

Vol. 38 KREUTZMANN, H. & S. SCHÜTTE (eds.) (2011): After the Flood in Pakistan. Assessing Vulnerability in Rural Sindh

Vol. 37 VÖHRINGER, M. (2010): Renewable Energy and Sustainable Development. An Impact Assessment of Micro and Mini Hydel Projects in Gilgit-Baltistan, Pakistan

Vol. 36 KREUTZMANN, H. & S. SCHÜTTE (eds.) (2009): Three Years After. Evaluation of the GRC/ICRC Livestock Programme in the Earthquake-affected Areas of Paksitan-administered Kashmir

Vol. 35 KREUTZMANN, H., M. SCHMIDT & A. BENZ (eds.) (2008): The Shigar Microcosm: Socio-economic Investigations in a Karakoram Oasis, Northern Areas of Pakistan

Vol. 34 BLANK, M. (2007): Rückkehr zur subsistenzorientierten Viehhaltung als Existenzsicherungsstrategie. Hochweidewirtschaft in Südkirgistan

Vol. 33 MAIER, C. (2007): Decentralised Rural Electrification by Means of Collective Action. The Sustainability of Community Managed Micro Hydels in Chitral, Pakistan

Vol. 32 SCHMIDT, M. (2006): Transformation der *Livelihood Strategies* im ländlichen Kirgistan. Verlorene Sicherheiten und neue Herausforderungen

Berlin Geographical Papers



Vulnerabilities in the Eastern Pamirs



Fanny Kreczi

Centre for Development Studies (ZELF)
Institute of Geographical Sciences
Freie Universität Berlin

Editor of Berlin Geographical Papers

Prof. Dr. Hermann Kreutzmann

Contact

Centre for Development Studies (ZELF)
Institute of Geographical Sciences
Freie Universität Berlin
Malteserstr. 74-100
D-12249 Berlin

h.kreutzmann@fu-berlin.de

Tel: +49 - 30 - 838 70223

Fax: +49 - 30 - 838 70757

Map design on title page: Tobias Kraudzun

© 2011 Centre for Development Studies, Freie Universität Berlin

ISSN: 1869-3377

BERLIN GEOGRAPHICAL PAPERS

Vol. 39

Vulnerabilities in the Eastern Pamirs

Fanny Kreczi

Centre for Development Studies (ZELF)
Institute of Geographical Science
Freie Universität Berlin

2011

Contents

1 Context and guiding questions	1
2 Theoretical framework	3
2.1 The vulnerability approach	3
2.2 Geographical risk research	4
2.3 The Sustainable Livelihood Approach	6
2.4 Questions on the way from theory to practice.....	9
3 The case study of Murghab.....	11
3.1 Ecological framework of the Eastern Pamirs	11
3.2 Murghab in transition	12
3.3 Transformation process in the Pamirs.....	15
3.4 State of research on the Eastern Pamirs.....	15
4 Vulnerabilities in the Eastern Pamirs	17
4.1 Vulnerability in Murghab	17
4.1.1 Demographic structures	17
4.1.2 Livelihood assets	20
4.1.3 Sustainable livelihoods in Murghab	35
4.2 The current state and perspectives of development cooperation in Murghab	37
4.2.1 Inventory of organisations and projects	37
4.2.2 Chances and limitations of development cooperation in Murghab	44
4.3 Relevance of development cooperation to sustainable livelihoods.....	44
5 Conclusions and prospects	49
6 Bibliography.....	50

List of Figures

Figure 1: The double structure of vulnerability	5
Figure 2: Sustainable livelihood framework.....	7
Figure 3: Ethno-linguistic groups in Murghab 2008.....	18
Figure 4: Age composition of the population of Murghab 2008	18
Figure 5: Gender distribution of the population of Murghab 2008.....	19
Figure 6: Main destinations of labour migration.....	19
Figure 7: Income distribution in Murghab 2008.....	29
Figure 8: Monthly average income of profession groups	31
Figure 9: Distribution of livestock possession in Murghab 2008	31
Figure 10: Mobility in Murghab 2008	33
Figure 11: Organigram of the Aga Khan Development Network (AKDN)	39
Figure 12: Challenges for households in Murghab 2008	45
Figure 13: Known organisations and institutions in Murghab 2008	45
Figure 14: Known activities of organisations in Murghab 2008	46

List of Tables

Table 1: Fields of potentials and opposing challenges for human assets.....	21
Table 2: Meat prices in Murghab 7/2008	23
Table 3: Fields of potentials and opposing challenges of natural assets	24
Table 4: Fields of potentials and opposing challenges of physical assets	27
Table 5: Energy prices in Murghab 2008	28
Table 6: Income versus requirement - The shortage of household budgets in Murghab	29
Table 7: Food prices in Murghab 2008	30
Table 8: Prices for sheep in Somoni at the bazaar in Osh 2008.....	32
Table 9: Fields of potentials and opposing challenges of financial capital	33
Table 10: Fields of potentials and challenges of sustainable livelihoods in Murghab	36
Table 11: Structure of active organisations in the Eastern Pamirs	38

List of Photos

Photo 1: Pamir Highway.....	13
Photo 2: Teresken at the bazaar in Murghab	23
Photo 3: Hand pump in the centre of Murghab	26
Photo 4: Shop at the bazaar in Murghab.....	47
Photo 5: Yurts at the summer pastures of Pshart-Valley.....	48

List of Maps (attachments)

Map A: Murghab - livestock per household	
Map B: Murghab - income distribution	
Map C: Comparison of livestock and ethno-linguistic groups	
Map D: Murghab - land use	

List of Acronyms

ACTED	Agency for Technical Cooperation and Development
AKES	Aga Khan Education Service
AKF	Aga Khan Foundation
AKHS	Aga Khan Health Service
AKDN	Aga Khan Development Network
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
CCM	Christian Charity Mission
CDE	Centre for Development and Environment
CIM	Zentrum für internationale Migration und Entwicklung
DED	Deutscher Entwicklungsdienst
DFID	Department for International Development
EZ	Entwicklungszusammenarbeit
FAO	Food and Agriculture Organisation
GBAO	Gorno Badakhshanskaya Avtonomnaya Oblast
GIS	Geo Information System
GTZ	Gesellschaft für Technische Zusammenarbeit
HAP	Humanitarian Assistance Program
HDI	Human Development Index
IBRD	International Bank for Reconstruction and Development
IRCT	International Red Crescent Tajikistan
MDGs	Millennium Development Goals
META	Murghab Ecotourism Association
MFP	Micro Finance Program
MSDSP	Mountain Society Development and Support Program
NGO	Non-Governmental Organisation
NPT	Nature Protection Team
OECD	Organisation of Economic Cooperation and Development
ODI	Overseas Development Institute
PHIP	Pamir High Mountains Integrated Program
PRDP	Pamir Relief and Development Program
PSP	Pamir Strategy Program
SDC	Swiss Development Cooperation
SLC	Snow Leopard Conservancy
SLA	Sustainable Livelihood Approach
TCF	The Christensen Fund
TYH	The Yak House
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNHCR	United Nations High Commissioner for Refugees
USAID	United States Agency for International Development
VO	Village Organisation

1 Context and guiding questions

Since the end of the 1960s, criticism of the motives, strategies and methods employed in the southern countries¹ by international development cooperation has been increasing - beginning particularly with the „crisis of development aid“, attested and deplored in the Pearson Report in 1969. The first decade (1961 - 1970), throughout which a decrease of poverty by means of the „trickle down effect“² had been hoped for, was followed by the 1970s, with the attempt to actively support development³ and thus lessen the poverty of people in southern countries by means of satisfying basic needs and with „assistance in self-aid“, - this attempt, however, was in vain. In the third decade of development, the oil crisis of 1979/80 led to a diminution of the development cooperation's financial means, causing many southern countries to entangle themselves in debt.⁴ Throughout this period, poverty continued to spread in these countries, hence the term „lost decade“ is used to characterise this era. Since the beginning of the 1990s, sustainability⁵ has become the international development cooperation's guiding motif. Along with the „assistance in self-aid“, it is meant to curtail depletion of natural resources and the increasing levels of poverty affecting people in the southern countries.

In the year 2000, a task group comprising representatives of the United Nations, the Organisation for Economic Cooperation and Development (OECD), the International Bank for Reconstruction and Development (IBRD) and various Nongovernmental Organisations, drafted the eight *Millennium Development Goals* (MDG) as part of the Millennium Declaration. Since then these goals act as an international framework for development politics. They are highly ambitious - one example being the reduction of poverty⁶ to half of its present level worldwide, - if we keep in mind that they are supposed to be met by 2015. However, as of 2009, it is questionable if these goals can be reached within this time frame. For many regions of the world today, it seems that individual goals can be realized, however, not the bundle of all eight MDGs required to sustainably diminish poverty. Additionally, the realization of these goals can only have a long-lasting effect if other important requirements are met. Above all things, this encompasses larger funds for development cooperation, a qualitative improvement of development cooperation, remissions of debts by the donor countries and more equitable commerce laws (cf. Nuscheler and Roth 2006).⁷

¹ The terms „industrial nation“ and „developing nation“, as defined by the modernisation theory, suggest an understanding of development as catch up development towards an industrial nation. Equally the terms *southern countries* and *northern countries* are results of the critical discussion of modernisation theory. Here, they do not stand for global regions but rather should be taken allegorically, denoting the former colonies in the southern hemisphere as well as the former colonial powers in the northern hemisphere.

² The „trickle down effect“ refers to the thesis of modernisation theorists suggesting that a strong economic growth eventually benefits the lower social strata as well. The positive development is supposed to extend itself from the centre toward the peripheral regions with batch-wise support of economic growth by financial means of the donor countries, in other words, by means of the „Big Push“. In practice, however, this sort of approach often leads to great regional disparities affecting particularly the poor (cf. Berger 1996: 46).

³ For a detailed discussion of the terms „development“ and „developing nation“, see Ch. 2.1.

⁴ Credits taken by the developing countries can only be paid back by means of taking up further credits. In this way, the nations progressively run up debts. The debts of the southern countries have steadily been growing from the 1970 onward. Critics demand the cancellation of debts.

⁵ The United Nations conference held in Rio de Janeiro in 1992 on the topic of environment and development can be regarded as the beginning of the sustainability debate. The foundation of the Commission for Sustainable Development was a result of this conference. A new approach to handling sustainability has been put forward by Scharmer (2009).

⁶ „Absolute poverty“ as defined by the IBRD is given if a person has less than 1.25 US\$ per day to make his/her living.

⁷ German development politics, too, revamped the old hat of development politics at the turn of the millennium. The „concept of global structure politics“ that allows for a re-orientation in favour of a reasonable shaping of the global framework for 'development'“ (Ziai 2007: 10, translation: F.K.) is supposed to be the magic formula that will increase efficiency and effectiveness of German development cooperation. Ziai does regard the concept of global structure politics as a „reaction to the crisis of development politics“ (p. 237, translation: F.K.), however he adds „if taken as a generalization of the action logic of development politics to other fields of foreign politics, it is highly likely to cause conflict“ (p. 240, translation: F.K.).

Presently, the „crisis of developmental politics“ is not yet resolved. However, as is commonly known, a crisis also opens up new opportunities. The *Sustainable Livelihood Approach* (SLA), which provides the theoretical framework to the study at hand, could present a chance to optimize the practice of development cooperation, while also paying regard to the complex circumstances of the individual local contexts in which poverty comes about. It simultaneously provides the means for an analysis of livelihoods, thereby creating a context specific image of poverty and vulnerability - an image, which needs to be developed if combating poverty is to have a foundation.

The international community is presented with great challenges when defining and evaluating poverty in local contexts and devising ways to combat it (cf. Spranger and Wolff 2003).⁸ These issues are broached in the study. The same difficulties arise when attempting to achieve a universal definition of the term „development“ (cf. Nyerere 1991, Nohlen and Nuscheler 1992, Rauch 2007, Sumner and Tribe 2008). Since the investigation of poverty in this paper is conducted within the context of development engineering, Nyerere's definition will be used as a basis for a consistent understanding of the term:

„Development is a process allowing the people to realize their abilities, gain confidence and live a fulfilling life. Development is a process that liberates the people from fear of poverty and exploitation. It is the way out of political, economic and social oppression. It is by development that political independence obtains its real meaning. [...] It is therefore synonymous with a growing individual as well as collective autonomy.“ (p. 34, translation: F.K.)

Certain important elements of the definition, such as the unfolding of abilities, the aspect of well-being or individual and collective autonomy can also be found in the SLA. Against this background, the present study is concerned with sustainable livelihoods and the effects of development cooperation with regard to their improvement and optimization in the Eastern Pamirs. In order to present the complexity of poverty and the influence that the development cooperation bears on sustainable livelihoods in the region, it is crucial to answer the following questions:

1. How does the complexity of poverty present itself in the local context of the high mountains in the southern countries?
2. What is the potential contribution of international organisations with respect to an improvement of sustainable livelihoods?

Firstly, sustainable livelihoods are elaborated here by means of a case study. This permits to demonstrate the specific characteristics of poverty and simultaneously the various strategies for survival employed by the local population in the Eastern Pamirs. The graphic presentation of sustainable livelihoods in Geo Information Systems (GIS) serves to locate the statistical data in the territorial context.

Secondly, I analyse the significance of the development cooperation for sustainable livelihoods in the Eastern Pamirs. In a first step, I draw up an inventory of the work of various organisations. Based on this portfolio I conduct an analysis and demonstration of the effectiveness, efficiency, relevance and sustainability of development cooperation in the regional context by means of a comparison between two development organisations.

⁸ The stereotyping of the concept of development is closely intertwined with the euro-centristic unification of the concept of development, criticized - among others - by the North-South commission led by Willy Brandt: „Development is more than just a transition from poor to rich, from traditional agriculture toward a complex community. It carries not only the idea of material wealth but also the idea of more human dignity, more safety, justice and equality.“ (Brand Report 1980: 65, translation: F.K.)

2 Theoretical framework

In this chapter, I present the vulnerability approach as an alternative to a normative understanding of poverty. Geographic perspectives on vulnerability and geographic risk research provide further conceptual context for the study. Further, the SLA as a practice oriented framework for the analysis of survival strategies and the work of development cooperation represents an important instrument of the study.

2.1 The vulnerability approach

Chambers (1989) has coined the term of vulnerability as one of the pioneers in the field. Not content with defining poverty by a lack of monetary resources but further incorporating the social components of insecurity, stress and the lack of ability to handle risks he assesses the following:

„Vulnerability, though, is not the same as poverty. It means not lack or want, but defencelessness, insecurity and exposure to risk, shocks and stress [...], and the difficulty coping with them.“ (ibidem: 33)

Vulnerability, then, denotes a basic inability of persons (and societies) of coping with dangers.⁹ According to the definition that Chambers put forward, vulnerability displays an external and an internal side. The external side concerns risks, shocks, and stress that a household¹⁰ is subject to. The internal side refers to the (lacking) capacities people have to handle such external situations (Chambers 1989: 33).

Bohle and Watts assert that the theoretical examination of vulnerability is mainly concerned with the external side. Therefore, Bohle (1994) calls for a systematic broadening of the concept including its internal side, in other words for an intensified scientific debate of the coping abilities of individuals and households. The empirical investigation in the paper at hand therefore focuses on the internal side of vulnerability.

Chambers postulates the differentiation of poverty and vulnerability against the background that poverty is usually defined in terms of monetary factors and statistical values, and measures to reduce poverty are developed based on these values:

„Failure to distinguish vulnerability from poverty [...] blurs distinctions and sustains stereotypes of the amorphous and undifferentiated mass of the poor. Poverty is often defined [...] in terms of flows of income or consumption. [...] Indicators of poverty are then easily taken as indicators of other dimensions of deprivation, including vulnerability. But vulnerability, more than poverty, is linked with net assets. [...] Programmes and policies to reduce vulnerability - to make more secure - are not, one for one, the same as programmes and policies to reduce poverty - to raise incomes.“ (Chambers 1989: 33)

If we define poverty via factors such as income and purchasing power, correspondingly, we should be able to fight poverty by raising income, using credit and investment. The vulnerability of the poor, however, increases with rising levels of debt.¹¹

Following Chamber's argumentation, the problem of treating poverty and vulnerability as synonyms leads to the misconception of poverty seen as an „illness“ in the practice of development cooperation. Extending this metaphor, we could say: monetary injections can

⁹ The distinction between danger and risk plays a particularly important role to Luhmann (1991). See Ch. 2.2: Geographic risk research.

¹⁰ In the following, I assume a group of people who are mostly organized by blood relationship, live in the same house, and make their living by mobilizing the resources of all members of the group to be a household (cf. Bertram 1993).

¹¹ The development measures taken during the „lost decade“ and the debt trap following them can serve as an illustration of this connection.

attenuate the symptoms of poverty in the short term. For a long-term alleviation, however, other measures are required. The „crisis of developmental aid“ results, among other things, from fighting the symptoms rather than the causes of poverty (cf. Poth 2005).

A further problem lies in the difficulty to assess how sustainable and quickly or qualitatively well the concerned individuals are able to recover from stress or shock events, because “[...] all persons at the same level of income do not suffer equally in disaster situations, nor do they encounter the same handicaps during the period of recovery.” (Wisner 1993: 13)

This insight has finally induced a turnaround in development politics after decades of unsuccessful struggle against poverty. In the discussion surrounding development politics, there is a movement focusing on individual phenomena rather than universalist theories (Scholz 2006). Since in an interdependent world, the (regional) determining factors of poverty and vulnerability become increasingly more complex, thus universal and generalizing theories become obsolete for the practice of development cooperation. Seen in this context, Chamber’s vulnerability approach (1989) is still highly valid today, as it demands the examination of individual, context-specific phenomena.

The interrelations between persons (or societies), natural territories and political as well as economic factors determining their lives constitute the key elements of the vulnerability approach. Therefore, vulnerability as a concept in the social sciences needs to pay regard to differentiations, which are group specific (individual or with regard to households or larger groups), geographic, (local/regional/national) as well as temporal (short-term/long-term).

The holistic nature of the vulnerability approach furthermore allows for analysing the interconnection of these aspects. Thus the analysis of vulnerability - going beyond purely economic criteria - encompasses the individual position of a person, group or a region in the corresponding social context. Social, cultural and political dimensions are taken into consideration. Vulnerability, then, is a multi-layered, multi-dimensional phenomenon (cf. Bohle 2007a).

