood grouse										
Owl										
Hawk										
Roe deer						3				
Badger										
Musk deer										
Wild boar						3		1		
Yatuu						1				
Typical squirrel								5		
Fish							4			
Manul										
Plantain										
Common dill						2				
Prickly rose		1	2					2		
Mugwort										
Onion sp			2					2		
Wild onion		1	3					2		
Water				8				8		8
Goose berry								1		
Blue Gentain						2				
Grasses				8						

Figure 5: Livelihood Analysis of a household. Number of family members: 6.
 From group and individual interviews it was apparent that this household is very much engaged in engaged in timber trading, while most neighbouring households work as laborers who cut and transport trees.
 Livelihood strategy elements of this household:

- Selling Dairy products
- Selling livestock skin
- Selling Cashmere
- Children’s money
- Selling wood

Income



Expenditure

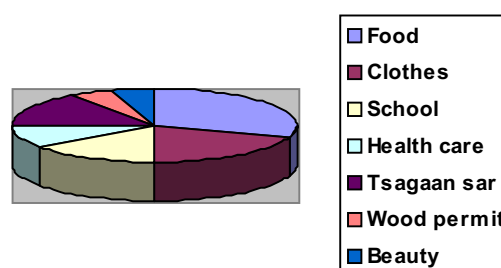


Figure 6: Livelihood analysis of a household (very poor). Family members: 9. 20.

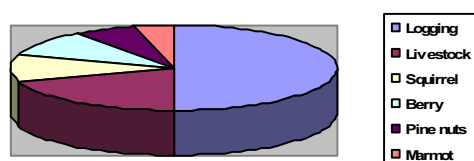
Livestock: Horses – 12, Cows – 6, Goats – 18

Annual income: Logging – 50%, Livestock – 20%, Squirrel – 10%, Berries– 10%,

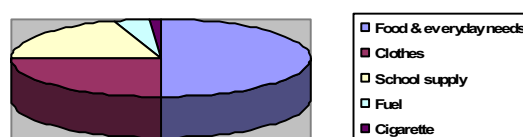
Pine nuts – 6%, Marmot – 4%

Annual Expenditure: Food and everyday needs – 50%, Clothes – 25%, School supply – 20%, Fuel – 4%, Cigarette – 1%.

Income



Expenditure



4. ULAAN UUL SOUM

4.1 Overview

As provided by Soum Government officials.

Territory: approx. 1.005.752 ha

- Pasture: 489.331 ha
- Haymaking area: 1105 ha
- Farming (vegetable fields): -
- Forest: 370417 ha, zoned as Utilization Forest according to Soum government officials
- Strictly Protected Area of Khoridol Saridag: 69530 ha

Ulaan Uul Soum has 158 km of border with Russia.

Total Population: 3893

- Households: 895

Livestock (2003)

- Total: 71223
- Camels: 222
- Horses: 7486
- Cows: 17294
- Sheep: 22313
- Goats: 23908

4.2 Brief summary of findings

Ulaan Uul Soum is remote compared to Tsenkher Soum of Arkhangai Aimag. Therefore, trade of timber to Aimag Centers and the capital city is much less here. However, the forest is zoned as Utilization Forest according to Soum government officials.

Non-timber forest products play a more important role for local livelihoods than timber resources and products, while the main source of income remains livestock and livestock products. Of the latter, cashmere was ranked first, followed by meat and milk products. After these, berries, namely cranberries and blueberries, were listed next in significance for income generation. Interviews with key informants (ranger, bag governor, project officer IFAD) provided insights into the extent of collection of medicinal plants and hunting of wildlife for illegal trade with wildlife parts, mainly for Chinese medicine. While wildlife use was not ranked high for income generation by participants in PRA meetings, cross-checking with information from interviews and analysis of charts and diagrams prepared on changes and trends of resources, and detailed information on prices that local people were able to provide suggest that a significant increase in the collection and hunting of plant and wildlife species since 1990 poses a serious threat to biodiversity.

Traders stimulate illegal wildlife hunting by offering discounts for other goods if local people provide wildlife parts.

Berries and pine nuts contribute to incomes, and may be a source for significant income of local communities if these had use rights and the possibility to manage, protected and either harvest resources themselves or regulate access of outsiders themselves with adequate benefit for themselves.

Lack of employment opportunities in the soum centre creates a workforce for two commercial operations by Ulaanbaatar based companies: Monospharma, a pharmaceutical company, and a company producing Mongolian Herb Tea of the brand “Ikh Taiga”. Both operations use cheap labor to have plants collected in large quantities, about which local people knowledgeable in medicinal plants expressed concern, both because of the probable overharvesting of medicinal plants (which are being baled like hay) and because of the lack of regard for traditional knowledge and lack of benefits for the holders of traditional knowledge.

Law enforcement was described as very weak, and local law enforcement officers (rangers) perceived a lack of support from supervising government organizations or line agencies in their tasks.

Mungarag Bag of Ulaan Uul Soum is known for its tradition of small scale production of ger wooden frames. Livelihood analyses and interviews revealed that this activity plays a more important role for household income generation for poor households with few or no livestock. Herders with more livestock may produce a ger wooden frame to supplement income for special occasions or special purchases, while poor households depend on selling ger wood for their daily needs. As in study site one, it has become almost impossible for poor households to legally obtain permits for cutting trees, and consequently a traditional local livelihood strategy has become an illegal activity.

Traditionally, shaman played a significant role in access to forest resources for local people. An elderly man stated that shamans were effective in enforcing customary regulations, i.e. that forest of certain mountains identified by the shaman remained untouched. These areas obviously created refuges for wildlife as well as a reserve for plant biodiversity and virgin forest.

As in study site one, local communities expressed concern about minerals exploration activities in local areas traditionally used as pasture or in community protected areas such as worshipping sites. One local man named as the greatest threat to the local environment and livelihoods the “issuing of licenses” to outsiders, and expressed the fear that “high level people will take the land, ...and we will be excluded”.

While there is a strong sense of ownership among local communities of the land, particularly traditionally protected and sacred sites, there is considerable pressure on resources through illegal harvest of wildlife, which is further promoted by traders. Open access to the area also allows outsiders to poach wildlife and collect natural resources.

In the relative remote areas of Ulaan Uul Soum’s country side, prices for goods are high while resources and products sold by local people without value addition fetch very low prices. Lack of access to credits

It appeared that a donor funded project on restocking and disaster relief had nurtured expectations among local people that they should receive outside support rather than created a readiness and build capacity for self-help. As in study site one, opportunities to improve livelihoods are severely restricted due to a lack of access to credit, lack of value addition, low educational standards. Here, distance from markets, aggravates the situation.

The issue of intellectual property rights with regard to the harvesting of medicinal plants by outsiders and companies was prominent at the Khovsgol study site. Concepts of Participatory Forestry, whereby possession of all resources, both timber and non-timber would be contractually agreed, would have to address this issue.

4.3 Analysis

Figure 1: Social Map.



- blue mark – Average – 9 households
100 – 150 livestock with car, motorbike, solar panel
- red mark – Poor households – 4 households
20 -50 livestock
- black mark – very poor households – 6 households

Table 1: List of the items made from timber for household use.

1. Small shed-Larch
2. Sled-Birch
3. House-larch
4. Hand spinning tool - Larch,Birch
5. Cart-Birch, Larch
6. Ger Posts(Top)-Larch
7. Ger Wall-Larch
8. Table-Pine
9. Livestock fence-Larch
10. Picture Frame-Pine
11. Handle for tools -Larch

12. Axe handle-Birch
13. Bed-Birch
14. Chair-Larch
15. Large oblong dish, or platter-Pine
16. Noodle roller-Pine and Spruce
17. Cutting board- Larch
18. Saddle-Larch
19. Floor- Larch
20. Bowl- (outgrowth, knot on the tree)
21. Mongolian ger's center pillars-Spruce
22. Spoon-Larch
23. Chest/Trunk-Pine
24. Saddle tree-Birch
25. Spoon for throwing milk- Juniper tree
26. Vessel- Larch
27. Circle of ger- Spruce
28. Door-Spruce

Table 2: Matrix Scoring of Natural Resources and their utilization.

	House	Food	Medical treatment	Fertilizer	Income	Fuel	Fodder	Own use
Sparrow			1					
Loon or Diver		4	2					
Altai Snowcock			5					
Lammergeyer								
Wood grouse			3					
Outgrowth								
Little owl								
Eagle								
White hare		2	2					
Eagle Owl			2					
Black kite								
Pheasant's eye			2					
Ural owl								
Horse mushroom		3	2		2			
Red current		3						
Vulture								
Gazelles		5						
Sable					2			
Fox					5			
Atragea				1				
Mountain Weasel								
Mineral water Boshdog			5					
River		5						
Cotoneaster			2					1
Bulgan khar			5					
Plant temeem suul			2					
Mineral water of Tsagaan Nuur			5					
Onion		5						1
Pink			5					1
Musk deer					5	1		
Juniper			1		2			

Rural livelihoods and access to forest resources in Mongolia

Prickly rose	1	5	5						1
Rose bay			3						
Blue berry		5				5			
Chalk	5		5						
Red deer		1				2			3
Jointweed		1	1			2			
Purola			1			1			
Red berry									
Wild onion		5							5
Pine nuts		1				5			
Antitoxicum			2						
Pine tree			2			1			
Black current		2	1			1			3
Coal									
Squirrel						5			
Rose bay		1							
Argali sheep									
Ibex									
Spruce									3
Bear		3	4			1			
Saussurea involucrata			3						
Baljingarav			2						
Plantain			3						
Grass		2				3		5	
Larch	5					5			

Table 3: Pairwise ranking of resources and their potential for income generation.

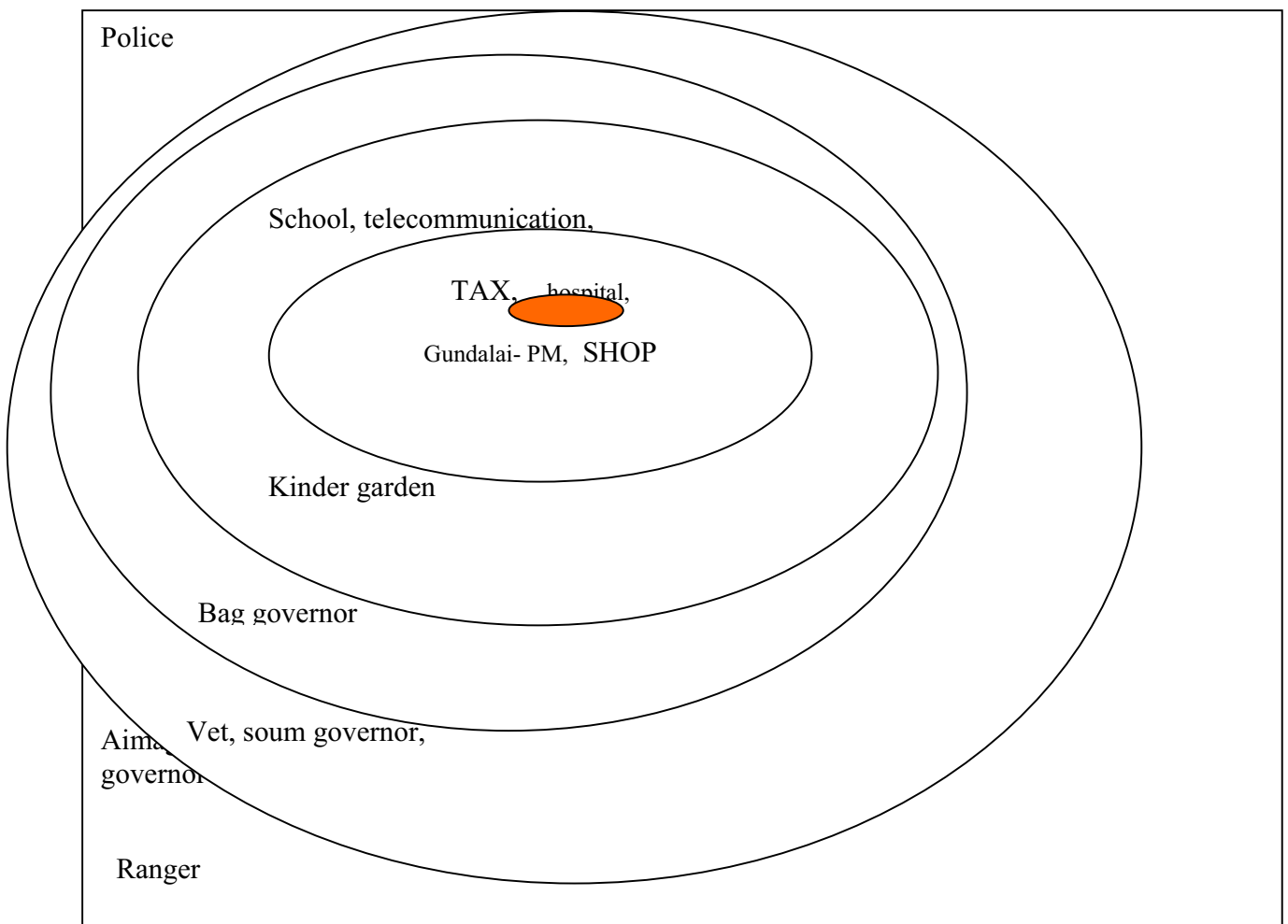
	Gold	Leaf of Cranberry	Pink	Purola	Blue berry	Plantain	Cranberry	Mushroom	Labrador tea	Áóëääí òàð
Gold 7	=	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold	Gold
Leaf of Cranberry 2		=	Pink	Leaf of Cranberry	Blue berry	Plantain	Cranberry	Mushroom	Labrador tea	Leaf of Cranberry
Pink 5			=	Pink	Blue berry	Pink	Cranberry	Mushroom	Pink	Pink
Purola 0				=	Blue berry	Plantain	Cranberry	Mushroom	Labrador tea	Labrador tea
Blueberry 8					=	Blue berry	Cranberry	Blue berry	Blue berry	Blue berry
Plantain 2						=	Cranberry	Mushroom	Labrador tea	Áóëääí òàð
Cranberry 9							=	Cranberry	Cranberry	Cranberry
Mushroom 6								=	Mushroom	Mushroom
Labrado									=	Labrad-

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

r tea										or tea
4										=
Áóëääí õàð										
1										

- | | | | |
|------|----------------------|------|-----------------------------|
| 1-st | Cranberry | 6-th | Labrador tea |
| 2-nd | Blueberry | 7-th | Plantain, Leaf of Cranberry |
| 3-rd | Gold digging by hand | 8-th | Áóëääí õàð |
| 4-th | Mushroom | | |
| 5-th | Pink | | |

Figure 2: Visualisation of relevance of institutions to local households as perceived by participants of meeting. 18 participants (50 % men) attended this meeting.



Rural livelihoods and access to forest resources in Mongolia

Table 6: Matrix Scoring on Natural Resources and Livestock products and their use in local livelihoods. Participants aged approx. 30-45, 4 men, 1 woman.

	Sell to Aimag	Sell to traders	Sell to company	Food	Health care	Fuel	Fodder	House hold use
Cranberry		3			3			
Fox		4						2
Spruce	2							3
Birch	2							3
Pine	2							6
Grass								8
Jade								3
Rock crystal		2						2
Edelweiss					5			
Artemisia							8	
Surnag								4
Rosebay								5
Hare								3
Badaa		2						5
Gold		8						
Blue berry		5						3
Purola					5			
Water								8
Red cherry								5
Duck								3
Prickly rose					3			3
Altai Snowcock					3			3
Thyme					3			3
Musk deer		4						
Juniper								5
Mineral water								
Pine nuts		5						3
Red cherry		5						
Jugam					4			
Saussurea		5						3
Burnet					2			2
Wolf		4						2
Squirrel		7						
Ground squirrel		3						
Fish		3	3					2
Mushroom		3		2				2
Larch	3					5		
Wolf Grass					4			
Plantain					2			2
Argali sheep				3				
Black current		3						3
Bear		3			2			
Bone		4						
Livestock intestine		3						
Horn								3
Fat		4						3

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

Meat	3		2				4
Aaruul		3					5
Dung							4
Yellow milk							3
Cream with eezgii		4					4
Skin	2	4					2
Horse main	2	2					2
Horse tail	2	4					2
Horse under hair	2	3					2
Batter	2	2					4
Cashmer	2	2	4				
Cream	2	2					4
Eezgii	2	2					4
Aarts		4					4
Wool		4					3
Milk		4					4
Rope							8

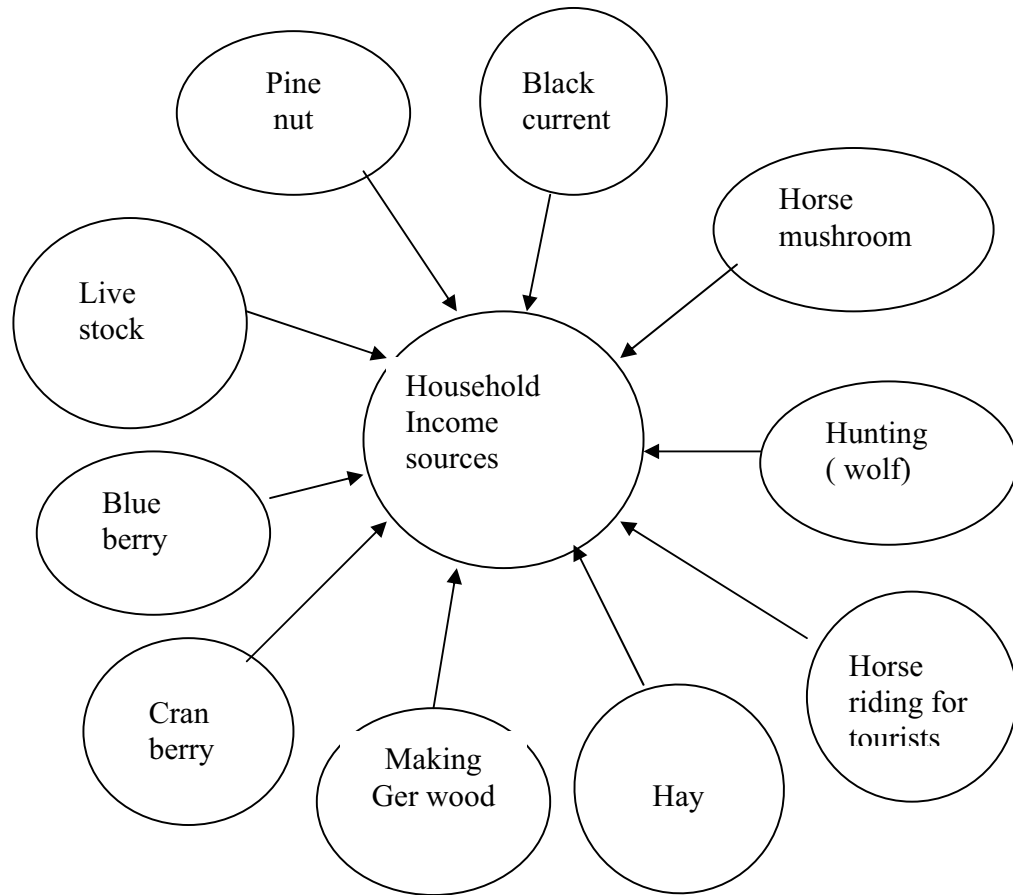
Table 7: Changes and trends, in collection and selling of forest resources and livestock products.

	1990	1995	2000	2005
Cranberry	1	1	3	5
Fox	3	4	1	1
Spruce	5	2	2	2
Birch	5	3	2	1
Pine	5	2	2	2
Grass	5	5	5	5
Jade	2	2	2	2
Rock crystal	2	2	2	2
Edelweiss	2	2	2	2
Artemisia	2	2	2	2
Surnag	2	2	2	2
Rosebay	2	2	2	2
Hare	1	1	1	2
Badaa	1	2	3	3
Gold				5
Blue berry	1	1	3	5
Purola	1	1	1	1
Water	5	5	5	5
Red cherry	2	2	2	2
Duck	2	2	2	2
Prickly rose	5	4	4	3
Altai Snowcock	5	5	5	5
Thyme	3	3	3	2
Musk deer	4	4	2	0
Juniper	3	3	3	0
Mineral water	5	5	4	5
Pine nuts	4	4	5	3
Red cherry	3	3	5	5
Jugam	2	2	2	1
Saussurea	4	4	4	4

Rural livelihoods and access to forest resources in Mongolia

Burnet	2	2	3	1
Wolf	4	4	4	4
Squirrel	6	6	3	1
Ground squirrel	2	2	2	2
Fish	5	5	4	2
Mushroom	4	4	4	4
Larch	3	3	3	3
Grass	3	3	3	3
Plantain	5	5	5	5
Argali sheep	1	1	1	1
Black current	3	3	3	3
Bear	1	1	1	2
Bone	1	1	1	2
Livestock intestine	5	5	5	5
Horn	1	1	1	2
Fat	5	5	5	5
Meat	5	5	5	5
Aaruul	5	5	5	5
Dung	1	1	1	2
Yellow milk	1	1	1	1
Cream with eezgii	5	5	5	5
Skin	5	5	5	5
Horse main	5	5	5	5
Horse tail	5	5	5	5
Horse under hair	5	5	5	5
Batter	5	5	5	5
Cashmer	5	5	5	5
Cream	5	5	5	5
Eezgii	5	5	5	5
Aarts	5	5	5	5
Wool	5	5	5	5
Milk	5	5	5	5
Cow skin	5	5	5	5

Figure 3: Visualisation of Income Sources for local households.



black current	1kg =250-300 Tug.
Cranberry	1kg=500 Tug.
Blueberry	1kg=300-400 Tug.
Pine nut	1kg= 700-800 Tug.
Mushroom (vet)	1kg= 300 Tug. Sell to Chinese trader
Horse riding	1 Horse per day = 3.000 Tug.
1 truck hay	20.0 – 30.0 thousand Tug.
6 wall complete ger wood	= 150.000 Tug, will sold for cash, or barter (livestock)

Table 8: Pairwise ranking of best income opportunities.

	Live stock	Ger wood	Hay	Hun ting	Pine nut	Mush room	Black current	Blue berry	Cran berry	rent Horse to tourists
Livestock	=	Live stock	Live stock	Live stock	Live stock	Live stock	Live stock	Live stock	Live stock	Live stock
Ger wood making		=	Hay	Ger wood	Ger wood	Ger wood	Ger wood	Ger wood	Ger wood	rent Horse to tourists
Hay			=	Hay	Hay	Hay	Hay	Hay	Hay	Hay
Hunting (wolf)				=	Pine nut	Mush room	Black current	Blue berry	Cran berry	rent Horse to tourists
Pine nut					=	Mush room	Pine nut	Blue berry	Pine nut	Pine nut
Mushroom						=	Mush room	Blue berry	Mush room	Mush room
Black current							=	Blue berry	Cran berry	Black current
Blueberry								=	Cran berry	Blueberry
Cranberry									=	Cranberry
renting Horse to tourists										=

Livestock place - 9 times, **1-st** place
 Ger wood place - 6 times, **3-rd** place
 Hay place - 8 times, **2-nd** place
 Hunting - 0 times place
 Pine nut - 4 times, **5-th** place
 Mushroom - 5 times, **4-th** place

Black current - 2 times, **6-th**
 Blueberry - 5 times, **4-th**
 Cranberry - 4 times, **5-th**
 Renting Horse – 2times, **6-th**
 to tourists

Figure 4. Livelihood analysis of poor household.

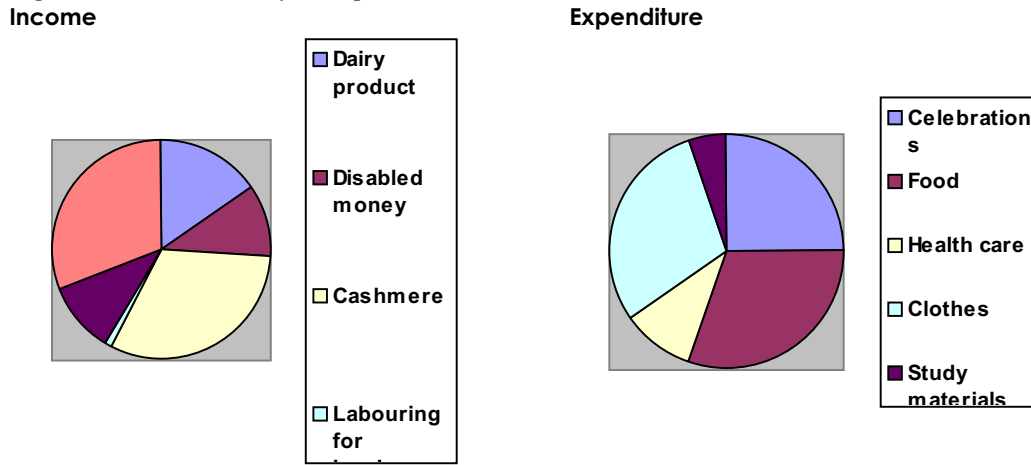


Figure 5: Livelihood analysis of household “well being”.

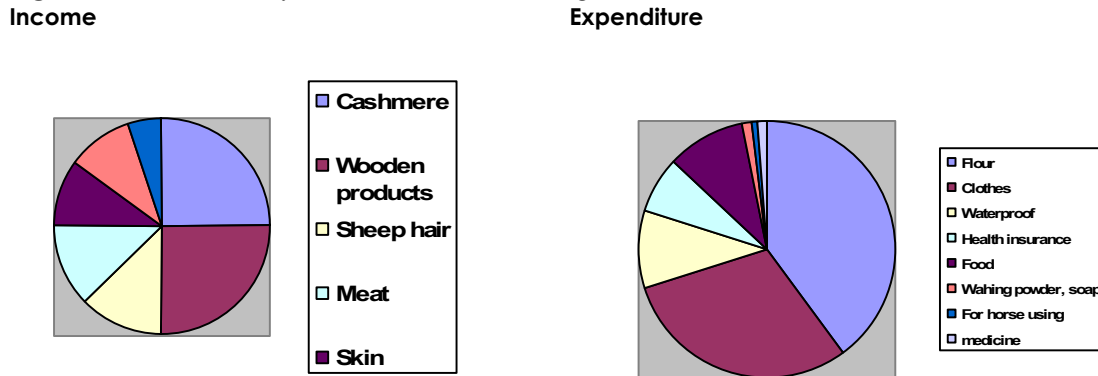
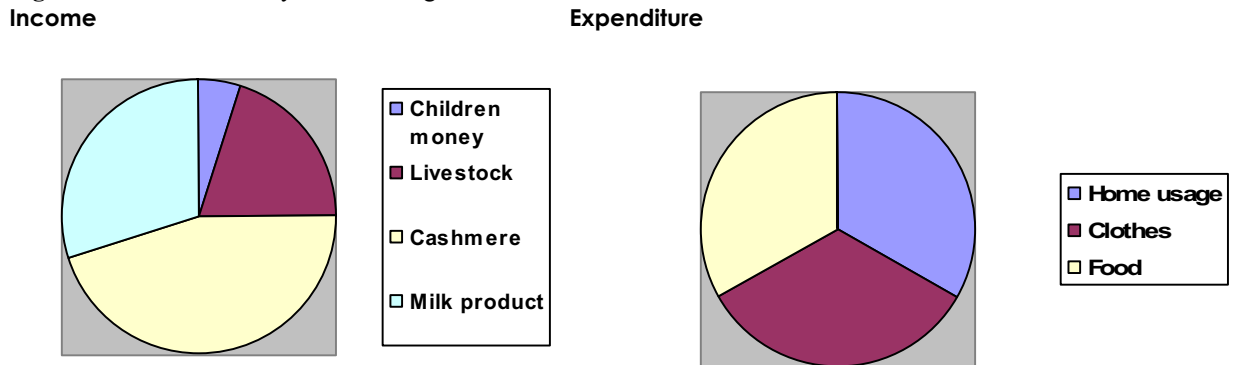


Figure 6: Livelihood analysis of “average” household.



5. BINDER SOUM

5.1 Overview

5 Bags

- Total territory: 536.000 ha
- 114.320 ha mixed pasture and forest land
- 101.300 ha forest
- 40.000 ha are within Onon Balj National Park

Total population as of end 20004: 3455

- 997 households
- 360 households in Soum Center year-round, in winter season 400
- 637 households in rural areas

Socio-economic information (based on data from 2000, provided by Social Officer, Mr. Urtnasan)

- 36 households are “rich”
- 362 hh are “average”
- 138 hh are “with little income”
- 279 hh are “poor”
- 182 hh are “very poor”
- nearly 35 % of the population is poor and very poor

This socio-economic profile is based on the following definitions:

average hh:

- more than 21.200 MNT/member/month income
- little income hh: 21.200 MNT/member/month
- poor hh: 8.480-21.200 MNT/member/month
- very poor hh: less than 8.480 MNT/member/months
- (21.200 MNT is the base defined for this region/Aimag; it differs regionally).
- During past years, the number of poor households has increased, mainly in Soum Center, caused by Dzuud.

The richest households are rich through livestock, have more than 100 livestock/household member, and also have shops, trucks and are involved in trade.

70 % of all households are herders; six herder households have more than 1000 livestock.

170 people are employed in state organizations.

Income from forest resources is especially important for the poor and very poor households and for the households with “little” income (this statement likely refers to non-timber resources). Preparing and selling firewood, as well as preparing logs for houses and sale to Ulaanbaatar is an important income source in the soum.

Vegetable planting is, compared to other Aimags, of little importance for income generation, but is for subsistence.

Binder Soum Center has a 10th grade secondary school, kindergarten, and a hospital that serves also neighbouring soums. A “Onon and Ulz River” movement was established, as a grass roots conservation organization.

Livestock: 63.217 total (10265 cows for milk)

Forest

Approximately 80 % of the forest in Binder Soum is larch, followed by birch, poplar (*populus suaveolens*, and *populus tremula*), Scotch pine (*pinus silvestris*). Sibirian pine (*pinus sibirica*) does not occur in Binder Soum, and people collect nuts in neighbouring Batshireet Soum). Willow (*salix* sp.) occurs in riparian areas.