2.2 Geographical risk research

In geography, vulnerability is in particular discussed within the framework of geographic risk research (cf. Bohle and Watts 1993, Scholz 1996, Blaikie et al. 2005, Müller-Mahn 2007, Wisner 2007). In this branch of research, (natural) territory and its interrelation with people or societies, bears an elementary significance. Müller-Mahn (2007) phrases some of the essential questions of geographic risk research as follows:

„In how far is risk a feature of territory and in how far is it one of society? What can risk mean from a territory-oriented perspective or, on the other hand, a society- and action-oriented perspective? What separates and connects these two perspectives? And last but not least: Which understanding of risk is the appropriate basis for an adequate handling of risks?“ (Müller-Mahn 2007: 4, translation: F.K.)

Thus questions about risk are central to a geographic inquiry on vulnerability in a regional context. In order to continue with our examination, then, it is necessary to look in more detail at the term and how it should be understood. This much-discussed question has been and remains a topic of scientific debate in many disciplines.¹² Hence a multitude of answers, definition attempts and clarifications of the concept exists.¹³ In the following, some aspects of the discussion relevant to the geographic risk research shall be examined.

¹² Examples include insurance management, financial management, psychology, sociology, mathematics and philosophy.

¹³ „There is no concept of risk that would meet scientific requirements. [...] If we attempt to look for definitions of the risk concept, we find ourselves surrounded by mist [...]“ (Luhmann 1991: 14-15, translation: F.K.)

The system theorist Luhmann (1991) has made an essential contribution to the interdisciplinary discussion with his delineation of the term. The difference between danger and risk is central for Luhmann as he understands the degree of social development to be dependent on the ability to translate incalculable dangers into calculable risks which then can be coped with.

„The term ‚risk‘, however, is notably distinguished from the term ‚danger‘, in other words from the case in which future damage is not seen as a consequence resulting from a decision, but is rather attributed externally. The distinction danger/risk [...] marks a limit, the crossing of which leads to the contrary situation with entirely different conditions and connectivities. [...] In the case of dangers the society is subjected to a problem, which has not been generated by the damaged party itself. Risks are attributed to decisions, dangers are attributed externally.“ (Luhmann 1991: 111-113, translation: F.K.)

Luhmann’s distinction of danger and risk directs our attention to a core element of being human: the need for safety. In this way, social vulnerability could be defined by means of the degree to which this need for safety can be satisfied. The worse the abilities to cope with consequences of danger - external shocks, stress situations, insecurity and defencelessness, - the more vulnerable are the persons affected by these consequences. Conversely, Bohle writes (2007a):

„[...] vulnerability is low when a low degree of menace goes hand in hand with strong adaptation abilities. Then one can speak of human safety, resilience or robustness. This relationship can be observed in all forms of vulnerability.“ (ibidem: 20)

Bohle differentiates between the vulnerability of ecosystems, social vulnerability and technological vulnerability (Fig. 1). For the present study, the field of social vulnerability is of overriding importance. This is due to social vulnerability being closely linked to ecosystem vulnerability, particularly in the context of a rural periphery.

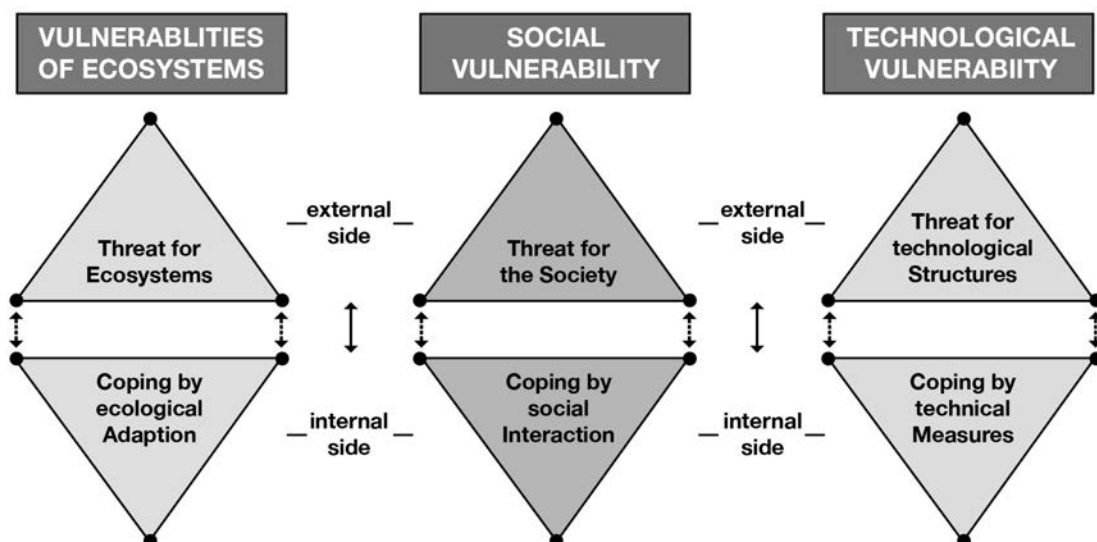


Figure 1: The double structure of vulnerability
Source: Bohle (2001a: 20, translation: F.K.)

Two different epistemological schools can be distinguished within geographic risk research with regard to the meaning of risk: the proponents of objectivist, natural science approaches (cf. Plate and Merz 2001), and those who argue from the position of constructivist social science (cf. Bechmann 1993). The first group assumes risks to be objective and therefore

calculable. The individual and/or the society only play a role within the calculation of an expected amount of damage. This amount of damage, when related with the probability of incidences, produces an expected damage value, which is of vital importance for insurance management. To proponents of the constructivist social science position, however, risk is constructed by the perception and the actions of people. Here, the individual is the focal point of interest, for it consciously exposes itself to dangers in everyday life in order to achieve certain goals, - therefore, it constructs the risk (cf. Müller-Mahn 2007). At this point, it is essential to understand the logic of the actors - decision-making processes, knowledge, experience, needs, values and social learning processes playing a major role here. Within risk research, topics often cannot clearly be attributed to a single discipline. Therefore, calls for interdisciplinary approaches and research have often been put forward (cf. Banse 1996, Banse et al. 2005).

The constructivist social science perspective lies at the core of the empirical inquiry of this study, and the local populations of the Eastern Pamirs and their actions are its focal point. However, the analysis of social vulnerability is impossible without an examination of the physical surroundings and the political and economic framework in which people make their living. An interdisciplinary approach is thus indispensable.

2.3 The Sustainable Livelihood Approach

At the beginning of the 1990, the practice oriented Sustainable Livelihood Approach (SLA)¹⁴ emerged from the vulnerability discourse. Chambers and Conway (1992) define sustainable livelihoods as follows:

„A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long-term.“ (ibidem: 7)

The concept of sustainable livelihoods offers the opportunity to analyse both the macro and micro levels of risk and survival with the help of a holistic analytical framework. At the centre of analysis is the level of the household, as can be derived from the definition of livelihoods put forward by Chambers and Conway. The approach pursued by the DFID since 1999¹⁵ with the development of the SLA¹⁶, privileges actors and the contexts in which they are immersed with a practice-oriented goal: „(the) identification of practical priorities for action that are based on the view and interest of those centred“ (DFID 1999).

The framework developed by the Sustainable Rural Livelihood Advisory Committee of DFID presents an analysis tool fit for an improved understanding of livelihoods in order to optimize the practice of development cooperation. The DFID task group outlines the features of the SLA as follows:

„[It] provides a checklist of important issues and sketches out the way these link to each other [...], draws attention to core influences and processes [...], emphasises the multiple interaction between the various factors which affect livelihoods.“ (DFID 1999)

¹⁴ Other approaches developed within the same framework include the Strategic Component and the Comprehensive Development Framework.

¹⁵ Several publications by the British Institute for Development Studies (IDS) have dealt with sustainable livelihoods and contributed to further developing of the concept (cf. Chambers and Conway 1991, Davies and Hassain 1997, Scoones 1998, Shankland 2000). During this time, institutions and NGOs such as Care, Oxfam, United Nations Development Programme (UNDP), the Overseas Development Institute (ODI) and the British Department for International Development (DFID) took up the concept as well.

¹⁶ In the following and unless otherwise stated, SLA refers to the Sustainable Livelihood Guidance Sheets drafted by the DFID in 1999 and further developed until 2001.

The DFID (1999) asserts a few overarching principles to be taken into account when analysing sustainable livelihoods: First and foremost, it is the principle of sustainability, which extends beyond the ecological dimension to the areas of economy, the social and toward institutions (ibidem: 10). A further basic principle of the SLA consists of identifying the positive aspects in the ecological, economic, political and social environment of sustainable livelihoods in order to be able to maximize them. Thus analysis is supposed to concentrate not merely on problems but also on potentials. The SLA methodically bases itself on the foundation of participation. This is supposed to guarantee that the goals of people within their vulnerability context are pursued rather than the goals of development cooperation.

Fig. 2 displays the framework of sustainable livelihoods. The vulnerability context here refers to the external conditions of livelihoods, such as shocks, trends and seasonality¹⁷. Depending on these general conditions, people can attain or utilize their assets¹⁸ in varying forms and to varying degrees. Transforming structures and processes that constitute the organisational and institutional context of sustainable livelihoods bear a defining influence on vulnerability. They contain the totality of all public and private organisations.¹⁹ Civil society actors, international, national and local NGOs, but also private companies fall under this category.

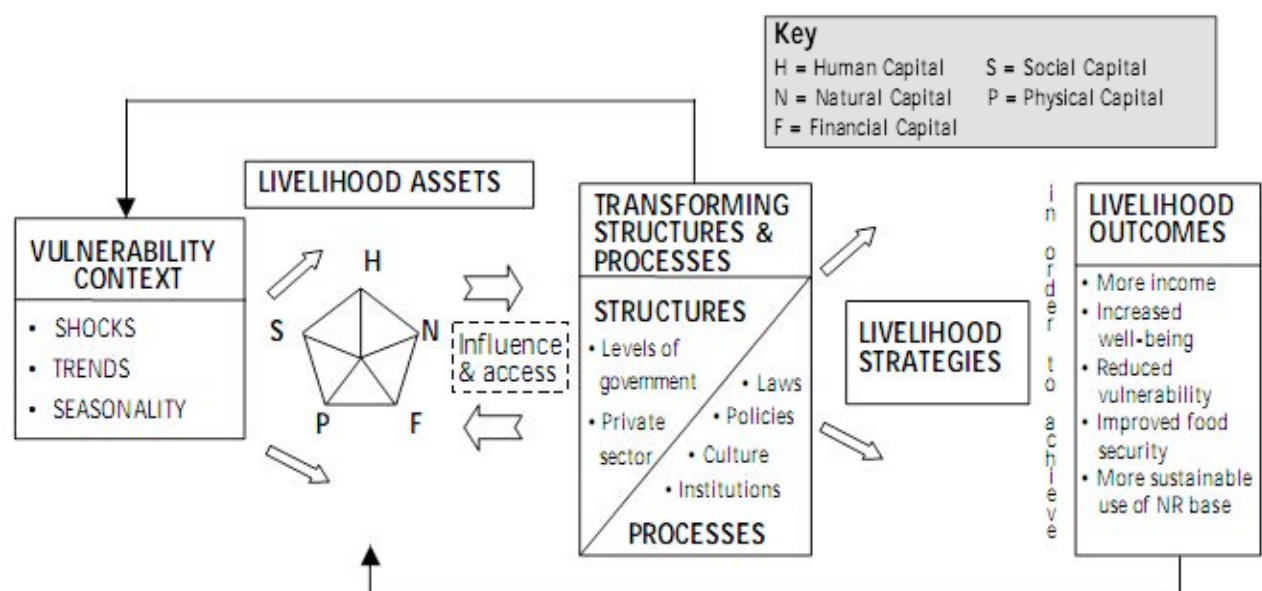


Figure 2: Sustainable livelihood framework
Source: DFID (1999)

The manifold transforming processes producing a frame of laws and regulations and therefore exhibiting an institutional character have a strong influence on the way in which actors interact and operate. Social power structures arising from gender, age and class belong to these processes as much as do social norms and values, international treaties and the creation of market incentives (cf. DFID 1999).²⁰

¹⁷ Examples of shocks include rapid changes in the external framework due to epidemics, extreme natural phenomena and acute economic crises; by trends, long-term processes such as the population development and the economic development, are depicted; seasonality can be described as season-dependent processes which influence prices, production and health.

¹⁸ The concept denotes the totality of the available sources that can be utilized to secure the livelihood (Bohle 2001).

¹⁹ Examples include political and corporate bodies from the local to the national/state level, governmental departments, and courts.

²⁰ The transforming structures and processes indicated here act as examples for a better understanding.

The transforming structures and institutional processes are permanently interrelated with the assets people have at their disposal. They constitute the conditions on which the households' access to the assets depends.

In the SLA, assets represent the fundamental resources available to households to form livelihood strategies and achieve their individual goals. These assets are classified in the following categories: (I) human assets, (II) natural assets, (III) physical assets, (IV) financial assets and (V) social assets (see Fig. 2: The asset-pentagon). Based on these assets and influenced by the individual vulnerability context and the transforming structures and processes, livelihood strategies are developed through which specific livelihood outcomes can be pursued. When the livelihood outcomes have been met, according to the logic of the SLA, the configuration of the assets changes (see Fig. 2).

(I) Human assets refer to the knowledge and the skills of an individual. Since working ability and health are prerequisites for the achievement of livelihood outcomes, they also belong into this category.

(II) Social assets encompass the social network available to a household. Here, the mobilization of social contacts can take horizontal (between individuals sharing a common interest) as well as vertical (within hierarchical structures) form. The ability to cooperate with other actors plays a special role with regard to social capital. This ability can present itself in the form of a membership in formal groups such as associations or special interest groups. Of the resource categories aforementioned, social capital is the one most closely linked to organisational structures and institutional processes. As a basic pre-condition for the utilization of the other assets, social capital holds a special position (Kroll 2008).

(III) Natural assets within the SLA mean the total of natural resources that can be used to the benefit of supporting oneself in the short or the long term. Natural capital comprises public goods such as the atmosphere and biodiversity, and also certain services linked to the physical environment, e.g. erosion control or waste management. There is a particularly close interrelation between natural assets and the vulnerability context. Since many shocks are natural processes, they can damage natural capital.²¹ Seasonality²², being just as important in connection with vulnerability, is directly dependent on changes in natural capital. In local contexts, the households that practice subsistence farming or whose profession is directly dependent on natural resources, such fishermen or peasants, prove to be the most affected (cf. Bohle 2007).

(IV) Physical assets describe the infrastructure and the production of goods necessary for a sustainable utilization of other assets. They refer to the entire transport infrastructure, housing opportunities, water supply and disposal and the information infrastructure. The equipment with physical capital is of particular importance for the effectiveness of forming sustainable livelihoods. If a household needs to invest disproportionate amounts of energy and time into the acquisition of water due to inadequate access possibilities, its productivity will be substantially compromised.

(V) Financial assets denote the financial resources utilizable for meeting livelihood outcomes and allowing for various livelihood strategies. The category financial capital encompasses, above all, available financial reserves and regular income. In certain local contexts, non-

²¹ One example here is the damage to the farmland caused by either floods in areas of river proximity or mudslides in mountain regions.

²² Examples of seasonality include floods in the summer as a consequence of high water, cattle loss during the winter due to the low temperatures and lack of forage, as well as droughts in late summer.

monetary reserves, such as territory, cattle or real estate, also play a part. The importance here lies with the ability to convert non-monetary reserves to financial means in case of need. A significant connection exists between shocks - part of the vulnerability context - and the available financial capital. The more reserves a household has, the better its ability to cope with livelihood shocks.

An important aspect in analysing the asset categories is their high degree of interdependence. Whenever equipment changes in one category, this change always yields consequences for the other assets. The interrelations between assets can result in both positive and negative outcomes. A surplus in one of the categories can balance a deficit in one of the other assets. By way of example, a lack in financial capital can be balanced with human or social capital when special skills in fixing things remove the necessity of acquiring something new. Social networks, too, play an important role in these contexts. Borrowing or exchanging resources between households can help compensate shortcomings with comparatively little effort. However, the relationships between assets can also have negative consequences: for example, when a lack in human capital also results in a decrease of financial capital.²³

2.4 Questions on the way from theory to practice

The above discussion of the vulnerability approach, of geographic risk research and the SLA enables us now to formulate the overarching research questions underlying this study.

In order to approximate an answer to the first major question that concerns the complexity of poverty in the local context of high mountain areas in southern countries, the focus is on the assets of the livelihoods. Further questions that result are:

- How is the population structured in the local context?
- What are the available assets, as classified by the categories of the SLA?
- What is the importance of financial capital that is often used as the most significant indicator when measuring poverty?
- How are sustainable livelihoods formed in the context of high mountain areas in southern countries?
- Which challenges and potentials determine sustainable livelihoods?
- Which livelihood strategies are developed by the local population?
- What vulnerabilities characterize poverty in the local context?

The second question deals with the role of the development cooperation with regard to the optimization of sustainable livelihoods. Here, the concrete questions are:

- Which organisations are active in the local context?
- Which programs and projects do they implement?
- To what extent do these programs exhibit effectiveness, efficiency, relevance and sustainability as their features?
- What are the opportunities presenting themselves to the development cooperation in the local context, and what are their boundaries?
- Are the potentials and challenges of sustainable livelihoods taken up in the course of development cooperation?
- Is development cooperation able to make a sustainable contribution to the improvement of livelihoods?

²³ Professional service capability drops with illness, which can cause the income to decrease or disappear entirely.

This study attempts to answer these questions through an inquiry into the concrete example of the high mountain region of the Eastern Pamirs. The sensitive living spaces of high mountains are particularly fit for an examination of these questions because the conditions for sustainable livelihoods are rather extreme in these areas. The sparse natural equipment, the peripheral position, the heavy seasonal fluctuation in temperature and the extreme altitude are but a few of the innumerable factors influencing the everyday life of people living in these regions. The interrelations between human beings and their environments are particularly strong in high mountain areas. The people are forced to make a living utilizing the few available resources they have. The sensitive ecosystem of the high mountains can be destabilised quickly due to overexploitation, environmental pollution and climate change, which presents additional challenges to households. Designing sustainable relationships between humans and environment is therefore of high importance. In the past few years, high mountains have attracted scientific and political attention due to their position as the largest fresh-water reservoir on earth.²⁴

Geomorphological features such as a high level of relief energy characterize areas at the extreme periphery. Long distances to markets and a mostly unsatisfactory transport infrastructure are further traits. There are considerable variations in temperature and precipitation. Depending on the relief, the material that collects during these processes is transported downward in the form of mass movements²⁵, often combined with precipitation events. The possibilities of agricultural land use are limited in mountain regions due to several reasons. Firstly, fertile soil is rare. Often enough, tillage is only possible in old river valleys, alluvial fans, and on the mountain slopes close to the lower valleys. Additionally, cultivation of field crops is further complicated by the extreme climates (depending on the position of the high mountains). Water economy, too, is coined by seasonal fluctuations. The availability of water is rather limited during the wintertime, when it is bound in higher regions in the form of ice, firn or snow. On the other hand, during spring and summer, when melt water makes streams and rivers burst their banks, water can become an acute peril to the inhabitants of these regions. High seismic activity, particularly in the area of geologic transform streams, is a frequent phenomenon that poses additional risks for people living in these mountain areas. The emerging ethno-linguistic diversity, promoted by the peripheral position, is traditionally associated with the „myth of high mountain valleys as regions for retreat“ (Kreutzmann 2001: 8, translation: F.K.).

If we examine these individual characteristics and phenomena it becomes clear that, in this context, one can undoubtedly speak of high mountains as a „critical region“ for „vulnerable groups“ (Bohle 1997: 39, translation: F.K.).

²⁴ The year 2002 was declared the „International year of the mountains“ by the United Nations. In the course of this, attempts were made to direct attention at the natural area of the high mountains by implementing projects and conducting events worldwide. The particularly profiled vulnerability of the mountain areas' inhabitants in most parts of the world was also made a topic.

²⁵ Examples include mud streams, avalanches, landslides, rockslides as well as solifluction processes.

3 The case study of Murghab

The Rayon²⁶ Murghab is a high mountain region in the Tajik Pamir, which confronts the resident population with multiple challenges. In addition to limiting natural environment factors for the development of sustainable livelihoods and the typical high mountain natural hazard potential, the livelihoods in Tajikistan (currently at position 122 in the world ranking of the Human Development Index)²⁷ are shaped by historical tensions between ethno-linguistic groups, the political processes of transformation and new and old border disputes. Together, these factors result in a high degree of vulnerability of the inhabitants of the Pamir.

The case study of Murghab examines the vulnerability of people living in high mountain areas and the influence of international development cooperation on their livelihood profiles. The Rayon Murghab is located in the *Gorno-Badakhshanskaya Avtonomnaya Oblast* (GBAO)²⁸. According to information from the Food and Agriculture Organisation (FAO) within Tajikistan, GBAO has the largest concentration of households living in poverty (FAO 2008: 6).²⁹ The Rayon has 14,013 inhabitants on 38,000km², resulting in a very low population density of 2.7 people/km² (*Hukumat* Administration Murghab, 2008).³⁰ The two largest ethno-linguistic groups are Kyrgyz (82%) and Pamiri³¹ (18%). In Murghab-town³², the capital of Rayon Murghab, 7,023 people live (4,974 Kyrgyz and 2,049 Pamiri) in 1,515 households (ibid.).

The following chapter provides an overview about the state of research on Murghab and the Eastern Pamirs. It then deals with the environmental conditions and historical development in the area, before the current situation for sustainable livelihoods is discussed in detail.

3.1 Ecological Framework of the Eastern Pamirs

From a geological perspective, the „roof of the world“, as the Pamir mountains are sometimes called³³, constitutes a connection between the great Himalayan arc in the south and the mountains of Allai and Tien Shan in the north, together with the Karakorum and the Eastern Hindukush (cf. Kreutzmann 1996). The Pamir extends to the national territories of Pakistan and Afghanistan in the south, of China in the east and of Kyrgyzstan in the North. Its Tajik part is nearly congruent with the administrative unit of GBAO, which amounts to 44.5% of Tajikistan's total area. The dialectic of the western and the eastern part of the Tajik Pamir is a significant feature of the region: geomorphological, the Western Pamirs are characterised by a high relief energy and shows differences in altitude of more than 4,000m between the valley floor (e.g. Khorog 2,075m asl) and the peaks (e.g. Peak Ismail Somoni: 7,495m asl). Large areas of active scree, many alluvial fans and a great variety of glacial forms are typical for the landscape. The settlement structure of the region has adapted to this environment: The residents of this area mostly live in close proximity to river oases, their food supply needs being met mainly by means of irrigated subsistence farming. As part of the Central Asian dry belt, the Pamir is characterized by a notable lack of precipitation

²⁶ Rayon means an administrative level, which can be compared to the German level of „Landkreis“.

²⁷ Human Development Report 2007/2008

²⁸ *Oblast* is the administrative level upon rayon and can therefore be compared with the German level of „Bundesland“. In the case of GBAO this *oblast* is politically autonomous.

²⁹ Meant are those households, which spend more than 80% of their monthly budget for food.

³⁰ The municipality of the rayon is called *Hukumat*, the municipality of the commune *Jamoat*. In the following terms are used synonymously to the English meaning.

³¹ The term Pamiri summarises a couple of small ethno-linguistic groups such as the Shugni and the Wakhi.

³² In the following the term Murghab always refers to Murghab as town and capital of rayon Murghab.

³³ A number of different interpretations for the name Pamir exist. One that can often be found in the literature is Bailey's translation (1948): *Pa* = mountain and *mira* = a wide plane or plateau (p. 176). This would accurately describe the widespread meadows typical of the high plateau, which bear great importance for pasture farming.

throughout the entire year. In Khorog, the administrative capital of GBAO, the climate is temperate in comparison to the Eastern Pamirs.

The Eastern Pamirs, on the other hand, have relatively low relief energy. Peaks surmount the wide plains by merely 1,200m. The pronounced aridity has made the glacial forms on the plateau less distinct. In Murghab, the long-term mean of annual precipitation amounts to merely 75mm, making the area prone to droughts (cf. Walther und Breckle 1986).

Because of low humidity, precipitation in form of snow and sleet often evaporates immediately and is therefore unattainable for vegetation. The extremely high solar radiance (solar heat gain of 90%) plus the average of over 3,000 hours of sunshine/year result in a potential evaporation of 1,000mm/year. The average annual temperature of -1°C (cf. Agakhanjans and Breckle 2004) is a result of low overall temperatures: -20°C in January and 12°C in July. These climate factors constitute extreme conditions for vegetation. As is known from other high mountain areas, the occurrence of vegetation is highly dependent on altitude levels (cf. Stanyukovitch 1973)³⁴. Cushion plants, half shrubs and meadows constitute the major part of the vegetation of the Eastern Pamirs. One species should be singled out in this context, since it plays a significant role for today's ecological balance. The dwarf shrub Teresken (*Krashennikovia ceratoides*) is one of the few locally available sources of heating material thanks to its lignified core. Simultaneously, the plant is valued as forage. Because of the plant's slow growth and the competitive usage by humans and animals, a strong decrease in supply of Teresken can be assumed (see also Ch. 4.1.2). For a closer examination of Eastern Pamirs' ecology, see also Agakhanjans and Breckle (2004).

3.2 Murghab in transition

To attain an understanding of the current situation in the Eastern Pamirs, the historical and political development of the past hundred and fifty years is fundamental. The foundation of Murghab is related to an event that bore a strong determining influence on the whole Central Asian region. The battle of dominion between Russia and the British Empire in Central Asia, better known as the Great Game³⁵, led to a temporary demarcation of borders through a Russian-British Boundary Commission in 1895, separating the respective territorial spheres claimed by the colonial powers.³⁶ This agreement was sealed permanently in 1907. Fear of invasion of the great powers led to a buffer zone instead of a linear borderline, the Wakhan Corridor in Afghanistan. This zone was to stop any direct contact between the two Empires. In 1892, the Russian military station Pamirsky Post was founded to control the borders to China, Afghanistan and Pakistan in the area claimed by Russia (cf. Kreutzmann 2002: 31). The founding of this Russian military base was the birth of Murghab. The consequence of imperial geopolitics in the 19th century was that national borders in Central Asia were created without involvement of the local population. This had severe consequences for the various ethno-linguistic groups of the Eastern Pamirs who beforehand lived mainly a nomadic lifestyle or were mountain farmers. Their farming and pastoral areas were all of a sudden divided by colonial powers unknown to them. For instance, the nomadic lifestyle of the Kyrgyz³⁷ was characterised by migration patterns following the seasonal changes of the year. In the period under Russian rule, however, the nomadic lifestyle of the Kyrgyz was transformed into a living in fixed settlements with annual hikes to the summer grazing areas (*jailoo*).

³⁴ Quoted after Kraudzun 2005: 13

³⁵ For a detailed analysis with geostrategic power relations in Central Asia cf. Kreutzmann 1997, 1995.

³⁶ The borders between national territories within the Russian Federation changed repeatedly before 1929. Today still, there are border-related conflicts with the People's Republic of China, with the latter claiming a share of *Gorno Badakhshan*. A new change of the demarcation has come about as a result of this in 2008.

³⁷ Cf. Scholz (1999).

Ten years after the definition of the external borders of the Tsarist Empire, the Bolschewiki took over political power in Russia (1917) and arranged a restructuring of Central Asia by founding the general government of Turkestan. The instrument of national organisation aimed at initiating a development that followed evolutionistic logic and, through revolution, should lead to the founding of nation states. The socialist concept of a nation was based on a common language for the territorial reorganisation. This led to a national reorganisation of the “multilingual milieu of Central Asia” (Rzehak 2004: 67). The republics of Turkmenistan, Uzbekistan, Kyrgyzstan, were founded after the dissolution of Turkestan on the basis of their Turk speaking majorities. The Iranian speaking part of the population was given their “own” state from the Bolschewiki: Tajikistan.

„The ethnonymized republics created on the basis of complex demarcations differing from the existing territories, each represent in their names an ethno-linguistic group, which, however, amounted to only between two-thirds and three-fourths of the total population at the time of creation [...]“ (Kreutzmann 2004: 5, translation: F.K.)

Until today there is high conflict potential between these nations.³⁸ In Tajikistan, the founding of a nation in 1929 also led to distinct inner conflicts. Till today, the Pamiri population (Eastern Tajikistan) who speak eastern Iranian dialects and are Shia Ismaelits are largely lacking recognition in contrast to the Tajiks (Western Tajikistan) who speak a western Iranian dialect and are Sunni Muslims³⁹ (cf. Kreutzmann 2002). However, with GBAO the Pamiri were given “their own” territory.



Photo 1: Pamir Highway
Source: F. Kreczi, June 2008

The administrative autonomy of the Pamir region was not a sustainable contribution to a peaceful multi-ethnic community in Tajikistan, as could be seen in the civil war after its independence. The importance of these historical incidents for today’s residents of the Pamir will be shown in the following.

³⁸ Lately, the topic of water usage rights has been especially prone to cause conflict (cf. Giese et al. 2004, Halverson 2008).

³⁹ The Pamiri are part of the Nizari, a sub-group of the Ismaelits. The Nizari are distinguished by the belief in the living Imamate, passed on by the prophet Mohammed via succession until today. Head of the Nizari today is the 49th Imam Karim Aga Khan IV, who also plays an important role for the Pamir residents as the founder and head of the international organisation Aga Khan Foundation (vgl. Davlatshoev 2006)

For the population of the Pamir the economic and the sociological restructuring process started with the exploitation of the area through the building of the road from Osh (Kyrgyzstan) via Murghab to Khorog, better known as the Pamir Highway (see photo 1). Through the road, which was finished at the end of 1934, it was possible to transport important agricultural machines and tools as well as construction material for the administrative, cultural and collective-economic infrastructure to the high plateau of the Pamir. For the population this meant big changes in their lives and lifestyle. They had to give up their independence, which was based on private landownership and were forced to live the socialist ideal of a collective proletariat. As Herbers (2001: 17) states, the resolution of the property played a major role in this process. The construction of permanent winter settlements for the nomadic living Kyrgyz was one of the measures, which forced the adaption of mountain farmers to the system of a planned economy. Forced resettlements of the Pamiri population to the western Tajik plains to work in cotton cultivation were also a consequence of the economic restructuring process at the time (Kreutzmann 2002: 37). In the following decades, the Eastern Pamirs became the main meat supplier for the Russian Federation. In return, the mountain region was supported through massive subsidies: food, fuel, petrol, coal and wood were imported and sold for subsidized prices. Living conditions of the Pamir inhabitants - in terms of security of economic supply - improved significantly. The committed education program changed the social structure of the Eastern Pamirs substantially, as can be seen through the high percentage of well-educated Tajiks (doctors, teachers, scientists and intellectuals), who originally came from GBAO (Kreutzmann 2002: 39). When Tajikistan became independent in 1991, the situation of the population in GBAO again changed fundamentally.

On the one hand the security of supply that was guaranteed by Russia ended abruptly. This was felt especially in GBAO where a famine could only be avoided through humanitarian aid of international organisations. Mainly to support the distribution of aid, the Aga Khan Foundation (AKF) founded the Pamir Relief and Development Program (PRDP) in 1992. On the other hand, things were evolving within Tajikistan due to political chaos in the wake of independence. The Islamic democratic opposition⁴⁰ made up of different groups confronted the communist party⁴¹, which held power since the presidential elections in November 1991 (Bischof 1996: 7). Conflict between Sunni Tajiks, Shia Pamiri and Russians in their quest for power grew into a massive political dispute eventually turning into civil war and heavy fighting between the different militias of the political opponents, lasting until 1997. The civil war made the supply situation in the Pamir region even worse. A main reason for the bad situation in GBAO was not only the peripheral geographic location, but also the massive amount of refugees and “education-migrants” from GBAO who had gone to the urban areas of Western Tajikistan in Soviet times, and were now searching for shelter with relatives in the Eastern Pamir mountains (Kreutzmann 2002: 39). The civil war cost more than 60,000 lives and resulted in 750,000 transnational refugees and 500,000 internally displaced Tajik refugees (UNDP 1996, UNHCR 1995). The presence of international organisations in the Pamir started during these times, but the still on-going transformation process from a socialist system into a democratic structure with a free market economy was delayed because of civil war.

⁴⁰ The Islamic democratic opposition had formed from the „Rostochz“ and „Lal'i Badakhshan“, Islamic and democratic parties.

⁴¹ President Nabijev had unified the communist clans from the northern Chudjand and the southern Kuljab into a communist party.

3.3 Transformation process in the Pamir

Mass unemployment combined with a lack of food supplies, medical supplies, construction material and important fuels like petrol and coal were direct consequences of the newly found independence of Tajikistan and the end of the supply from Russia. In its political, social and economic dimensions this situation was a massive shock (Herbers 2006: 13). The high level of education and professional specialization achieved by the Pamir population during Soviet times was not helpful to improve the situation. Traditional knowledge about mobile herding, which made an independent life possible before the Soviet era, was forgotten during the 70 years of external supply.

In the context of transformation⁴² this knowledge becomes more and more important to the people in the Eastern Pamirs. Kreutzmann (2000) shows that „agrarian conditions in the transformation country Tajikistan slowly approach those of Afghanistan“ (ibidem: 60, translation: F.K.). Today people are far away from an independent life: every year the Mountain Society Development and Support Program (MSDSP) of the AKF, which is the follow up organisation of the PRDP, supports people with the most important goods like forage grass, beans, oil, milk powder, shoes and clothes to satisfy basic needs. While the Pamir inhabitants transformed step by step from the proletariat into farmers (Herbers 2001: 6), different NGO's such as the Agency for Technical Cooperation and Development (ACTED) and AKF tried to support the potentials of the region and its inhabitants to minimize problems of development. The above-discussed historical and political development had a long-term impact on the current situation of people in the Eastern Pamirs and a strong influence on their present livelihood profiles.

3.4 State of research on the Eastern Pamirs

Empirical studies that deal with regional development phenomena of geographical research have been an important basis for the present work. Kreutzmann (1995) made a first contribution by examining the processes of change among the nomadic Kyrgyz through socio-economic transition in the borderland between Tajikistan and China.

The impact of the socio-economic and political environment on the Kyrgyz in today's Afghanistan is also discussed by the same author (Kreutzmann 1997a). Kreutzmann (1996) also deals comprehensively with the role of ethnicity in the development process by the example of the Wakhi, an ethno-linguistic minority settling in the Afghan-Tajik border area. In other regional research on the Wakhan Corridor, the author investigates the survival strategies of Wakhi and Kyrgyz (Kreutzmann 2003) and the impact of the Afghan crisis on this region and its inhabitants (Kreutzmann 2004).

The impact of transformation on the development process in the Eastern Pamirs is of great interest for the investigation of sustainable livelihoods. Major contributions especially with regard to land use and changes in the human-environment interactions have been provided by Herbers (2001, 2002, 2006, and 2004). Kreutzmann (2002) has analysed the changing status of the Gorno Badakhshan's autonomy over time (2002), whereas Bliss (2006) has analysed the socio-economic changes in the Pamir. An insight into the institutional dimensions of the transformation process in the Eastern Pamirs is provided by Kraudzun (2005). The work of Agakhanjanz and Breckle (2004) was used for the analysis of natural resources and natural resource management.

⁴² Here the transformation process is understood, according to the definition coined by Wolf (1998), as a „re-arrangement of the entire system“ and entails „changes on all levels of transformation: On the level of behaviour, the political level, the economic level and the legal level“ (p. 59, translation: F.K.)

The Swiss Centre for Development and Environment (CDE) has been dealing with the development potential of the Eastern Pamirs and the development of sustainable development strategies. Breu and Hurni (2003) and Hurni et al. (2004) provide an overview of these issues. Specific topics were covered as part of diploma and PhD theses of numerous authors in the course of the Pamir Strategy Project (PSP), e.g. Zibung (2002), Domeisen (2002), and Breu (2006). These academic sources were supplemented by grey literature of development organisations. Those manifold brochures, annual reports, log frames, project descriptions, etc. were used in addition to expert interviews in order to analyse the work and influence of development cooperation in the Eastern Pamirs.