Forest resources utilization

Mostly in 2nd and 3rd bags,

In socialist times, a saw large sawmill was in operation. After 1990, it was privatized and divided into 2 operations, none of which survived.

2 sawmills are operating currently in the Soum (one in soum center, one in rural area), one with a permit, one without permit.

2 Khamtlags (forest user groups) exist as organizations, but they do not undertake activities in forestry, or in other natural resource management, but are awaiting provision of a legal basis for their activities.

Forest in a 25 km radius around the soum center is zoned as Green Zone, and not for utilization (both Khamtlag areas are in the Green Zone).

Income from forest resources

Permits from firewood generate 3.5 to 4.0 Mio MNT annually for the Soum.

A commission decides prices for confiscated logs, which are then sold on (mainly bought by Soum Center people). Logs for an average house cost approx. 200.000 MNT.

Timber use regulations currently in place:

In 2005, the Ministry for Nature and Environment granted no permits at all for cutting logs (for purposes other than household use) in Binder Soum.

Fine for 1 m³ timber is 68.000 MNT (replacing ecological value) plus 20.000 MNT (penalty), plus confiscation of logs and equipment.

According to the environmental inspector, it is difficult to enforce this because the livelihoods of people are difficult.

Fire wood requirements per household is annually approx. 16 m³, MNE regulations allow 8 m³ per household. For household use (fence, shelter, etc.) 30 m³/household are allowed, which is sufficient according to environmental inspector.

The price of a permit for 10 m (1 truck load) of firewood rose from 7.000 MNT to 14.000 MNT this summer.

MNE allowed 150-200 m³ of timber to be harvested per year soumwide. (not clear whether this is for 2005 only, or for all years)

Forest Management:

Before 1990, 6 forest rangers, and a professional forest service, now one Environmental inspector. Permits are issued to bag governors, no or very limited monitoring of where logging takes place and how much is cut.

Forest Industry Organisation (state owned, *Turiin omchid ulsiin uildveriin gazar*), currently being transferred from central government to Aimag, was previously established to coordinate permit issuance and payments, since 2000 their responsibilities decreased. The organization (re)-planted 440 ha of forest last year (claim of 75 % success rate), with funds from central government. For

this year, only 45 ha are planned, as funds are allocated for the “Green Wall” programme. Funding for planting forest from central government is 100.000 MNT/ha.

Non-Timber forest resources

Nuts and berries are important for local incomes in autumn (as opposed to logs that provide income in springtime). Berries are plentiful in Binder Soum.

Wildlife resources already have been decimated considerably; in previous years, marmot skins, deer horn, and musk were traded. Some households, in the southern, steppe area of the soum, depended on marmot for their livelihood. Now, deer and marmot are rare, and bear is very rare. Permits for fishing are issued, at 600 MNT for 3 days fishing.

Soum budgeting

2005 Budget is 165.281.200 MNT

In 2004, the soum generated 14.537.200 MNT soum income from local taxes, permits, services.

For 2005, the planned income for the soum is 15.243.100 MNT. This breaks down as follows:

- 3.639.600 MNT from permits for logging
- 504.000 MNT from permits for boar hunting
- 320.000 MNT from natural resource use fee
- 990.000 MNT from fines (including 570.000 from police, i.e. offences other than natural resource related?)
- 260.000 MNT notary services etc.
- 7.981.500 MNT from livestock taxes
- 750.000 MNT taxes from small business
- 250.000 MNT taxes/fees from tourists, and other

Another 7.565.800 MNT, collected as car, land and property taxes in the soum, go to the Aimag.

Another 6.600.000 MNT, collected as VAT and income tax (salaries, private entities), go to the central government.

Apprx. 50 % of locally collected taxes go to Aimag and Central Government. Of the remaining funds allocated as income for the soum, nearly 30 % depend directly on natural resources, and a portion of this depends on illegal activities!

5.2 Brief summary of findings

Preliminary learnings from the field study in Binder Soum suggest that livelihoods there depend less on forest resources compared to the previous study sites in Arkhangai and Khuvsgul, and this seems to be true for all levels of well-being. While the official statistics on socio-economics of the soum refers to approximately one third of the households as poor or very poor, the well-being of the poor here is better than in other study sites. The official definition is based in livestock numbers only; however the most important kind of livestock in the Khentii is dairy cattle, of which a few generate relatively high, and year-round income for local households. This puts households with “few livestock” above households with “few livestock” in other regions. Another advantage of Binder Soum local households is their ability to add value to their principal livestock product (making cream) and being able to market this locally, and to the capital city.

Use of timber resources, both legal and illegal, is for constructing the shell of log houses, both for own use and for sale. Binder Soum, like neighbouring soums, has a high percentage of Buriat people and very few people live in gers, but use traditional Buriat log cabins. Most households, except soum center households, have a summer and winter house. Of non-timber forest resources, berries are important for household income. For poor households, income from berries in general makes up a higher percentage of total annual household income than in average or better off households.

Poaching of wildlife probably has been and still is significant; species such as red deer, roe deer, musk deer, marmot, bear, squirrel have dramatically declined, due to poaching by both locals and outsiders. Currently, wildlife hunting and poaching (deer, wild boar) appears to be more for consumption than trade. Buriat people are traditionally known as good hunters.

A better socio-economic condition due to dairy production, along with better educational standards, better services in Binder Soum as compared to the other study sites, and a history of forest industry with a large contingent of trained forestry professionals have created a base of interest in and readiness for participatory forestry in Binder Soum. Representatives of both local communities and local government expressed strong interest in and support for the implementation of community based forestry. Two forest user groups (Khamtlag) have already been formed in the 2nd Bag, and in the 3rd Bag, local households are discussing the formation of a Khamtlag.

In-depth discussions with focus groups, with Khamtlag member households and interviews with other key informants provided information on developing an enabling environment for participatory forestry. As the findings from the previous sites suggest as well, legal changes or amendments are not the sole requirement to develop an enabling environment. Rather, there are barriers to the successful implementation of participatory forestry that are related to fiscal procedures, law enforcement, governance issues, institutional capacity.

Some of the issues in summary:

Fiscal

As mentioned above in the section on Binder Soum Information, the local budget depends significantly on income from forest resources. This forces local governments either to exceed the legal limits of timber sales themselves, or indirectly promotes illegal use as the soum budget relies on income from fines and sales of confiscated logs.

Land/Resource Tenure

In discussions with Khamtlag members and other households of the local area all participants agreed that the Khamtlag “should not have any gap”, i.e. all local households should be members, and all resources of the community managed area should be included under contractual agreement for resource management (including protection and use). Khamtlag members need exclusive right over the area; regulations need to be developed that govern the issuance of permits for resource use to outsiders through the Khamtlag (as opposed to issuance of permits by local government).

Law Enforcement

Khamtag should have right to stop illegal use of resources, and the right to confiscate.

Institutional

In Binder Soum a large contingent of forestry professionals exists many of which would be Khamtlag members. Khamtlag members suggested the formation of an Khamtlag Association mandated with (among other tasks) technical advice to Khamtlags and liaison to government.

Management Planning for the Khamtlag area was thought to be undertaken by Khamtlag members with technical advice from the Khamtlag Association and representatives of relevant Soum and Aimag government departments (the question arises whether currently these departments have qualified staff to perform these tasks; capacity development will be necessary here, as well as institutional development – professional forest service!). Monitoring of implementation of Management Plans was thought to be performed by the Khamtlag Association in cooperation with the Soum Environmental Inspector. Improving the capacity of Khamtlag was perceived as very important (technical, legal, financial skills and knowledge training).

Zoning of Forests and Rights/Responsibilities of Khamtlag

Binder Soum provided an excellent case study on a much discussed issue in the participatory in the dialogue about participatory forestry in Mongolia. Both Khamtlags of the 2nd Bag were located in the Green Zone (a radius of 25 km around the Soum Center); thus the government's interest in the Khamtlag was predominantly the transfer of responsibilities to the local community while opportunities to benefit from managing the forest are limited in the "Green Zone".

Legal

The "Yan" Khamtlag in Binder Soum was established 5 years ago. No activities have been undertaken to date, the lack of a legal framework being named as the reason.

The question did arise whether the Khamtlag cannot begin certain activities, that are also not against any law, and thus help develop a model and generate experiences on implementing concepts of PF.

Suggestion for further study:

It is obvious that the fiscal issue, and political will, are crucial factors in developing an enabling environment for participatory forestry.

It appears that one or several case studies, looking at the economic impacts of Participatory Forestry i.e. trying to calculate how increased income of communities and local households, leading (hopefully) to more income tax, less government spending in welfare and other support, would off-set the loss of income for soum governments from selling permits, collecting fines and selling confiscated logs (and other resources), could be a very useful way of making the case for community forestry. Such an exercise would also need to consider the long-term social and ecological impacts, and how they ultimately translate into economic impacts. This may be necessary before policy makers and government are really willing to introduce participatory forestry, or community based natural resource management in general.

Poverty and Access to Forest Resources

With regard to poverty and access to forest resources, the most striking finding (of all three study sites so far) may be this: When the poor access forest resources, they do so as laborers, being paid low wages for their labor (of logging, transporting, cutting boards, and other labor). The resource then is treated by those with means of transportation, with connections to those in power, with financial means as their own; they are able to add value to it and sell it as if it was theirs.

If the poor are able to sell any forest resources, it is non-timber forest resources (berries, nuts), and they are not able to add value and have to sell them at low prices as they have to sell them locally to traders.

5.3 Analysis

Figure 1: Natural Resource Map.

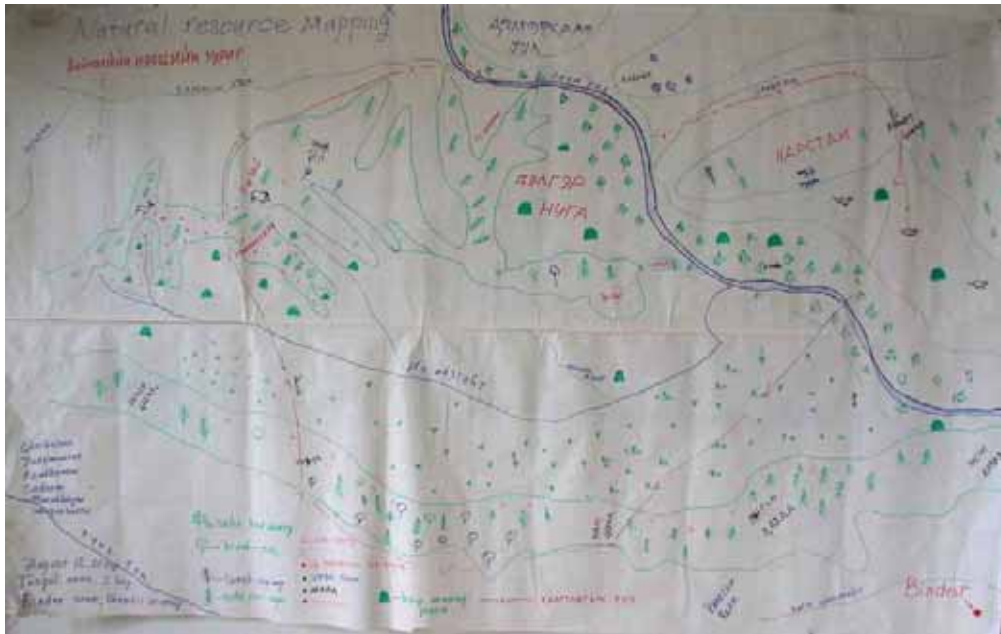
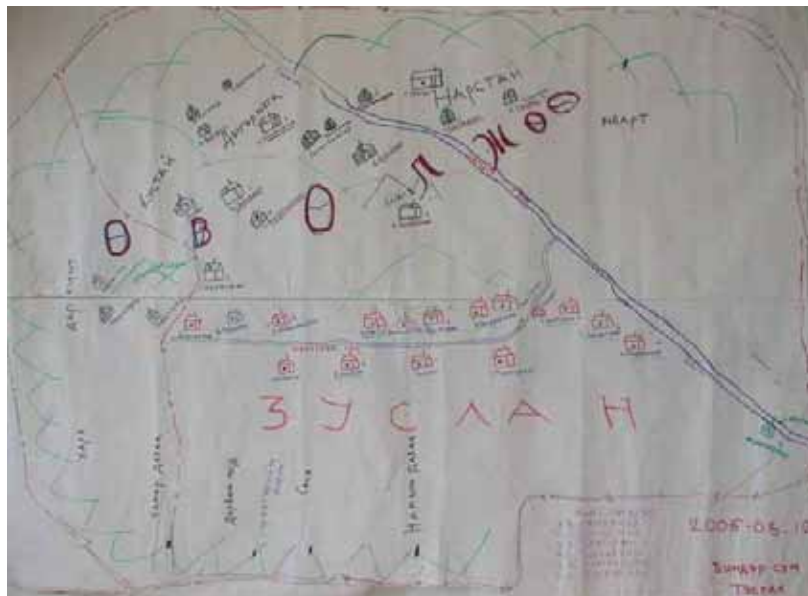


Figure 2. Social Map.



Green is average (Household number 14)
Purple is lower (poor) (Household number 11)

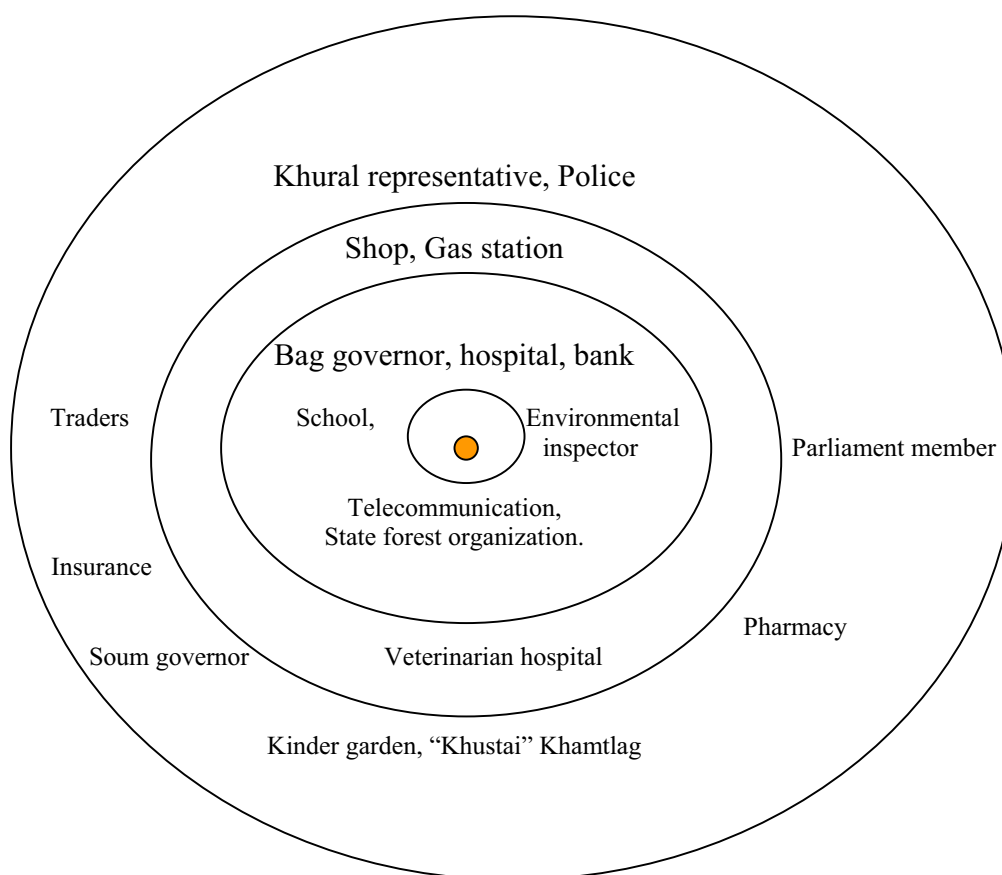
Table 1: Changes and Trends of Natural Resources and Phenomena. **Score:** 0-5

	1960-1975	1975-1990	1990-2005	2005-2020 expected
Livestock	4	5	3	2
Grasses	5	2	2	3
Forest	2	3	3	1
Wild boar	5	3	2	1
River	5	4	2	1
Berries	5	5	3	2
Red deer	5	4	1	1
Roe deer	5	3	1	1
Weather /warm/	5	3	1	1
Squirrel	4	4	1	0
Wolves	5	5	5	5
Pests	0	2	3	5
Fire	4	4	3	2
Flood	5	4	2	0
Stealing	0	0	5	5
Snow	4	4	4	3
Drat	4	4	3	2
Rain	3	4	3	1
Harsh winter	3	3	3	3

Table 2: Time Line by an elderly man.

Years	Events
1925	First Forest Unit was established
1951	Wood factory was established in 2 nd bagh area. At that time, people started to share their labor and Fund.
By 1951	Big Flood of Onon river
1963	Wood factory was expanded and moved to Binder soum center and became an enterprise and provided with equipment - provided wooden products with all soums of Khentii aimag
1975	Started re-plantation of forests
1978	Big Fire from Mungun Morit to Tusgal area of Binder soum
1980	Zud
Since 1985	Insects in forests have increased. Trees have dried and gotten older
1992	Zud
1950 - 1990	There were many wildlife including deer, boars, gazelles
Until 1997	There were a lot of pine nuts in Khan Khentii areas
Since 1995	Water level has been lower Streams and rivers have been drying Growth of berries and pine nuts has been worsening

Figure 3. Local Institutions, and their relevance (“distance”) to households.



Note: ● is household

Table 3: Natural resources and their utilization. Matrix scoring.

	Food	Fire wood	House	Treatment	Shelter	Income	Own use	Furniture	Toy
Cream	5					2			
Crataegus	1			1					
Lenok	1					1			
Burnet				1					
Madwort				1					
Taimen	1					1			
Birch		1					2		
Prickly rose				1					
Red berry	1					1			
Apple sp	1					1			
Scotch pine			1		2			4	1
Straw berry	1								
Stone bramble	1								
Cranberry	1			1					
Pike	1					1			

Rural livelihoods and access to forest resources in Mongolia

Larch		5	5		4	2	1		
Poplar		1			1				
Willow		1					1		
Wool						1	1		
Skin						1	1		
Cashmere						3			
Meat	5					3			
Marmot	1					1			
Treated skin							4		
Red deer						1			
Plantain				2					
Milk	5					2			
Fat	3					2			
Badger				1					
Fox						1			
Sable						1			
Squirrel						1			
Wolf				1		1			
Lynx				1					
Bear				1		1			
Hare	1								

Table 4: Pair wise ranking on income generation from natural resources and livestock products. Done by representatives of households ranked as poor on the social map by participants. 58 resources and products were ranked in an exercise lasting all day.

Resource/Livestock Product	Ranking
Cashmere	1
Butter	2
Nut	3
Pine tree	4
Livestock skin	5
Milk	5
Blueberry	6
Hay	7
Larch	7
Hard cheese (Dairy product)	8
Curds (Dairy product)	9
Red berry	10
Black current	11
Yogurt	12
Birch cherry	13
Prickly rose	13
Apple species	13
Soar cream	14
Cheese	15
Fish	15
Squirrel	16
Birch	16
Eedem (Dairy product)	16
Horse tail	16
Wool	17
Mushroom species	18
Yargai (tree)	19
Doloogono (medicinal plant)	20

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

Cranberry leaves	20
Tsagaan tums (medicinal plants)	21
Mushroom	22
Onion species	22
Moss	23
Plantain	24
Bogdiin Tolgoi	24
Crane berry	24
Bush	25
Mangir (onion species)	26
Common dill	26
Nettle	27
Kharakhana	28
Pink	28
Ganga (Medicinal plants)	29
Tsarvan (medicinal plant)	30
Birch juice	31
Burnet	32
Tsos ovs (medicinal plant)	33
Norgos	34
Agi (medicinal plant)	34
Avarga soril	35
Birch mushroom	36
Battsagaan	37
Baavgan Chikh (medicinal plant)	38

Figure 4: Livelihood analysis, of average household. Age: 45-50.

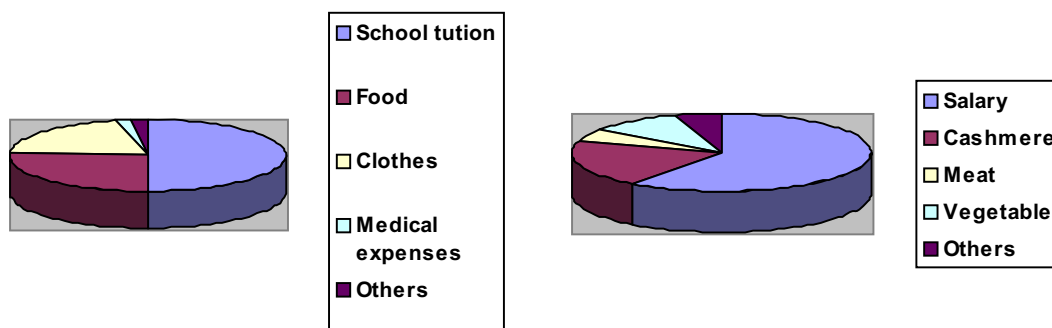
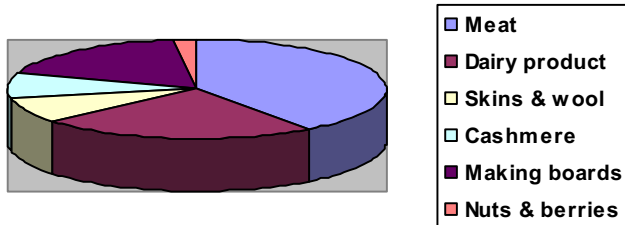


Figure 5 Livelihood Analysis: of average household
Household income:



Household expenditure:

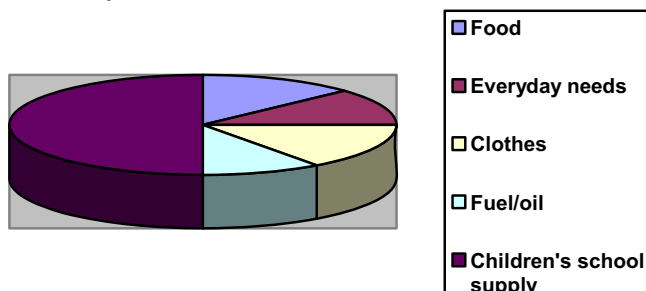
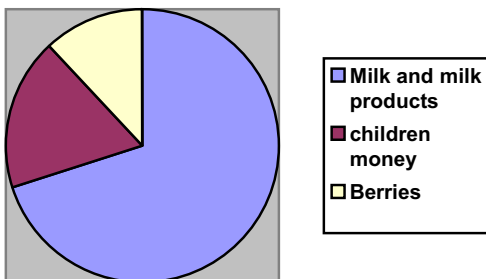


Figure 6. Livelihood Analysis of a poor household
Income



Expenditure

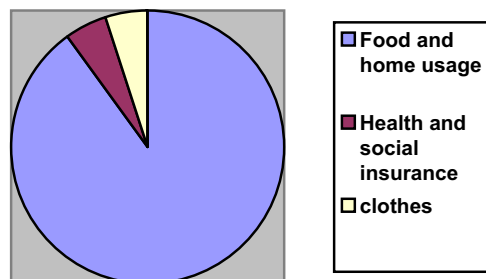


Table 5: Pair wise ranking of natural resources and livestock products with regard to contribution to annual household income. **Blue is score, red is rank.**

	Wolf <u>(7)</u>	Fox <u>(4)</u>	Sable <u>(4)</u>	Milk <u>(16)</u>	Fat <u>(12)</u>	Deer <u>(5)</u>	Meat <u>(19)</u>	Cashmere <u>(16)</u>	Skin <u>(12)</u>	big skin <u>(13)</u>	Wolverine <u>(3)</u>	Lenok <u>(3)</u>	Pike <u>(1)</u>	Bird cherry <u>(10)</u>	Taimen <u>(4)</u>	Apple <u>(8)</u>	Larch <u>(18)</u>	Cream <u>(15)</u>	Wool <u>(6)</u>	Marmot <u>(11)</u>	
Wolf <u>(10)</u>		wolf	wolf	milk	fat	wolf	meat	cashmere	skin	big skin	wolf	wolf	wolf	Bird cherry	wolf	apple	larch	cream	wool	marmot	
Fox <u>(12)</u>			sable	milk	fat	deer	meat	cashmere	skin	big skin	fox	fox	fox	Bird cherry	fox	apple	larch	cream	fox	marmot	
Sable <u>(13)</u>				milk	fat	deer	meat	cashmere	skin	big skin	sable	sable	sable	Bird cherry	sable	apple	larch	cream	wool	marmot	
Milk <u>(3)</u>					milk	milk	meat	milk	milk	milk	milk	milk	milk	milk	milk	milk	milk	cream	milk		
Fat <u>(6)</u>						fat	meat	cashmere	skin	fat	fat	fat	fat	fat	fat	fat	larch	cream	fat	marmot	
Deer <u>(12)</u>							meat	cashmere	skin	big skin	Deer	lenok	pike	Bird cherry	taimen	apple	larch	cream	dear	deer	
Meat <u>(1)</u>								meat	meat	meat	meat	meat	meat	meat	meat	meat	meat	meat	meat	meat	
Cashmere <u>(3)</u>									cashmere	cashmere	cashmere	cashmere	cashmere	cashmere	cashmere	cashmere	larch	cashmere	cashmere	cashmere	
Skin <u>(6)</u>										big skin	skin	skin	skin	skin	skin	skin	larch	cream	skin	marmot	
Big skin <u>(5)</u>											big skin	big skin	big skin	big skin	big skin	big skin	larch	cream	big skin	big skin	
Wolverine <u>(14)</u>												lenok	wolverine	wolverine	taimen	wolverine	larch	cream	wool	martmot	
Lenok <u>(14)</u>													lenok	Bird cherry	taimen	apple	larch	cream	wool	marmot	
Pike <u>(13)</u>														Bird cherry	taimen	larch	cream	bird cherry	Bird cherry	marmot	
Bird cherry <u>(8)</u>															apple	larch	cream	cream	wool	marmot	
Taimen <u>(13)</u>																	cream	apple	wool	marmot	
Apple <u>(9)</u>																	larch	apple	wool	marmot	
Larch <u>(2)</u>																		cream	apple	marmot	
Cream <u>(4)</u>																		larch	apple	marmot	
Wool <u>(11)</u>																		larch	cream	cream	
Marmot <u>(7)</u>																					marmot

The 5 products/resources ranked first are:

1-Meat

2-larch

3-Cashmere

4-Cream 5-Big skin /raw hide (cow, horse, camel)

Table 6: Seasonal Workload of women for two “average” households, Age: 40-50

Month	Jan	Feb	March	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Scoring	4	6	7	10	8	8	8	8	7	5	5	4
Main work	Receiving new born animals Preparation for tsagaan sar, Daily work	Tsagaan sar, Receiving new born animals, Daily work	Receiving new born animals, Daily work	Dairy product making, Daily work, Preparation for moving to summer camp	Dairy product making and selling, Moving to summer camp, Working in Tree nurturing	Dairy product making, Daily work, Naadam preparation	Dairy product making and selling, Daily work, Naadam, Hay making, Collecting berries	Daily work, Dairy product making, helping with hay making, Collecting berries, school preparation	Daily work, dairy product making and selling, School children, Collecting berries	Dairy work, repairing winter camp, moving to winter camp	Daily work, preparing for winter food and etc.	Daily work

Explanation: Cleaning animal droppings, watering animal, herding sheep, milking cows are the daily work
Scoring: 10 is the highest score

Table 7: Seasonal calendar of income of poor household.

Months	Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
Scoring	4			6		5	7	10	8	7	9	
Main income	Selling milk			Selling cashmere		Selling yogurt Wool Skin	Selling milk Cream Butter Meat Cheese	Selling cream, curds, berries, Vodka, cheese	Selling milk, cream, curds, butter, berries, vegetable, vodka	Selling butter, berries, milk, curds, nuts	Selling livestock animal, Milk and curds	

The highest score is 10

Table 8. Men's seasonal workload

	1	2	3	4	5	6	7	8	9	10	11	12
7		9	8	9	9	9	8	10	6	5	5	8
Daily work, depend on time that become busy or not, we have water problem, 3-4km to reach the water	Prepare fire wood, herding livestock, To guard horses at night, tsagaan sar, clean snow	Movement to spring place, dig snow, make manure for livestock, bring hay	Livestock give birth, combing goat	Summer preparation Fix livestock fences	Move to the summer place, plant vegetable, prepare horse for horse racing,	Naadam, horse racing	Hay making	End of hay making, preparation for children school	Move to autumn place, winter preparation	Daily work	Winter Food pre-Peration Daily life, depends on time that busy or not	

Note: Maximum 10 point.

Rural livelihoods and access to forest resources in Mongolia

Table 9: Pair wise ranking on natural resources with regard to income generation (contribution to annual household income) Black is score, red is rank.