4 Vulnerabilities in the Eastern Pamirs

4.1 Vulnerability in Murghab

The history of the Rayon Murghab shows that living conditions and access to resources remained by and large unchanged since the beginning of settlement with the notable exception of the Soviet era, during which supply was organized externally. In contrast to that stands the changing socio-economic and political framework, which has gone through multiple drastic changes during the past 110 years.

Since the Kyrgyz⁴³ settled in the Eastern Pamirs at the end of the 18th century (cf. Dor and Naumann 1978), its residents have been able to ensure a self-sufficient provision via a combination of several strategies. Mobile pasture management allowed for effective livestock breeding. By bartering actively with the settled population of the river oases in the valleys of the Western Pamir, the Kyrgyz were able to trade their livestock products such as meat, *ayran* and *qurut* in exchange for agricultural products. Trade caravans frequently passed the Eastern Pamirs as part of the former Silk Road. The Kyrgyz nomads were not always as hospitable as they are today: they compensated their lack of consumer goods by raiding transports on the Silk Road. Additionally they offered themselves as guides with knowledge of the local geography and throughfare. This shows that over generations the residents of the Eastern Pamirs had a bundle of strategies to ensure their survival. Interestingly, the difficulty of survival has not changed significantly over the centuries, and people of the Eastern Pamirs are still prone to vulnerability.⁴⁴ The chaotic situation of the civil war until 1997 and the transformation process after independence are additional factors to enhance vulnerability.

The following chapter presents own empirical data and deals with the question in what ways the complexity of poverty in the local context of high mountain regions in developing countries is constituted. The empirical database was collected from June till August 2008 in Rayon Murghab, mainly in the capital town. Following the principle of methodological triangulation, a quantitative inquiry was conducted by interviewing 500 households in Murghab. Additionally qualitative interviews with single household members, politicians and foremost members and associates of organisations and institutions of development cooperation were made. In addition to the empirical investigation, grey literature of the main active organisations and institutions was used for the analysis in this paper.

4.1.1 Demographic Structures

Tajikistan is the country with the highest population growth in Central Asia. The reason for this is the low mortality rate compared to the birth rate. Although the birth rate has decreased because of the limited possibilities of survival, the population in the Eastern Pamirs is nevertheless increasing due to a low mortality rate and high domestic migration, (cf. Herbers and Khaydarov 2007). Umarov (1998) explains domestic migration into the high mountain regions of the Pamir as a result of the growing population pressure in the Western plains. People or their ancestors who originally came from the mountain regions to work in the plains⁴⁵ 're-migrate' to the Pamir with a hope for territory and an increase in their quality of life (cf. ibidem). The growing population of the Pamir is a big challenge for the sustainable use of natural resources. Soil erosion as a consequence of extensive irrigation and an

⁴³ The small ethno-linguistic groups of the Western Pamir were settling the Eastern Pamir much later.

⁴⁴ This is rooted mainly in the fact that a complete self-sufficiency is not possible in the high mountain areas that are marked by natural, economic and social risks (cf. Kreutzmann 2004).

⁴⁵ This goes for those Pamir residents who were subjected to compulsory relocation to work on cotton plantations in the lowlands during the collectivisation measures undertaken in the 1930ies.

intensive use of pastures close to settlements represent only two of the major challenges to deal with.

Due to the history of settlement the Kyrgyz are the dominant ethno-linguistic group in Rayon Murghab (see Fig. 3). In the periphery of the Eastern Pamirs, the share of Kyrgyz gets even bigger when compared to Murghab.

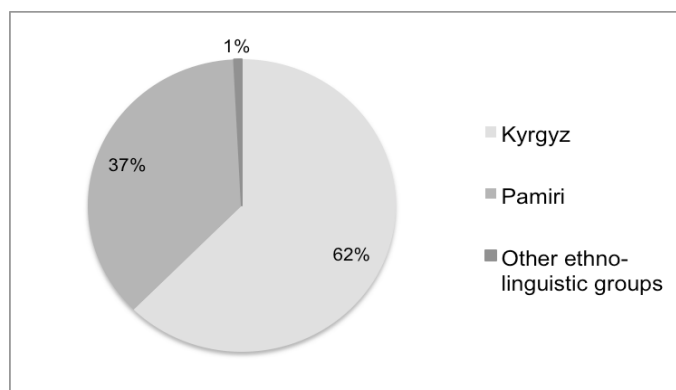


Figure 3: Ethno-linguistic groups in Murghab 2008
Source: Own survey (n = 500)

The largest part of the 2,866 interviewed inhabitants of Murghab (see Fig. 4) is under 25 years of age. One third (1,009 cases) are between 26 and 52 years old. The oldest two groups of population decrease in size because of the natural population development.

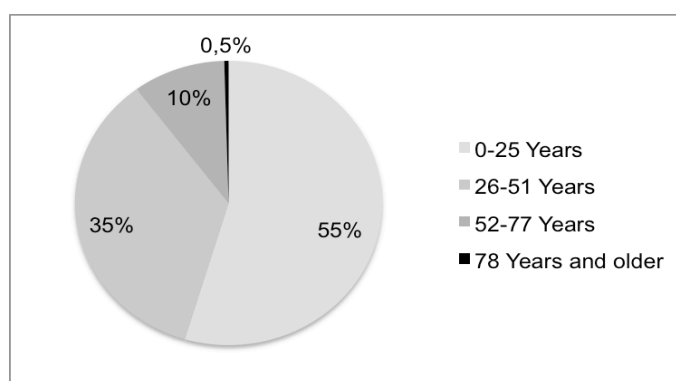


Figure 4: Age composition of the population of Murghab 2008
Source: Own survey (n = 2866)

The share of women in the total population of Murghab is 53%. The massive loss of jobs since the independence⁴⁶ is one reason why especially men at ages between 20 and 40 are trying to escape their situation through temporary labour migration (cf. Herbers and Khaydarov 2007). The lower percentage of males in the total population could therefore be related to labour migration (see Fig. 5).

⁴⁶ In 1999, Tajikistan's unemployment rate crossed the 40% mark (United Nations Office for the Coordination of Humanitarian Affairs 1999).

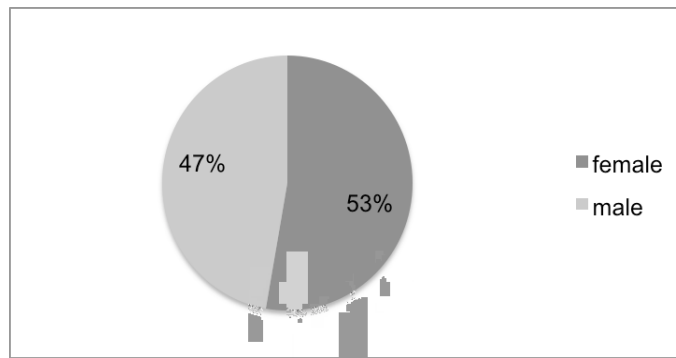


Figure 5: Gender distribution of the population of Murghab 2008
Source: Own survey (n = 2866)

For some households the shortage of available jobs leads to the decision to give up their lives in the Eastern Pamirs and move to the plains of Tajikistan or to try a new beginning in Kyrgyzstan. The hopes associated with migration are, however, often disappointed by a variety of reasons, like e.g. incompatibility with the differing climates, cultural differences and a lack of social networks. This is why households often return from their destinations of migration:

“We sold everything: our house, our livestock and our belongings. We moved to a village close to Bishkek because my wife and I found work on the fields. The kids got health problems and we had nobody to support us. After one year, we gave up living in Kyrgyzstan and moved back to here. Now we have nothing left.” (Household interview Alichur, translation: F.K.)

Despite the return of some households, labour migration is still an important livelihood strategy. Young students of both genders with better potential earnings in their future and young males are the most common population groups who temporarily migrate to Khorog, Dushanbe, Osh, Bishkek, or even further to Russia (Fig. 6). A comparison of the different income sources shows the role played by the financial contribution of migrating household members: the remittances of migrants are with 218 Somoni⁴⁷ nearly double the amount that can be generated through the average income of formal jobs in Murghab (see chapter 4.1.2).

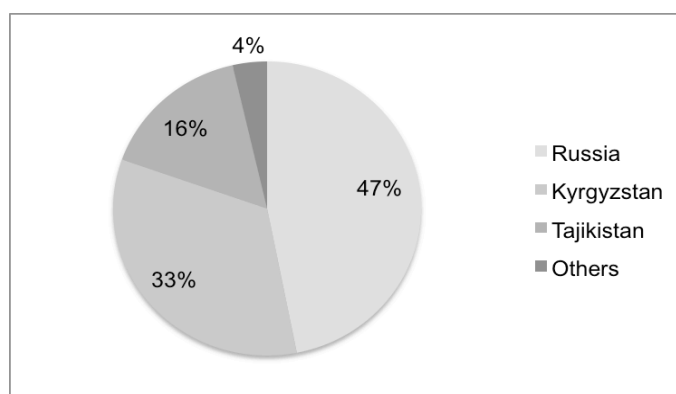


Figure 6: Main destinations of labour migration
Source: Own survey (n = 194)

Russia is the most popular migration destination for the population of this study. This is similar to what the International Helsinki Federation on Human Rights (2007) states:

⁴⁷ 3.43 Somoni corresponded to 1 US\$ at the time of the study.

“It is estimated that several million migrants from Central Asia currently work in Russia, although the exact number is difficult to determine and is subject to seasonal fluctuations. The largest group originates from Tajikistan, which is the poorest of the former Soviet Republics, with more than 60% of its population living below the national poverty line. Up to one million Tajiks - or more than ten per cent of the country’s population - are believed to be working in Russia. The remittances sent home by these migrants provide a significant distribution to the economy of Tajikistan and represent as much as 20% of the country’s gross domestic product.” (p. 8)

Language skills, well-paid jobs and unproblematic entry clearance as well as residence authorization are the main reasons for Russia as the preferred country of choice for migration. Household interviews confirmed a high affinity to Russia as a result of the good supply and employment situation for most people during the Soviet era.

Households in Murghab mostly consist of a core family,⁴⁸ often living together with other members of the lineage system such as old and orphaned members. This results in quite complex household compositions⁴⁹ with an average size of five to six persons. Due to the limited possibilities of survival, the increase of population is a big challenge for Rayon Murghab especially in terms of livelihood. The following section introduces the household sample in more detail and looks at the endowment with assets that people have at their disposal to manage their livelihoods in the high mountains of the Eastern Pamirs.

4.1.2 Livelihood assets

The assets are the central element within the Sustainable Livelihood Approach and guide the analysis of the household sample in Murghab. The livelihood potentials and challenges of households were carved out in relation to their livelihood assets.

I. Human assets

Over the last century different times generated different sources of knowledge for the population of Murghab: Till the beginning of the 20th century traditional skills were passed on orally from generation to generation. These skills containing knowledge and experience about livestock breeding, pasture management and phytomedicine were essential for survival in high mountain areas (cf. Ehlers 1996).

The social and economic upheavals induced by the implementation of a planned economy in the 1920s and the massive supply from Russia made the use of traditional knowledge more and more obsolete. Mass production of livestock by highly specialized workers in *kolkhoz* (and later *sovkhozes*) gradually replaced nomadic animal husbandry as practiced by Kyrgyz households. The drastic change of daily work and life of the Pamir residents induced by Soviet subsidies and resource supply improved the quality of life. Thanks to the creation of manifold jobs by means of extending the administration, the education system and infrastructure, most of the Murghab population could be employed⁵⁰ with a regular income. For livestock breeding in collective farms traditional knowledge and intergenerational experiences were not necessary anymore. Also transport of herdsman from winter to summer pastures was now organized with motorized vehicles. Forage that could not be produced in the Pamir was brought from other regions of the Russian Federation and veterinarians ensured constant

⁴⁸ I understand a core family in the sociological sense to be constituted by a system of father, mother, and child(ren).

⁴⁹ The reasons can be found, on the one hand, in cultural tradition, which is distinguished by a strong social network system. On the other hand, there is no state-held social system, which could otherwise do the job.

⁵⁰ The relocation to the great cotton plantations of south Tajikistan first and foremost affected peripheral villages. The people leaving Murghab were mainly well-educated residents who saw better chances for employment in the larger centres of Khorog and Dushanbe (cf. Herbers and Khaydarov 2007).

medical supply for the animals. Households were heated with imported coal, which together with food and petrol was sold at subsidized prices.

All these factors led to collective oblivion of traditional knowledge throughout the Soviet era. Only in very few families and households could this knowledge be preserved. These families are in a privileged situation today, because traditional skills became more and more important after independence: As the supply from Russia ended in 1991 most jobs were eliminated, inflation devaluated local currency, and hardly anybody knew how to manage subsistence economy in a high mountain climate. With the support of different development programs the awareness of the traditional practices of a locally adapted subsistence economy is slowly returning. For the bigger part of the population knowledge and experience about an independent survival in the Eastern Pamirs had to be created anew, especially regarding livestock breeding and animal husbandry (cf. Breu 2006).

A majority of the population in the Eastern Pamirs is comparatively well educated.⁵¹ However, the knowledge accumulated during the Soviet school and education programs only helped a smaller part of the population to a solid existence after independence. Current lack of employment and low payments are only a few reasons for present day problems resulting in a lack of perspectives and widespread resignation among Murghabis when contemplating their future. The interviews showed that the lack of perspectives often goes along with the desire to return to a planned socialist system, while the implementation of own ideas and strategies to promote livelihoods are lacking. This might be partly due to the lack of support for one's own initiative during times of full employment, as personal achievement was not central in the socialist system. Still, abundant corruption, high taxes, a lack of support from the state and a high bureaucratic effort also hinder individual economic activities.

In this context health is one of the important factors for accessing work and for generating and using knowledge. However, in the Eastern Pamirs malnutrition and resulting secondary disorders represent a big risk for many. High prices for vegetables and fruits at the bazaar mean that the access to vitamins is not affordable for all. A widespread problem often connected to malnutrition is anaemia, especially affecting pregnant women.⁵² Other widespread local health problems in Murghab affect the respiratory tracts. Chronic bronchitis is the most widespread health problem connected to heights (interview Dr. Kodja).

In the course of the transformation process the meaning of various skills and the quality and composition of human assets had changed. Self-initiative concerning the use of knowledge slowly increases through the pressure of survival. Also the health situation improves little by little through better medical infrastructure and simple medical education. Nevertheless there are a lot of unexploited potentials considering the use and acquirement of traditional knowledge and especially livestock breeding, which could - in the long run - lead to an advancement of sustainable livelihoods and their condition (see Tab. 1).

Table 1: Fields of potentials and opposing challenges for human assets

Potentials	Challenges
‘Traditional’ knowledge	Health risks
‘Modern’ knowledge	Use of knowledge

Source: Own Survey

⁵¹ 63% of the population of Murghab has at least a certificate of secondary education.

⁵² In the year 2006, 1169 pregnant women had anaemia in GBAO. During the field study in 2006 two pregnant women died of anaemia in Murghab. Six female informants had the official status „disabled“ because of anaemia.

II. Natural assets

The biggest challenge is the sustainable use of existing natural resources provided by the sensitive eco system of the Eastern Pamirs.⁵³ However, pasture management appears to be a viable opportunity for sustainable livelihoods:

„The share of usable phytomass in the Western Pamirs with 40.000 t (=22% of the overall mass) reaches a lower value than in the Eastern Pamirs with 60.000 t (=45% of the overall mass) [...] The higher and therefore characterized by a more balanced relief Eastern Pamirs has extensive pastures of high quality: the very attractive pasture farming lands of the Pamir.“ (Kreutzmann 1996: 52-53, translation: F.K.)

Pastoralism has a long tradition for the local population and its practice has increased self-sufficiency since independence (cf. Hurni et al. 2004). The thematic map A “livestock property” shows that 70% of all households possess at least one sheep unit (SU)⁵⁴. Thus, a relatively high number of households can supply themselves with animal products. However, lack of transport facilities and small budgets make the purchase of fodder for nearly all households in this statistic category impossible. Often, the animals cannot be moved before winter (cf. Domeisen 2002) which results in a strong overuse of pastures close to the village. The size of a herd seems to be crucial for an investment in the mobility of livestock. Especially households with less than ten SUs usually do not employ any herdsman.⁵⁵ With few exceptions these households let their animals graze freely on pastures close to the residential village.

Another field of potential is the scenic attractiveness of the Eastern Pamirs with its unique flora and fauna that attracts eco and hunting tourism. The most famous example is the Marco-Polo sheep (*Ovis ammon polii*), which is the biggest wild living sheep worldwide with a shoulder-height of 130cm and twisted horns that can grow to a length of 160cm (cf. Grubb 2005). Trophy hunting by tourists is a very lucrative business for the government and local hunting organisations. The bigger share of the revenues from costly shooting-licences⁵⁶ goes to the Tajik state and to a lesser degree to hunting-companies. The local population cannot profit from the revenues of this business. However, although hunting the Marco-Polo sheep is forbidden for residents of the Pamir, people still engage in this lucrative business. It can be assumed that this is one of the reasons why the Marco-Polo sheep are almost extinct today (cf. Lüthi 2003). They share the fate of the snow leopard (*Unica unica*)⁵⁷ and the capricorn (*Capra sibirica*), the numbers of which has dramatically declined in the Pamirs over the 20th century because of extensive hunting (cf. Schaller 2003). The situation of the Marco-Polo sheep is indicative for the dilemma regarding the sustainable use of resources in the Eastern Pamirs: for the population hunting is illegal, although they have done so in Soviet-times and before. Additionally, meat is a very expensive and therefore a rare resource for many households today (see map A „livestock“ in the attachment and Tab.2). That is why the local population sees the illegal hunt of the Marco-Polo sheep as essential.⁵⁸

⁵³ The ecosystem of the Pamir region has suffered severely during 70 years of planned economy. The strongest exploitation concerned natural resources of firewood in the Western Pamir, wild life stock of the whole GBAO as well as pasture and cultivated land.

⁵⁴ SUs are used by the Tajik administration and the international and local organisations to subsume different kinds of livestock in one entity. The following values are used: yak/cattle = 5, horse=3, sheep=1, goat=0.8 SU's.