	Wild boar	Marmot	Red fox	Wolf	Roe deer	Onion species 1	Black cherry	Crane berry	Straw berry	Red current	Berry species	Black current	Onion species 2	Black cherry	Blue berry	Larch
Wild boar		Marmot	Red fox	Wolf	Roe deer	Onion species 1	Black cherry	Crane berry	Straw berry	Red current	Berry species	Black current	Onion species 2	Black cherry	Blue berry	Larch
Marmot	11		Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Marmot	Larch
Red fox	2			Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Red fox	Larch
Wolf	4		Red fox		Wolf	Wolf	Wolf	Wolf	Wolf	Wolf	Wolf	Wolf	Wolf	Wolf	Wolf	Larch
Roe deer	4		Red fox	50	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Roe deer	Larch
Onion species1	10		Red fox		Black cherry	Black cherry	Black cherry	Black cherry	Straw berry	Red current	Berry species	Black current	50	Bird cherry	Blue berry	Larch
Black cherry	2		Red fox				Black cherry	Black cherry	Straw berry	Red current	50	Black current	Black cherry	Bird cherry	Blue berry	Larch
Crane berry	11		Red fox						Straw berry	Red current	Berry species	Black current	50	Bird cherry	Blue berry	Larch
Strawberry	8		Red fox							Red current	50	Black current	Straw berry	Bird cherry	Blue berry	Larch
Red current	7		Red fox								Red current	Black current	Red current	50	Blue berry	Larch
Berry species	8		Red fox									Black current	Berry species	Bird cherry	Blue berry	Larch
Black current	6		Red fox									Black current	Black current	50	Blue berry	Larch
Onion species2	10		Red fox									Black current	Black current	50	Blue berry	Larch
Bird cherry	6		Red fox									Black current	Bird cherry	Bird cherry	50	Larch
Blue berry	5		Red fox									Black current	Bird cherry	Bird cherry	50	Larch
Larch	1		Red fox									Black current	Bird cherry	Bird cherry	50	Larch

Table 10. Seasonal income and expenditure of average household.
Household name: Jantsankhorloo, Bazargur (husband)

Months	Jan	Feb	March	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Scoring	3	3	2	10	6	8	9	9	9	5	5	4
Main income resource	Milk	Milk		Cashmere	Cream	Milk Cream Aarts	Milk Cream Aarts Berries	Milk Cream Aarts Berries	Milk Cream Aarts Berries	Milk Arts	Milk Arts	Milk Arts

Expenditure

Months	Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
Scoring	5	10	4	4	4	4	6	9	4	5	7	4
Main expenditure	Food for school children	Tsagaan sar					Naadam preparation	School fee		Moving to winter camp (Patrol)	Winter preparation (Food, clothes)	New Year

Table 11. Womens' seasonal workload of average household.

Months	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Scoring	4	10	7	7	6	7	8	7	7	6	5	5
Main workload	Daily work	Preparation for Tsagaan sar (making deel, buuz and cookies)	Receiving young animal	Receiving young animal Goat combing	Receiving young animal Goat combing	Moving to summer camp Start making dairy products	making dairy products, Making new deel for Naadam	Collecting berries, Help hay making	Move to autumn camp making dairy products	Move to winter camp	Prepare food and clothes for winter	Daily work Milking the cows

Cleaning animal droppings, watering animal, herding sheep, milking cows are the daily work for women
Above described is additional work performed in the different months of the year.

Figure 6: Mobility map of a women with 3 children.

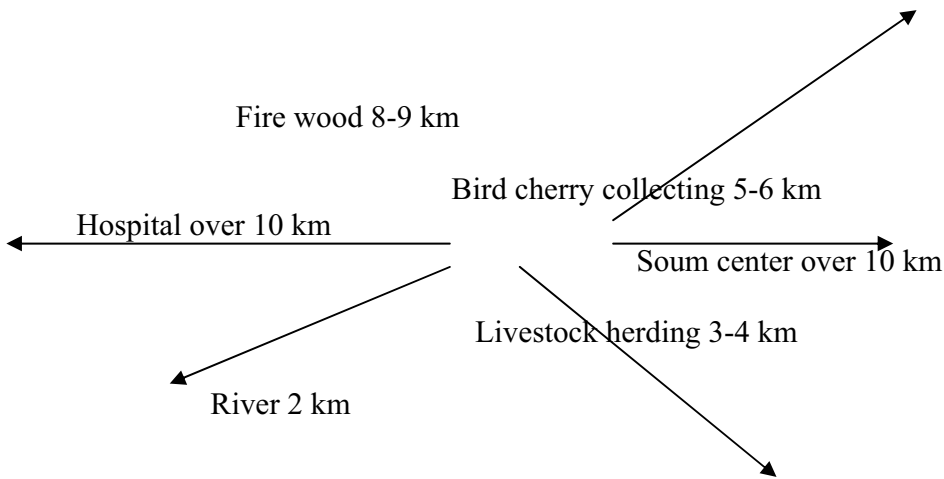


Figure 7. Mobility map of man in his 30s

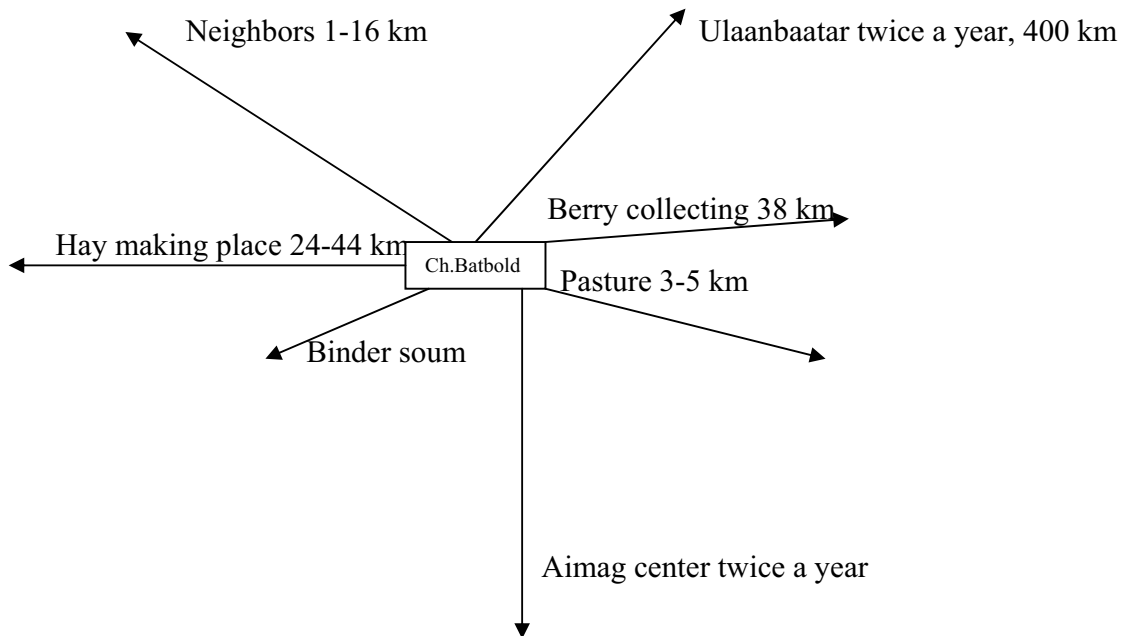


Figure 8: Mobility map of average household.

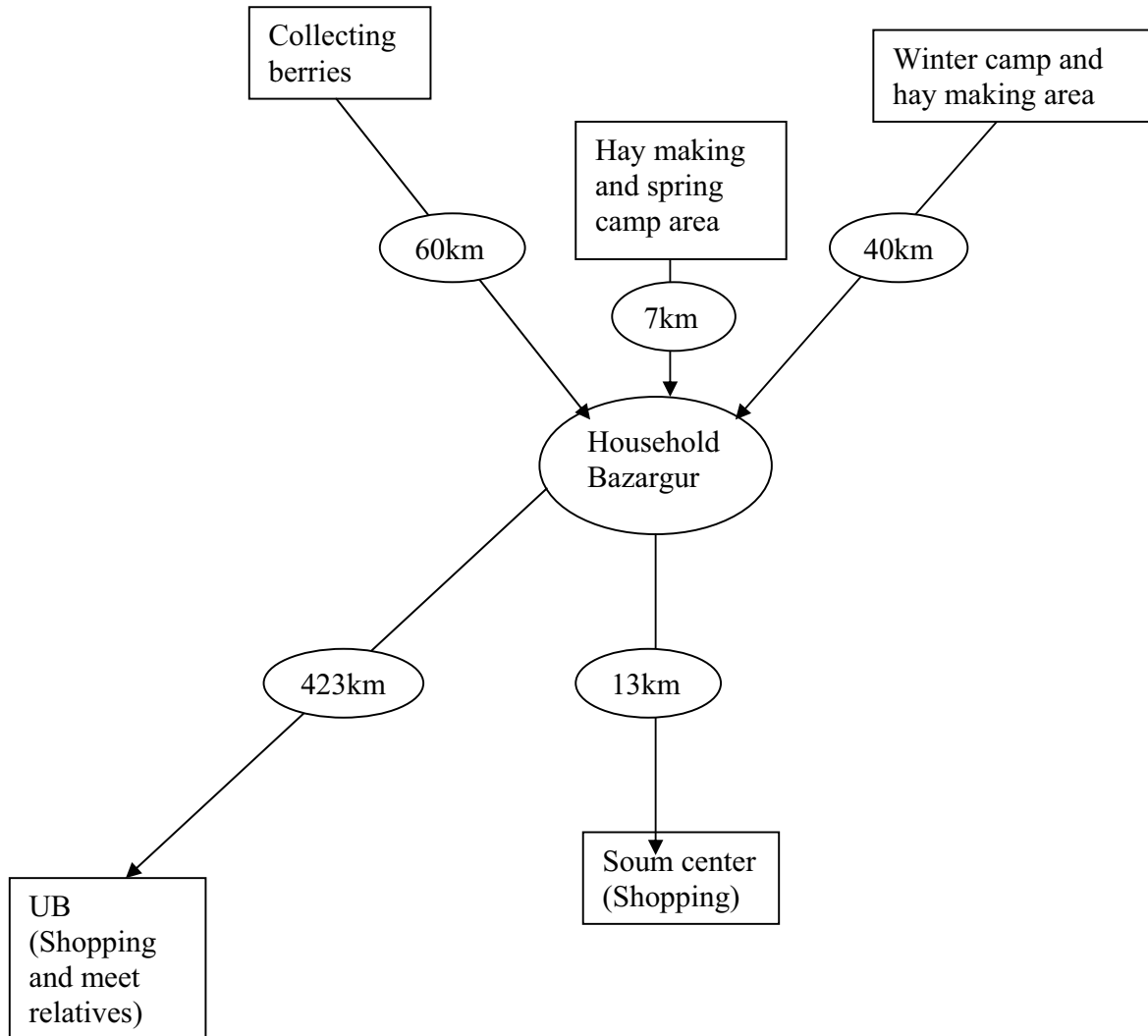


Figure 9. Natural Resources Map

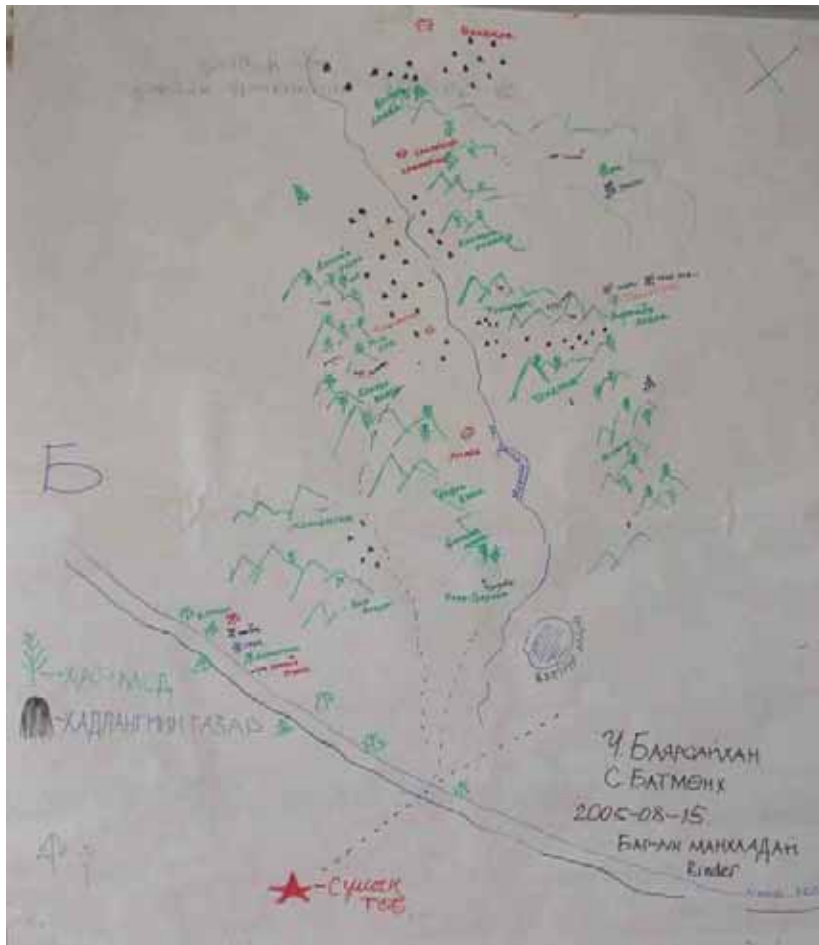


Figure 10: Social Map

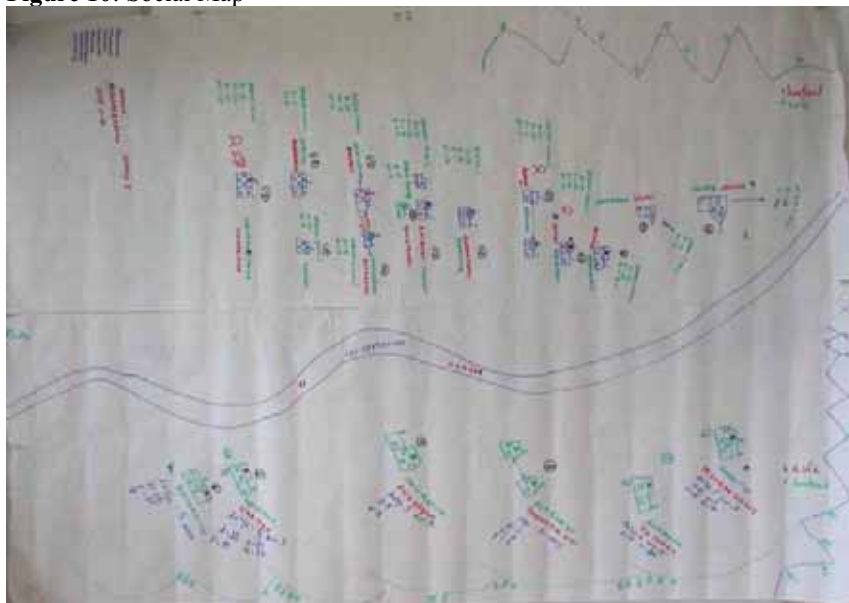
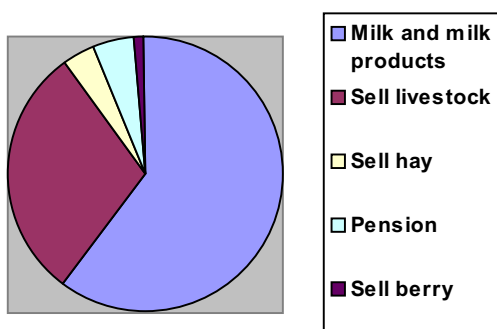


Table 12: Seasonal income of man in his 30s

1	2	3	4	5	6	7	8	9	10	11	12
Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension	Mother pension
Sell frozen milk	Sell livestock	Sell house, house wood	Sell house, house wood		Sell cream, curds	Sell cream, curds	Sell cream, curds	Sell marmot(before the ban)	Sell hay, cream, curds	Sell fire wood	Sell frozen milk, pine nut before ban,

Figure 11: Livelihood Analysis of “lower” family. Main elements of livelihood strategy: milk products and livestock.
Income



Expenditure

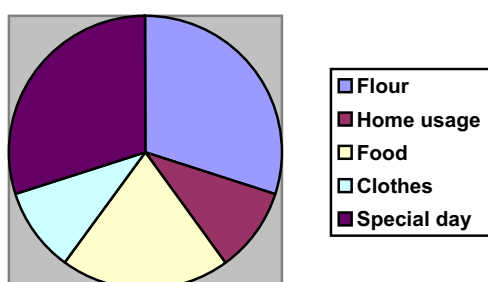
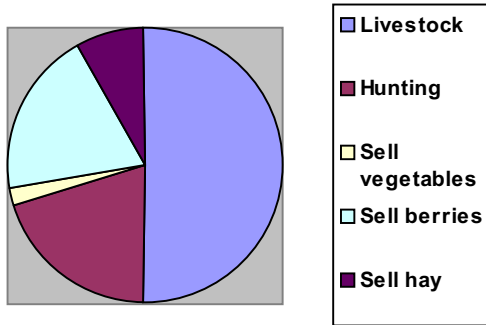


Figure 12: Livelihood Analysis of “lower” household.

Main source of income is from livestock, hunting as well as berry collection also significant for income.

Income



Expenditure

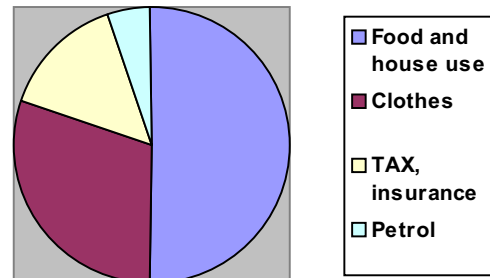
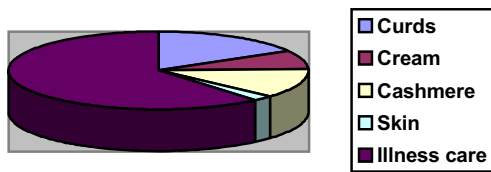
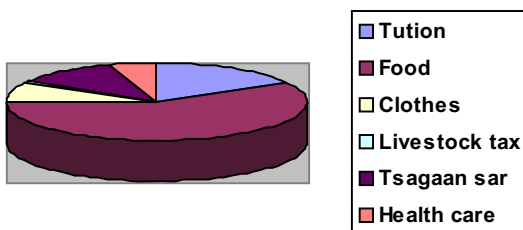


Figure 13: Livelihood analysis of average household.

Income



Expenditure



6. TESHIG SOUM

6.1 Overview

Teshig Soum is rich in natural resources, both renewable and non-renewable, and of outstanding natural beauty. The area is renowned for rivers rich with Taimen, a large salmonid fish very popular among sport fishers. While the “Taimen Conservation Fund” project is assisting with protection of the species, there are reasons for concern about the sustainability of the fish population in the face of heavy pressure through legal and illegal fishing. Other grave environmental threats stem from the use of mercury by gold mining operations, other illegal taking of wildlife including species listed in the Mongolian Red book and CITES appendix such as moose and Great Bustard, for selling as well as local consumption. Timber forest resources are used by one company, the Mongolian Railway Company who has obtained permission in the year 2004 to log 10.000 cubic meters annually. The legal limits allocated to the soum for household use amount to about the same timber volume. Threehundred cubic meters are permitted for construction purposes and 8.000 cubic meters for firewood. The allocation for construction suffices only for 15 family houses of 4x5 meters, while approximately 80 households per year submit a request to build a home.

The larger scale logging by the Railway Company generates no benefits to the soum as fees paid for resource use are paid to the Aimag. Of the 54 Mio. MNT that the company pays to the Aimag for logging, 27 are for the portion logged in Teshig Soum. The company is obliged to rehabilitate 300 ha of logged area, but has so far claimed to be rehabilitating forest in Selenge Aimag instead. Cost for logging permits are currently 2.200 MNT for 1 cubic meter of firewood (formerly 720 MNT). For construction logs, permit costs per cubic meter vary depending on log diameter (see table 1).

Table 1: Costs of logging permits for 1 cubic meter of wood

Used for: Log diameter:	Construction			Firewood
	>25 cm	12-24.5 cm	3.5 – 12 cm	
Cost (MNT)	9.800	8.600	6.500	2.200

Unemployment is high. Poverty is worst in the Soum Centre Bag where of 235 households 110 are poor, 60 of which are very poor.

Table 2: Reasons for poverty in Teshig Soum named by local government officers

• Loss of livestock through Dzud
• Loss of livestock through wolves
• Poverty among herders through loss of pasture through converting pasture into crop land
• Poverty among crop farmers through lack of rain, loss of crop through hailstorms, inability to repay bank loans
• Significant rise in petrol prices

The disparity among the different bags seems to be significant. In the poorest bag the richest households own 70 head of livestock, while in the richest bag the poorest household owns 70 head of livestock.

The most important livelihood strategy is livestock herding, and cream and butter are the most important products for sale. Teshig soum has a significant percentage of ethnic Buriat people known for their diligence and their skills as forest resource users (hunting, traditional log home building).

Other livelihood strategies include collection of non-timber forest products including nuts and berries. Hunting activities are carried out by locals and outsiders, targeting wild boar, fox, roe deer, bear and other wildlife including rare species. Several fish species are used for household consumption and local sale.

In the 2nd bag,, nearly 9.000 hectares of traditional pasture land were converted into cropland during the socialist time and are now used by agricultural companies. In springtime, local herding households are forced to move from traditional grazing areas to eliminate grazing in the croplands. This poses a problem for the livelihoods of the local herders community. The cultivation of agricultural land had provided 300 jobs during the socialist times, now only 30 people are employed by the companies. The companies are outside business entities that engage not only in agriculture but also tourism. One company also runs a sawmill. The companies provide low paying jobs for local people while more qualified work is performed by outsiders. Several tour companies operate hunting and fishing camps, bringing high paying clients by helicopter for Taimen fishing while hardly purchasing local products or services. The environmental inspector reported a high incidence of illegal fishing by tourists including illegal taking, and subsequently wasting, of Taimen specimens. The fine for illegal catch of Taimen is only 25.000 MNT, plus the 20.000 MNT charge for the “cost” of one Taimen. The permit to catch Taimen is obtained from the Ministry of Nature and Environment and 10 % of the paid fee should go to the soum by law. However, this percentage is not forwarded to the soum according to local government officers.

Hunting is effecting wildlife populations. Musk deer are reportedly nearly gone. The Red deer population is recovered since checks at the border were improved. The number of forest fires has also decreased markedly since then. (It is known from other areas of Mongolia as well that many forest fires were caused by antler collectors).

The soum is supposed to collect 300.000 MNT annually from fish and wildlife use to supplement the local budget. Fees for wild boar and roe deer are 5.000 MNT for one specimen, the fee for 10 fish is 700 MNT/person. Penalties for illegal taking of bear and musk deer are payment of 520.000 MNT to replace the “value” of the animal, plus a 2.5 year prison term.

Nuts and berries are mainly collected by poor people, some of who walk for 50 kilometers to reach forest areas with these resources. Collectors also come from as far as Erdenet and Ulaanbaatar. The sale price of 1 kilogram pine nuts is 800 -1.300 MNT when sold locally to traders from Erdenet, and 1.500 MNT when sold in Erdenet.

A total of 30 minerals exploration licenses have been issued by the Mining Authority in Ulaanbaatar for the territory of Teshig Soum. A gold mining operation, backed by Malaysian investments, has commenced operations, employing a crew of Chinese workers and hiring local staff for low paid work. Many of the laborers are young women who just graduated from high school.

Medicinal plants are used largely for household consumption to treat human ailments and domestic animals.

6.2 Basic information

ADMINISTRATION, DEMOGRAPHY and SOCIO-ECONOMY	
Total Population	3.521
Total number of households	845
Income unit/household member to define household category ¹	22.400 MNT
Number of rich/better-off households	approx.5
Number of average households	205
Number of poor households (including very poor)	635
Number of very poor households	230
Number of herding households	
Number of Soum centre households	235
Number of rural households	
Number of Bags	5
TERRITORY, ECOLOGY and LAND USE	
Total area	771.900 ha
Ecological zone(s)	
Area with forest cover	686.000 ha
Percentage of forest cover	80 %
Area of pasture	
Area of crop lands	
Area under formal protection (local or national protected areas)	
Forest type(s)	Larch, pine, birch, poplar, bushy plants
Biodiversity/Conservation Values	Taimen, rare wildlife
LIVESTOCK	
Total Livestock numbers	56.000
Number of horses	
Number of cattle/yak	
Number of camel	
Number of sheep	
Number of goats	
INDUSTRIES and SERVICES	
Main industries/services	Livestock husbandry, trading, gold mining, crops, tourism
Local and traditional products/crafts/services	Birch bark items

In each bag of the soum there is one organized community group named “Bul” (family). The groups formed through their own initiative or were encouraged by local government officers to form in order to receive equipment support such as small tractors as a group. Teshig Soum was included as implementation area of the IFAD Rural Poverty Reduction Programme in 2005; World Vision is also providing support.

6.3 Brief summary of findings

“There is income generated from crop farming, tourism and gold mining, but very little is going to local communities, not even through employment”.

This quote by a participant in a meeting with households of “Arbulgiin Shil-Bul illustrates the situation found in Teshig Soum.

¹ <60 % of this/household member defines “very poor”

It appears that monetary benefits from forest and other natural resources with which this area is naturally endowed are predominantly reaped by outsiders, such as companies from Ulaanbaatar and foreign corporations, not by local communities, and that taxes, fees and fines resulting from legal and illegal resource utilization predominantly go to provincial and central government bodies, not to the local government.

The main sources of income for local households with sufficient livestock are from cashmere, cream and butter. For poor households, non-timber forest resources play a more significant role. However, lack of transportation means make access to forest areas with non-timber forest products such as nuts and berries.

Participatory analysis showed that Soum centre people use a larger number of natural resources, and possibly larger volumes of natural resources, including illegal taking of wildlife. This finding was confirmed by the Environmental Inspector. Rural households generate more income from livestock and depend less on other natural resources than rural centre households with no or few livestock.

As in other soums visited for this study, local communities are very concerned about the issuance of licenses to outsiders and foreigners, and they fear to lose access to their traditional grazing lands and locally managed and protected areas. In this soum, 30 licenses have been issued to outside entities.

In rural areas with a high percentage of Buriat people, traditional crafts in woodworking and carpentry are very much alive. Therefore household use of timber resources is important, while private trade in timber is very limited due to the remoteness of the Soum. Trade in wildlife and wildlife parts plays a role in income generation.

Both in the Soum centre and in rural areas, families live in log houses, and gers are rarely used. The average household has 4 seasonal homes in the respective summer, autumn, winter and spring grazing areas, and even poor households may own several log cabins. Groups of households move together to the seasonal camps, and houses are in relative proximity to each other.

6.4 Analysis

The field study team worked with groups of local households and government representatives in 3 rural areas (Arbulgiin Shil, Burgast and Tavn) and in the Soum centre:

Arbulgiin Shil area

“Poverty and the Loss of Access to Pasture Land”

At the time of the study, 11 households working together as a “Bul” (family), dwell in log houses in the small settlement of their winter area. The summer camp can be seen down in the valley in several kilometers distance. During the socialist time, nearly 9,000 hectares of pasture land in this area were converted into crop land. The Soum environmental inspector, and local people during the meeting, quote this as a significant contributor to poverty among local households. In springtime, households are forced to move away to prevent damage to the crops by livestock. The crop farming undertaken by companies provides employment only to very few people, and only seasonal.

Households in Arbulgiin Shil area facing the typical problems of remote areas far from markets. Selling prices for local products are low, while prices to buy goods brought in from outside are very high. Traders buy wildlife and wildlife parts when they conduct other business in the area but appear not to order certain species or specifically promote wildlife poaching and trading. The area still has a healthy population of bears. Local people use fish, and medicinal plants.

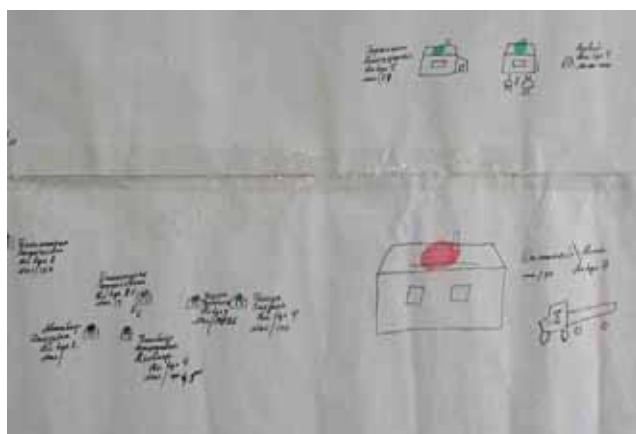
A group discussion was held with representatives of all local households, represented throughout the day by 9 women and 6 men. With focus groups consisting of representatives from different well-being groups as defined through social mapping by participants, natural resource use, livelihood strategies, seasonal workloads, mobility and institutions relevant for local livelihoods, and seasonal changes in income and expenditures were discussed.

Table 1: Well-being groups and criteria defined by local women of Arbulgiin Shil

Well-being Group	Local Criteria
Better off	<ul style="list-style-type: none"> • Few family members • Vehicle / Motorbike • Solar Panel • A family member gets pension or salary • Number of livestock more than 80
Poor	<ul style="list-style-type: none"> • More family members • No family member is employed • Number of livestock is less than 80
Very poor	<ul style="list-style-type: none"> • No livestock or no more than 10

The criteria were defined by an all female group of 11 participants. “Better-off” is defined by and for this local group of households; it rather corresponds to “average” when compared to rural categories countrywide.

Figure 1: Social Map of Arbulgiin Shil area households



With individuals from different well-being categories, household livelihood strategy elements were discussed and recorded in detail, and key informants provided insights into local use of medicinal plants, and on changes over time in resource abundance and use. In a final plenary meeting, benefits to local households from natural resources, barriers to realizing benefits,

enabling factors to promote benefits and steps necessary to improve benefiting while using resources sustainably were discussed.

Figure 2: Natural Resource Map of Arbulgiin Shil area.



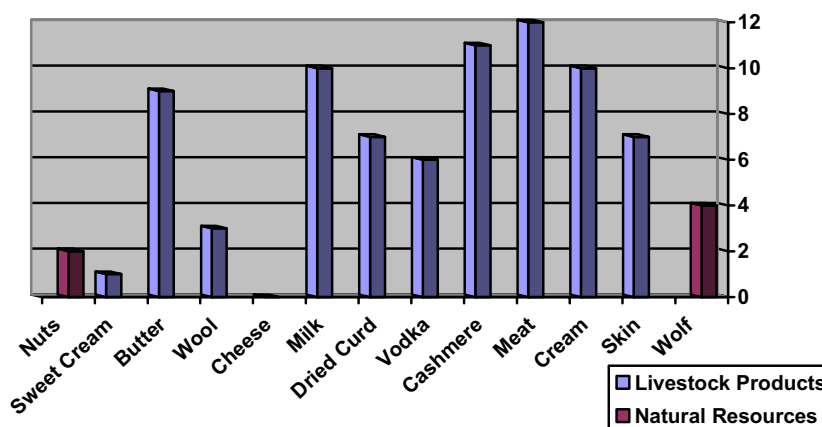
Table 2: Use of natural resources and livestock products for local livelihoods in Arbulgiin Shil area.