⁵⁵ The wages of herdsman are calculated monthly on the basis of numbers of animals of a herd. In summer 2008 the wages corresponded with sheep units. For example for 30 yaks and 20 sheep a herdsman was paid 170 Somoni per month.

⁵⁶ The price for one shooting-licence including the trophy varies between 21,000 US\$ and 24,000 US\$ for one Marco-Polo sheep.

⁵⁷ Pamirian residents see the snow leopard as a threat for livestock, because since the wild life decreases it hunts for yaks, sheep and goats. The indirect menace to the own basis of existence makes the snow leopard a target for herdsman (interview with Rodney Jackson and numerous households).

⁵⁸ In Murghab one can buy Marco-Polo meat on the black market at any time. By word of mouth one knows who of the hunters is actually selling Marco-Polo meat. The meat is sold directly at their homes.

Table 2: Meat prices in Murghab 7/2008

Entity of Meat	Prices
1 Kg Goat meat	14 Somoni
1 kg Sheep meat	15 Somoni
1 Kg Yak meat	12 Somoni
1 Kg Meat of the Marco-Polo argali	7 Somoni

Source: Own survey

As can be seen in Tab. 2, the meat prices for wild hunted animals are low in relation to meat of bred livestock. The meat of the Marco-Polo sheep is deemed to be the most tender and delicate and is part of the menu on special occasions. This means that illegally hunted meat regularly finds purchasers in Murghab. Currently one cannot talk of a sustainable use of animals (interview Rodney Jackson, founder of Snow Leopard Conservancy). Too many households live in poverty, have no animals and must manage their existence without the help of the government.

With regard to the use of natural fire wood resources the situation is quite similar. Since independence⁵⁹ the energy demand of bio mass fuel in Murghab is mostly covered by Teresken (see chapter 3.1 and Photo 2). This local dwarf-shrub species grows relatively slowly and plays an important role as protection against erosion and as fodder for wild living and bred animals. Longy and Gely (2000) estimate a “Teresken-harvest” of 213 ha per day for heating purposes. The level of outtake can be measured through the distance that is covered by harvesting communities for finding a worthwhile amount of Teresken (Kraudzun 2005). Looking at the case of Murghab the distance was 20km in the winter of 2002/03; in the winter of 2004/05 harvesters had to cover a distance of 70-80km (ibidem: 82). The consumption of a household is approximately 15kg per day during the summer (3-4 months). In winter (8-9 months) the consumption is doubled because of the additional need for heating. This heavy usage of the shrub led to its diminishing availability in the eco-system of the Eastern Pamirs (cf. Zibung 2002). However, the lack of alternative fuels and high costs for coal that are not affordable for most households makes Teresken together with *tersek* (dry dung) and *kuik* (dung out of the pen) the most important fuel source for the vulnerable populations in the Eastern Pamirs.



Photo 2: Teresken at the bazaar in Murghab
Source: F. Kreczi, June 2008

⁵⁹ Before the independence, 60% of the energy demand was covered by subsidized coal delivered from Kyrgyzstan.

An aspect with huge potential for the local population is the exceptionally rich presence of minerals in the area (cf. Minaev 2002), including valuable gemstones such as ruby, gold beryl, tourmaline, sapphire, gold and silver. The selling of these minerals through private persons is prohibited by the state. Still, quite a few households can earn a little extra money through the illegal trade with these rare gems by taking the risk of high penalties.⁶⁰ The bad economic and fiscal situation of Tajikistan prevents professional mining until today.

“Here in GBAO we have a lot of resources: gold, silver, ruby and a lot of phyto-medicine. But we have no specialists who could find these resources nor do we have factories that could mine them. Our government cannot improve the situation because it has no money. We need “donors”. These resources are our greatest treasures, but we stay poor because we cannot use them.” (Household interview Alichur, translation: F.K.)

High export duties and difficult conditions for exploitation⁶¹ largely prevent foreign investors to fund mining activities, although a Kazakh company began to explore silver near Alichur in 2007. Concerning the positive effects of establishing foreign enterprises in the Eastern Pamirs the residents of the region are still sceptical:

“If anyone profits, it is the Tajik or Kazakh governments but not the people here. Maybe those who get regular work in a mine can also profit through their salaries from the company.” (Household interview Alichur, translation: F.K.)

With its huge glacial areas Tajikistan belongs to the countries with the greatest water resources in Central Asia (cf. Giese et al. 2004). Melt waters of the large glaciers of the “Academy of Science” however only feed the rivers at the drainage basins of the Western Pamirs. Therefore the Eastern Pamirs and hence Rayon Murghab cannot profit from the benefits of this natural asset. The use of the available water in this region could be improved by expansion of infrastructure. Solar and wind energy are long-term solutions for the Pamirian high plateau, but to date no noteworthy infrastructural investments have been undertaken in order to use renewable forms of energy or to improve energy efficiency.

Table 3: Fields of potentials and opposing challenges of natural capital

Field of potential	Challenges
Pastures	Natural fuels for heating
Landscape	Poaching
Mineral resources	Water use
Solar- and windenergy	Electricity

Source: Own survey

Most residents are conscious of the dilemma “nature vs. consumption” of which they are a part (household interview Murghab). However, the lack of viable alternatives and opportunities for people are the main reasons why the population of Murghab has little

⁶⁰ A woman, 80% of whose household income was generated by the trade with minerals, stated, that sales on the black market are profitable: her customers (businessmen from Iran, Dubai and Afghanistan) are getting in contact with middlemen in Dushanbe and deposit up to 2000 US\$ for the purchase of minerals. The Tajik middlemen then give the order to local „collectors“, like her. For one kilo of rubies the woman gets 5,800 US\$, for one kilo of Tourmaline she gets 1,000 US\$. Depending on the quality and purity of the stones prices vary. The risk to be caught by the police is the price she pays for having a relatively constant income of 200 Somoni per month, as she said in the interview (household interview, Murghab).

⁶¹ Such as the bad infrastructure and the great distance to the markets.

possibilities and capacities to use the pastures, the wild life, Teresken and water in a sustainable way.

III. Physical assets

In the isolated region of Rayon Murghab the transport infrastructure is of special importance. The most important connection to the distant centres Khorog (310km) and Osh (415km) is the Pamir Highway. Since the completion of this elementary transport axis in the 1930's the asphalt-track is under heavy use and at the same time insufficiently maintained. In winter the pass road is often closed because of adverse weather conditions.

Great expectations are tied to the expansion of the Road of Friendship as the connection between the Pamir Highway and the Chinese towns of Tashkurgan and Kashgar. The Road of Friendship has the potential of becoming an important connection between east and west and revive the historical importance of the Pamir as an important part of the Silk Road. However, the name Road of Friendship appears to have nothing to do with reality. Since the official inauguration in 2001 frequent border conflicts between China and Tajikistan have occurred and bureaucratic-diplomatic restrictions hinder transnational traffic (Kreutzmann 2004: 8-9).

Potentials can be seen in the extended use of water for power generation and for pasture irrigation. Since the civil war electricity in GBAO is produced through hydroelectric power. The infrastructure, however, originates from Soviet times and was not modernised. The supply for the town Murghab stems from the hydropower-station ('GES') "Aksu".⁶² Technical interventions by AKF made the power station more effective but the production volume is still not enough to facilitate a decrease of Teresken consumption. In winter there is still hardly any electricity, and present levels of water energy are not satisfactory to meet the demand in Murghab, where supply of electricity is the worst in whole GBAO (Zibung 2002: 91). The increasing demand for electric power going along with an increase of technical equipment has to be seen in contrast with existing infrastructure facilities. In 34% of surveyed households a lack of electricity was perceived as the greatest challenge. However, the degree of willingness to pay for electricity presents a problem. There is a general reluctance to pay a market price as during the 70 years of Soviet rule supply was cheap because of heavy subsidies. The distorted perception of the cost for power generation is also a hindering factor for the introduction of renewable energy forms. There is also no canal or irrigation infrastructure, which could make water easier accessible for people. Water pipes that supplied the southern part of Murghab during Soviet times have not been operational since 1989. Supply of water is dependent on outtakes from the Aksu-River or on deep wells fed by groundwater. Only a few households in the centre of Murghab have access to a private well and are part of a privileged minority concerning water supply,⁶³ but most residents have to carry their water from public wells. Households situated at the northern slope are too far away from both, the wells or the river, and procure water from Russian trucks. Hand pumps installed by ACTED represent a significant progress (see photo 3). However, in the last few years the groundwater levels dropped due to extended drought periods and overall water supply was limited (Zibung 2002: 102).

⁶² Before the renovation there was no electricity throughout large parts of the winter due to a combination of poor flow volume and bad efficiency of the power station.

⁶³ The closer houses are build to the river, the easier it is to build wells, due to higher levels of groundwater.



Photo 3: Hand pump in the centre of Murghab
Source: F. Kreczi, July 2008

In spite of better access to public hand pumps considerable investments of time and energy have to be applied daily for a majority in order to fetch drinking water. In addition, multiple risks of water pollution arise by the transportation of water in open buckets. Lack of waste disposal options and associated contamination of drinking water through seepage of motor oil, gasoline and other pollutants represents a severe threat to the health of the population. Central waste management does not exist in Murghab. Each household disposes of its garbage behind the house in a designated pit. Water pollution, however, is not perceived as a major threat among studied households, and accordingly the interest with regard to the issue of waste disposal is rather limited.

The information infrastructure of telecommunications, radio, television, internet, print media and postal services has improved significantly in recent years. Landlines are now widespread in Murghab, but due to the lack of maintenance and spare parts are often not reliable. The use of mobile phones is possible since 2007 and its use very widespread. It is assumed that this trend will continue because of rather low costs and higher reliability. The majority of households are also equipped with radio and television sets. A simple TV connection offers a choice of three programs. With the increasing use of satellite dishes a large number of programs from around the world can be received in the isolated region of the Pamir. Internet access, however, hardly exists. Only the Murghab House as the headquarters of ACTED offers temporary internet access for selected users by virtue of diesel generators. Monthly cost of approximately 300 US\$ for a satellite provider make internet access an expensive commodity. In the public opinion postal service is working reliably although the duration of deliveries can vary greatly. The postal service has further adopted a series of bank and governmental transactions such as domestic transfers and payment of government benefits such as pensions and social assistance (Zibung 2002: 106).

The health sector in the entire GBAO has a hierarchical structure. At village-level there are so-called „medical points“ for the provision of basic healthcare. Outpatient clinics and local hospitals can be found at the level of the *Jamoat*. In addition to the district hospital there is a polyclinic in Murghab.

Khorog offers a large hospital for GBAO, a polyclinic and several medical centres. Through refurbishment, renovation and supply with medicines and medical materials by various NGOs (AKHS/AKF, IRCS, ACTED) the conditions and possibilities of the medical infrastructure has significantly improved since 1999. Courses and training programs by NGOs are adding to the quality of medical care. Primary care is being assured today, but lack of stable energy supply,

human resources and equipment are still major challenges for hospitals and medical points and make preventive measures insufficient. The statement of a resident of Murghab confirms this:

„I visit the dentist in Osh. In Murghab there is one indeed, but there is not enough power for surgery. In general, the lack of electricity is the biggest problem in Murghab.”
(Household interview Murghab)

The results of the analysis of physical capital are summarized in Table 4.

Table 4: Fields of potential and opposing challenges of physical assets

Field of potential	Challenges
Pamir Highway and Road of Friendship	Natural fuel for heating
Information infrastructure	Public infrastructure
	Water supply
	Social infrastructure

Source: Own survey

IV. Financial assets

Financial assets include not only monetary reserves or regular revenues, but all resources which can be turned into cash, e.g. livestock, territory or real estate. However, The significance of territory and real estate as financial assets for sustainable livelihoods in Murghab is marginal. Although previously state-owned territory was passed into private hands by strictly egalitarian principles based on the Land Code passed in 1996 (cf. Herbers 2001: 20), the diversification of territory remains insignificant for Rayon Murghab. The Land Code's goal was to establish a more efficient use of cropland and an increase in agricultural productivity but the fact remains that Rayon Murghab has hardly any cropland at its disposal, which explains the negligence with respect to the privatisation in the Eastern Pamirs. Land tenure rights remain somewhat unclear to this day⁶⁴ and access rights to pastureland are controlled informally.⁶⁵ Also real estate ownership plays a minor role as the majority of houses have been built by the inhabitants themselves on a state-run leasehold. The lease is a mere 30 Diram per square meter, which makes for a low yearly lease of 90 Somoni for a square footage of 300m². The real estate is passed on via a patrilineal heritage system.

The depiction of a model household with its constructed basket of available commodities offers an insight into the composition of elementary household expenses.⁶⁶ Neither real estate nor territory is taken into account in this example. A designated official estimated the costs for the usage of electricity and telephone resulting in a flat monthly charge that remains valid for quite some time.⁶⁷ The calculations for the model household are based on mean values resulting from empirical research data.

The monetary income in Murghab is composed of formal salaries, revenues from informal occupations and transfers made by migrant labourers. The average income stemming from the Murghab residents' formal occupations amounts to 141 Somoni per month. Another 115

⁶⁴ The lack of regulations in the usage of pastureland could constitute one reason for the partially heavy overexploitation of the land.

⁶⁵ Those cattle breeders who took up pastoral economy immediately after independence could secure pastureland by regular use. Thus, a „first come, first serve“ rule is in place. Legally, however, the current allocation of the land has no basis.

⁶⁶ The model household is constructed from all available mean values: The mean values of the dimension of the household, the formal and informal incomes and retransfers from migrant labourers are contrasted with average costs for provisions, energy resources and convenience goods.

⁶⁷ For the time span of one year (5/2008 - 4/2009), 40 Somoni were calculated for a Murghab household. The monthly costs of 3.34 Somoni in total for electricity are negligible.

Somoni per month on average are gained from informal occupations. The transfers from migrating household members are far more profitable in comparison and amount to an average of 218 Somoni per month. Thus the average household in Murghab of 5.8 persons with its monetary gain composed of the three possible categories has 474 Somoni per month at its disposal. An average of 40.5 SUs needs to be added. Such a medium-sized herd can be regarded as an important foundation for subsistence while simultaneously serving as a reserve that can be sold or traded in the events of shock or seasonality.⁶⁸

The average household comprises two adults, three children and one elderly person.⁶⁹ The calculations of monthly expenditures for provisions take into account the varying calorie requirements of the household members' differing ages, the calorie values of different groups of provisions as well as the average market prices for these provisions.⁷⁰ Table 5 and 7 indicate the prices for energy supply and the most crucial provisions needed to construct the basket of commodities. The rather high prices are attributed to Murghab's isolated position and the need for long transport routes via Osh or Khorog. Aside from the costs of the transportation itself, customs duties and bribe money at the Tajik-Kyrgyz border play an important role. In order to meet its food requirement the model household would need 652 Somoni per month. Livestock ownership allows people to meet their needs in animal protein (dairy products, meat/fish), thus reducing the provision expenditures to 391.2 Somoni per month.

Table 5: Energy prices in Murghab 2008

<u>Raw Material</u>	<u>Quantity/Unit</u>	<u>Prices in Somoni</u>
Petrol	1 Liter	4.5-4.8 Somoni
Teresken	1 Bundle	12 Somoni
Coal	1 Ton	600 Somoni

Source: *Jamoat* Administration Murghab 2008

575 Somoni need to be raised for Teresken on monthly basis⁷¹ and should be added to the basket, as well as 100 Somoni for daily household expenses.⁷² This results in 1066.2 Somoni monthly cash need for the model household in order to meet basic necessities. Even without accounting for clothing, furniture, blankets, transportation and medication the model household is 592.2 Somoni short (see Tab.6).

The analysis shows how low actual incomes are when compared to the essential costs for subsistence in Murghab.

⁶⁸ The importance of cattle in Murghab is discussed in more detail later on.

⁶⁹ In accordance to Fig. 4 this means two adults of 26-51 years; one child < 10 years; two children > 10; one elderly person > 52 years.

⁷⁰ For these members of the household, monthly expenses were calculated based on daily calorie requirements of 1900Kcal per adult, 1200Kcal per child < 10 years, 1700Kcal per child > 10 years, 1700Kcal per elderly person, and on a percentile composition of provisions (45% grain, 10% vegetables, 5% fruit, 20% dairy products, 18% meat/fish, 2% fats/oil).

⁷¹ The daily requirement in Teresken amounts to 1 batch of 15kg during the summer and 2 batches of 15kg during the winter months. In 2008, a batch of Teresken cost 12 Somoni at the bazaar, however the price oscillates between 8 and 15 Somoni depending on the season.

⁷² Here we find expense parameters such as soap, paper, pencils, matches etc.

Table 6: Income versus requirement - The shortage of household budgets in Murghab

<u>Income in Somoni</u>	
Formal income	141.00
Informal income	115.00
Transfers of labour migration	218.00
Total income	474.00
<u>Requirements</u>	
Food requirements	652.00
Of which covered through livestock	- 40.00%
Total food requirements	391.20
Teresken demand	575.00
Houshold expenses	100.00
Total requirements	1,066.20
<u>Income less requirements</u>	- 592.20

Source: Own Survey

As can be seen in Fig. 7 the example of a model household falls into the middle category. Fig. 7 also shows that more than half of the surveyed households fall into the categories of “poor” or “very poor”. An examination of the average income in various occupation groups (see Fig. 8) shows that specifically formal occupations are paid rather poorly in Murghab. Of 24 different occupations, 17 are paid less than 150 Somoni per month. Accordingly, formal occupations can hardly serve as an exclusive fundament for subsistence.