	Food	Fire wood	House	Selling	Medicine	Shelter	Forage	Hh use Decoration
Hay							5	
Black current	1							
Arenaria capillaris					1			
Thymus asiaticus					1			
Blue berry	1							
Pine nuts	1			1				
Fox								1
Lynx								1
Wolf				2				
Prickly rose					1			
Dianthus superbus					1			
Ribes diacantia					2			
Daurian Partridge	1							
Birch					1			2
Cocalia hastata					1			
Artemisia frigida					1			
Red current	1							
Straw berry	1							
Cranberry	1				1			
Larch		4	2			2		
Orostachys malacophylla					1			
Crataegus dahurica	1							
Galium boreale					1			
Sogoon sav					1			
Malus baccata	1				1			

White mushroom					1			
Onion sp.	1							
Allium schoenoprasum (Onion sp.)	1							
Wild onion	1							
Artemisia xerophytica					2			
Onion sp. Mangir	1							
Livestock skin				3				
Yogurt	2							
Cream	3			2				
Meat	2			3				
Cashmere				3				
Traditional vodka	1			1	1			
Dried curd	2			2				
Milk	3			2				
Cheese	1			1				
Wool				3				
Butter	2			3				
Sweat cream	1			1				

Prepared by local men: Scoring 1- 5

Figure 3: The relative significance of livestock products and natural resources as income sources. Only 2 natural resources were named as important for income: Wolf and Pine Nuts (additional income from poaching may be understated).



When the thirteen natural resources and livestock products listed for income were ranked against each other (in pairwise ranking each resource is compared against all others and for each pair the more significant one is selected) meat and cashmere were ranked highest, followed by other livestock products. Wolf and pine nuts were rank seven and 9 respectively (table 7).

Table 3: Ranking for significance as income source of natural resources and livestock products

Resource	Meat	Cashmere	Cream	Milk	Butter	Dried Curd	Skin	Vodka	Wolf	Wool	Pine Nuts	Sweet Cream	Cheese
Rank	1	2	3		4	5		6	7	8	9	10	11
Score	12	11	10		9	7		6	4	3	2	1	0*

*Cheese was first listed as relevant for income, but then never defined as more significant than any other resource it was compared with.

Table 4: Local selling prices for livestock products and natural resources (according to local men)

Resource/Product	Unit	Price (MNT)
Pine Nuts	1 kg	800- 1000
Butter	1 kg	1000 - 1200
Wool	1 kg	150 - 200
Milk	1 liter	250
Dried Curd	1 kg	500
Traditional Vodka	1 liter	500
Cashmere	1 kg	25.000
Large Cattle	1	500.000
4 year old cattle	1	150.000
3 year old cattle (?)	1	180.000
Cow	1	200.000
Horse	1	150.000- 180.000
Young Sheep	1	25.000 – 30.000
Ram (sheep)	1	50.000 – 60.000
Ewe (sheep)	1	40.000
Buck (male goat)	1	25.000
Doe (female goat)	1	15.000
Cream	1 kg	1000
Sheep Skin	1	2000
Goat skin	1	8000 - 9000
Cow skin	1	14.000 – 15.000
Wolf, complete	1	40.000

A group of men discussed changes in natural resources such as population sizes of wildlife species, abundance of plants and berries, and amount of livestock products produced. Against these changes and trends, the quality of local livelihoods and the number of poor households was discussed.

Visualization of Changes in Occurrence/Abundance of Natural Resources and Livestock Products, for decade periods since 1970, and expectation of the situation in the year 2010 were discussed and visualized, through scoring from 1-10, by a group of men from different well-being groups. The production of dairy products has increased, while the abundance of almost all natural

resources has experienced a sharp decline after 1990, a picture that mirrors findings from previous study sites, and a situation characterizing the situation countrywide. Larch and birch were thought by participants to have declined by 50 % after 2000. Pinenut decline by nearly 90 % was dated already for the decade before 1990. The only wildlife species described as not declining is wolf.

While livelihoods improved initially after 1990, they deteriorated significantly after 2000, and participants of the discussion group felt that they will continue to do so and even drop to levels 50 % below today's level. Accordingly, the number of poor households is expected to have further increased by 2010, to twice the number of the year 2000. The reason for the post-2000 deterioration was seen in inflation of prices for goods while local products and resources generate little income by comparison.

Table 5: Changes and Trends in Natural Resource Occurrence and Livestock Product production since 1970, and expectation until 2010. Discussed by local men, and scored 1-10.

Resources	1970-1980	1980-1990	1990-2000	2000-2005	2010
Hay	10	6	4	3	2
Black current	9	3	3	3	3
Turgen tsagaan	10	10	10	10	10
Thymus asiaticus	10	10	10	10	10
Blue berry	5	5	4	3	4
Pinenuts	10	1	1	5	3
Fox	6	5	1	3	4
Lynx	4	2	1	1	1
Wolf	10	10	10	10	10
Prickly rose	10	10	10	10	10
Sogoon suman	8	8	6	5	5
Ribes diacantia	10	10	10	10	10
Daurian Partridge	1	1	2	3	6
Birch	10	10	10	5	6
Cocalia hastata	10	10	10	10	10
Artemisia frigida	8	8	8	8	8
Red current	5	5	6	4	5
Straw berry	6	5	5	4	4
Cranberry	10	10	8	8	8
Larch	10	10	10	5	10
Dumberee	2	2	2	2	2
Crataegus dahurica	5	5	5	5	5
Shudag	10	8	8	5	5
Sogoon sav	8	8	8	4	4
Malus baccata	5	5	5	2	3
White mushroom	10	8	6	1	1
Onion sp. haliar	10	10	10	10	10
Onion sp. khunkheel	10	10	10	10	10
Wild onion	2	2	2	2	2
Livestock skin	10	10	6	4	2
Onion sp. Mangir	10	10	10	10	10
Artemisia xerophctica	10	10	10	10	10
Yogurt	1	2	6	6	6
Cream	1	2	4	6	8
Meat	5	5	8	8	10

Rural livelihoods and access to forest resources in Mongolia

Cashmere	1	2	6	8	8
Mongolian vodka	1	2	6	8	10
Dried curt	1	3	4	6	6
	1970 – 1980	1980 – 1990	1990 – 2000	2000 – 2005	2010
Local Livelihoods	6	6	7	4	2
# of poor Households	0	0	4	6	8
Milk	1	2	6	8	8
Cheese	1	1	3	4	5
Wool	1	1	2	3	3
Butter	1	1	2	3	4
Sweat cream	2	2	2	2	2

Table 6: Changes in Local Livelihoods and Number of Poor Households since 1970, and expectations for 2010.

While tables 5 and 6 reflect only an approximate estimate of use and decline of resources over time and of the poverty profile of the local community, they do depict the general picture of a rapid decline in natural resources while poverty is exacerbated. In figure 3, a number of natural resources that are used for livelihoods and income generation, are depicted. In figure 4, the perceived increase in livestock products is shown. It coincides with a perceived increase in poverty. Participants explained this with inflation of consumer goods while sales prices for local products, and profits, remain low due to large distances, especially with rising fuel costs.

Figure 4: Changes and Trends in Natural Resources (declining) and Number of Poor Households (rising) from 1970 to 2005. Based on group discussion in Arbulgiin Shil, 2nd Bag, Teshig Soum, 21.12.2005

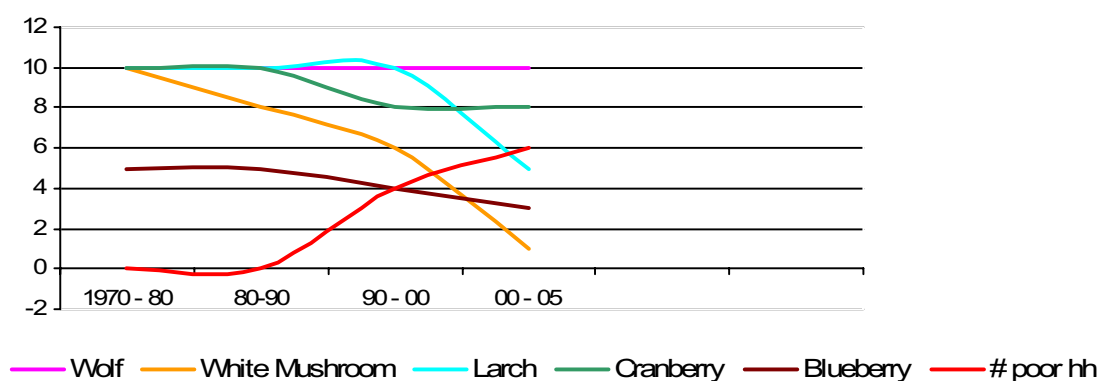
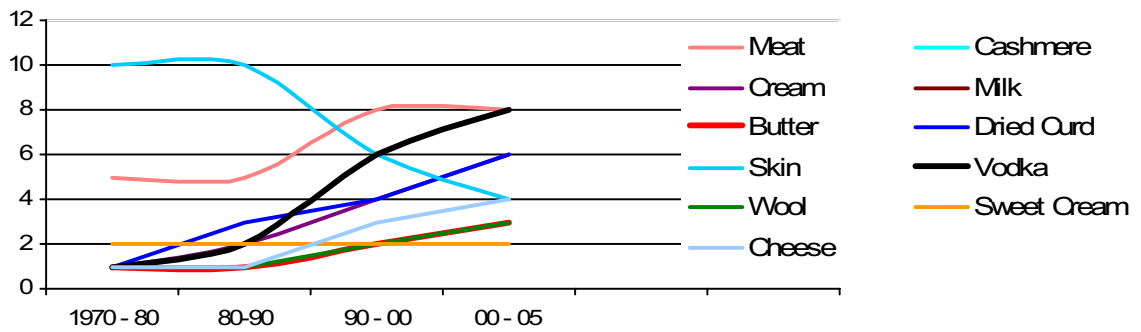


Figure 5: Changes and Trends in Production/Sale of Livestock Products since 1970



The estimated rise in Vodka, Milk and Cashmere production is scored exactly the same, therefore line for cashmere is masked, (black line is for vodka, milk and cashmere). The same goes for butter and wool (green, and red line under it). The only product declining in production/sale is skin.

Figure 6: Institutions relevant to local households, discussed and visualized by representatives of “better-off” households.

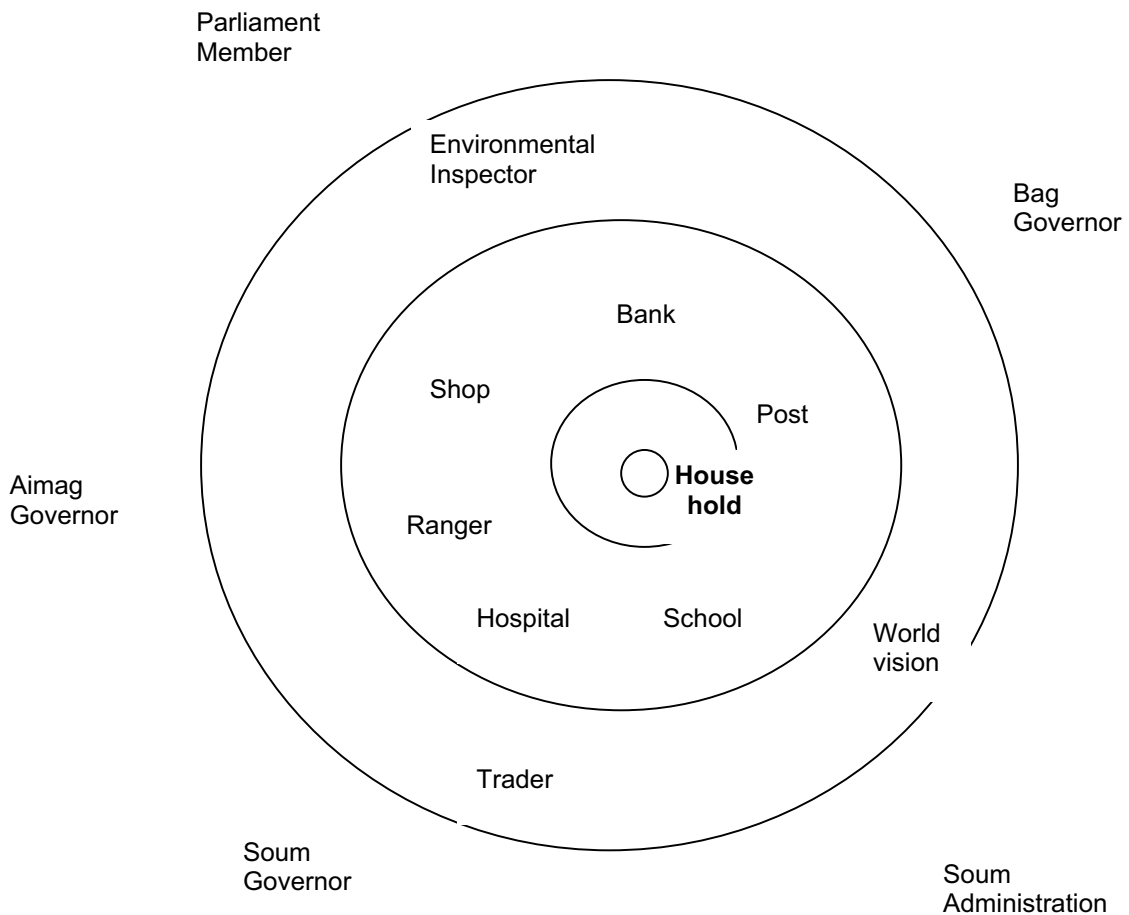
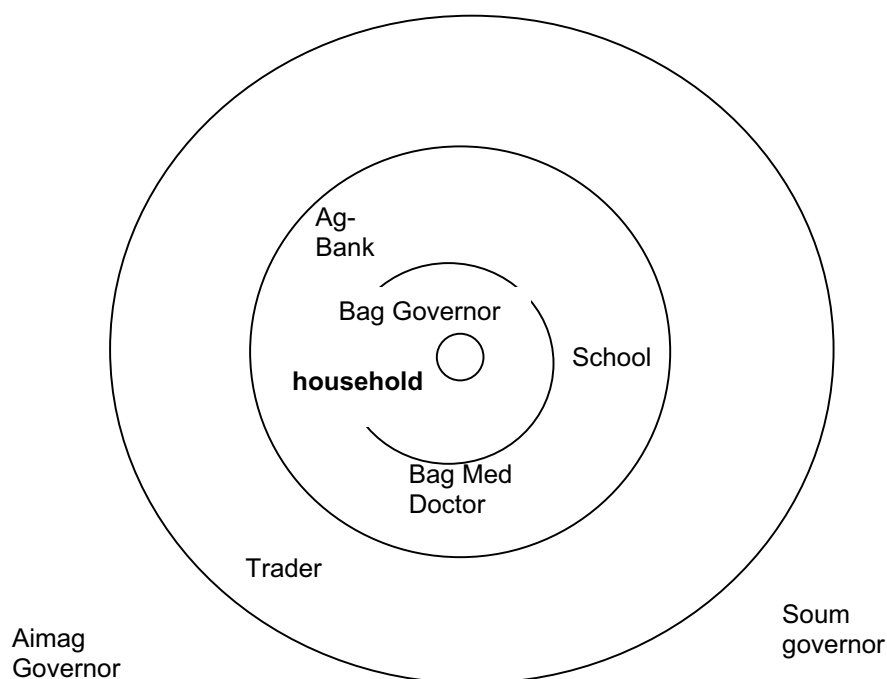


Figure 7: Institutions and their relevance (expressed as distance from Household in the centre of diagram) to poor households.



Both well-being groups placed highest relevance on school, hospital/bag doctor, bank (Ag-Bank) and the World Vision Project as institutions. The group of poor households placed the bag governor above these and in fact at the highest relevance, while the better-off group placed the bag governor, together with soum and aimag government, and the local member of parliament at the lowest rank of relevance. The poor group had the same ranking for Soum and Aimag government, and did not mention the member of parliament.

Table 13: Institutions and their relevance as perceived by representatives of local households. (Discussed in separate groups of poor and better-off households.)

	Poor Households	Better-off Households
1.	<ul style="list-style-type: none"> • Bag Governor 	
2.	<ul style="list-style-type: none"> • School • Bag Doctor, • Agricultural Bank 	<ul style="list-style-type: none"> • School • Hospital • Ranger • Shop • Bank • Post
3.	<ul style="list-style-type: none"> • Trader, • Veterinarian • Environmental Inspector • Soum Shop • World Vision Project 	<ul style="list-style-type: none"> • Trader • Environmental Inspector • World Vision Project
4.	<ul style="list-style-type: none"> • Aimag Government • Soum Governor 	<ul style="list-style-type: none"> • Bag Governor • Soum Government • Soum Administration • Aimag Government • Member of Parliament

Mobility of poor and better-off households was found to be different, with better-off households going to collect berries. Lack of means of transportation and ability to pay for fuel was mentioned also otherwise as an obstacle for poor and very poor households to access berries. Otherwise, few differences were noted with regard to distances traveled to reach different resources or services. The little difference can probably also be attributed to the fact that the household categories distinguished here by local criteria are very detailed and the households are not very different in income and well-being. Important services, like medical care, are far and too expensive to access for households in this area. Long distances also worsen the situation of prices, low when selling products and high when buying goods.

Figure 8: Mobility map, better-off household

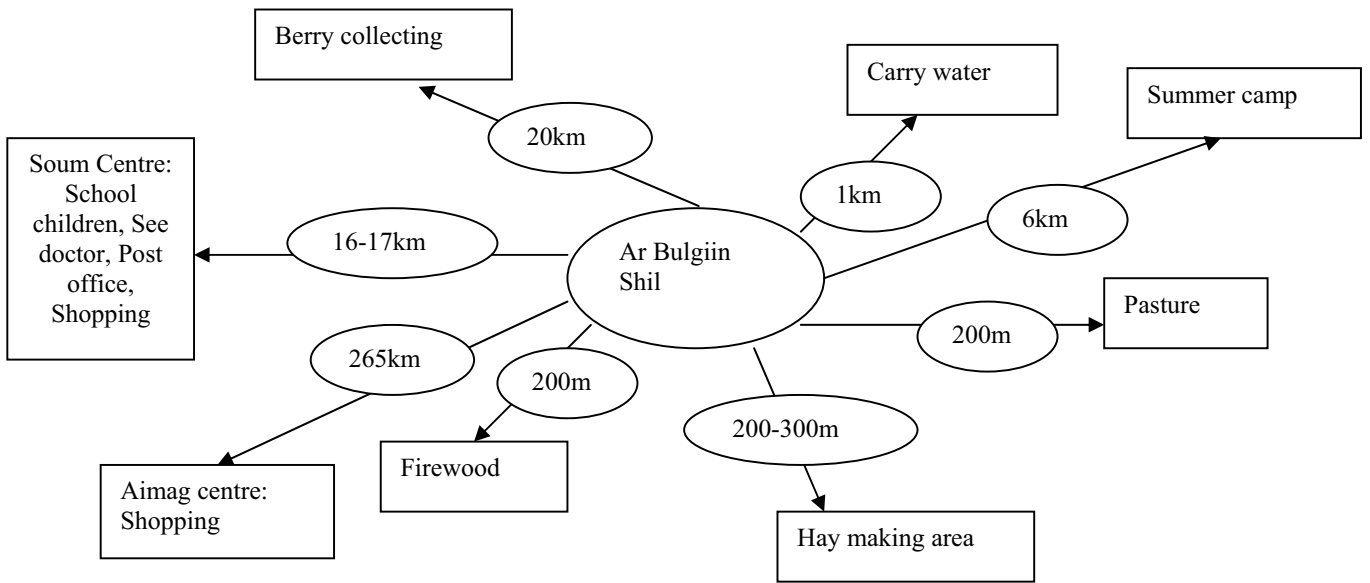


Figure 9: Mobility Map, Poor Household.

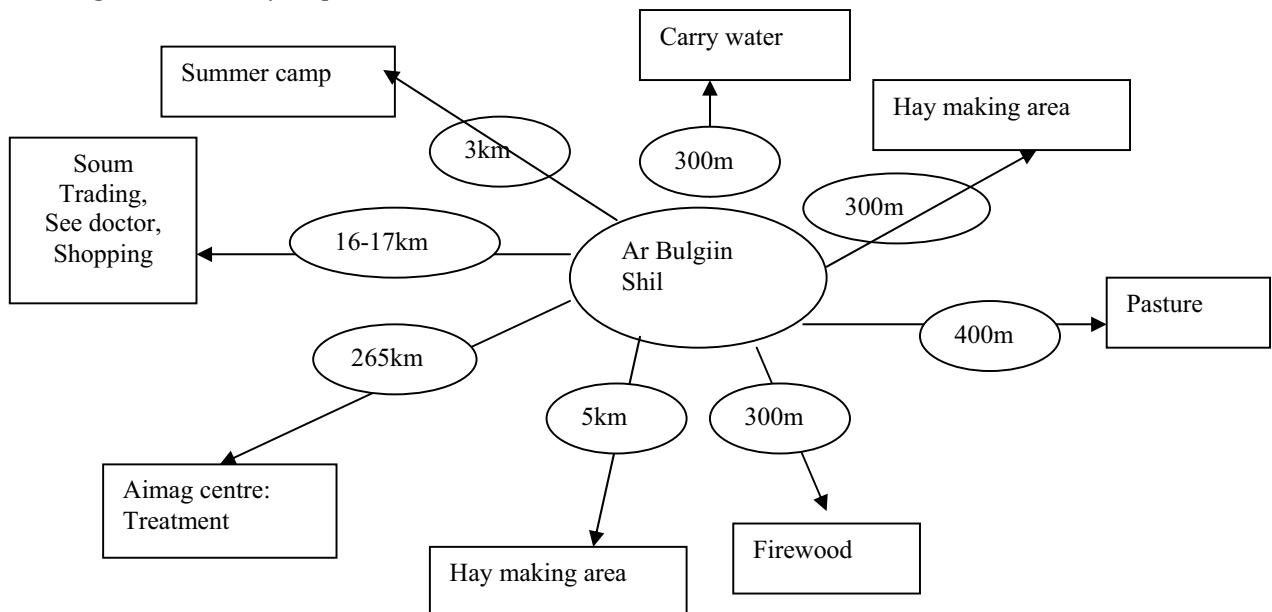


Table 8: Seasonal Workload of Men in Arbuljiin Shil area. Lower Row: Scoring 1-10

JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
Herding livestock, Feeding livestock, Fixing livestock fence	Herding livestock, Feeding livestock, Fixing livestock fence, Preparing for Tsagaan sar	Herding livestock, Feeding livestock, Fixing livestock fence, Livestock give birth, Celebrate womens Day	Herding livestock, Feeding livestock, Fixing livestock fence, Combining cashmere	Herding livestock, Feeding livestock, Fixing livestock fence, Combining cashmere, Clean fences, Cow give birth, cut livestock droppings	Move to summer place, prepare Naadam and horse racing, Grow wheat, Herding livestock	Celebrate Naadam, visiting families, Herding livestock	Hay making, Prepare fodder, collecting berries, and pine nuts, harvest wheat, Herding livestock, collecting medicinal plants	Hay making, Prepare fodder, collecting berries, and pine nuts, harvest wheat, Herding livestock, collecting medicinal plants	Move to winter place, herding livestock	Prepare winter food, herding livestock	Prepare winter food, herding livestock
8	8	10	10	10	7	6	10	10	10	9	10

Table 9: Seasonal Workload of Women, done by different well-being groups.

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Well-being Group: "Better off"											
Prepare "Tsagaan sar", Sew deel, Cleaning ger,	Home work, Herding Sheep	Receive young livestock, Combining cashm. Feed weak livestock	10	8	8	5	6	6	8	6	6
			Receive young livestock, Combining cashm., Dung cleaning	Clean livestock shelter, Move to spring camp, Herd sheep	Process Milk, Produce Milk products, Shear Sheep wool	Process milk, Sew deel for Naadam	Process Milk, Produce milk products, Hay making	Process Milk, Produce milk products, Hay making	Move, Cleaning shelters		Sewing, Feed livestock, Transport water and ice
Well-being Group: "Poor"											
7	3	10	5	3	3	4	9	9	3	3	3
Sewing deel, clean animal shelter, milk cows, Feed animals, prepare fire wood	Prepare for tsagaan sar, prepare fire wood, milk cows, feed animal	Clean animal shelter, feed animals, receive new born animals, herding sheep	Milk cows, feed animals, saw fire wood, water animals, comb goats	Milk cows, clean home, process dairy product, saw fire wood, herding animal	Milk cows, process milk products, saw fire wood	Milk cows, process milk products, Saw fire wood, herding animal, 8	Milk cows, make product, prepare cream, prepare sending school children, prepare hay making	Milk cows, make dairy products, saw fire wood, prepare cream	Milk cows, saw fire wood, prepare cream,	Prepare winter food, Milk cows, saw fire wood, prepare cream, feed animal	Milk cows, clean animal shelter, saw fire wood, get water, animals

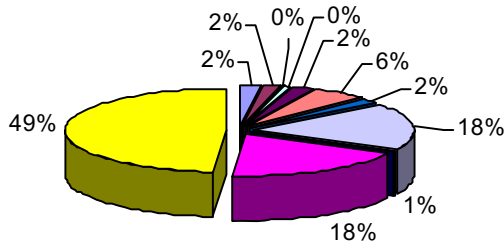
Table 10: Seasonal Income and Expenditure, of Poor and Very Poor Households.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
No income	No income	No income	Selling Cashmere	No income	Selling wool	Selling Butter, cream, Aaruul	Selling Butter, cream, Aaruul Berries	Selling pine nuts	No income	Selling milk, Sour milk	Selling milk, Sour milk, Animal skin
0	0	0	10	0	3	3	3	2	0	5	8
Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice	Daily: Flour, sugar, tea, salt, rice
2	8	2	2	2	4	6	2	2	2	2	2

Table 11: Seasonal Income and Expenditure, of Better-off Households.

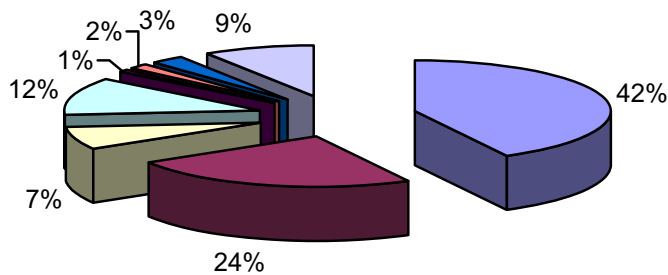
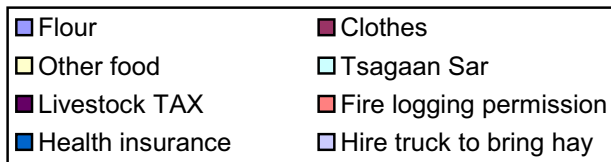
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0	0	0	10	0	3	4	4	0	2	4	7
			Cashmere		Sheep wool	Butter, Mixed cream, Dried curd	berry's Most for hh use		Sell Sheep goat	Skin	Salary
			200.000 - 300.000	10.000 - 20.000	10.000 - 20.000	10.000 - 15.000	5,000 - 10,000/kg		Appr. 60,000	30,000 - 40,000	
10	1	3	3	1	1	4	4	1	1	1	1
Tsagaan sar	Flower, rice	Women's day	Clothes, every day consumption	Flower, rice	Flower, rice	Naadam	Prepare School	consumption (flower, rice)	consumption (flower, rice)	consumption (flower, rice)	consumption (flower, rice) New Year Celeb.
100,000-300,000 also taking credit	Monthly 10,000 – 20,000	5,000 – 10,000	30,000 - 40,000	10,00020,000	10,000 - 20,000	20,000 - 50,000	30,000 - 40,000	10,000 - 20,000	10,000 - 20,000	10,000 - 20,000	10,000-20,000

Figure 10. Example of “better off” household
Income



Type of Income	Amount (MNT)
Cashmere	148.000
Wool	6.000
Meat	155.000
Pension	408.000
Selling horse skin	18.000
Selling cow skin	15.000
Sheep skin	2.500
Selling milk	3.000
Curd	20.000
Butter	48.000
Dried curd	15.000
TOTAL	835.500

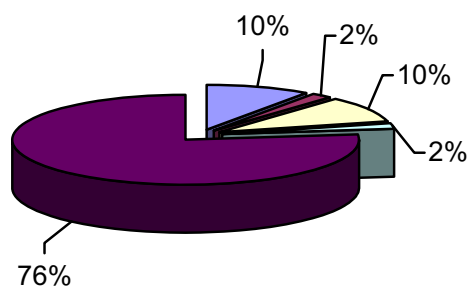
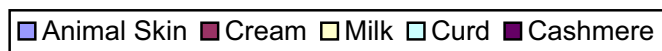
Expenditure



Type of Expenditure	Amount (MNT)
Flour 22 sack x 16000	352000
Tea 24 pcs x 500	14000
Salt 36 kg x 250	9000
Other Food	
Candle 60 pcs x 600	36000
Matches 24 big box x 100	2400
Clothes	200.000
Tsagaan Sar	100.000
Livestock Tax	5000
Logging permission for fire	14400
Health Insurance	24000
Hire truck to bring hay	76000
TOTAL	480.800

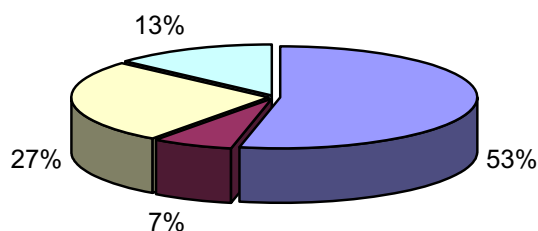
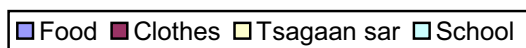
Figure 11. Example of “poor” household

Income



Type of Income	Amount (MNT)
Cow skin, 2 @ 15.000 MNT	30.000
Cream, 10 ltrs @ 600	6.000
Milk 300	30.000
Curd, 20 ltrs @ 300	6.000
Cashmere, 8 kg (from 30 goats) @ 30.000	240.000
Some support from World Vision Project	
TOTAL	312.000

Expenditure



Type of Expenditure	Amount (MNT)
Food (flour, tea, sugar, salt, rice)	400.000
Clothes	50.000
Milk	30.000
Tsagaan sar	200.000
School supplies	100.000
TOTAL	750.000

Livelihood Analyses shown here concur with findings from other study sites in terms of a greater diversity of income sources and livelihood strategies of poor households. The above diagram shows income from berries and pine nuts for a poor household, while the better-off household has listed only livestock products for income. However, in Teshig Soum this may not apply generally to all poor households as high fuel prices and lack of transportation means were mentioned as a problem for households, especially the poor, to reach areas with nuts and berries. Also, the data collected on household income and expenditure in individual interviews in Teshig Soum were found to possibly contain a bias, depending on gender of the interviewee. Income analysis showed that trades in livestock are the task of men, and women may not even be aware of sales of livestock by the husband. Women, on the other hand, are in charge of selling other goods, of lower value, such as dairy products.

The livelihood analyses above do not include any income from illegal taking of wildlife or other natural resources. It is likely that there is a bias as the Soum Environmental Inspector was present

during some of the discussions. The disparity between income and expenditures, in fact clearly higher annual expenditures than incomes, is also an indication that not all income sources were named in some cases.

How well do local households benefit from forest resources?

A group discussion was organized on the topic “How well do local households benefit from forest resources?”, using an “H-Form Exercise”². On a scale form 0-10, the average score of participants was 6.3. While this indicates some satisfaction about benefiting from resources, the long list of negative reasons for scoring low as compared to a short list of positive reasons for scoring high reflected a number of deficiencies in rules and regulations, laws and tenure system perceived by local residents. The conversion of pasture land into crop land was mentioned repeatedly as a problem to local livelihoods, indicative of the significance of access to seasonal pastures for households in this (semi) mobile pastoral society also in this part of the country even though it appears more “settled” due to the scarcity of ger dwellings compared to log houses.

As negative reasons, or barriers for local households to benefit from resources, participants mentioned rules and regulation for paying fees and taxes, lack of access to resources due to lack of transportation or restricted access due to private/corporate use if grazing lands, and low prices that locally sold products fetch.

Table 16: Record of “H-Form” Exercise

Group Discussion “How well do local households benefit from forest resources”	
☹ 0 _____ 5 6.3 _____ 10 ☺ group score	
Negative Reasons	Positive Reasons
Tax	Use berry’s and nuts
Logging Permit price is high	Fire wood close
Difficult to have a permit	Pasture close
No time	We use medicinal plants
Difficult to reach berry and nut collecting area	Forest is close
Difficulties with transport	We process berry’s to jam
not enough pastureland	
most pasture under crop agriculture	
shortage on pasture, because of hay making and agriculture areas	
price for berry’s cheap	
water shortage	
well broken, no well	
very remote	
no market for products	
Fuel price high	
Penalty for 1 truck log is 7, 8 Mio MNT	

² In the H-Form Exercise, participants first individually score the topic in question, on a scale from 0-10, and the average/group score is determined. Participants then note on cards why their score was not higher (negative reasons) and why it was not lower (positive reasons). All points made are briefly clarified, discussed. Lastly, participants write suggestions/solutions on how the score can be maximized, what actions are necessary to achieve the objective of a project or improve a situation.

Suggestions to increase benefits for local households from forest resources (while using resources sustainably)
Have a common understanding in Bul (group of households) and have a meeting with Soum government
Develop our own idea
We wish to have a community
Request Soum Governor to repair well
Let finance well repair from Soum budget
Develop well repair proposal to World Vision
Winter and Spring camps should be free from crop agriculture areas
Bul meeting with agriculture company
In order to increase pasture land let company's to use crop land rotationally
Let parliament member make permit price cheaper
Permit price in remote area should be cheaper
Make suggestion to determine permit price regionally to the local khural
Have a berry collecting area
Let make cheaper the transport to the Soum and Aimag
Make permit price for fire wood and logs cheaper
Participants: Dalantai, Erdenetsogt, Otgonjargal, Noovoi, Munkhbat, Odonchimeg, Bayarsaikhan, Erdenetsseg, Gansukh, Zolzaya, Undrakh, Uuganchimeg, Dangaasuren, Erdenetsseg, Ulambayar, Nyambayar, Munkhbayar, Dashdavaa, Togoo, Batmandakh, Oyunchimeg, Boldoo, Otgonjargal

Burgast area

A similar process of data gathering, analysis and discussion was used with representatives of households of the Burgast Area. The area has a high percentage of ethnic Buriat people, known for their woodworking skills in building houses and furniture.

The area is home to 15 households, they are organized in a “Bul” (family). The highest livestock number per household is 385. Compared to “Arbulgiin Shil” area, the well-being of households is higher here. Well-being was defined by participants of group discussions by the sole criteria of number of cows. The “poor” category as defined here, is better-off compared to the “poor” defined by “Arbulgiin Shil” households. Iren Bag covers a large territory of totally 155,000 hectares. Livestock products are the most important income source for both average and poor households. Livestock trade is the task of men, while processing of livestock (cow) skin is part of women's labor.

Of natural resources, berries were said by the bag governor, Mrs. Dulamtsoo, to be the most important one for income generation. Natural resource use (berries, pine nut, deer antler and wild boar) for income seems higher here compared to “Arbulgiin Shil”. Local households hunt for wild boar, squirrel and musk deer, there are 27 registered guns in the bag. Household consumption of fish is common.

Due to the remoteness of the area, reachable via a pass, transportation of logs from the area is difficult. Annual firewood consumption per household is 12 cubic meter (of larch) on average. Permits for (insufficient) supplies of 8 cubic meters cost 14,200 MNT in the rural area, and 19,200 MNT in the Soum centre.

As in other areas, local people expressed great concern about the issuance of minerals exploration licenses, a total of 30 in this soum, to outsiders and foreign companies. Costs for logging permits

were perceived to be too high and discussants felt that the harvest of fallen trees should be allowed for local household without special permission.

Figure 12. Natural Resource Map of Burgast Area

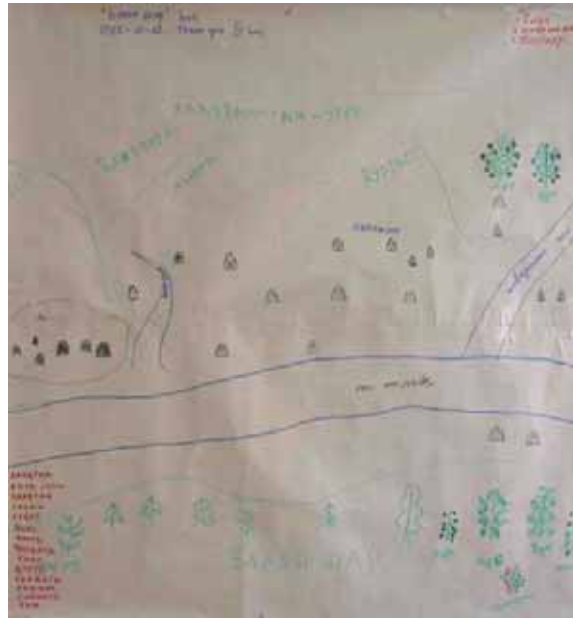


Figure 13. Social Map

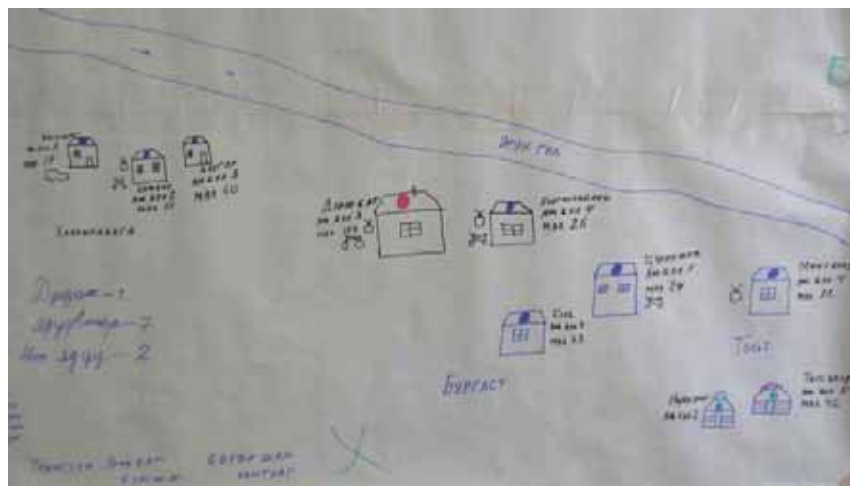


Table 12: Natural Resource use and livestock products for livelihoods, scoring by significance (1-5).

Names	Food	Medicine	Firewood	House	Furniture	Selling	Tools	Shelter	Forage
Curt	1					3			
Willow							1		
Larch			5	5				5	
Birch							3		
Pine				4	4				
Mixed cream	1					1			
Butter	5					5			
Red current	1								
Blue berry	1					1			
Dried curt	2								
Cream	5					5			
Black current	1								
Cranberry	1	1							
Meat	5					5			
Sweat cream	1								
Mushroom	1	1							
Caraway	1								
Sheep skin						2			
Strawberry	1								
Cow skin						2			
Hay									5
Pine nuts	1					1			
Horse skin						1			
Goose berry	1								
Cacalia hastata		5							
Rheum	1								
Bird cherry	1					1			
Crataegus dahurica		1							
Valeriana		1							
Thermopsis alpina		1							
Prickly rose	2								
Fermented milk	5								
Birch mushroom	1	2				3			
Yogurt	2								
Traditional vodca						3			
Roe deer	2	2							
Onion sp	1								
Wildboar	2					3			
Wolf		1				2			
Lichen		1							
Fish	2					2			

Figure 14. Significance of Natural Resources and Livestock Products for Income Generation. Determined through “pairwise ranking”- comparing each resource and products to all others

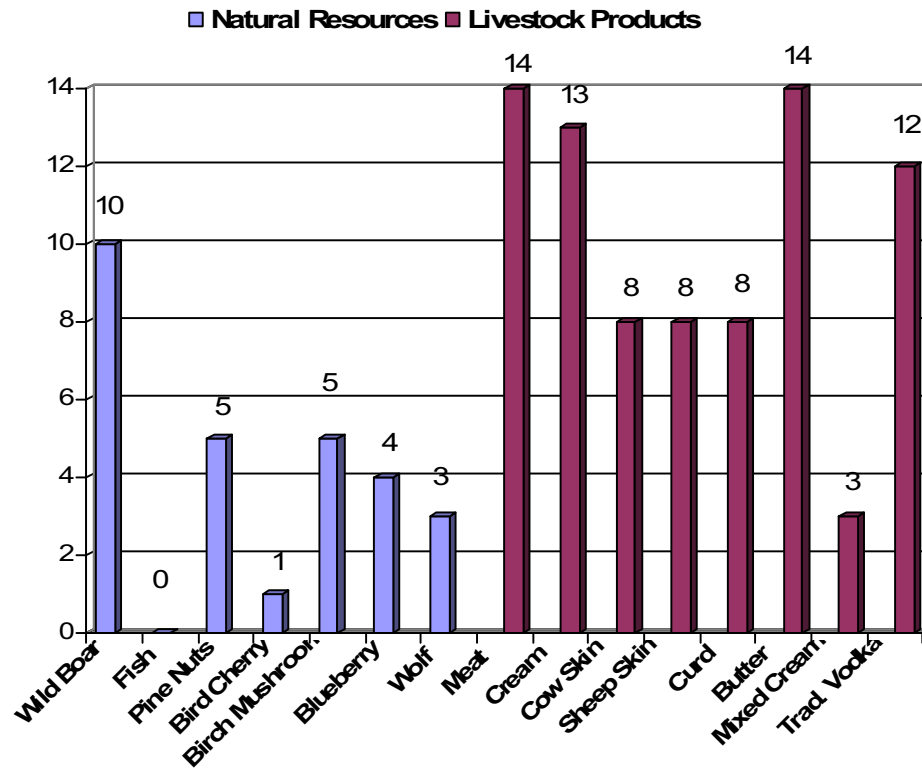
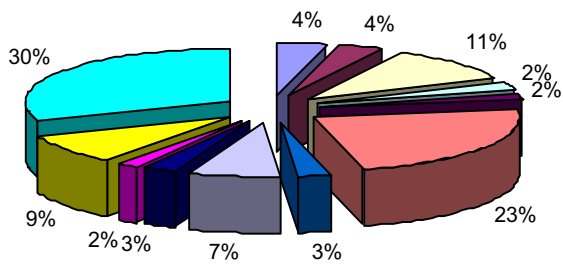
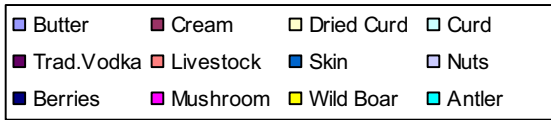


Table 13: Natural Resources and Livestock Products in Order of Significance for Income Generation of households.

Rank	1	2	3	4	4	6	7	8	9	10
Resource/ Product	Meat Butter	Cream	Traditional Vodka	Wild Boar	Cowskin Sheepskin Curd	Pine Nuts Birch Mushroom	Blue Berry	Mixed Cream Wolf	Bird Cherry	Fish
Score	14	13	12	10	8	5	4	3	1	0

Figure 15. Livelihood of “poor” household

Income



Expenditure

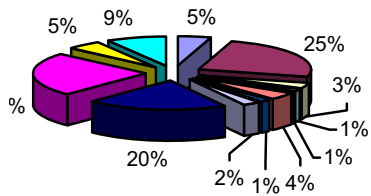
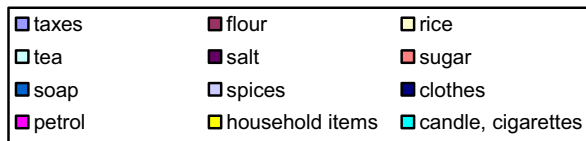
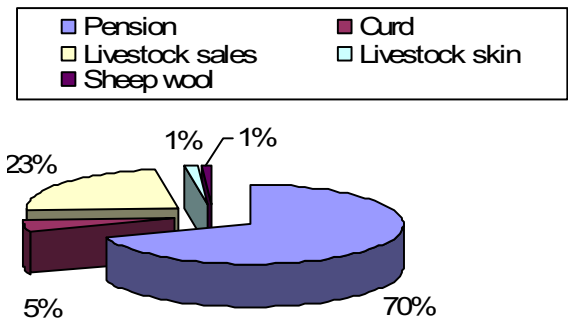


Figure 16. Livelihood of “low income” household
Income



Expenditure

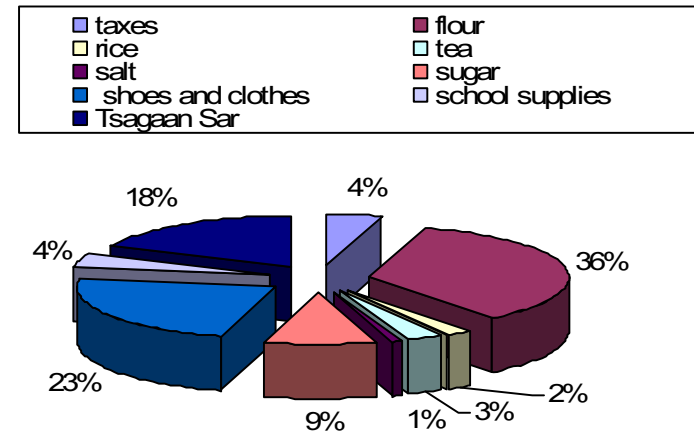
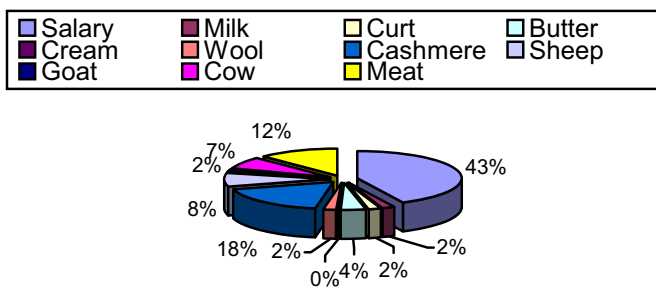
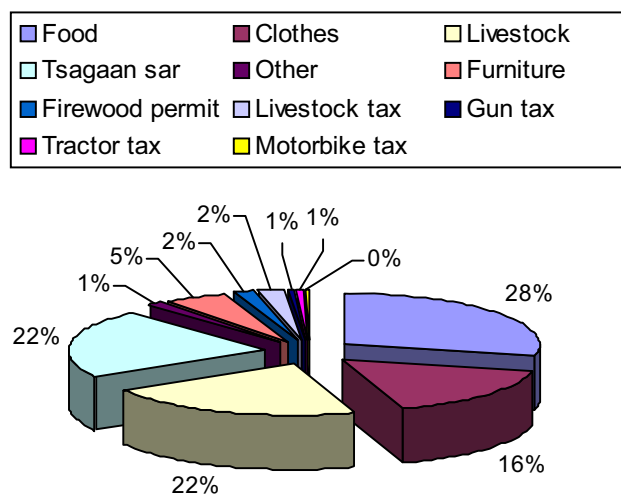


Figure 17. Livelihood of “average” household

Income



Expenditure



The livelihood analyses of households concur with findings from other study sites. The income sources of poorer households are generally more diverse, and poorer households, with less livestock, need to depend more on natural resources. In the examples shown here, the diagram for the poorest household shows the most natural resources and a significant percentage of the poor's income from non-timber forest resources, in this case antler, berries and nuts. The best off household derives the major portions of income, after the salary as bag governor, from meat and cashmere. However, in this as in other households, wildlife resources and other forest resources may play a role that has been understated in visualizations.

Table 14: Sale prices of local products and resources, compiled by local men

Resource	Unit	Price
Wild boar	1 kg	2.500 – 3.000
Pine	1 kg	1.500
Meat	1 kg	520 – 550
Bird cherry	10 kg	5.000
Birch mushroom sold locally	1 kg?	800
Birch mushroom sold in Erdenet		1.500
Blue berry	1 liter	6.000 – 8.000
Wolf	Small specimen	20.000
	Large specimen	25.000
Cream	1 kg	1.500 – 2.000
Cow skin	1 piece	25.000
Sheep skin	1 piece	800 – 1.000
Curd	1 kg	250 – 300
Mixed cream	1 kg	1.000
Mongolian vodka	1 liter	500 - 800

Seasonality of income shows the same pattern as elsewhere, with peaks of income after combing cashmere in springtime, and lowest or no income at the end of winter. This applies to different categories of households.

Local prices for selling products and resources are low, illustrated in the table below. Price rises as soon as resource are sold outside the local area, are considerable, as the example of birch mushroom shows. Sold for 800 MNT/kg in the local area, it fetches to nearly twice as much in Erdenet. Collection and sale of birch mushroom has begun only in recent years since the mushroom is said to be beneficial to treat cancer.

When discussing how local households benefit from forest resources, participants scored fairly positive in their assessment (7 on a scale from 1-10), listing current legal and illegal use practices of resources and suggesting lower fees for logging, permission to take fallen trees and the option for local households to possess forest.

Table 15: Changes in Occurrence of Natural Resources relevant to local livelihoods, scored (1-8).

Resource	1950 -60	1960 -70	1970 -80	1980 -90	1990 2000	2000 -05	2005 -10
Willow	8	8	8	8	8	8	8
Larch	8	8	8	8	8	8	8
Birch	8	8	8	8	8	8	8
Pine	8	8	5	5	3	3	2
Red current	8	8	8	8	8	8	8
Blue berry	8	8	8	8	8	8	8
Black current	6	6	6	6	6	6	6
Cranberry	8	8	8	8	8	8	8
Mushroom	8	8	8	8	8	8	8
Caraway	8	8	8	8	8	8	8
Strawberry	8	8	8	8	8	8	8
Hay	8	8	8	8	5	5	5
Pine nuts	8	8	5	5	3	3	2
Goose berry	8	8	8	8	8	8	8
Cacalia hastata	8	8	8	8	8	8	8
Rheum	8	8	8	8	8	8	8
Bird cherry	8	8	8	8	8	8	8
Crataegus dahurica	5	5	5	5	5	5	5
Valeriana	8	8	8	8	8	8	8
Thermopsis alpina	8	8	8	8	8	8	8
Prickly rose	8	8	8	8	8	8	8
Birch mushroom	8	8	8	8	7	5	5
Roe deer	8	8	8	6	6	5	5
Onion sp	8	8	8	8	8	8	8
Wild boar	6	6	8	8	8	7	6
Wolf	8	8	8	8	8	8	8
Lichen	8	8	8	8	8	8	8
Fish	8	8	8	8	7	6	6

Figure 18: Natural Resources for which a decline since 1950 was identified by discussants. Other resources were thought to be stable.

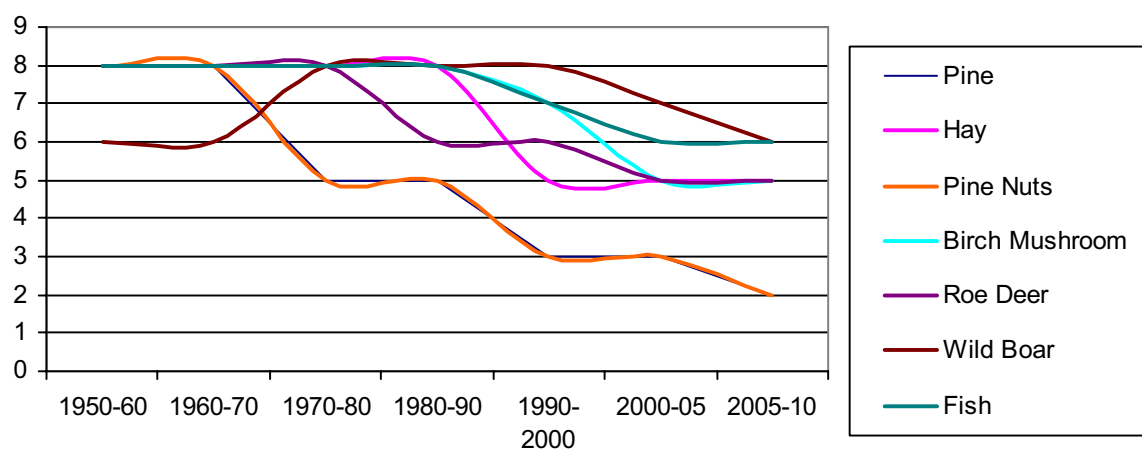


Table 15. Results of Group Discussion in Burgast area on how local households are benefiting from forest resources.

Group Discussion "How well do local households benefit from forest resources"	
☹ 0 _____ 5 _____ 7 _____ 10 ☺ group score	
Negative Reasons	Positive Reasons
Logging permission fee is high	Cutting logs for the fire
TAX is high	Build a house
No poplar and pine here, grow far away	Use water
No gun	Collect berries
Hay making time and collecting time is same, so can't collect pine nut	Water, river is near so we go fishing
	Collecting medicine plant
	Possessing land
	Collecting onions
Suggestions to increase benefits for local households from forest resources (while using resources sustainably)	
Different region of forest should have different logging permission fee, logging permission fee of our area should be low; propose to MPs	
Ministry for Nature and Environment should give permission for logging pine	
Local people should possess forest; propose to local Khural	
Larch tree price should be cheap; propose to Ministry of Nature and Environment	
Release logging permission in order to clean forest and take fallen trees from forest	
Participants: Khongorsaikhan, Bold, Sambuu, Dulamtsoo, Ankhtsetseg, Bolormaa, Munkhbold, Batzorig, Burgast area, Teshig Soum, December 22, 2005.	

Tavt area

The Tavt area is a small “settlement” surrounded by larch forests. Local households have very few livestock, and selling of livestock products is not a significant source of income. Many adults of the area are employed, part or full-time, by a gold mining company backed by Malaysian investment. The operation also employs a crew of Chinese workers.

The study team had meetings with representatives of local households discussed natural resource use, prices, household incomes and expenditures, and problems of local livelihoods.

Table 16 a) Natural Resource used by households

Forest Resources used for Livelihoods in Tavt area of Dalam Bag	
Trees	Pinewood, Birchwood, Pinenuts
Food Plants	Allium senescens
Mushrooms	White Mushroom, Birch Mushroom
Berries	Gooseberry, Bird Cherry, Black Currant, Strawberry, Red Berry, Cranberry, Blueberry
Medicinal Plants	Calium boreale, Crataegus dahurica, Prickly Rose, Ribes diacantia Burnet (Sanguisorba officinalis), Plantago major
Mammals	Red Deer, Roe Deer, Wolf, Wild Boar
Fish	Cod, Taimen, Lennok, Grayling, Pike
Birds	Partridge
Other	Water, Mineral Water

Table 16 b) Forest Resources used for Income Generation by households

Forest Resources used for Income Generation in Tavt area of Dalam Bag								
Rank	3	1	2	5	1	4	3	2
Resource	Grayling	Lennok	Pike	Blueberry	Pine Nut	Wild Boar	Birch Mushroom	Bird Cherry
Score	4	7	5	1	7	3	4	5

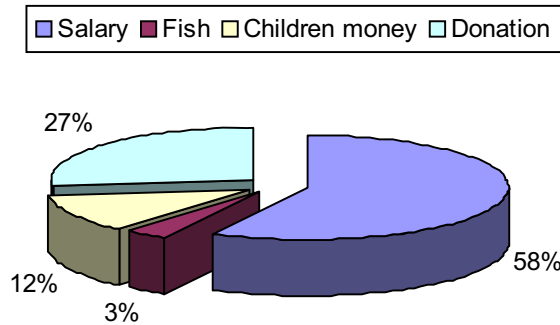
For income generation, Lennok and pine nut ranked first, followed by Pike and bird cherry, Grayling and Birch Mushroom, wild boar, and blueberry. However, this income from forest resources is here rather supplementary, and the most important natural resource for income generation among many local households here is gold, either through salaries from the gold mining company or directly through artisanal mining. Livelihood analysis show this significance of income from gold mining in this local area. Compared to the total population of the soum, only a very small percentage of households benefit.

Table 17. Prices for local resources

Resource	Unit	Price (MNT)
Wild boar	1 kg	1.500
Blue berry	10 kg	5.000
Lennok	1 small 1 large	300 500
Grayling	1 piece	300
Birch mushroom	1 kg?	700-1.000
Pine nut	1 kg	800-1.000
Bird cherry	1 kg	400 - 500

Figure 19. Livelihood of Household

Income



Expenditure

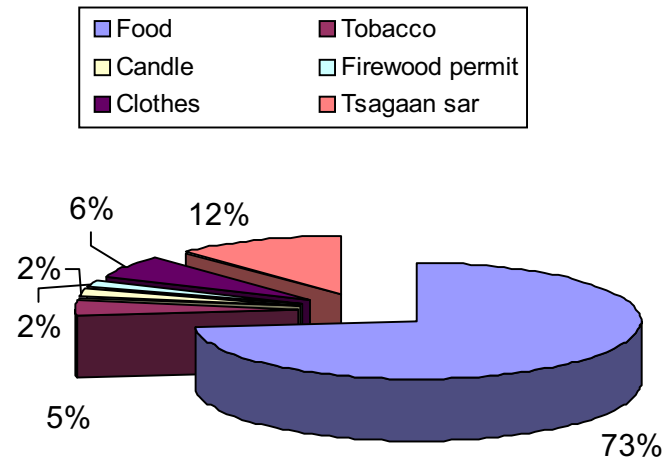
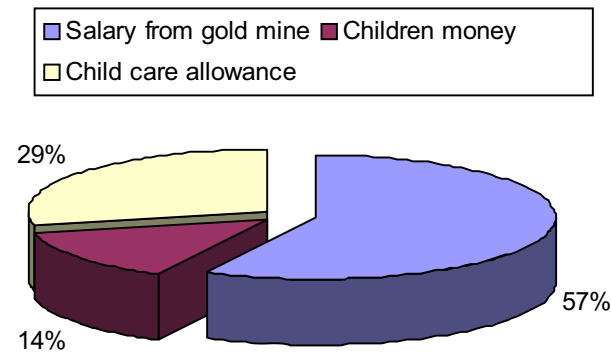
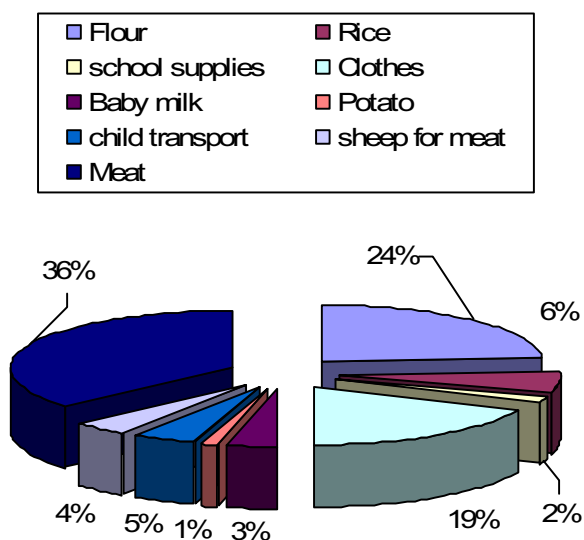


Figure 20. Livelihood of Household

Income



Expenditure



Teshig Soum Centre

Concurring with findings from other locations, more natural resources used for local livelihoods were listed by residents of the soum centre. While there may be biases in the finding due to understatement of illegal resource use in the country side and the greater openness of soum centre people to share information with outsiders, the finding probably reflects a true trend. The livestock-poor turn more to natural resource use than households that are able to generate income from livestock. In Teshig Soum centre, a picture of extensive use of wildlife, illegal and unsustainable, emerged. Protected and endangered species were mentioned as being taken for local food consumption, including moose and Great Bustard.

Table 18. Natural Resources collected or hunted in Teshig Soum, and their utilization.