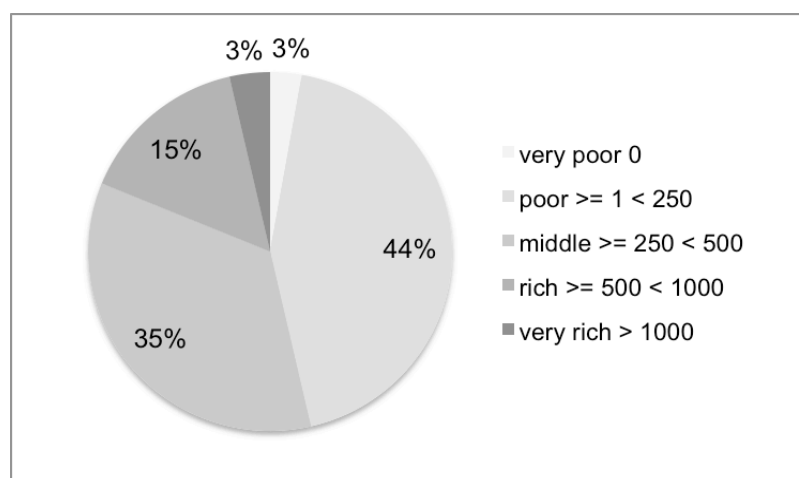


Figure 7: Income distribution in Murghab 2008

Source: Own survey (n = 500)

It should be noted here, however, that as the domicile of the regional administration unemployment rates are relatively low in Murghab in comparison to the peripheral villages. With a total of 3,346 employable citizens in Murghab, the unemployment rate is at exactly 40%. In contrast, the unemployment rate in the Rayon amounted to 61% in 2008 (according to the *Jamoat* administration Murghab).⁷³ Therefore, the significance of formal incomes further decreases at the periphery. The thematic map B “Income” displays the territorial distribution of different household incomes in Murghab, taking into account the incomes comprised of

⁷³ As calculated from the data of all adults between 18 and 50 years old, plus the 72 persons who are 51 or older and still work. The latter number was considered because the retirement age is between 51 and 53 in Murghab and it can be assumed that all persons belonging to the „51 or older“ group are already retired.

formal and informal occupations as well as transfers from households' migrant labour. A strict spatial segregation of households with low and high income cannot be observed in Murghab - households with highly varying income are distributed all over town.

Table 7: Food prices in Murghab 2008

Good/Product	Quantity/Unit	Price in Somoni
Flour	1 Sack (45 Kilogram)	145.0-165.0
Bread	1 Loaf	4.0
Lepjoschka	1 Piece of pita bread	2.5
Macaroni	Kilogram	3.0-5.0
Lapscha noodles	Piece	0.6
Potatoes	Kilogram	3.0-4.0
Rice (all sorts)	Kilogram	2.3-3.0
Carrots	Kilogram	5.0-6.0
Onions	Kilogram	10.0-11.0
Tomatoes	Kilogram	3.5-4.0
Cucumbers	Kilogram	3.0-4.0
Apples	Kilogram	4.0-6.0
Vegetable oil	Liter	2.0-4.5
Cotton seed oil	Liter	10.0
Imported oil	Liter	10.0
Bacha oil (Iran)	Can	10.0
Butter	Kilogram	4.0-8.0
Cookies	Kilogram	8.0-18.0
Confectionary	Kilogram	8.0-19.0
Granulated sugar	Kilogram	4.0-4.5
Eggs	Kilogram	1.0
Sausage	Kilogram	13.0-14.0
Beefmeat	Kilogram	13.0-14.0
Sheepmeat	Kilogram	14.0-15.0
Milk	Liter	2.3-2.5
Dried milk	Package	10.0

Source: *Jamoat* Administration in Murghab 2008

Livestock is a vital asset for the households and represents the substantial fundament for subsistence and an existential feasibility for the generation of cash money in Murghab:

“Investment in mobile capital and usage of natural pasture resources guarantees high gain, if risk factors such as confiscation, epidemics and diseases, livestock theft, animal loss due to natural hazards or attacks of natural enemies (wolves, snow leopards) can be reduced to a minimum, and well-funded markets can be served.” (Kreutzmann 1996: 70, translation: F.K.)

The following products can be attained from livestock possession: traditionally, the milk of yaks, sheep and goats is processed to become *qurut* (dried milk pellets), *kaymak* (sweet cream), *ayran* (kefir) or *sösmö* (sour milk). Depending on the product, various lengths of storage life can be achieved. However, livestock possession serves as a primary means of meat production. The slaughtering of animals is carried out in accord with Muslim rules (halal).⁷⁴ The animal is carved up as soon as it has finished bleeding; the innards are

⁷⁴ I.e., the animals must bleed dry immediately after the slaughtering for the meat to be fit to be consumed, since the consumption of blood as well as cattle that has perished or been killed by wild animals is prohibited in Islam. Halal implies a

immediately cooked and eaten, as they are considered especially delicious. The remaining animal parts are preserved in a dark and cool part of the house for up to ten days. Particularly valued are the parts rich with fat, these being especially nutritious.

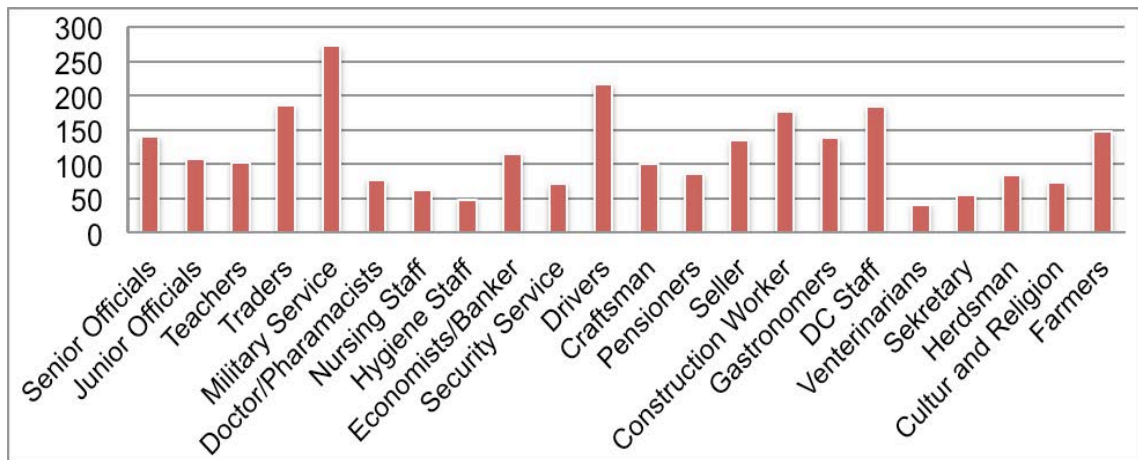


Figure 8: Monthly average income of profession groups
Source: Own survey (n = 876)

The fur is laid out to dry in the sun and can subsequently be used as seating, or isolation for yurts and roofs. Tanning isn't particularly popular due to lack of both knowledge and chemicals. Processing of animal skin to leather so far remains an unused potential. Usage of new wool is limited. Beside the traditional production of felt mats for yurts and house furnishings, new wool is spun manually in small amounts. The wool is dyed and used for traditional carpets and straps used to tie down yurts. The amount of livestock possession is decisive for the degree of a household's vulnerability. It can be stated that the more livestock a household in Murghab possesses, the less vulnerable it becomes. The thematic map A "Livestock possession" presents the livestock (in sheep units) possession per household in Murghab. The relative frequencies of the particular classes with different amounts of livestock are shown in Fig. 9.

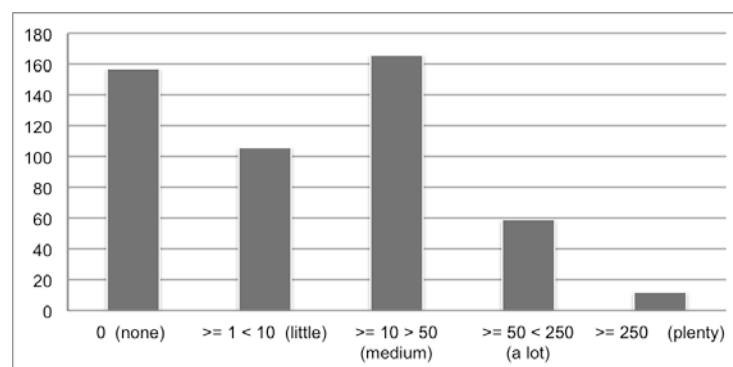


Figure 9: Distribution of livestock possession in Murghab 2008
Source: Own survey (n =500)

In contrast to the situation observed with respect to the spatial dispersion of income classes, the distribution of livestock possession shows slight agglomerations of households with little or no livestock in the centre of town (between the bazaar and the administrative domicile, the *Hukumat*). Due to the fact that rearing of livestock traditionally bears more importance

number of further rules, such as the prohibition of the consumption of pork. In this text only the regulations that bear significance for inhabitants of the Pamir are accounted for.

for the Kyrgyz than it does for the Pamiri, the language affiliation has been contrasted with livestock possession in a cluster analysis (cf. the thematic map C “Comparison of livestock possession and language affiliation”). Nearly no tendencies toward spatial segregation are found in any of the other quarters, however. The Centre/Frunze quarter has been selected as an example for slight segregation tendencies and was compared with the *Jarbashi* quarter situated in the west, characterized by an even composition of households with low and high amounts of livestock. An examination of the territorial dispersion of language affiliation in Centre/Frunze shows a distinct agglomeration of Pamiri households in the south-western part (Centre) in comparison with the north-eastern area (Frunze). The majority of households in the central quarter hold less than ten SUs. Therefore a direct link can be assumed between the affiliation with one of the predominant ethno-linguistic groups and the dimension of livestock possession. The second settlement cluster, *Jarbashi*, is an example of a residential area evenly mixed as with regard to language affiliation as well as to livestock possession. This settlement structure can be assessed as being dominant for Murghab. A comparison of language affiliation and livestock possession in *Jarbashi* confirms the stated relation: by trend, Kyrgyz households hold more livestock than Pamiri do.

Households without any livestock lack a basis for subsistence as well as collateral which can be resorted to in an emergency situation. The 2nd class comprises all households that hold a minimum of one SU and a maximum of nine SUs allowing for a basic self-sufficiency. However, in the event of shocks or seasonality these households lack of opportunities to cope. Households falling into the third class can meet their daily requirements with respect to animal protein and they can make use of their herds when unexpected expenses become necessary. Required medical treatments, travel, higher education of children or rather large household-related purchases can be funded by means of an averagely sized herd and additional income. This also includes the loss of employment in a household that can be compensated for a short time by virtue of larger numbers of livestock, as well as the facilitation of a bride price. Households owning over 50 SUs even have the opportunity for an additional income through the sale of animals. Households with 250 SUs at disposal are those with improved livelihood security means and can be called rich in the local context. A herd comprised of 50 SUs and upward is usually overseen by a shepherd retained for this duty, in a few cases also by a designated household member.

Table 8: Prices for sheep in Somoni at the bazaar in Osh 2008

Age	Male	Female
0-1	100-180	100-180
1-2	300-250	200-250
2-3	250-300	250-300
3-4	300-450	-
> 4	450-550	-

Source: Own Survey

As soon as the animals return in good condition and well-fed from summer grazing lands in autumn they are transported to the nearest markets and sold. The transport and border crossing required to sell the animals at the lucrative market in Osh present a considerable cost factor. Table 8 gives a review of prices for sheep of different ages and gender. Female sheep older than three years do not grow anymore and are needed for herd reproduction and therefore are sold less often. Often livestock owners decide in favour of a more risky but more cost-efficient scenario: bringing the cattle to Kyrgyzstan via the Kyzyl Art pass and the uncontrolled border. Compared to the effort that needs to be invested in livestock rearing, the prices for cattle often appear rather low to the Murghab citizens:

“I sell my animals in autumn when they are fattest; [I sell them] in Osh, where I get more money than in Khorog or in Murghab. I bring the cattle to Kyrgyzstan via the Alai because otherwise it would not pay off anymore, because of the high custom fees and the gas cost. Once on the Kyrgyz side, I take a ride to Osh with the cattle so they do not lose weight. For the money I get from selling one sheep I can barely afford to buy a new tire for my truck.” (Household interview, Murghab, translation: F.K.).

Despite the effort that needs to be invested in mobile animal husbandry, the knowledge necessary for rearing and the relatively low prices for cattle livestock remains an essential livelihood ingredient for Murghab. Finally, the significance of possessing one’s own automobile should be noted here. Due to the peripheral position and the lack of possibilities to ensure self-sufficiency in Murghab and other settlements in the Rayon, mobility is of great importance for individual households. Not only does a private car allow for easier transportation of goods and thus aid in responding to the budgetary demands of a household, but it can also become a substantial income source in its own right, giving the opportunity to transport persons or goods.

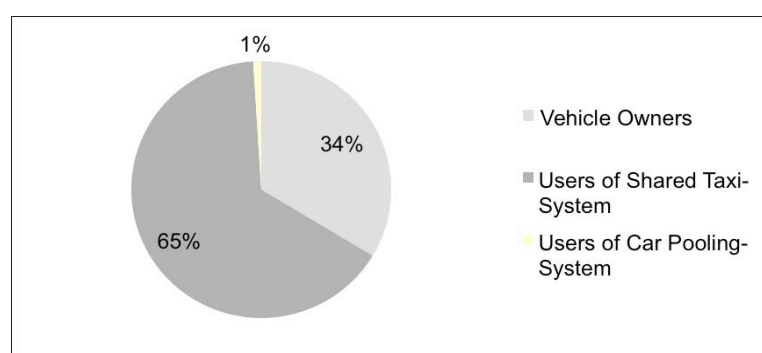


Figure 10: Mobility in Murghab 2008
Source: Own survey (n = 500)

As shown in Fig. 10, as many as 34% of the surveyed households have a private car at their disposal, while the majority of the population makes use of public transportation comprised of a multitude of privately owned vehicles offering informal service. Individual prices for routes, persons and freights are negotiated upfront inside a generally accepted range. Possession of a vehicle can generate additional income and may turn out to be a lucrative investment, which on the other hand, is not affordable for a majority.

In summary, it can be asserted that livestock ownership, remittances from migrant labour as well as commercial initiative constitute potentials with regard to financial assets. However, financial assets are also shaped by the challenges of high market prices, high unemployment rates and large distances to markets (see Tab. 9).

Table 9: Fields of potentials and opposing challenges of financial asset

Field of potential	Challenges
Livestock possession	High market prices
Remittances	Unemployment
Economic self initiative	Large distance to markets

Source: Own survey

V. Social assets

The analysis above shows that for many households in Murghab even small shortages in resources can turn into an existential threat. This is why social relations to close and distant relatives, neighbours and professionals play such an important role. A sense of community, trust and shared values and norms are the requirements needed in order to generate social capital. Social networks are essential not merely in overcoming situations of shortage or emergency. Putnam (2000)⁷⁵ refers to the economic advantages that social capital bears for a whole community:

“The central idea is: social networks have a value. They increase individual and collective productivity alike, in just the same way a screwdriver (physical capital) or a good education (human capital) do.” (ibidem: 1, translation: F.K.)

The same can be asserted for part of the Murghab population as well. For instance, the common use of a vehicle has the advantage of mobility while at the same time reducing gasoline and other costs for all participants. In Murghab social networks are linked more tightly when they stay inside the same ethno-linguistic group. This may be explained by the aforementioned shared values and norms of people with similar religious affiliations. Other factors conducive to the sense of community inside an ethno-linguistic group include language, conventions and traditions.

Different advantages result from the usage of the social capital available for the Pamiri (1) and Kyrgyz (2) living in Murghab:

1. The Pamiri settlement area is concentrated around the river valleys of the Western Pamirs where, because of irrigated agriculture, the level of subsistence is far higher than in the Eastern Pamirs. Cultivable crop plants are wheat, barley, various pulses, potatoes, carrots, cabbage and various fruit trees (apple, cherry, mulberry or apricot) provide important vitamin sources. As the survey shows, a large number of Pamiri households are supplied with these provisions by their relatives living in the Western Pamirs. In return, whole families from Murghab migrate to help their relatives during the summer harvest. Also notable is the Tajik networking of Pamiri inside the GBAO and beyond. This is due to both the voluntary and involuntary migrations that occurred during the Soviet era.
2. In contrast, the Kyrgyz mainly practice animal husbandry. Their settlement area in Tajikistan is concentrated on the Eastern Pamirs plateau.⁷⁶ This allows them to use their social capital particularly in the area of livestock rearing. The shared usage of a shepherd's services and of large stables for animals owned by several households is an example. In addition to this, the propagation and circulation of knowledge constitute a rich potential inside the Kyrgyz community.

In the same way in which Pamiri can benefit from social networking inside Tajikistan, the Kyrgyz take advantage from social networks that reach beyond the border into Kyrgyzstan. Those networks are essential in light of the increasing rates of migrant labour. Habitation and socialisation in the target country are mainly organized via social networking:

⁷⁵ Cited after Dettling 2000: 1

⁷⁶ Cf. Kreutzmann 1996 and 2001

„When planning to go abroad to earn money, a migrant will rely on assistance from his immediate family and the *avlod* [a wide circle of mostly blood relatives; a clan]. He is likely to be joining relatives who have already settled in the target country. If not, he turns to migrants of his *kishlak* (village), for help in arranging his trip and employment. If a migrant has a problem which cannot be solved by relatives or neighbours from the *kishlak* he approaches representatives of his ethnoregional group. Communities are formed on an ethnoregional basis in all foreign cities [...]. For example there is a migrant organisation in Moscow which assists people from Gorno-Badakhshan Autonomous Oblast (GBAO) in finding work, registering and renting accommodation.” (Olimova and Bosc 2003: 59)

Olimova and Bosc (2003) also provide indications toward the separation of ethno-linguistic groups. In Murghab the coexistence of the Pamiri and the Kyrgyz proves to be peaceful but not without friction. The Kyrgyz mainly hold positions in the regional and communal administration, whereas jobs in law enforcement (police and customs office) and military are occupied predominantly by Pamiri. The utilisation of social networks within an area predominantly occupied by one of the ethno-linguistic groups produces network-related advantages for households of that group. Complementary to this, disadvantages can arise when the Kyrgyz come in contact with law enforcement, or the Pamiri come in contact with the administration. During the household interviews, Kyrgyz repeatedly complained about discrimination when passing the Tajik-Kyrgyz border, particularly with regard to custom fees. On the other hand, Pamiri feel less well represented on the Rayon and *Jamoat* levels by the Kyrgyz government representatives. The high proportion of the Kyrgyz population in Rayon Murghab justifies the assumption of a tendency towards stronger discrimination against the Pamiri. In turn, Kyrgyz are often discriminated against in regions where the Pamiri constitute the majority. This holds particularly true for the Kyrgyz working and studying in Khorog.