Resource	Food	Medicine	Income	Construction/Household	Firewood	Remarks
Wild Onion	x		x			
Birch			x	x		Birch bark containers
Geranium Pratense		x				
Fir			x			Fir is very rare, sold as boards
Onion sp.	x		x			

Black rice	x		x			Cultivated crop, 1 ton sells for 30.000 MNT
Oats	x					cultivated
Squirrel			x			Skins sold to changers
Bear		x	x			
Red berry	x		x			
Red Fox			x			
Ulaan cuult- "red-tailed" fish	x		x			
Khadary Whitefish	x		x			
Wheat	x		x			crop
Wild onion	x		x			
Strawberry	x		x			
Cranberry	x	x	x			
Black currant	x		x			
Bird Cherry	x	x	x			
Blueberry	x		x			
Birch mushroom		x	x			Cancer treatment, high demand developed in last couple years
Wolf		x	x			
Larch			x	x	x	
Pine			x	x		
Pine Nuts	x		x			
Gold			x			Selling from small scale mining, and salaried work for company
Wild Boar	x	x	x			
Red deer	x		x			
Hay			x			
Taimen	x		x			Sold by "high position people" according to participants
Lenok	x		x			
Marmot	x	x	x			Very rare now, originally also not common
Arenaria capillaris (medicinal plant)		x				
Orostachys malacophylla (medicinal plant)		x				
Calium boreale (medicinal plant)		x				
Dianthus superbus (medicinal plant)		x				
Lilium pumilum	x	x				
Great Bustard	x	x				Listed CITES 2 nd Appendix, Mongolian Red Book, rare bird according to government order 152
White mushroom	x	x				
Crane		x				
Birch sap		x				

Case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum & Baynlig Soum

Rhodolia quadrifida (medicinal plant)	x			Treatment broken bones
Cratagus dahurica	x	x		
Ribes diacanta (medicinal plant)		x		
Onion sp.	x			Allium schoenoprasum
Mineral water		x		from several locations in the soum
Tree branches			x	
Willow			x	Ger walls
Moose	x			Listed Mongolian Red Book, rare species in Mongolia
Plantago major (medicinal plant)		x		
Water	x			
Red willow			x	
Spruce				Used as Christmas tree
Rubus arcticus	x			
Prickly Rose	x	x		
Magpie		x		Blood used for medicinal purpose
Cacalia hastata (medicinal plant)				
Onion sp.	x			
Malus baccata	x			
Roe deer	x	x		
Partridge	x	x		
Mushroom	x	x		

Table 19. Prices of Resources sold for income, scoring importance of resource for annual household income, and market connections. Scoring is on significance for annual household income generation, 1-10.

Species	Part/unit	Price (MNT)	Sold to	Score
Squirrel	skin	2.000 – 3.000	changers	1
Bear	Gall bladder	25.000 – 30.000		1
	Foot/paw	More than 10.000/pc		
Red Berry	10 liters	7.000		1
Red Fox	skin	6.000 – 7.000	changers	
Salt	40 kg	2.000	herders	2
Red tailed fish				2
Khadary Whitefish	1 piece	20	locally	2
Wheat (crop)	1 ton	180.000	Flour mill	10
Strawberry	1 liter	10.000	Locally	4
Cranberry	10 liter	10.000	Locally	4
Black currant	10 liters	8.000	Locally	4
Bird Cherry	10 liters	7.000	Locally	4
Blueberry	10 liters	8.000	Locally, passers-by	4
Birch mushroom	1 kg	> 1.000	Changers from Erdenet and Huvsgul	5
Wolf	Whole	50.000	Changers (then	5

			Ulaanbaatar, China)	
Larch	1 truck load	25.000	Soum centre people and organizations	8
Pine	1 board (4 meter)	2.000	Sawmill, or people with saw	7
Pine Nuts	1 kg	1.300	Traders from Erdenet	9
Gold	1 tsen (?grams)	30.000		9
	Bottom of small glass covered with gold dust	100.000	Changers in Erdenet	
Wild Boar	Meat of one	150.000	Locally and outsiders	3
	Liver	30.000	Locally and outsiders	
Red Deer	Uterus	50.000 – 60.000	changers	3
	Penis	>100.000	changers	
	Antlers, 1 kg	2.500 – 13.000 (depending on quality)	changers	
	Velvet, 1 kg	30.000	changers	
Hay	1 truck/tractor, approx. 3.5 ton	60.000	herders	2
Taimen	1 fish	120.000	Not sold by local/common people, but by “high position people” according to informants	1
Lenok	1 fish	30	Russia and changers	2
Marmot	Skin	4.000 – 5.000		1
Red Currant	10 liters	5.000 – 6.000	Locally	4

According to the soum centre working group participants, the significance for household income generation is the same for pine nuts as for gold. Following in rank are larch, pine, birch mushroom and wolf, berries, red deer and wild boar, salt and several fish species. Taimen was mentioned as a resource sold, but participants claimed Taimen was sold not by common people but by “people in high positions”.

Table 20. Order of Importance of Resources for annual Household Income

Rank	Resource	Score (1-10)
1	Wheat (crop)	10
2	Gold	9
	Pine Nuts	9
3	Larch	8
4	Pine	7
5	Birch Mushroom	5
	Wolf	5
6	Strawberry	4
	Cranberry	4
	Black currant	4
	Bird Cherry	4
	Blueberry	4
	Red Currant	4

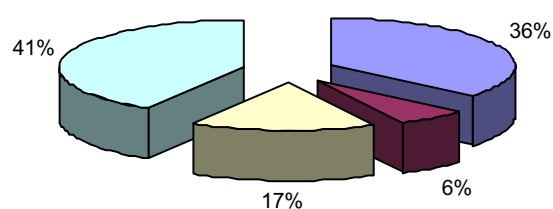
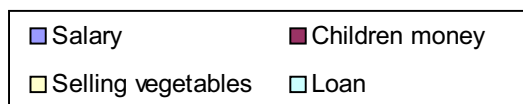
7	Red Deer	3
	Wild Boar	3
8	Salt	2
	Red tailed fish	2
	Khadary Whitefish	2
	Lennok	2
	Hay	2
9	Taimen	1
	Marmot	1
	Squirrel	1
	Bear	1
	Red Berry	1

In livelihood analysis of individual households natural resource use for income generation features very little however, for two reasons probably. Participants were listing resources that are generally known to be used by soum centre people, but not necessarily by themselves, and may not have mentioned in the individual interviews illegally taken resources by themselves.

Livelihood analysis in the soum centre show the benefits of vegetable growing as income source, the often found stronger reliance of poor households on non-timber forest products (berries), and the high costs of education even for households above the poverty group.

Figure 21: Livelihood of “average” household

Income



Expenditure

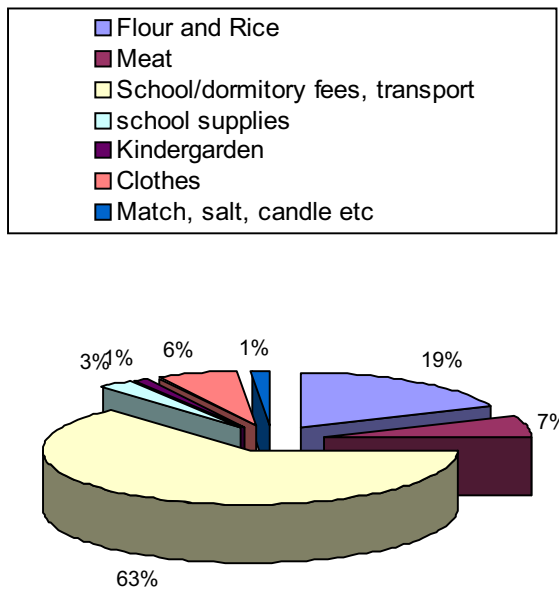
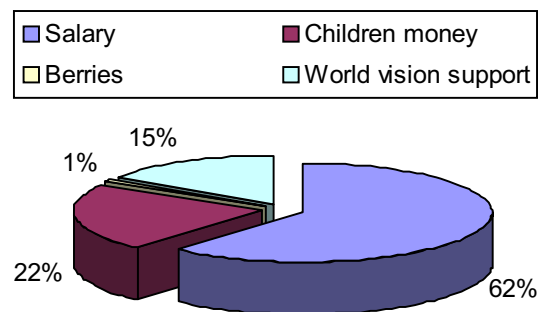
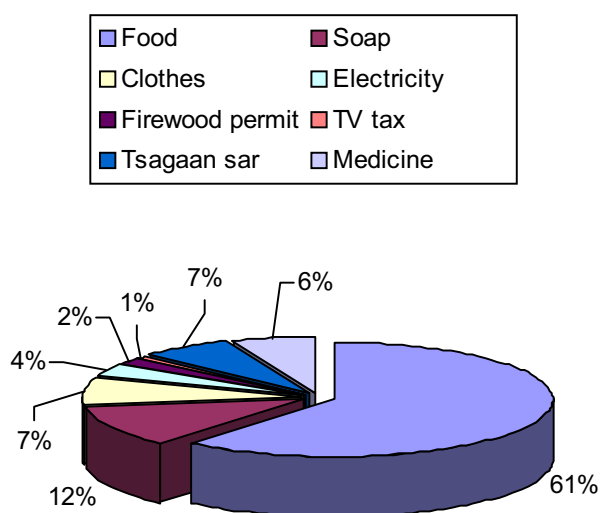


Figure 22. Livelihood of “poor” household

Income



Expenditure



Problems of livelihoods as discussed by participants of the soum centre working group centred very much around governance issues, such as nepotism and political appointments, bad conduct of civil servants, difficulties for civil servants sympathetic to opposition party, as well as on issues of access to credits, low salaries and pensions, and remoteness of the area and its consequences such as inadequate infrastructure and high prices for goods.

Table 21. Discussion in Soum Centre on Problems of local Livelihoods, Causes, and Solutions.

Causes	Problems
Lack of education	Bureaucracy of authorities
Weak awareness	Unemployment
Bank policy is not satisfactory	Bad communication
bad responsibility system	High tax
Infrastructure is bad	High interest rate
Bad law on tax	Remoteness
Remote condition	High price of commodities
Government discrimination of civil servants for political/party reasons	Lack of information
No cash	No cash
Government policy is wrong	Inflation
Health insurance is wrong	Low disability allowance
Bad management of sum government	Low salaries and income
Misuse of government positions	Bank deposit system
Wood tax is high	Health insurance system is wrong
Forestry law is not satisfactory	Corruption
labor safety is bad	Bad working condition
No democracy to get a job	Remote from market
233th resolution	Sum government weak performance
	Not able to give responsibility
	low salary of Civil servants
	Bad social allowance for civil servants
	Relatives get jobs
	Civil servant's code of conduct is bad

Reform election system Equalize pension allowance Employ educated people. Review 233d order of government Improve salary and pension allowance Have democratic election Recognize responsibilities Develop laws that are practical Promote government policy Reform tax law	Create paved road Implement poverty reduction project Create monitoring system Develop infrastructure Support democracy and remove the bureaucracy Respect the law Create monitoring position in rural area Reform election system Respect professional code of conduct
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Table 22. Complete lists of natural resources named by local people as being utilized for livelihoods in Teshig Soum

Mammals		Fish	
English Name	Latin Name	English Name	Latin Name
Moose	<i>Alces alces</i>	Siberian whitefish	<i>Coregonus lavaretus</i>
Red deer	<i>Cervus elaphus</i>	Taimen	<i>Hucho taimen</i>
Roe deer	<i>Capreolus pygargus</i>	Khadary whitefish	<i>Coregonus chadary</i>
Siberian musk deer	<i>Moschus moschiferus</i>	Pike	<i>Esox lucius</i>
Wild boar	<i>Sus scrofa</i>	Mongolian Redfin	<i>Erythroculter mongolicus</i>
Siberian marmot	<i>Marmota sibirica</i>	Lenok	<i>Brachymystax lenok</i>
Hare	<i>Lepus tolai</i>		
Corsac fox	<i>Vulpes corsac</i>	Birds	
Red fox	<i>Vulpes vulpes</i>	English Name	Latin Name
Ground squirrel	<i>Citellus unguulates</i>	Vulture	<i>Aegypius monachus</i>
Grizzly bear	<i>Ursus arctos</i>	Hawk	<i>Buteo buteo</i>
Wolverine	<i>Gulo gulo</i>	Wood grouse	<i>Tetrao urogallus</i>
Badger	<i>Meles meles</i>	Owl	<i>Bubo bubo</i>
Pallas Cat	<i>Felis manul</i>	Daurian Partridge	<i>Perdix dauuricae</i>
Stone marten	<i>Martes foina</i>	Black Grouse	<i>Lururus tetrrix</i>
Mountain Weasel	<i>Mustela altaica</i>	Little Owl	<i>Athene noctua</i>
Sable	<i>Martes zibellina</i>		<i>Troglodytes troglodytes</i>
Lynx	<i>Felis lynx</i>	Winter Wren	<i>Anthropoides virgo</i>
Gray wolf	<i>Canis lupus</i>	Magpie	<i>Pica pica</i>
Typical squirel	<i>Scuirus vulgaris</i>	Great Bustard	<i>Otis tarda</i>
Chipmunks	<i>Tamias sibiricus</i>	Ural owl	<i>Strix uralensis</i>
Trees and Bushes		Nuts	
English Name	Latin Name	English Name	Latin Name
Scotch pine	<i>Pinus silvestris</i>	Pine Nut	
Siberian pine	<i>Pinus pumila</i>		
Siberian larch	<i>Larix sibirica</i>	Mushrooms	
Poplar	<i>Populus suaveolens</i>	White mushroom	
Birch	<i>Betula platyphylla</i>	Birch mushroom	
Siberian fir	<i>Abies sibirica</i>		
Spruce	<i>Picea obovata</i>		
Gray willow	<i>Salix rorida</i>		

Medicinal Plants		Medicinal Plants cont.	
English Name	Latin Name	English Name	Latin Name
Onion	Allium schoenoprasum		Artemisia frigida
Gentian sp.	Gentiana acuta	Caraway	Carum carvi
Gentian sp.	Gentiana barbata	Thyme	Thymus lamiaceae
Burnet	Sanguisorba officinalis		Dianthus versicolor
Horse mushroom	Psalliota arvensis		Galium verum
Plantain	Plantago depressa		Arenaria capillaris
Caraway	Carum carvi		Dianthus superbus
	Thlaspi cochleariforme		Cotoneaster mongolica
Onion sp.	Allium victoralis	Berries	
Wild onion	Allium altaicum	English Name	Latin Name
Onion sp.	Allium senescens	Cranberry	Vaccinium vitais idaea
Peony	Geranium lactiflora	Black current	Ribes nigrum
	Rhodiola quadrifida		
	Phododendron dahuricum	Blueberry	Vaccinum uligonosum
Rose bay	Dianthus superbus	Prickly rose	Rosa acicularis
Pink	Thermopsis alpina	Red current	Ribes diacantha
	Burleorum	Straw berry	Fragaria orientalis
Thorough-wax	Polygonium	Red berry	Ribes altissimum
Jointweed	Urica angustifolia	Bird cherry	Podus asiatica`
Nettle	Artemisia xerophytica	Stone bramble	Rubus saxatilis
Mugwort	Trollius asiaticus	Goose berry	Ribes altissimum
Columbine	Cacalia hastata	Barberry	Berberis sibirica
	Saussurea involucrata		
Chive	Allium schoenoprasum		
	Leontopodium leontopodiodes		
Edelweise	Valeriana officinalis		
Valerian	Rheum undulatum		
Rhubarb	Purola incarnata		
	Lilium pumilum		
Water-lily	Bergenia moench		
	Parmelia conspersa		
Stone Lichen	Epilobium angustifolium		
Fire weed	Artemisia frigida		

Table 23. Seasonal income and expenditure of average household.

Months	Jan	Feb	March	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Scoring	3	3	2	10	6	8	9	9	9	5	5	4
Main income resource	Milk	Milk		Cashmere	Cream	Milk Cream Aarts	Milk Cream Aarts Berries	Milk Cream Aarts Berries	Milk Cream Aarts Berries	Milk Aarts	Milk Aarts	Milk Aarts

Expenditure

Months	Jan	Feb	March	April	May	June	July	August	Sep	Oct	Nov	Dec
Scoring	5	10	4	4	4	4	6	9	4	5	7	4
Main expenditure	Food for school children	Tsagaan sar					Naadam preparation	School fee		Moving to winter camp (Patrol)	Winter preparation (Food, clothes)	New Year

Table 24. Womens' seasonal workload of average household.

Months	Jan	Feb	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Scoring	4	10	7	7	6	7	8	7	7	6	5	5
Main workload	Daily work	Preparation for Tsagaan sar (making deel, buuz and cookies)	Receiving young animal	Receiving young animal Goat combing	Receiving young animal Goat combing	Moving to summer camp Start making dairy products	making dairy products, Making new deel for Naadam	Collecting berries, Help hay making	Move to autumn camp making dairy products	Move to winter camp	Prepare food and clothes for winter	Daily work Milking the cows

Cleaning animal droppings, watering animal, herding sheep, milking cows are the daily work for women Above described is additional work performed in the different months of the year.

7. BAYNLIG SOUM

7.1 Overview

Baynlig Soum is situated in the south of Bayankhongor Aimag, in desert steppe and desert zone and is the district with the highest number of camel, now numbering more than 10.000, in Mongolia. The country has experienced a decline in camels over the past decades and government and non-government organizations, and donor support, have joined in an effort to increase camel numbers through support in breeding, camel product development and marketing, promoting camel herding traditions as well as new activities, such as camel polo, in order to raise awareness and capacity for expanding the size of camel herds. Camel numbers have begun to rise in two Aimags (provinces) in recent years, including Gobi Altai and Bayankhongor.

Baynlig Soum is home to the 4 households owning the largest herds of Bactrian camel in Mongolia. These herder households own 609, 410, 404, and 402 camels respectively. Altogether, there are 461 camel herder households in the soum, constituting 57 % of all households. Camel numbers rose by 1.675 between 2004 and 2005. The soum governor attributes some of the rise to donor supported activities³ in adding value to camel milk products, developing markets for refined camel wool yarn, developing capacity within communities for collective action and improved pasture (saxaul forest) management and assistance in developing alternative fuels and installing coal burning heating systems in public buildings.

Baynlig Soum was gravely affected by Dzud (severe winter weather) between 2000 and 2002 as a result of which livestock numbers plummeted from 151.000 to 37.000 and the number of poor and very poor households rose considerably. Currently, 29 % of all households were considered poor as defined by a list of criteria now applied by government (pers. comm. social officer) The social officer familiar with the well-being of local households considered the 11 criteria (table 1) applied as not very suitable to define the actual well-being of households.

ADMINISTRATION, DEMOGRAPHY and SOCIO-ECONOMY	
Total Population	3298
Total Population	3298
Total number of households	808
Income unit/household member to define household category	
Number of rich/better-off households	4
Number of average households	567
Number of poor households (including very poor)	237
Number of very poor households	142 (no livestock)
Number of herding households	
Number of Soum center households	
Number of rural households	
Number of Bags	
TERRITORY, ECOLOGY and LAND USE	
Total area	1.1 Mio ha
Ecological zone(s)	Desert steppe/desert
Saxaul areas	57.271 ha

³ The Gobi Component of the project “Conservation and Sustainable Management of Natural Resources” (GTZ), implemented by local communities, local government and the South Gobi Protected areas with facilitation by IPECON, began in 2000 and is planned until late 2006.

Percentage of forest cover	5.2 %
Area of pasture land	
Area of crop lands	
Area under formal protection (local or national protected areas)	... ha in Gobi Gurvan Saikhan National Park, ...local protected areas
Forest type(s)	Saxaul
Biodiversity/Conservation Values	Domestic animals genetic resources (Bactrian camel), Saxaul forests, Gobi Gurvan Saikhan National Park, Bichig Khad (Script Rock) with petroglyphs from periods spanning 2.000 years; White Cave, important pre-historic/archeological site.
LIVESTOCK	
Total Livestock numbers	77.696
Number of horses	1.018
Number of cattle/yak	328
Number of camel	10243
Number of sheep	10.315
Number of goats	55.792
INDUSTRIES and SERVICES	
Main industries/services	Livestock husbandry, artisanal/illegal gold mining, trade
Local and traditional products/crafts/services	Camel milk and wool products

Table 1: Criteria used by government to define socio-economic category of a household, listed by social officer of Bayanlig Soum

Criteria used by government to define socio-economic category of a household	
1.	Location (soum center, rural)
2.	Number of family members
3.	Employment/unemployed
4.	Education
5.	Ownership of house, ger, apartment
6.	Assets, real estate ownership
7.	Number of livestock
8.	Disabled family members
9.	Female/male headed hh, number of members older than 70 years of age
10.	Support from welfare organizations
11.	Vehicle/means of transportation

7.2 Brief summary of findings

While saxaul “forest” may be considered of lesser importance for local livelihoods compared to the forests of northern Mongolia, they play a crucial role in the livelihoods of herders that probably exceeds the role forests elsewhere play directly for livestock herding.

Saxaul Forest, Camels and Local Livelihoods

The significance of the camel in this area, for local livelihoods and in the desert ecology, is very high. Camels are traditionally used for transport. Many Gobi herders with herds of other livestock (sheep, goat and horses) had a few camels as pack animals, enabling herders to move to new pastures, and thus maintaining a crucial strategy for sustainable management of the Gobi drylands. Many “new” herding households that turned to subsistence herding after 1990, lacked camels as means of transportation. The resulting loss in mobility played a significant role in land degradation. Moreover, subsequent years of Dzud (severe winter weather) lead to massive livestock losses, and the sale of camel for meat began on a larger scale. This appears to be the main cause of decline in camel numbers. Traditionally, camel meat was not used for consumption, in fact considered a “sin”, as elders of camel herder communities told the team.

Camel are adapted to the desert climate and forage, and in the southern parts of the Gobi provinces are the only large livestock type suited for sustainable livestock husbandry. They depend on Saxaul forest, especially for winter forage, and in turn probably contribute to maintaining saxaul forests by spreading seeds of the plant on which they feed. Saxaul forest, when intact, has a role in providing wind shelter for other pastures used in different seasons by camel herds, and in maintaining local microclimate by retaining moisture in soil and air.

Saxaul wood has a high caloric value, and is traditionally the predominant source of fuel for camel herders. In recent decades, saxaul has been used as fuel wood for households and public buildings on a large scale.

For lack of available or affordable alternatives, it is still used widely. Law enforcement to prevent this use is weak, and for lack of viable options for residents of rural centers, law enforcement personnel see themselves unable to enforce regulations and impose fees to considerably cut down on saxaul use.

Saxaul forest has declined considerably in the last decades starting in the late 60ies and 70ies. The increase of cars and trucks available for transporting larger amounts of fuel and able to reach more remote locations is probably responsible for a significant rise in Saxaul collection around that time.

In previous times, saxaul forest was very dense, and specimens grew to great heights. Some remnants of higher Saxaul plants are left today and are used by camel herders as look-outs. Otherwise, large specimens can only be seen in museums today, for example in the displays of the “Yoliin Am” Museum at the entrance of Gobi Gurvan Saikhan National Park in the South Gobi. The author has heard numerous accounts of elderly people in the Gobi who recall dense saxaul forests, in which a camel herd would disappear and where children were cautioned to venture into for fear of getting lost among the dense brush.

After 1990, lack of funds available to local governments to purchase coal to heat public buildings and the dysfunctional state of central heating systems lead to a significant increase in saxaul use for fuel. A public building, like a school, hospital or local government house, may use an average of 10 truckloads of Saxaul annually.

Locally, like in Baynlig Soum, this trend may have been mitigated, where donor support has provided a number of buildings with new coal heating systems and enhanced local technology development and distribution of alternative fuels as well as fuel efficient stoves. In general, however, use of saxaul as fuel wood is still very widespread and it poses the single most significant threat to saxaul populations.

Local herders spoke of 1-2 trucks that daily come to the saxaul forests to collect fuel wood, for sale in the soum center as well as further away, such as soum centers in Uvurkhangai Aimag. Due to rise in fuel prices, saxaul areas farther away than 40 km from the soum center are now less frequently impacted through collection. Local people also report a strong influx in the last years of collectors of Goyo (latin name), a parasitic plant growing on saxaul roots and appearing on the desert sand as mushroom-like growth. The plant is fetching high prices when sold across the border to China, where it is used for medicinal purposes.

The plant is believed to be beneficial to maintain soil as well as air moisture, thereby having a cooling affect on local microclimate. Harvesting of Goyo on a large scale, as it has occurred in recent years, is another very significant impact on the health of the saxaul forests according to camel herders in the area who have observed the changes and experience the impacts in their daily lives. Camel herders are very concerned about the unsustainable use of their important resource base and frustrated over the lack of law enforcement as well as over their own inability to protect saxaul, due to a lack of ID cards that would authorize them to act against illegal use.

The soum receives no permit from the Ministry of Nature and Environment to legalize any collection of saxaul. However, the Soum Environmental Inspector mentioned to have non-written agreements with Aimag authorities to tolerate a certain amount of saxaul collection for lack of viable and affordable fuel alternatives.

There is clearly a great incentive for local communities of camel herders to manage and protect Saxaul forest and a rationale for including saxaul areas into a pilot programme on community forestry in Mongolia.

7.3 Analysis

Poverty in Bayanlig soum is, according to the social officer, not decreasing, except among households that are organized in “Nukhurlul”, community organizations for poverty reduction and natural resource management that maintain their own community fund for household micro-credits and facilitate collective action among members to protect resources and improve livelihoods through value addition of local products and diversification of livelihood strategies. A doubling of process for goods coming from the capital city and steep increase in petrol prices were quoted as reasons for continuing poverty.

Income to the local government from fees and taxes amounted to 6.6 Mio MNT in 2005 according to the tax officer. Land use fees and natural resource use fees are set at 400 MNT/household and 1.700 MNT/household respectively per year, regardless of the amount of resources used. Over 100 households cannot pay these fees. Income from livestock tax in 2005 amounted to 5.8 Mio. MNT, from gun tax approximately 150.000 MNT.

The environmental inspector reported that fees imposed for illegal saxaul collection amount to 30.000 MNT/ton of saxaul, representing the sum of fine and replacement of the “ecological value”, apparently set at 20.000 MNT for one ton of Saxaul. He also mentioned costs for a one ton saxaul collection permit of 3.213 MNT. This is not consistent with the fact that all saxaul collection is prohibited by law and no permits are officially issued to the soum for distribution, and it demonstrates the shortcomings in law enforcement pertaining to saxaul as well as other resources that were also found at other study sites.

Income to the soum from fees imposed for illegal saxaul collection as reported by the environmental inspector has fluctuated over the last years.

Table 2. fees obtained for the soum budget from illegal collection of saxaul.

Fees/fines imposed for illegal collection of Saxaul, Baynlig Soum	
Winter 2003/04	600.000 MNT
Winter 2004/05	200.000 MNT
Winter 2005/06	400.000 MNT

In “Sevsuul” area 6 camel herder households were spending the winter during the time of this field study, their gers (traditional felt tents) set up among rolling hills covered by saxaul vegetation. Wiith Tsagaan Sar (Lunar New Year) approaching, men and womens workloads were high to prepare for celebrations, adding to the normal seasonal work that keeps camel herders out late until late night bringing in camels from pasture and watering the animals. During the stay of the study team with camel herders, this work would keep men out until midnight.

Table 3. Social Map record.

Well being Group	Criteria
Wealthy	Vehicle Number of family members no more than 4
Better off	Number of livestock more than 60 Number of family members 4

Representatives of 6 households participated in discussions and interviews.

They listed 15 natural resources used for local livelihoods, including 9 species of pasture plants, and 3 resources for selling. Livestock products listed numbered 11, including 9 or selling. White goyo and wolf were scored equally high as cashmere, milk, camel airag (fermented milk), curd and dried curd.

Table 4. Natural resource and livestock products used for local livelihoods, and their different uses. Scoring 1-5.

Natural Resources	Selling	Food	Medicine	Fire wood	Pasture plant
1. White goyo	5				
2. Anabasis brevifolia					5
3. Fox	2				
4. Reaumuria soongorica					
5. Salsola passerina					4
6. Saxaul				4	4
7. Wolf	5				
8. Hare			2		
9. Budnuur					1
10. Artemisia adamsii					2
11. Red goyo			5		
12. Saxaul seeds					2
13. Tamarix ramosissima					1
14. Allium mongolicum		5			3
15. Agrophyllum pungens			5		4
Livestock products					
16. Dried curd	5	5			
17. Curd	5	5	5		

18. Camel wool	3			
19. Camel airag	5	5	4	
20. Milk	5	5		
21. Sweat cream		4		
22. Sheep skin	1			
23. Camel skin	2			
24. Goat skin	3			
25. Wool of male camel				
26. Gland of male camel			5	
27. Cashmere	5			

White Goyo collection has increased significantly in recent years, mainly for sale to China. Local herders attribute loss of soil and air moisture, and degradation of Saxaul forests, also to the collection of goyo which they consider important for moisture retention in the soil. Dry matter of one kilogram goyo weighs 300 grams.

Saxaul was not listed as resource for selling by discussants in the Sevsuul area; other discussions confirmed that collection of saxaul for sale is undertaken predominantly by outsiders such as Soum center people or owners of trucks from further away.