Social capital also plays an essential role for the quality of development cooperation:

“It is of extreme importance for the successful implementation of projects that one stays on site for a long enough time to comprehend who is linked to whom and in which way. Afterwards it can be decided what can be done where and with whom.” (Interview André Fabian, translation: F.K.)

These features indicate the significance of long-term planning of a development project and its implementation. Not only is it substantial for the utilisation of social capital that planning and realisation should be established on a long-term basis, but also that the staff is not exchanged too quickly. The local population’s trust in the work of NGOs is often generated in reference to individuals. Too frequent staff changes can therefore have a negative effect on the quality of projects. Social assets for sustainable livelihoods in Murghab are marked by the opportunities that social networks provide. However, ethno-linguistic differences can have a compromising effect on the utilisation of social networks.

4.1.3 Sustainable livelihoods in Murghab

The analysis of population structure and assets demonstrates what kinds of potentials are available to sustainable livelihoods in the Eastern Pamirs and which challenges must be faced. The fundamental demographic situation is determined by three quintessential topics: (i) As in other regions of Tajikistan, Rayon Murghab is characterized by a strong increase in population leading to pressure in the face of limited resources. (ii) A trend toward labour migration can be observed. (iii) The increase in numbers of migrant labourers from the Eastern Pamirs region provides an indication of the important role of remittances for sustainable livelihoods.

Table 10: Fields of potentials and challenges of sustainable livelihoods in Murghab

	Field of potential	Challenges
Human assets	"Traditional" knowledge "Modern" knowledge	Improve health Use of knowledge
Natural assets	Pastures Flora and fauna Mineral resources Solar- and windenergy	Deal with natural fuels for heating Contain poaching Limit pollution Improve the use of water
Physical assets	Pamir Highway, R. of Friendship Information infrastructure	Improve public infrastructure Improve social infrastructure Development of the energy infrastructure Water supply
Financial assets	Livestock possessions Remittances Economic initiatives	High market prices Decrease of unemployment Large distance to markets
Social capital	Social networks	Ethno-linguistic differences

Source: Own survey

The numerically smaller population group of Pamiri proves to be more vulnerable compared to the Kyrgyz, mainly because they lack the possession of livestock. Tendencies towards discrimination further deepen the vulnerability of the Pamiri in Rayon Murghab. Beyond the Rayon borders in the Western Pamirs, however, it is the Kyrgyz who are often confronted with exclusion and discrimination. The challenge that the different ethno-linguistic groups are confronted with is that of building stable community relations across the borders of culture, religion and language. The analysis of the different assets categories shows a number of challenges and potentials (Tab. 10) for sustainable livelihood in Murghab. The analysis of the complex potentials and challenges also makes apparent that monetary income cannot be employed as the sole indicator of poverty, as it is often the case on an international level. This approach also substantiates the criticism of a mono-causal evaluation of complex living conditions.

The calculation of a basket of essential livelihood commodities further shows the insufficiency of purely monetary criteria as poverty indicator. Households have a number of alternative strategies and income sources at their command when using different assets:

- The selling of products gained from stock breeding (milk products, meat, new wool)
- Independent digging and harvesting of Teresken
- *Tersek* production
- Taking up loans to trade in the market
- Taking up loans in order to breed livestock
- Offering driver services in exchange for a fee
- The production and sale of traditional handicraft
- The production and sale of meals
- Offering room for rent to tourists
- Illegal trading of minerals or drugs
- The production of clay bricks for private and for sale
- Offering various services (e.g. sewing, washing, herding) in exchange for a fee
- Management of bathhouses (*banyas*)

- Poaching for individual needs and for trading
- Fishing for individual needs and for trading

These livelihood strategies in their combination constitute mechanisms aimed at an increase in „income“, „well-being“, increased reliability with respect to provision supply, and in long-term usage of natural resources (Fig. 2). Under the pressure of securing their livelihoods many households have little opportunity to use the natural resources at their demand in a sustainable way, although many realise the apparent dangers of exploitation. The organisational, political and institutional structures constituting the socio-political framework are significant for managing a livelihood. The political institutions of the centralistic Tajik state are reluctant in applying regional development strategies. High taxes, a confusing bureaucracy and changing laws, together with high customs fees at the borders inflict constraints for commercial activities. The insecurity of livelihoods is further worsened by widespread corruption primarily in the form of bribery:

„The population [...] and the structures of the state [...] reach an agreement based on the individual situation: this practice has been institutionalized up to the point of having fixed rates for bribe money. The amounts to be paid at roadblocks set up by state organisations are notably lower than the official dues. Thus they facilitate the overturn of cattle and a supply of goods from Osh for prices that are in accord with the regional purchasing power. [...] Elements of Soviet ideology, such as lack of transparency and hierarchically structured decision processes allowing for little participation pervade the system of state rules as a fundamental pattern.“ (Kraudzun 2005: 122-123, translation: F.K.)

In summary, it can be asserted that possession of livestock is of elementary importance for sustainable livelihoods in high mountain areas. Well-being (cf. Sen 1993) increases through livestock possession and its multiple use. The connection of asset categories demonstrates that an effective and sustainable utilisation of resources is dependent on the degree to which safety needs are met. Well-being therefore can be considered a precondition for the construction of sustainable livelihoods. It can be safely stated that financial means alone do not suffice to define vulnerability in the local Murghab context. It can be verified that the hypothesis that a measurement of poverty by means of income alone has little validity in the context of high mountain living conditions.

4.2 The current state and perspectives of development cooperation in Murghab

In the area of political and institutional structures a multitude of actors can be found that influence the utilisation of livelihood assets. In the following chapter, an inventory of development cooperation in Murghab is performed and their influence on sustainable livelihoods assessed.

4.2.1 Inventory of organisations and projects

The inventory of development cooperation presented in this chapter is focussed on those development cooperation activities, which have taken place since the end of the civil war and the beginning of the transformation process. Development cooperation before 1998 was mainly comprised of programs and projects implemented to provide humanitarian aid. However, these are not the central point of concern since the short-term character of humanitarian aid does not have a lasting influence on sustainable livelihoods. With the help of interviews with experts, an evaluation of the organisations' literature as well as their internet

presence, a portfolio of development activities since 1998 is compiled.⁷⁷ Table 11 provides an overview of the independent organisations actively implementing projects in the Eastern Pamirs (i.e., those not acting solely as donors). The local organisations „The Yak House“ (TYH) and Murghab Ecotourism Association (META) are treated as part of ACTED as they are founded in the course of Pamir High Mountains Integrated Program (PHIP) and became independent only a few years ago.

In accordance with this principle, the local NGO MSDSP is also assessed as part of its parent organisation, the AKF. Like META and TYH, the MSDSP is registered as an independent NGO, however it de facto acts within the organisational structures of the AKF.

Table 11: Structure of active organisations in the Eastern Pamirs

	Government organisations	Non governmental organisations
Local organisations		Kyrgyz Ate META MSDSP The Yak House
National organisations		NPT RCST
International organisations	GTZ	ACTED AKF (incl. AKHS, AKES) CCM SLC

Source: Own survey

Aga Khan Foundation (AKF)

The Aga Khan Foundation is part of the Aga Khan Development Network (Fig. 11). The presence of the organisation and the multitude of its activities in GBAO since independence make the AKF, along with its child organisations AKES and AKHS, one of the most important NGOs in the Pamir region.

At the beginning of civil war, the AKF reacted to the unfolding humanitarian catastrophe by establishing the Pamir Relief and Development Program (PRDP). With the help of the Humanitarian Assistance Program (HAP) a short-term basic supply with provisions, materials for the long and cold winters including clothing and footwear was ensured. The Agricultural Reform Program (ARP) was implemented in 1994 based on the legislated Land Code. The ARP intended to aid the privatisation of farmland and thereby enabling subsistence farming. Supported by the *oblast* government state-owned farmland in GBAO was allocated to private households.

⁷⁷ I do not raise any claims to completeness; as far as it was possible, information was compiled from interviews, grey literature and information available on the internet.

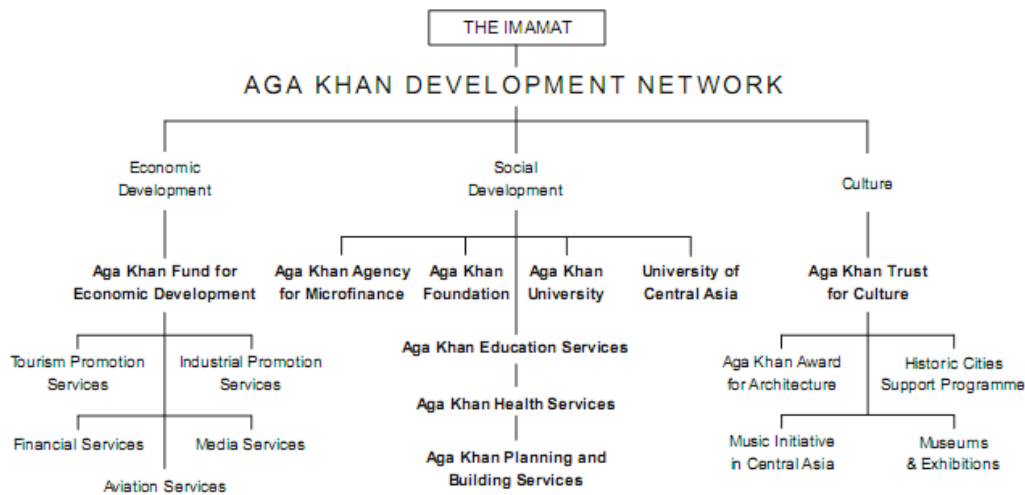


Figure 11: Organigram of the Aga Khan Development Network (AKDN)

Source: www.akdn.org/about_akdn_chart.asp

Additionally, basic agricultural knowledge was provided in seminars and a micro-loan program was developed. In the course of the peace process 1997 the AKF turned the humanitarian aid program PRDP into the NGO MSDSP with its headquarter in Khorog⁷⁸.

AKF's experiences, particularly those made in Northern Pakistan, have shown that an implementation of long-term development programs calls for social organisation on the local level, especially when state institutions are weak or largely absent as was the case after the Tajik civil war (cf. Tetlay and Jonbekova 2005). Therefore social structures on the village level were established in the course of the Village Organisation Program (VOP)⁷⁹ starting in 1998. The creation of Village Organisations (VOs) and their subsequent functioning were guided by democratic principles by establishing an institutional structure that allowed the participation of the entire population of a community.

By 2004, 419 VOs had been created in GBAO. In 2008, 32 VOs existed in Rayon Murghab alone. The individual VO managers deliver reports that serve as the basis for an internal evaluation carried out by the MSDSP in Murghab on a quarterly basis. The results of the evaluation are discussed annually. If a VO manager receives a negative evaluation twice he is replaced through a re-election where all VO members have the right to vote.

The social organisation of the VOs is of decisive importance for development activities because it serves as vehicle of implementation for most active NGOs. The organisations expect long-lasting effects when working with VOs due to the bottom-up principle and the participation of the local population (cf. Reichmuth and Jakob 2008). MSDSP utilizes the system of VOs in order to consolidate food security by keeping subsistence levels as high as possible. Granting micro-loans for cattle and small businesses, improving infrastructure and creating a social network for the benefit of vulnerable households are only a few examples here.

The Aga Khan Health Service (AKHS), a sub-organisation of the AKF, concerns itself with the area of health infrastructure in GBAO. The medical provision in the Pamir area is addressed at three levels. Firstly, existing medical facilities are redeveloped and refurbished and ambulances („med points“) constructed wherever there are facilities at hand. Secondly,

⁷⁸ When founded MSDSP was a sub-organisation of AKF. Just recently it has turned into an independent organisation.

⁷⁹ The Village Organisations (VOs) were established on the basis of existing clan structures. A pilot phase in GBAO, with 14 VOs having been established, showed positive results. It should be noted that MSDSP could develop a good relationship to the local population due to its work in GBAO for many years, which aided the establishment of the VOs.

technical equipment of the medical facilities is acquired and installed. Further, the staff of hospitals and ambulances is trained and specialized in local health problems.⁸⁰ Substantial progress with respect to medical infrastructure has been made by the refurbishment of the Murghab hospital that was realized by AKHS in cooperation with MSDSP. This refurbishment combined with the establishment of a hospital pharmacy significantly improved the medical situation of the Rayon.

Yet another sub organisation of the AKF is the Aga Khan Education Service (AKES). In GBAO, the organisation offers scholarships to excellent students to enable their studies at the universities in Bishkek, Dushanbe or Khorog. In various areas of GBAO schools send their recommendations to AKES. Applicants must then pass a test which mainly examines the level of mathematical and language skill. Ten university vacancies in the more distant metropolis of Dushanbe and Bishkek and seven places in Khorog are made available every year. In the past four years, however, none of the stipendiaries has come from the Rayon Murghab. Shelina Karmali, project manager of the AKES for GBAO, explains as follows:

„Many reasons for this deficit accumulate in Rayon Murghab: [...] isolation and climate are strong factors why teachers are not joining the seminars we provide. In consequence, pupils here have less access to education than in other regions. Another reason, in my opinion, is that most people in Murghab aren't Badakshani [Pamiri] and therefore were disadvantaged with regard to regional programs.“ (Interview Shelina Karmali, translation: F.K.)

The AKES coordinator not only addresses natural factors here but also points out that the discrimination against the Kyrgyz minority within GBAO is yet another reason for the low number of scholars from the Rayon Murghab. We can assume that discrimination against the Kyrgyz outside the Rayon Murghab plays a role in many aspects. Examination of this topic is yet to be performed. Apart from the reasons for the marginal participation of students from the Rayon Murghab that have already been presented it is also evident that contrary to other regions of Tajikistan male children tend to leave school earlier in order to serve as workers in their households.⁸¹

Agency for Technical Cooperation and Development (ACTED)

The French organisation ACTED began its activity in the course of the Pamir High Mountains Integrated Project (PHIP), founded in 1999. ACTED describes the main goal of the PHIP as „improving livelihood of the local population by opening up sustainable economic options.“ In order to fulfil this goal, a number of thematic branches have been established (Cf. ACTED 2003).

- Credit and capacity building⁸²
- Overhauling of the local social infrastructure
- Agriculture, environment and cattle
- Support of local handicraft
- Support of cultural activities
- Support of the most vulnerable families
- Support and development of ecological tourism

⁸⁰ The health problems of the inhabitants of GBAO are primarily connected to altitude and climate and manifest themselves in chronic pulmonary disease such as chronic bronchitis or pulmonary hypertonia (interview Doc. Khoja).

⁸¹ In the region surrounding Garm it is mainly girls who are married early and therefore must break off their school education.

⁸² Cf. Schramer 2008.

The PHIP can be broken down into three distinct phases. It began with the pilot phase (I) in 1999 during which a framework for the work of the PHIP was established, the individual branches founded, staff members acquired and individual projects of the branches planned (cf. ACTED 2001). In 2002, the implementation of the projects could commence (cf. ACTED 2003a, 2003b). Aside from the main donor, the Swiss Development Cooperation (SDC), UNESCO also supported the branch for ecological tourism. During this phase of intensive activity and high budgeting of all the branches, three of the projects developed particularly well: the Micro-Finance Program (MFP), Murghab Ecotourism Association (META) and the project for the support of local handicraft, i.e. The Yak House (TYH). An internal evaluation by ACTED in 2003 showed that these projects have the potential to become independent organisations themselves (cf. ACTED 2005). The goal of supporting and expanding MFP, META and TYH in a way that would allow them to become registered as local NGOs shaped the final phase (III) of the PHIP from 2005 - 2007 (ACTED 2006, 2007). META was registered as an independent local NGO in 2005, TYH by the end of 2007. The future of MFP remains unclear. Integration into OXUS as ACTED's micro-loan institute is planned but has not been realized at the time of writing.

In the period of 2007 - 2009 ACTED realized a project called "Using Governance, Cultural Promotion and Ecological Protection as Pathways to Sustainable Economic Development" on behalf of The Christensen Fund (TCF). This project is supposed to support sustainable livelihoods and intercommunity cooperation (ACTED 2007a). The project's goal should be viewed against the backdrop of current developments shaped by the enormous scarcity of natural resources and the resulting rivalry between regional communities:

„Loss of natural capital in Tajikistan has compromised rural livelihood options and contributed to the emergence of unsustainable livelihood strategies, as social conflict, especially gender inequity, and - in combination with other factors such as high rural population growth and significant youth populations, high unemployment of young men and woman, and regionalism - a rising probability of renewed violent conflict.“ (ACTED 2007a)

The project's goals are to be realized by means of encouraging traditional and cultural exchange, support of economic diversification and a focus on environmental protection. Transferring responsibility to the local level via a network of community organisations (e.g. the VOs) is hoped to result in a lasting implementation of the project goals.

The German Society for Technical Cooperation (GTZ)

The ratification of Tajikistan by the United Nation Conventions to Combat Desertification (UNCCD) laid the foundation for the current project of the GTZ, called Sustainable Management of Natural Resources in GBAO. The crucial point here is reducing desertification in Eastern Tajikistan. In a pilot phase (2006 - 2008) four topics have been addressed in cooperation with the land usage committee of GBAO and the Pamir Biological Institute to approach this goal (cf. Interview André Fabian, Country Director GTZ):

- Energy efficiency
- Pasture management
- Usage of medicinal plants
- Forest utilisation

The capitalisation of natural resources with the goal of instituting a lasting usage is at the focal point of all these projects. Within the Rayon Murghab, three houses in Chechekty were insulated and equipped with special stoves to increase energy efficiency enabling households

to use up to 75% of the generated thermal energy for heating (interview Rustam Zervashoev, GTZ). The decreased usage of Teresken in these pilot households is not only progressive with respect to environmental issues but simultaneously helps to diminish expenditures and investment of labour. A similar bundle of measures has been applied in the village school of Chechekty in order to decrease the energy usage and produce a stable room temperature.⁸³ Furthermore a canal system for the irrigation of nearby pastures has been created. According to statements made by villagers, the irrigation system allows to produce a substantial amount of animal fodder enough for small groups of cattle that now can find enough forage in the summer and need not to be transported to distant summer pastures.