As pasture plant, Saxaul is listed twice (leafs and seeds) and scores high, exceeded only by *Anabasis brevifolia*, and equaled by *Salsola p.* and *Agrophyllum p.*

Figure 1: Importance of pasture plants scored (1-5) by camel herders of Sevsuul area

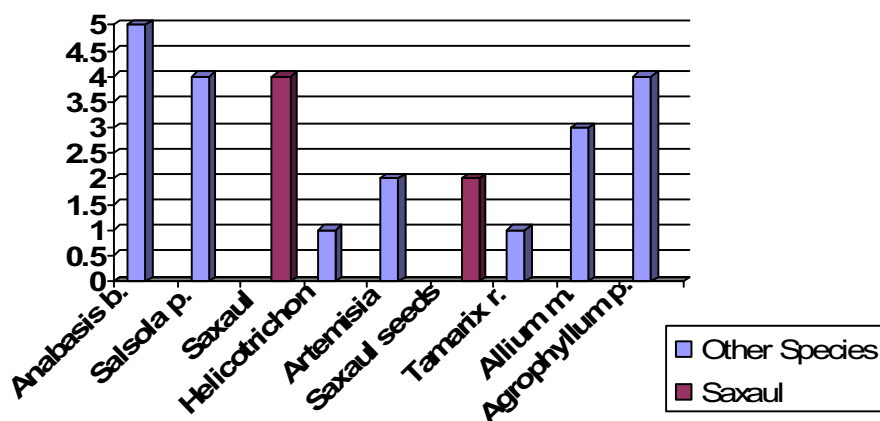
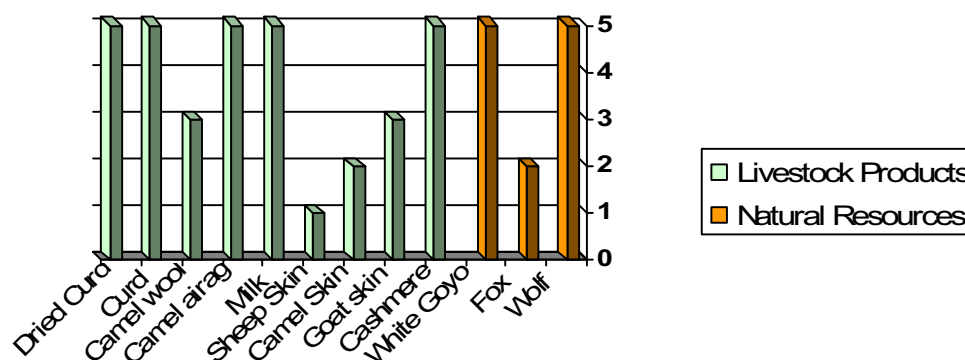


Figure 2: Importance of different livestock products and natural resources for income generation, scored by camel herders in Sevsuul area (scoring 1-5)



Saxaul was not listed as resource for selling by discussants in the Sevsuul area; other discussions confirmed that collection of saxaul for sale is undertaken predominantly by outsiders such as Soum center people or owners of trucks from further away.

Local herders discussion and visualization of changes in different natural resources over time showed the dependence of pasture plants, except Saxaul, Tamarix and Agrophyllum, on rain, thus illustrating the concept of “non-equilibrium ecosystem” of the Gobi drylands here, emphasizing the significance of mobile pastoralism for sustainable drylands and livelihoods, and underlining the importance of Saxaul as reserve pasture.

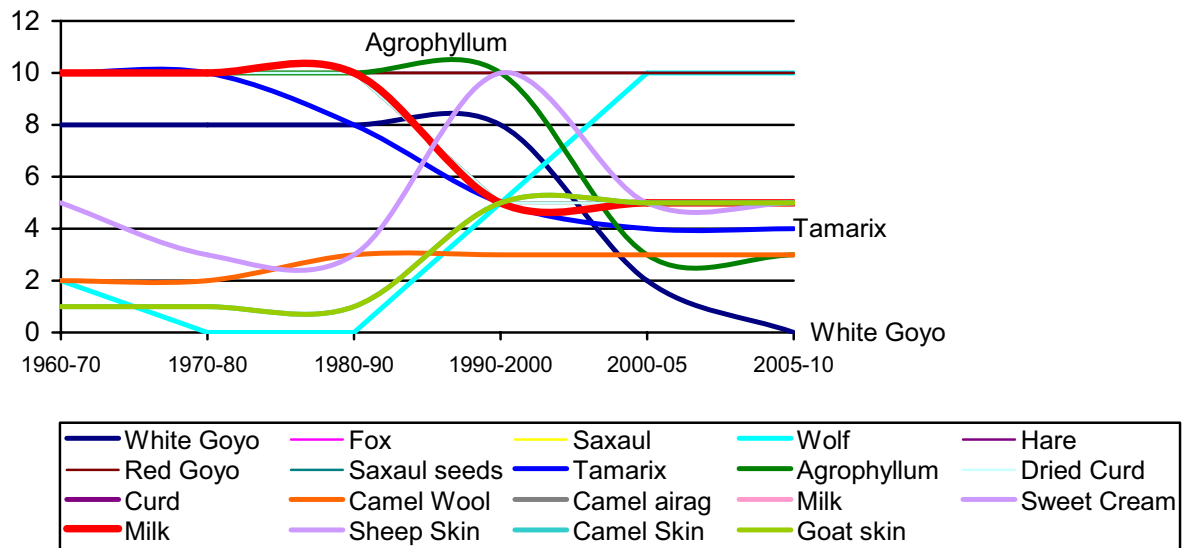
Table 5: Changes in abundance of natural resources and production of livestock products, discussed by households of Sevsuul area, 2nd Bag, Baynlig Soum. Red: resources in decline.

Natural Resources	1960-1970	1970-1980	1980-1990	1990-2000	2000-2005	2005-2010 expected
<u>White goyo</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>8</u>	<u>2</u>	0
Anabasis brevifolia	Depending on rain					
<u>Fox</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>5</u>	<u>5</u>	5
Reaumuria soongorica	Depending on rain					
Salsola passerina	Depending on rain					
<u>Saxaul</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>5</u>	<u>5</u>	5
Wolf	2	0	0	5	10	10
Hare	10	10	10	10	10	10
Budnuur	Depending on rain					
Artemisia adamsii	Depending on rain					
Red goyo	10	10	10	10	10	10
<u>Saxaul seeds</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>5</u>	<u>5</u>	5
<u>Tamarix ramosissima</u>	<u>10</u>	<u>10</u>	<u>8</u>	<u>5</u>	<u>4</u>	4
Allium mongolicum	Depending on rain					
<u>Agrophyllum pungens</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>3</u>	3
Livestock Products						
Dried curd	10	10	10	5	5	5
Curd	10	10	10	5	5	5

Camel wool	2	2	3	3	3	3
Camel airag	10	10	10	5	5	5
Milk	10	10	10	5	5	5
Sweet cream	10	10	10	5	5	5
Sheep skin	5	3	3	10	5	5
Camel skin	1	1	1	5	5	5
Goat skin	1	1	1	5	5	5
Camel gland	10	10	10	10	has been used	
Cashmere	harvested by state			10	10	10
Number of camel	10	10	8	7	9	10
Local livelihoods	5	5	5	3	7	Will depend on inflation
# of poor households	0	0	0	10	10	

Local herders discussion and visualization of changes in different natural resources over time showed the dependence of pasture plants, except Saxaul, Tamarix and Agrophyllum, on rain, thus illustrating the concept of “non-equilibrium ecosystem” of the Gobi drylands here, emphasizing the significance of mobile pastoralism for sustainable drylands and livelihoods, and underlining the importance of Saxaul as reserve pasture.

Figure 3: Changes in abundance of natural resources and production of livestock products, discussed by households of Sevsuul area. Note that the red line for milk masks/represents also the values over time for saxaul, saxaul seeds, fox, Dried curd, curd, and sweet cream, as they were all scored equally over the periods in question. Lines for Red Goyo and hare are also identical, the same goes for camel skin and goat skin.



The most significant changes observed by local herders in natural resources change concern saxaul, fox and White Goyo. Saxaul and fox are thought to have suffered a 50 % decline after

1990, while White Goyo was recently (after 2000) reduced to 25 % and is believed to be distinct by 2010. All pasture plants are shown to be in decline. The only natural resource perceived to have increased is the wolf population. Private household production/sale of camel skin and goat skin has increased considerably, and cashmere production has been consistently high since 1990. Camel wool production has slightly increased. Milk product output has decreased, while the number of camel has recovered after a low between 1990 and 2000 and is expected to rise to the same level as previously again within the next 5 years.

Local livelihoods were rated as having improved considerably after a low period between 1990 and 2000, and as better than before 1990. On a scale from 1-10, current local livelihoods were scored as 7, compared to 3 between 1990-2000, and 5 before 1990. The improvement in the livelihood of the camel herders of Sevsuul is most likely due to cashmere sales, and to high prices that camels fetch when sold as live animals.

Camel wool has been sold at a low price of 800 MNT/kg (see table 4). Through processing this wool into spun yarn, herders can achieve a much higher price. Ongoing support by NZNI-IPECON through the project “Conservation and Sustainable Management of Natural Resources” (gtz) is assisting in product development and marketing for camel wool yarn that is sold for 3.400 MNT/100 g, which exceeds the price/kg of cashmere.

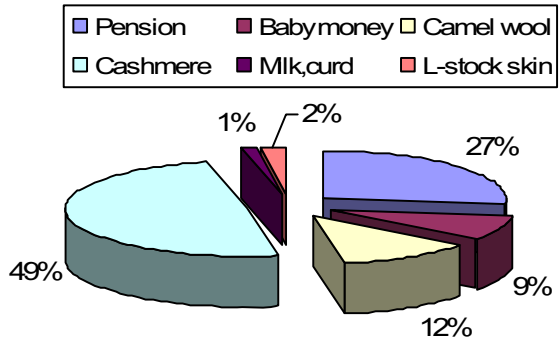
Table 5: Prices for natural resources and livestock products, listed in Sevsuul local area.

Natural Resource	Unit	Price (MNT)
White Goyo, sold locally	1 kg	300
White Goyo, sold at Chinese border		10.000
Saxaul	1 load of small truck	15 L Petrol ⁴
Saxaul	1 load of Russian jeep	10 L Petrol
Fox	1 skin	10.000
Wolf	1 wolf	45.000
Livestock products		
Aaruul	1 kg	2000
Curd	1 kg	1000
Male camel wool	1 kg	1000-1500
Camel wool, unprocessed	1 kg	800
Camel wool yarn		34.000
Camel fermented milk	1 L	600-700
Camel milk	1 L	500-600
Sheep skin	1 skin	3000-3500
Camel skin	1 skin	8000-10.000
Goat skin	1 skin	7000-10.000
Camel	1 camel	300.000-350.000
Racing camel	1 camel	800.000-1.000.000
Cashmere	1 kg	28.000-30.000

⁴ Informants in the soum center quoted a price of 50 liters for this amount of saxaul.

Figure 4. Livelihood of camel herders

Income



Expenditure

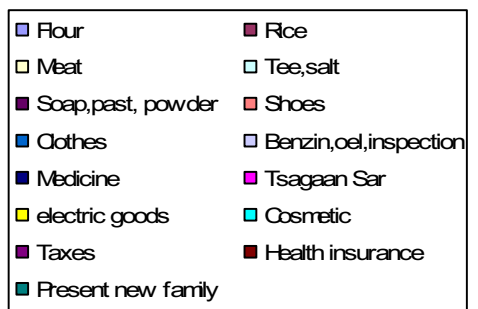
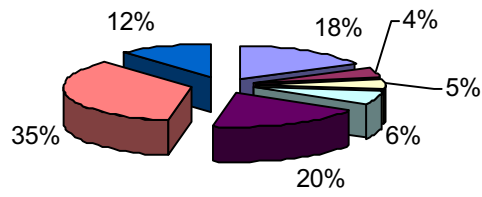
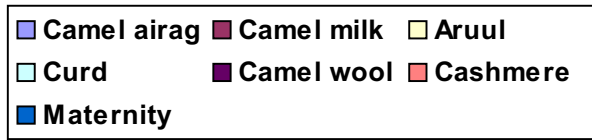


Figure 5. Livelihood of “better off” household

Income



Expenditure

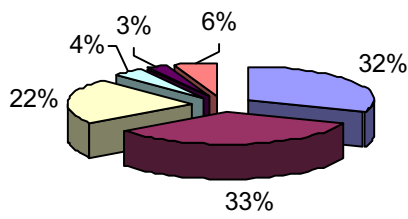
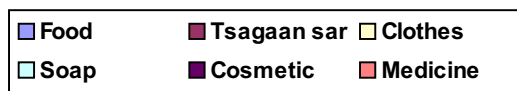


Figure 5: Mobility Map of “better off” household

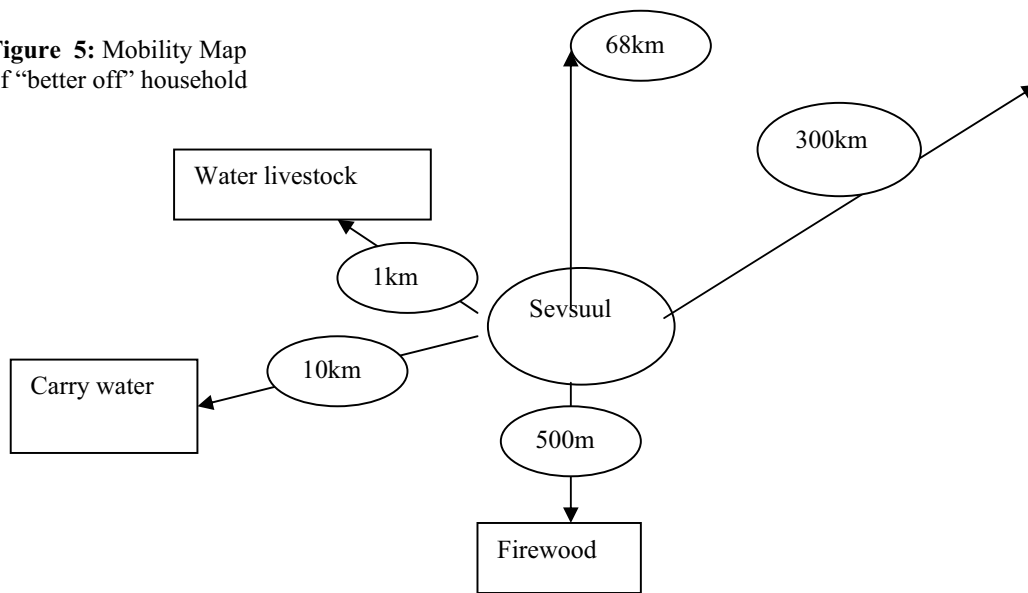
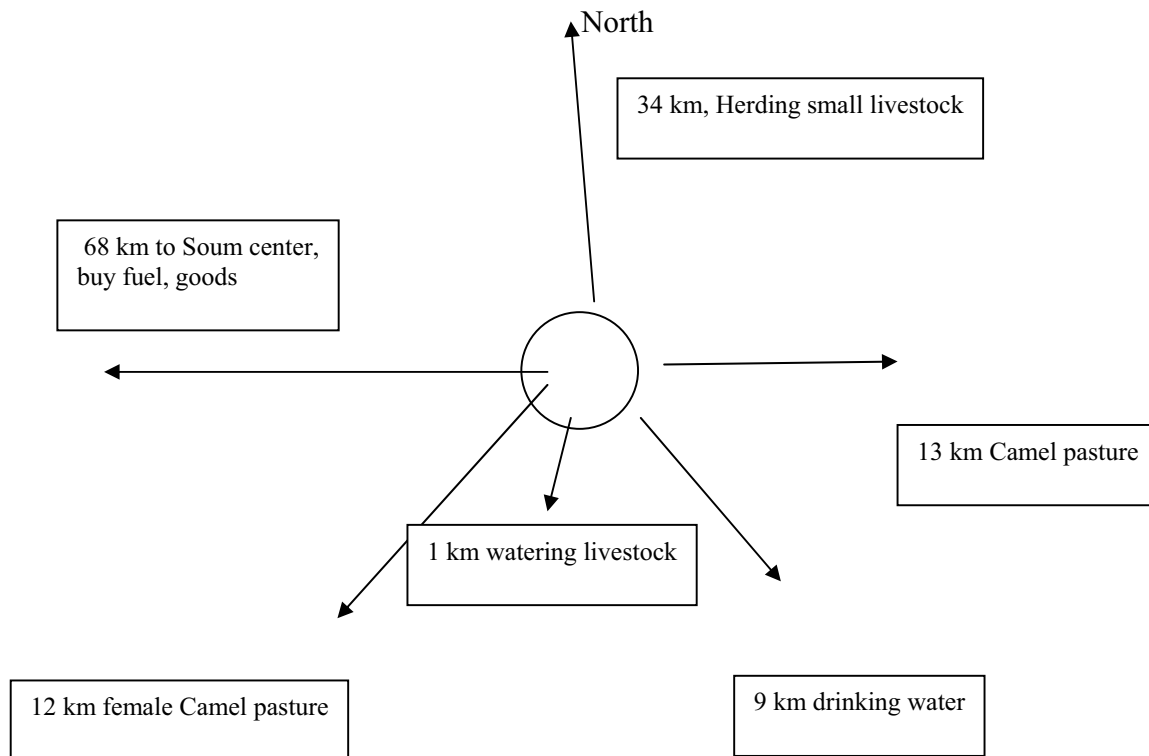


Figure 6: Mobility Map of “better off” household.



- For fuel wood in all directions (in Saxaul forest)

Table 6: Seasonal workload of women

Month	1	2	3	4	5	6	7	8	9	10	11	12	
Score	4	9	6	7	10	6	6	7	5	4	4	4	
Activity	Milking livestock Watering livestock Home work Child care	Milking livestock Watering livestock Home work Child care Prepare- "Tsagaan sar"	Milking livestock Watering livestock Home work Child care Start to receive young livestock	Milking livestock Watering livestock Home work Child care Receive young livestock	Milking livestock Watering livestock Home work Child care Finish to receive young livestock, Combing cashmere, cut wool,	Milking livestock Watering livestock Home work Child care Start to Process Milk Finish combing cashmere cut wool	Milking livestock Watering livestock Home work Child care Processing milk, School preparation	Milking livestock Watering livestock Home work Child care Processing milk, School preparation	Milking livestock Watering livestock Home work Child care Processing milk, School preparation	Milking livestock Watering livestock Home work Child care Processing milk, School preparation	Milking livestock Watering livestock Home work Child care Hay making Repair winter shelters	Milking livestock Watering livestock Home work Child care	Milking livestock Watering livestock Home work Child care Livestock slaughtering

Table 7: Seasonal Income and Expenditure of "better off" household

Months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Income	Selling camel milk and airag	Selling camel milk and airag	Selling camel wool and cashmere	Selling camel wool and cashmere	Selling camel wool and cashmere	Selling camel wool and cashmere	Selling camel milk and curd	Selling camel milk and curd	Selling camel milk and curd	Selling camel milk and curd	Selling camel milk and curd and airag	Selling camel milk and curd and airag
Score	4	4	0	6	6	8	4	4	4	4	10	10

Months	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Expenditure	Daily consumption: Flour, rice etc. Tsagaan sar New clothes	Daily consumption: Flour, rice etc. Tsagaan sar	Daily consumption: Flour, rice etc.	Daily consumption: Flour, rice etc. Prepare for wool collecting: scissors, sacks	Daily consumption: Flour, rice etc. Prepare for wool collecting: scissors, sacks	Daily consumption: Flour, rice etc.	Daily consumption: Flour, rice etc. Fuel and oil for moving	Daily consumption: Flour, rice etc. Buying winter clothes	Daily consumption: Flour, rice etc. Making deel	Daily consumption: Flour, rice etc.	Daily consumption: Flour, rice etc. Making deel and buy some winter boots	Daily consumption: Flour, rice etc.
Score	3	10	3	6	6	5	8	8	5	3	10	6

Income of camel herders peaks in the winter, due to the accumulated earnings from several milk products (milk, curd, and airag), and in May following the cashmere harvest. The income peak in winter is in contrast to the earning pattern of herders of other livestock whose income is low or none in the winter months.

Tarav Area of Baynlig Soum

A meeting was held in the morning in the Tarav area, at the edge of extensive saxaul areas used as pasture for large camel herds.

Table 8: Pasture Plants and their significance for camel and small livestock (Score 1-10)

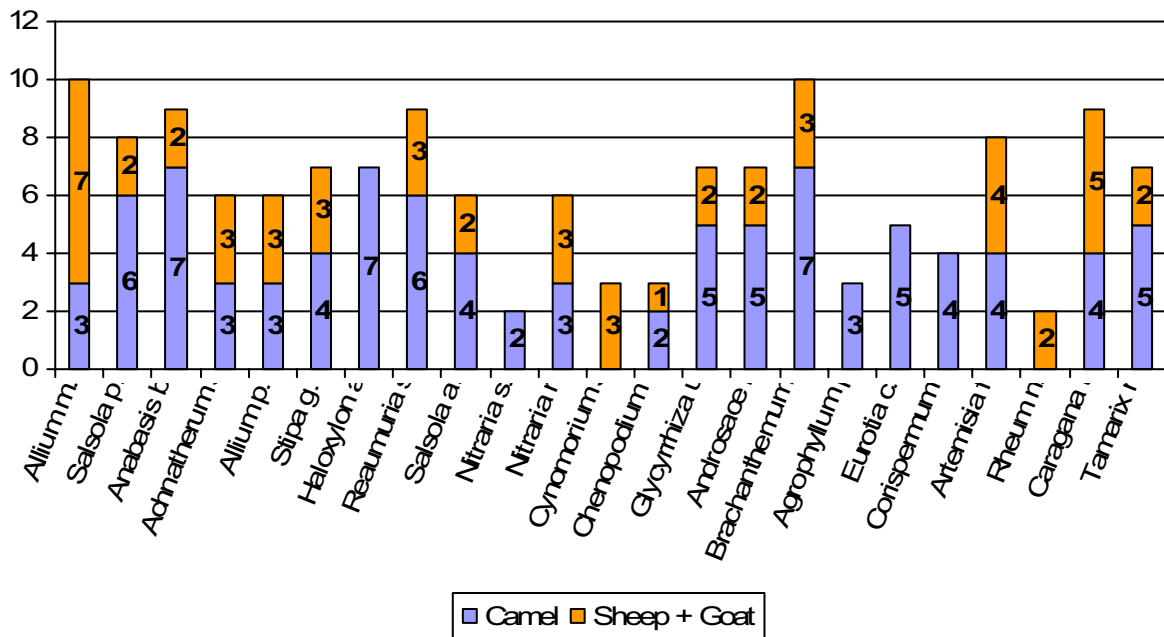
Pasture Plant	Camel	Small livestock	Human Consumption	Total Score
<i>Allium mongolicum</i>	3	7	6 food	16
<i>Salsola passerine</i>	6	2		8
<i>Anabasis brevifolia</i>	7	2		9
<i>Achnatherum splendens</i>	3	3		6
<i>Allium polyrrhizum</i>	3	3		6
<i>Stipa gobica</i>	4	3		7
<i>Haloxylon ammodendron</i>	7		7 fuel in winter	14
<i>Reaumuria songorica</i>	6	3		9
<i>Salsola arbuscula</i>	4	2		6
White Goyo	3		8 only outsiders	11
<i>Nitraria sibirica</i>	2			2
<i>Nitraria Roborovskii</i>	3	3	2 food	6
<i>Cynomorium songoricum</i> (Red Goyo)		3	4 food	7
<i>Chenopodium album</i>	2	1		3
<i>Glycyrrhiza uralensis</i>	5	2	2 medicine	9
<i>Androsace incana</i>	5	2		7
<i>Brachanthemum gobicum</i>	7	3		10
<i>Agrophyllum pungens</i>	3		2 medicine	3
<i>Eurotia ceratoides</i>	5			5
<i>Corispermum tylocarpum</i>	4			4
<i>Artemisia frigida</i>	4	4		8
<i>Rheum nanum</i>		2	2 food	2
<i>Caragana tibetica</i>	4	5		9
<i>Tamarix ramosissima</i>	5	2		7

Pasture plants most important, and rated as equally important, for camel are *Anabasis brevifolia*, Saxaul (*Haloxylon ammodendron*) and *Brachanthemum gobicum*, followed second by *Salsola passerine* and *Reaumuria soongorica*, and third by *Glycyrrhiza uralensis*, *Androsace incana*, *Eurotia ceratoides* and *Tamarix ramosissima*.

For small livestock, *Allium mongolicum* was rated as the most important by far, followed second by *Caragana tibetica* and third by *Artemisia frigida*.

When summing up scores for importance of pasture plants for camel and small livestock, *Allium mongolicum* and *Brachanthemum gobicum* come up highest, followed second by *Anabasis brevifolia*, *Reaumuria soongorica* and *Caragana*, and third by *Artemisia frigida*.

Figure 7: Significance of different Pasture Plants for Camel and Small Livestock, according to local herdsmen



When adding the significance of plants for local household use as food, medicine and fuel, *Allium m.* is the most important overall, followed by *Saxaul*. When adding the significance of plants regarding human use for selling, *White Goyo* is rated third highest. Discussants from the local areas claimed that *White Goyo* is collected only by outsiders, and degradation of *Saxaul* forest is attributed to decline in *White Goyo*, as the plant is believed by herders to be important for moisture retention in the soil. *White Goyo* collection is, according to participants in discussions, undertaken by people from the Southgobi province and sold to China through the border crossing points there. Illegal *White Goyo* collection on large scale has been witnessed by members of this study team during previous work in the area.

The plants rated highest for camel and small livestock respectively belong to different plant communities, and demonstrate the complex pattern of herding requiring high mobility practiced by these Gobi herders. Mobility maps prepared by some households also depict long distances, and different destinations for camel and small livestock and differentiated pastures for female camels.

Figure 8: Pasture plant significance for camel, small livestock and human use, according to local herdsmen

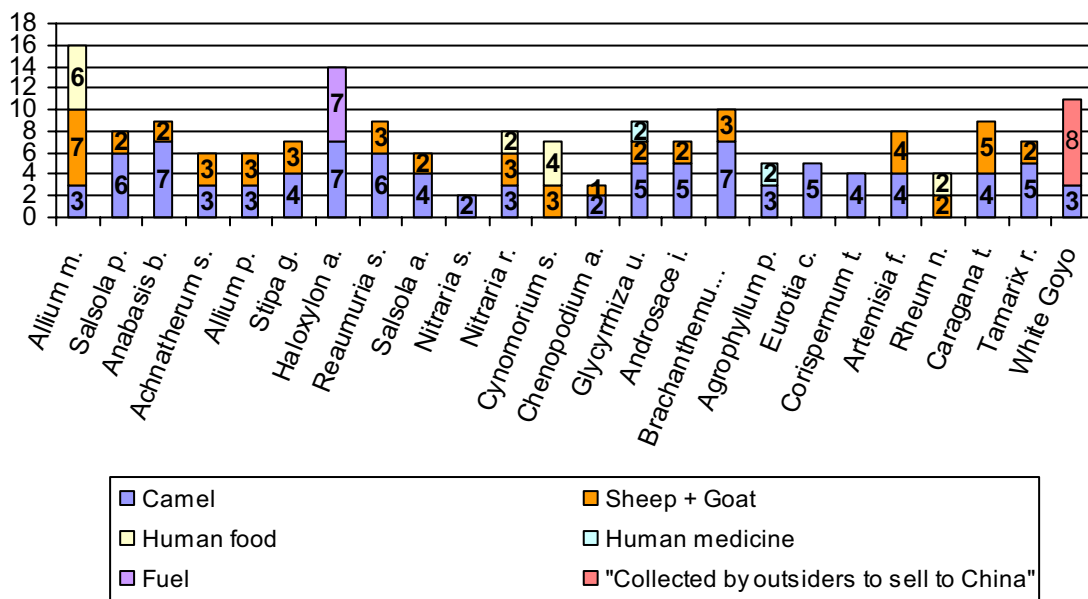


Figure 9: Significance of different Pasture Plants for Camel, according to local herdsmen

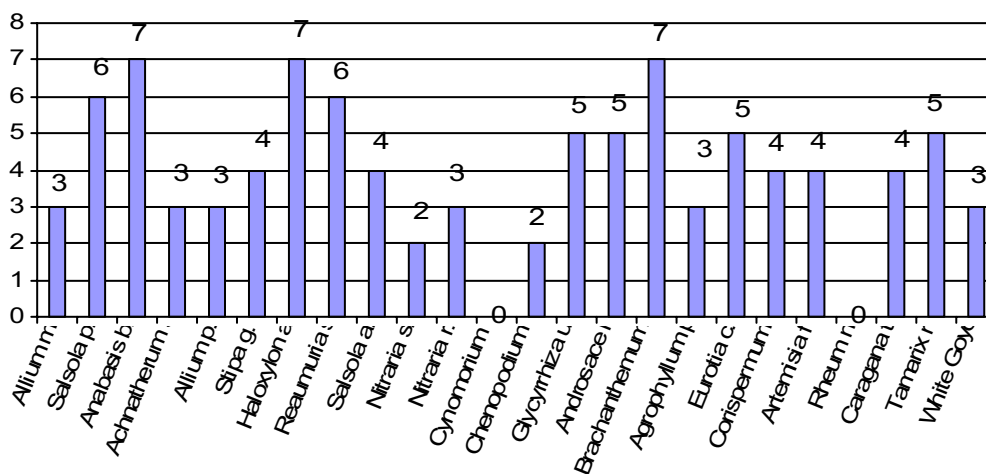
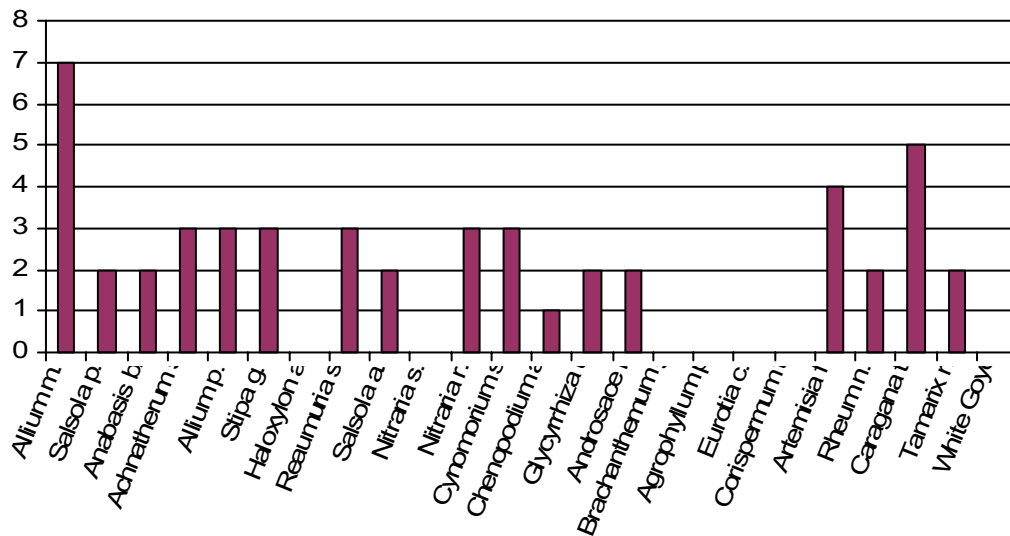


Figure 10: Significance of different Pasture Plants for Small Livestock, according to local herdsmen.



The problem of Saxaul forest degradation, its impacts and causes were discussed with women of Tarav area. They identified as the direct causes collection of live saxaul for fuel due to its higher caloric value, collection of goyo due to the high sale price in China, as well as drought. Upon further analysis, broader causes for collection were traced back as lack of awareness on the ecological significance of saxaul among younger people, poverty of soum center people and high gasoline costs leading to more collection near the soum center, vehicle ownership leading in the past to expansion of collection also in more remote areas.

Lack of effective law enforcement was also identified as an important cause, due to the soum environmental inspectors failure to follow collectors to the saxaul area, lack of respect for him, lack of a local ranger and lack of identification cards that authorize community rangers to take action against illegal and excessive saxaul collection.

The latter issue is referring to rangers identified by community organizations of the local herders from among themselves. These community organizations are local institutions of collective action for natural resource management and conservation and improvement of livelihoods through improved market access, value addition to products and diversification of livelihood strategies. As primary organizations of herder households they are an institutional basis to implement community based natural resource management concepts and to hold tenure rights. As direct consequences of saxaul forest degradation discussants listed loss of moisture in soil and air, loss of wind shelter for other pasture, decrease of carrying capacity of pasture, weakened livestock and decrease in number of camels. Effects on livestock of course lead to direct impacts on herders livelihoods.

Figure 11: Causes of Saxaul Forest Degradation, discussed by local women.

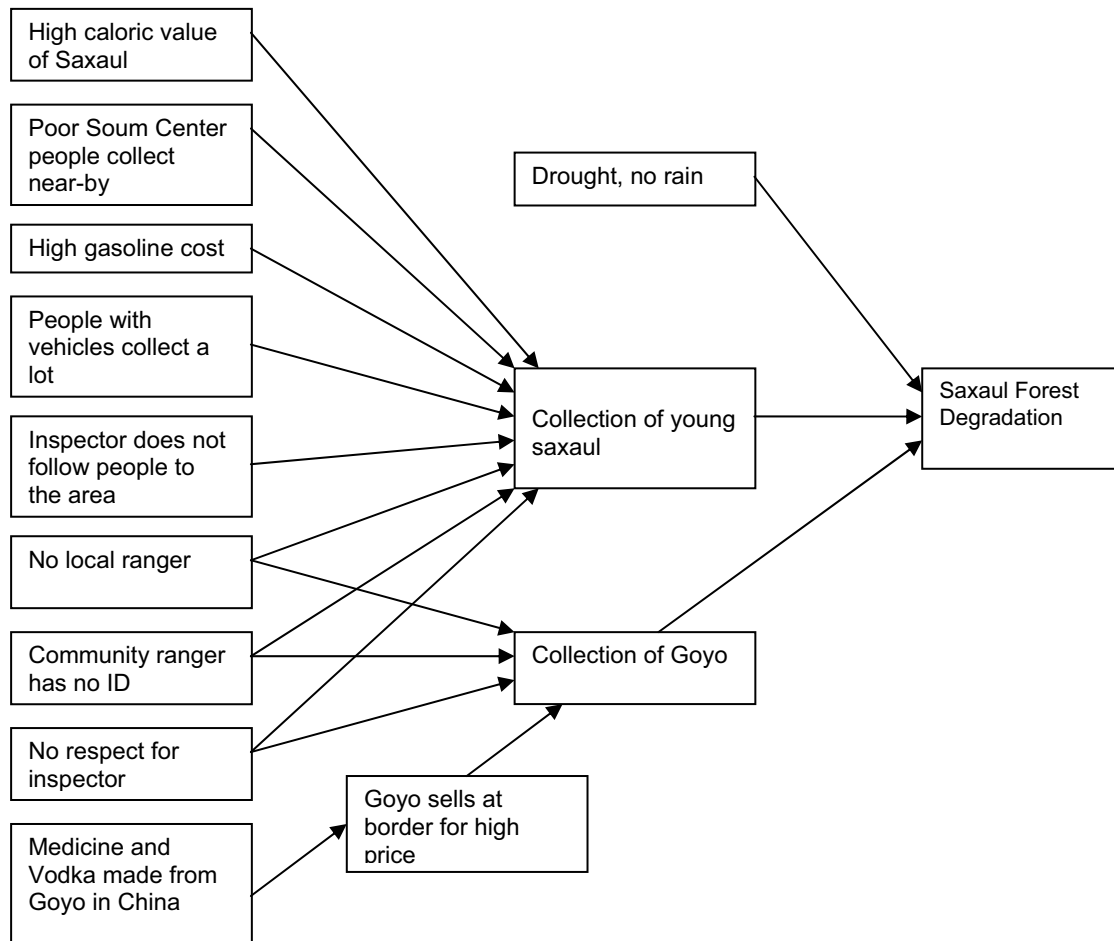


Figure 12: Impacts of Saxaul Forest Degradation, discussed by local women.

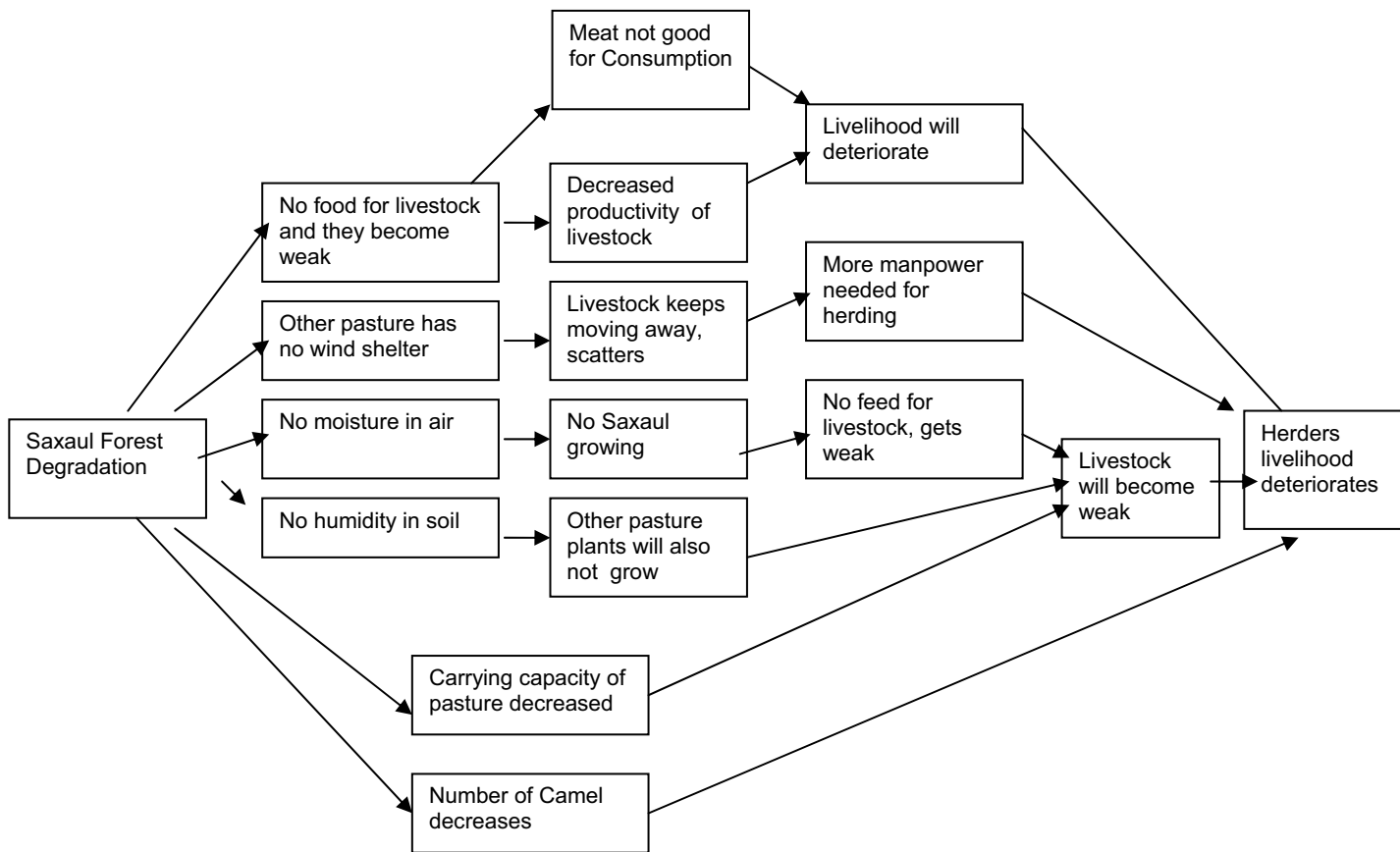
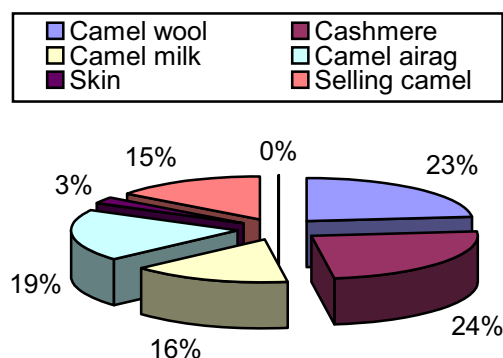
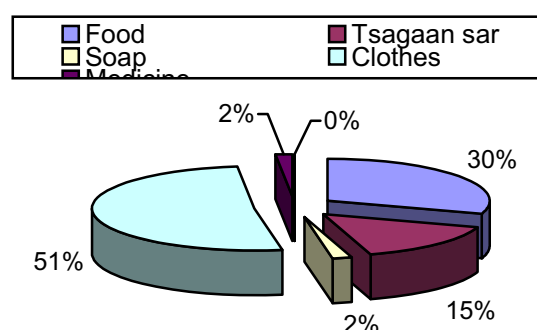


Figure 13. Livelihood of “average” camel herder household.
Income



Expenditure



Baynlig Soum Center

In Baynlig Soum Center, a meeting was held with 6 people from a neighborhood known as “the camp” to discuss issues of natural resource use, fuel consumption, livelihood problems and livelihood strategies.

Soum center households have few livestock and therefore face greater challenges to maintain their livelihood. Participants in discussion estimated that 70 % of soum center households depend on gold mining for income. As small scale miners they face conflicts with mining companies (outside or foreign) who refer to their licenses issued by central government authorities and claim their sole right for exploitation of minerals in these local areas. Lack of electricity in the soum center perpetuates unemployment and makes it more difficult to engage in any production or processing activities. It also disadvantages soum center residents with regard to access to information compared to those rural herders who can afford satellite receivers and alternative energy sources and therefore have access to 5 TV channels.

As experienced in other areas, residents of the soum center listed more natural resources used for livelihoods than rural herders. Again, this may be due both to more resource use for lack of income from livestock as well as more openness of discussants to share resource use practices, particularly illegal use, with outsiders. Findings from previous discussions with herding households in Sevsuul and Tarav area about the use of saxaul and White Goyo by outsiders were confirmed with the soum center residents, who scored these two resources highest for income generation. The only other resources listed for income were wolf and Red Goyo. Eight resources, including 6 plants, mineral water and hare were listed for medicinal use. Argali sheep, snow leopard, gazelle and red fox were initially listed but then not scored, a

fairly clear indication of illegal use of these wildlife resources, which include rare and globally threatened species.

Gold was not listed along with other natural resources here, but mentioned in open discussion and in livelihood analysis with individual interviewees. Plant fuel resources other than saxaul were not listed either along with other natural resources as fuel issues were addressed in a separate exercise.

Table 9. Natural Resources used for livelihoods by soum center people, and their different use forms, scored for significance (1-10).

Natural resources	Food	Medical Treatment	Selling	Crops	Shelter	Block making	Fuel	Own use
Artemisia adamsii		7						
Agrophyllum pungens	3	2						
Argalii sheep								
Mineral salts				8				
Nitraria								
Abex								
Allium mongolicum	6			5				
Saxaul tree			8				10	
Water	10			10				10
Red goyo	3	5	1	4				
Gazelles								
Wolf			3					
Snow leopard								
Red fox								
Mineral water	9	5						
Plantago depressa		5						
Allium polyrrhizum	3			8				
White goyo			8					
Glycyrrhiza uralensis	8	6						
Sophora alopecuroides		7						
Barley	10			5				
Stone					10			
Mud						3	2	
Hare		6						

Prices were provided for saxaul, red and white goyo, fox and wold fur. Saxaul price is expressed in liters of gasoline, due to the steep rises in fuel costs.

Table 10. Prices of Natural Resources

Saxaul One Russian jeep load One small truck load	25-30 liters gasoline 40-50 liters gasoline
Wolf fur in Aimag center at Chinese border	20.000 – 25.000 MNT 40.000 – 50.000 MNT
Fox fur	6.000 – 10.000 MNT
White goyo, 1 kg, sold locally	250-300 MNT
Red Goyo, 1kg	100 – 150 MNT

As fuel sources, discussant listed seven types, four of them plant species including Saxaul, Artemisia, Caragana and *Amygdalus mongolica*. Use of these plants for fuel has direct impact on livestock by reducing pasture resources and in the long-term through land degradation and desertification, symptoms of which are increased number and intensity of sand movement on the ground as well as sandstorms.

Alternative fuels

The problem of fuel is exacerbated compared to other arid regions through the harsh climate of Mongolia that requires reliable fuel sources not only year round for cooking but for most months of the year also a high energy source to generate heat. Saxaul is favoured for his high caloric value and its suitability for starting a fire quickly. The price for saxaul is relatively low. In contrast, the costs of using a gas stove, with rechargeable balloons, are high and therefore prohibitive of wide usage of gas stoves which were rated as “very useful”. The direct link between unsustainable use of plant fuel resources to poverty is evident. Interventions to address the issue of fuel sources, particularly for public buildings and soum center households, should be an integral part of programming for sustainable livelihoods and natural resource management in the region. Fuel sources, their advantages and disadvantages as recorded by working group members in Baynlig Soum center, are depicted in table 13 below:

Table 11. Fuel sources used by households, women, aged 19-45.

Fuel	Advantages	Disadvantages	Price MNT
Saxaul	Quickly burn, start fire	Impact on nature	Paid in gasoline: Small truckload 50 liters
Artemisia	abundant	low energy and smoky	A camel cart of firewood is 5.000
Livestock dung	Good energy and abundant	Much ash	A sack of dung is 150-200
Caragana	Quick to start fire	Rare	A camel cart of wood is 5.000
Gas stove	Very useful	Expensive	50.000, balloon refill is 15.000
<i>Amygdalus mongolica</i>	Good energy	Rare	A camel cart of wood is 5.000
Briquettes	Depending on quality	Very rare	Do not know

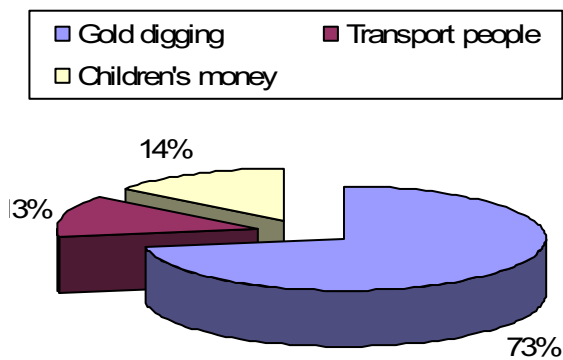
Trends, in fuel use and other, were discussed with an elderly resident who used to be a camel herder between 1958 and 1962. She linked the significant increase in use of saxaul as fuel mainly to the first increase of cars available for transport. By 1960, there were only 3 cars (2 trucks, 1 Russian Jeep) in Baynlig soum, and the number of cars began to grow thereafter. The decline of Saxaul begins in the same period. The number of camel does not show a relation to saxaul abundance in the table produced by this informant.

Table 11: Changes in Saxaul abundance

	1950-60	1960-70	1970-80	1980-90	1990-2000	After 2000
Saxaul	9	8	5	3	2	1
Number of vehicle	0	3	5	7	8	9
Number of big buildings	1	3	6	8	8	9
Number of camel	5	7	10	8	5	10
Coal usage			3	7	7	10

Figure 14. Livelihood analysis of “average” household

Income



Expenditure

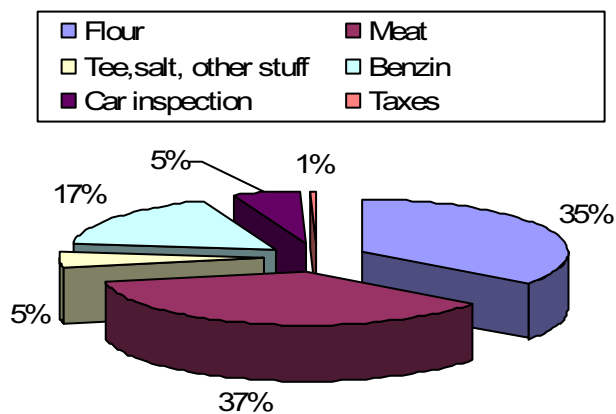


Table 12. Natural Resources used for local livelihoods.

English Name	Scientific Name
Plants	
Mongolian onion	<i>Allium mongolicum</i>
	<i>Salsola passerine</i>
Anabasis	<i>Anabasis brevifolia</i>
Achnatherum	<i>Achnatherum splendens</i>
Onion sp.	<i>Allium polyrrhizum</i>
Stipa	<i>Stipa gobica</i>
Saxaul	<i>Haloxylon ammodendron</i>
Reamuria	<i>Reaumuria soongarica</i>
Salsola	<i>Salsola arbuscula</i>
Kalidium sub-shrub	<i>Kalidium foliatum</i>
Niter bush	<i>Nitraria sibirica</i>
Nitraria bush	<i>Nitraria Roborovskii</i>
	<i>Cynomorium soongaricum</i>
Chinopodium	<i>Chenopodium album</i>
	<i>Glycyrrhiza uralensis</i>
Rock jasmine	<i>Androsace incana</i>
Brachanthemum	<i>Brachanthemum gobicum</i>
	<i>Agrophyllum pungens</i>
	<i>Eurotia ceratoides</i>
Bassia	<i>Corispermum tylocarpum</i>
	<i>Artemisia frigida</i>
	<i>Rheum nanum</i>
Pea shrub	<i>Caragana tibetica</i>
Reaumuria	<i>Tamarix ramosissima</i>
Sagebrush	<i>Artemisia adamsii</i>
Plantain	<i>Plantago depressa</i>
Barley	<i>Hordeum</i>
	<i>Helictotrichon schellianum</i>
Wildlife	
Wolf	<i>Canis lupus</i>
Red fox	<i>Vulpes vulpes</i>
Mongolian gazelles	<i>Procapra gutturosa</i>
Black tailed gazelles	<i>Gazella subgutturosa</i>
Snow leopard	<i>Panthera uncial</i>
Hare	<i>Lepus tolai</i>
Corsac fox	<i>Vulpes corsac</i>

Further information about the LSP

The Livelihood Support Programme (LSP) works through the following sub-programmes:

Improving people's access to natural resources

Access of the poor to natural assets is essential for sustainable poverty reduction. The livelihoods of rural people with limited or no access to natural resources are vulnerable because they have difficulty in obtaining food, accumulating assets, and recuperating after shocks or misfortunes.

Participation, Policy and Local Governance

Local people, especially the poor, often have weak or indirect influence on policies that affect their livelihoods. Policies developed at the central level are often not responsive to local needs and may not enable access of the rural poor to needed assets and services.

Livelihoods diversification and enterprise development

Diversification can assist households to insulate themselves from environmental and economic shocks, trends and seasonality – in effect, to be less vulnerable. Livelihoods diversification is complex, and strategies can include enterprise development.

Natural resource conflict management

Resource conflicts are often about access to and control over natural assets that are fundamental to the livelihoods of many poor people. Therefore, the shocks caused by these conflicts can increase the vulnerability of the poor.

Institutional learning

The institutional learning sub-programme has been set up to ensure that lessons learned from cross-departmental, cross-sectoral team work, and the application of sustainable livelihoods approaches, are identified, analysed and evaluated for feedback into the programme.

Capacity building

The capacity building sub-programme functions as a service-provider to the overall programme, by building a training programme that responds to the emerging needs and priorities identified through the work of the other sub-programmes.

People-centred approaches in different cultural contexts

A critical review and comparison of different recent development approaches used in different development contexts is being conducted, drawing on experience at the strategic and field levels in different sectors and regions.

Mainstreaming sustainable livelihoods approaches in the field

FAO designs resource management projects worth more than US\$1.5 billion per year. Since smallholder agriculture continues to be the main livelihood source for most of the world's poor, if some of these projects could be improved, the potential impact could be substantial.

Sustainable Livelihoods Referral and Response Facility

A Referral and Response Facility has been established to respond to the increasing number of requests from within FAO for assistance on integrating sustainable livelihood and people-centred approaches into both new and existing programmes and activities.

For further information on the Livelihood Support Programme,
contact the programme coordinator:
Email: LSP@fao.org

LSP WORKING PAPERS to August 2006

- Baumann P., (July 2002) **Improving Access to Natural Resources for the Rural Poor: A critical analysis of central concepts and emerging trends from a sustainable livelihoods perspective.** FAO, LSP WP 1, Access to Natural Resources Sub-Programme.
- Cotula L., (August 2002) **Improving Access to Natural Resources for the Rural Poor: The experience of FAO and of other key organizations from a sustainable livelihoods perspective.** FAO, LSP WP 2, Access to Natural Resources Sub-Programme.
- Karl M., (August 2002) **Participatory Policy Reform from a Sustainable Livelihoods Perspective: Review of concepts and practical experiences.** FAO, LSP WP 3, Participation, Policy and Local Governance Sub-Programme. Also available in Spanish and French.
- Warren P., (December 2002) **Livelihoods Diversification and Enterprise Development: An initial exploration of Concepts and Issues.** FAO, LSP WP 4, Livelihoods Diversification and Enterprise Development Sub-Programme.
- Cleary D., with contributions from Pari Baumann, Marta Bruno, Ximena Flores and Patrizio Warren (September 2003) **People-Centred Approaches: A brief literature review and comparison of types.** FAO, LSP WP 5, People-Centered Approaches in Different Cultural Contexts Sub-Programme. Also available in Spanish and French.
- Seshia S. with Scoones I., Environment Group, Institute of Development Studies, University of Sussex, UK (November 2003) **Understanding Access to Seeds and Plant Genetic Resources. What Can a Livelihoods Perspective Offer?** FAO, LSP WP 6, Access to Natural Resources Sub-Programme.
- Biggs S. D., and Messerschmidt D., (December 2003) **The Culture of Access to Mountain Natural Resources: Policy, Processes and Practices.** FAO, LSP WP 7, Access to Natural Resources Sub-Programme.
- Evrard O., (Janvier 2004) **La mise en oeuvre de la réforme foncière au Laos : Impacts sociaux et effets sur les conditions de vie en milieu rural** (with summary in English). FAO, LSP WP 8, Access to Natural Resources Sub-Programme.
- Ellis F., Allison E., Overseas Development Group, University of Anglia, UK (January 2004) **Livelihood Diversification and Natural Resource Access.** FAO, LSP WP 9, Access to Natural Resources Sub-Programme, Livelihood Diversification and Enterprise Development Sub-Programme.
- Hodgson S., (March 2004) **Land and Water – the rights interface.** FAO, LSP WP 10, Access to Natural Resources Sub-Programme.
- Mitchell R. and Hanstad T., Rural Development Institute (RDI), USA, (March 2004) **Small homegarden plots and sustainable livelihoods for the poor.** FAO LSP WP 11, Access to Natural Resources Sub-Programme.
- Hanstad T., Nielsen R., Brown J., Rural Development Institute (RDI), USA, (May 2004) **Land and Livelihoods: Making land rights real for India's rural poor.** FAO LSP WP 12, Access to Natural Resources Sub-Programme.
- Fisher R.J., Schmidt K., Steenhof B. and Akenshaev N., (May 2004) **Poverty and forestry : A case study of Kyrgyzstan with reference to other countries in West and Central Asia.** FAO LSP WP 13, Access to Natural Resources Sub-Programme.
- Cotula L., and Toulmin, C. with van Vlaenderen, H., Tall, S.M., Gaye, G., Saunders, J., Ahiadeke, C. and Anarfi, J.K, International Institute for Environment and Development (IIED), UK (July 2004) **Till to tiller: Linkages between international remittances and access to land in West Africa.** FAO LSP WP 14, Access to Natural Resources Sub-Programme.
- Baumann P., Bruno M., Cleary D., Dubois O. and Flores X., with contributions from Warren P., Maffei T. and Johnson J. (March 2004) **Applying people centred development approaches within FAO: some practical lessons.** FAO LSP WP 15, People Centred Approaches in Different Development Contexts Sub-Programme. Also available in Spanish and French.
- Neely C., Sutherland K., and Johnson J. (October 2004) **Do sustainable livelihoods approaches have a positive impact on the rural poor? – A look at twelve case studies.** FAO LSP WP 16, Institutional Learning Sub-Programme.
- Norfolk S. (2004) **Examining access to natural resources and linkages to sustainable livelihoods: A case study of Mozambique.** FAO LSP WP 17, Access to Natural Resources Sub-Programme.
- Unruh J. (2004). **Post-conflict land tenure: using a sustainable livelihoods approach.** FAO LSP WP 18. Access to Natural Resources Sub-Programme.

- Eckman, C. (2005). **Lessons Learned by the WIN Project on Livelihoods Diversification and Enterprise Development: An Overview of WIN LDED-related Activities in Cambodia, Nepal and Zambia.** FAO LSP WP 19. Livelihoods Diversification and Enterprise Development Sub-Programme.
- Warren, P. (2005). **Between the Household and the Market: A livelihoods analysis of SPFS seed multiplication in Southern Guatemala.** FAO LSP WP 20. Livelihoods Diversification and Enterprise Development Sub-Programme.
- Strele M., Holtge K., Fiebeger M., Were J., Schulmeister A., with contributions from Weingartner L., (2006) **Participatory Livelihoods Monitoring . Linking Programmes and Poor People's Interests to Policies Experiences from Cambodia.** FAO LSP WP 21. Participation, Policy and Local Governance Sub-Programme.
- Unruh J. and Turray H. (2006). **Land tenure, food security and investment in postwar Sierra Leone.** FAO LSP WP 22. Access to Natural Resources Sub-Programme.
- Nielsen R., Hanstad T., and Rolfes L. **Rural Development Institute (RDI). (2006). Implementing homestead plot programmes: Experience from India.** FAO LSP WP 23. Access to Natural Resources Sub-Programme.
- Quan, J. Natural Resources Institute University of Greenwich. (2006). **Land access in the 21st century: Issues, trends, linkages and policy options.** FAO LSP WP 24. Access to Natural Resources Sub-Programme.
- Cotula L., Hesse C., Sylla O., Thébaud B., Vogt G., and Vogt K. International Institute for Environment and Development (IIED). (2006.) **Land and water rights in the Sahel: Tenure challenges of improving access to water for agriculture.** FAO LSP WP 25. Access to Natural Resources Sub-Programme.
- Gomes N. (2006). **Access to water, pastoral resource management and pastoralists' livelihoods: Lessons learned from water development in selected areas of Eastern Africa (Kenya, Ethiopia, Somalia).** FAO LSP WP 26. Access to Natural Resources Sub-Programme.
- Tanner C., Baleira S., Norfolk S., Cau B. and Assulai J. (2006). **Making rights a reality: Participation in practice and lessons learned in Mozambique.** FAO LSP WP 27. Access to Natural Resources Sub-Programme.
- Tanner C. and Baleira S. with Afonso Â, Azevedo J. P., Bila J., Chichava C., Moisés A., Pedro C. and Santos J. (2006). **Mozambique's legal framework for access to natural resources: The impact of new legal rights and community consultations on local livelihoods.** FAO LSP WP 28. Access to Natural Resources Sub-Programme.
- Romano F. and Reeb D. (2006). **Understanding forest tenure: What rights and for whom? Secure forest tenure for sustainable forest management and poverty alleviation: the case of South and Southeast Asia, with case studies of Orissa and Meghalaya, India and Nepal.** FAO LSP WP 29. Access to Natural Resources Sub-Programme.
- Lindsay J., Wingard J. and Manaljav Z. (2006). **Improving the legal framework for participatory forestry: Issues and options for Mongolia.** FAO LSP WP 30. Access to Natural Resources Sub-Programme.
- Schmidt S. with Altanchimeg C., Tungalagtuya K., Narangerel Y., Ganchimeg D., Erdenechimeg B., Dambayuren S. and Battogoo D. New Zealand Nature Institute - Initiative for People Centered Conservation. (2006). **Depleting natural wealth – perpetuating poverty: Rural livelihoods and access to forest resources in Mongolia.** FAO LSP WP 31. Access to Natural Resources Sub-Programme.
- Schmidt S. with Altanchimeg C., Tungalagtuya K., Narangerel Y., Ganchimeg D., Erdenechimeg B., Dambayuren S. and Battogoo D. New Zealand Nature Institute - Initiative for People Centered Conservation. (2006). **Rural livelihoods and access to forest resources in Mongolia: Methodology and case studies of Tsenkher Soum, Ulaan Uul Soum, Binder Soum, Teshig Soum and Baynlig Soum.** FAO LSP WP 32. Access to Natural Resources Sub-Programme.

Livelihood Support Programme (LSP)

Email: LSP@fao.org

from OUTSIDE FAO:

http://www.fao.org/sd/dim_pe4/pe4_040501_en.htm

from INSIDE FAO:

<http://intranet.fao.org/en/departments/sd/en/projects/lsp/index.html>