In a subproject, master craftsmen in the areas of insulation technology, oven and water pump construction have been trained in the course of supporting small and middle-class businesses that now contribute to the propagation of energy efficient technologies out of economic self-interest. Three master craftsmen and two organisations selling handicraft (DePamiri, The Yak House) have received aid in form of seminars and an expansion of their workshops. Both organisations as well as the three master craftsmen have also received support in various areas: measures creating competition, valorisation of the local market, quality improvement, marketing, advertisement, product development, and business plan creation (interview Paulina Moor, GTZ).

In pilot projects the areas of forest management and energy efficiency have proved particularly effective.⁸⁴ The measures for isolation and thermal efficiency in private homes (developed during the pilot phase) are being made available to all households of GBAO since 2008. The households receive micro-loans via the Madina Bank that can be used to perform the necessary reconstructions of their homes.⁸⁵ Subsequently, the loan can be repaid by virtue of reduced fuel consumption. The GTZ closely works together with MSDSP and other organisations in all of its projects. The structure of the VOs provided the direct link to local communities.

Red Crescent Society Tajikistan (RCST)

The organisation implements projects in the areas of humanitarian aid and disaster relief. The organisation began its activity in the Rayon Murghab in 1999 by implementing a three-year project for the provision of school children with food. In 2003, a project supporting vulnerable families followed. A Red Crescent staff member was provided with a flock of animals that served to supply vulnerable households with animal products. Additionally, lambs and kids from the flock were sold in order to support these families with the revenue. From 2003 till 2006 seminars and courses on behaviour during natural hazards were held for the population of the Rayon Murghab in the course of a „Disaster Preparedness“ project. The Red Crescent also offers first-aid courses to 76 voluntary workers. The participants of the course are supposed to pass on their knowledge to the local population.

Snow Leopard Conservancy (SLC)

SLC is an American NGO focusing on the protection of wild animals and, more specifically, the protection of the snow leopard in Central Asia. The snow leopard is regarded by the local population as a threat because it attacks the flocks, particularly during the winter. The goal

⁸³ This project, while being part of the larger context of energy efficiency improvement and therefore contributing to the UNCCD, was realized by the GTZ, DED and the German embassy in memory of the GTZ agent Eva Kleinn, who passed away in 2005.

⁸⁴ The project of the Joint Forest Management is of importance primarily for the regions of the Western Pamir and is not discussed in detail here.

⁸⁵ The GTZ allocated a total of 50,000 € to this end; the Madina Bank manages the money.

of the organisation is, according to the founder Rodney Jackson, to change the perception of the snow leopard from being a dangerous creature toward its symbolisation as crucial element for the functioning of the entire Pamir ecosystem. Strategies for the realization of this goal provide means of protection against the attacks of snow leopards and raising incomes of affected households so that a loss of animals ceases to be an existential threat to livestock breeders. The projects are being implemented mainly via MSDSP and the VOs because SLC does not have own local agents in Tajikistan. For the Rayon Murghab, the activities of SLC have limited significance because the Eastern Pamirs are not among the snow leopard's main habitats.

Nature Protection Team (NPT)

NPT is a national NGO also concerned with the protection of wild animals. The project "Community-based Conservation and sustainable Management of Mountain Ungulates in Tajikistan" pursues the goal of sustaining the population of mountain ungulates, which in the Rayon Murghab include primarily the Marco Polo sheep (*Ovis ammon polii*), the capricorn (*Capra ibex sibirica*), the Bucharu urial (*Ovis vignei buchariensis*) and the markhor (*Capra falconeri*) (interview Stefan Michel, consultant at NPT). These ungulates are counted among the „endangered“ species by the International Union for Conservation of Nature and Natural Resources (IUCN). The survival of these species has great significance for sustainable livelihoods of the Eastern Pamirs as the ecological balance depends directly on them. Further, eco-tourism indirectly depends on a diverse fauna. As already mentioned in Ch. 4.1.2, wild animals are hunted traditionally and even more so today under the pressure of scarcity of resources:

„In the Eastern Pamirs, wild animal meat is a substantial part of the food of the people. In other regions of GBAO, this is less pronounced. For some households, however, wild animal meat is an important provisional basis there, too.“ (Interview Stefan Michel, translation: F.K.)

Through close cooperation with local hunting businesses an attempt is made to sustain the population of mountain ungulates. Hunting businesses lease large areas from the state and purchase certain amounts of shooting licenses per leased area and protect their territories against illegal hunting, motivated by self-interest in a growth of the populations. In the surrounding areas, illegal hunting remains common and in the long run might lead to a massive decrease of populations threatening the hunting businesses. Against this backdrop, Stefan Michel comments: „Therefore it is particularly important to allocate usage contracts to local population as well“, because this can lead to personal responsibility that could guarantee a lasting protection of wild animals.

Kyrgyz Ate

Another local NGO active in the area of the Eastern Pamirs is the Kyrgyz organisation Kyrgyz Ate, which dedicates itself to the proliferation of the Kyrgyz horse.⁸⁶ The Kyrgyz horse has been a substantial part of the Kyrgyz culture for centuries but was pushed aside in the course of the Russian occupation and the motorisation that came along with it. In the mountain landscape of the Eastern Pamirs, where mobility is exceedingly important for sustainable livelihoods and petrol is very expensive, the possession of a horse can be of high value. In addition to providing transportation, „the Kyrgyz horse constitutes a cultural symbol which generates Kyrgyz identity and eliminates the border between Tajikistan and Kyrgyzstan“,

⁸⁶ The Kyrgyz horse does not denote a species. It rather refers to a horse that is particularly hardwearing, persevering and well adapted to the high mountain areas due to natural selection and experience-based assortment by the Kyrgyz nomads.

(Jacqueline Ripart, founder of Kyrgyz Ate). Kyrgyz Ate works in the Eastern Pamirs since 2008 with the support of the *Hukumat* and in cooperation with ACTED.

Christian Charity Mission (CCM)

This evangelical organisation was founded in 1990 in the Ukraine and is marked by its missionary character. Since 2006 the organisation pays yearly visits to the Pamir. Vladimir Frantschuk is head and founder of the organisation and describes the goal of CCM as follows: „We have made this Christian mission to serve the people with humanitarian aid and the word of the Lord.“ (Interview Vladimir Frantschuk). Provision of humanitarian aid such as presents for school children and distribution of flour to „very poor“ families is one means of achieving this goal. Generators and budgets for schools (300 US\$ per school) to be invested in learning materials as well as „awards“ for teachers in the form of monetary presents (20 Somoni per teacher) are further examples of missionary humanitarian aid by the CCM. The word of god is being spread and cited and Christian reading material in the form of illustrated Bible stories are distributed. This missionary aspect of the CCM's work led to resentment from the Murghab Imams in 2008 who demanded an eviction of the missionaries from the Rayon by the regional government. The *Hukumat* granted the CCM three more days to distribute the rest of their assets. Whether this organisation will be visiting the Pamir in the upcoming years is not clear.

4.2.2 Chances and limitations of development cooperation in Murghab

Humanitarian aid provided throughout the time of the civil war proved to be essential for the inhabitants of the Rayon Murghab. The continuation of humanitarian aid beyond 1997 remained necessary due to limited possibilities for subsistence and insufficient opportunities to generate income. However, as a short-term measure humanitarian aid is not concerned with sustainability. The amount of humanitarian aid has clearly decreased but remains part of the development cooperation. The transformation process led to a change in all levels of a society and presents great challenges. The development cooperation can create impulses for economic initiative, ownership and empowerment for the local population. Promotion of sustainable livelihoods in a local context must be the focal point of activities by encouraging participation of the local population in decision and implementation processes.

The lack of functioning institutional and organisational structures in the Tajik state poses great challenges. The room for manoeuvre available to development cooperation is limited by centralized and often corrupt structures. Dealing with these structures is an important but often delicate matter. Capacity building and institution building in Government agencies can create important impulses in improving livelihoods. Structures established by development organisations in collaboration with Government need to be endowed with consistency over a long period of time (cf. Wiegmann 2005) when international organisations gradually withdraw, after projects are finished, in order to leave the tasks to the Government. On a more general level, development organisations can contribute important work for the future particularly with regard to supporting ecological sustainability in the Eastern Pamirs.

4.3 Relevance of development cooperation to sustainable livelihoods

The topics individually examined in the previous chapters - sustainable livelihoods (Ch. 4.1) and activities of development cooperation (Ch. 4.2) are juxtaposed in this section with the aim to assess the influence of development projects in promoting sustainable livelihoods for the local population.

An important element of the household interviews was concerned with the perception of the greatest challenges of daily life. Out of these perceptions arise local demands towards development cooperation (Fig. 12).

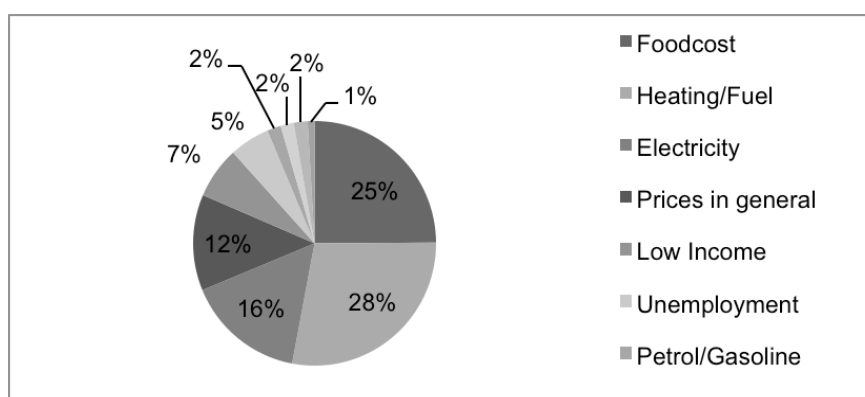


Figure 12: Challenges for households in Murghab 2008
Source: Own survey (n = 1,197; multiple answers possible)

The analysis of household interviews shows that the greatest challenges for households in Murghab correspond to the challenges summarized in Ch. 4.1.4.⁸⁷ They include „provision costs“, „heating material“, „electricity“ and „prices in general“. Also, „low earnings/pensions“ and „unemployment“ were often mentioned. „Gas“, „medical treatment“, „location (periphery, altitude)“ and „water“ occurred less often. Households were also questioned about their awareness of development activities, both in terms of organisations (Fig. 13) and projects (Fig. 14). AKF (including its child organisations MSDSP, AKHS, AKES and the VOs) and ACTED (including the META and The Yak House) are much better known than other NGOs.

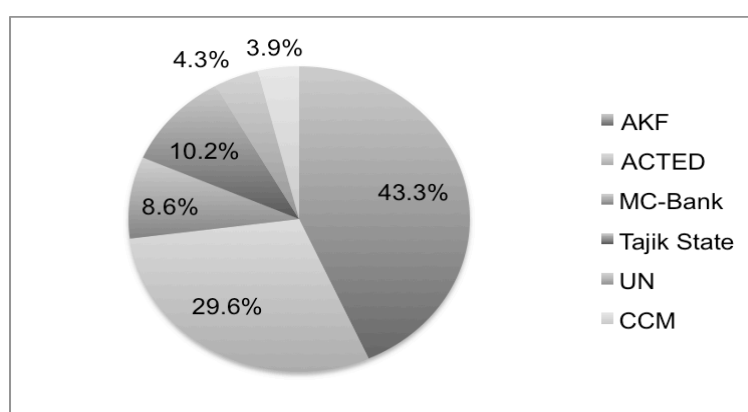


Figure 13: Known organisations and institutions in Murghab 2008
Source: Own survey (n = 893; multiple answers possible)

ACTED is known to 29.6% of households, and 43.3% are aware of the AKF. There are several possible causes for the less-pronounced perception of ACTED. Multiple projects implemented by ACTED have proved to have little lasting effect for the local population. Many interviewees stressed the importance of humanitarian aid offered by the AKF via the PRDP during the civil war. The measures taken by the AKF were essential for many households and have shaped

⁸⁷ It is striking that certain areas that have presented themselves as challenging in the course of the analysis of assets were not perceived as such by the households themselves. This different perception refers to topics like poaching, environmental pollution, social and public infrastructure and the ethno-linguistic differences.

people's consciousness until today. The second most commonly known „organisations“ are microcredit banks⁸⁸ (abbreviated in Fig. 13 as MC-Bank) with 8.6% and the Tajik state with 10.2%. The latter was often referred to because the Tajik President Rachmon Emomali makes regular attempts to win the favour of the population by providing humanitarian aid.

The United Nations (UN) and the Christian Charity Mission (CCM) were not mentioned very often, both reaching nearly 4%. In the recent past, the UN showed little activity in Rayon Murghab. It is mentioned in connection with the civil war, when the UN or its subsidiary organisations provided humanitarian aid. In comparison, the relatively high awareness of CCM activities can be explained because of its contentious missionary activities. The least often mentioned organisation is the German Organisation for Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit, GTZ). This organisation was not very active in Murghab so far. The organisation's activities within the Rayon Murghab have mostly taken place in Chechekty, which helps to explain the low profile of the GTZ in Murghab.

Fig. 14 demonstrates the practices and activities of the organisations specified by the interviewees. The number of possible answers was not limited. The figure shows that the microcredit programs (MCP) of the AKF and of ACTED are best known. Projects by all organisations that helped improving the infrastructure were mentioned by 40% of the households. Named by 19% of the interviewees were projects (also by the AKF and by ACTED) in which subsidized flour and coal were allocated.

The survey showed that many households attempt to handle the acquisition of high-priced provisions by virtue of micro-loans. Loans granted are tied to their utilisation and mostly serve to set up small businesses. However, products that can be obtained in Murghab are mostly purchased in Osh, and each transport requires crossing the border and payment of high customs fees.

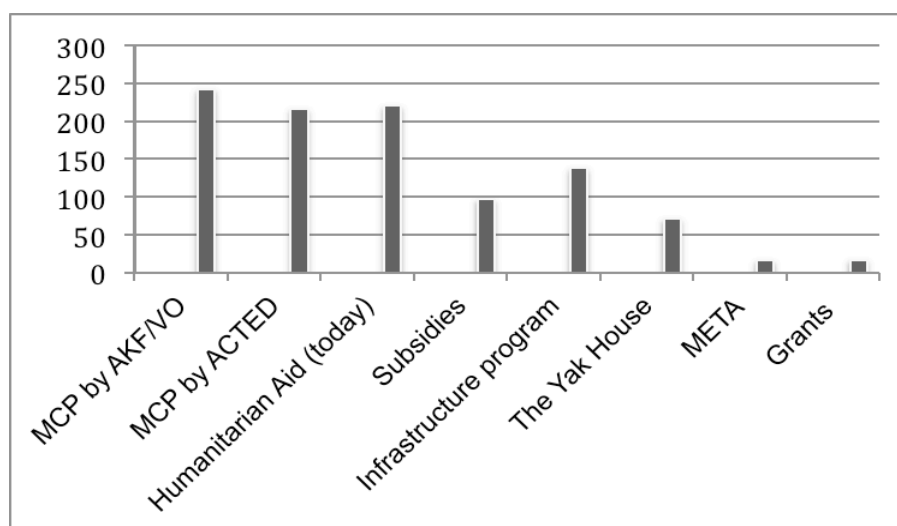


Figure 14: Known activities of organisations in Murghab 2008
Source: Own survey (n = 1017; multiple answers possible)

Due to limited refrigerating possibilities the trade with delicate products often leads to loss of investment. Only few of the interviewed households stated that taking up loans has improved their quality of life significantly. The majority of credit receivers are able to cover personal needs with the loan and pay back instalments from the profit they make. Tradesmen

⁸⁸ Summarized here are all the banks not directly connected with an organisation. Most frequently mentioned were Amonatbank and Agroinvestbank.

and women offer a limited spectrum of goods at the bazaar in Murghab (Photo 4). Many traders compete against each other due to the low degree of specialisation. The situation of constant competition could be avoided with the help of specialisation in individual groups of products or goods.



Photo 4: Shop at the bazaar in Murghab
Source: F. Kreczi, June 2008

With regard to micro-loan programs it can be stated that these activities help households to meet daily needs but they seldom result in a long-term improvement of the quality of life or sustainable increase in income. It should also be noted that only certain parts of the population have access to loan programs, and households with little or no income and/or little or no livestock are not included because they lack credit worthiness. Therefore, vulnerable households in Murghab are largely excluded.

Present day activities in humanitarian aid were known to 44% of the households. This high number may result from various circumstances. At the time of research, the Tajik state and the Ukrainian CCM organisation provided humanitarian aid, which left a positive impact in the memory of many interviewees. Also, there are certain expectations with regard to free provisions (e.g. flour), clothing and medication as a result of the massive support provided during the civil war.⁸⁹ Further, the acquisition of basic provisions continues to be the biggest challenge for vulnerable households and makes humanitarian aid most needed.⁹⁰ In the long run, however, these activities cannot improve sustainable livelihoods as the effect of humanitarian measures reduces once provisions have been used up.

Apart from the acquisition of provisions, energy requirement particularly for heating and cooking constitutes one of the greatest challenges. The rivaling usage of Teresken both as forage and as primary fuel presents a dilemma for households. The AKF as well as ACTED try to address this issue by selling subsidized coal granted to traders via loans. In addition to supplying households with coal, this can also help generate additional income for individual households. A long-term improvement could be achieved through the GTZ energy efficiency project presented in Ch. 4.2.1. Providing a widespread implementation of these project measures, a positive impact on the ecosystem and on individual households could be achieved in the long term. However, at the time of research only few individual households in

⁸⁹ These expectation attitudes pose the question in how far development cooperation today adopt the same supply activities of Russia before Tajikistan's independence.

⁹⁰ I count the separately named area of „prices in general“ among the complex of problems of provisions acquisition here. Therefore, this challenge is not discussed individually below.

Chechekty had the opportunity to benefit from the project that will only become relevant if implemented on a larger scale.

Another great challenge for the population of Murghab is the lack of electricity. Long overdue refurbishment tasks were performed by the AKF/MSDSP in 2002/03 and a comparatively regular supply of electricity was achieved during the summer months. The availability of electricity during winter is still varying greatly, however. Further refurbishment measures could improve the quality of supply but do not constitute a long-term solution for Murghab as hydro-electric power is seasonally limited and the consumption of electricity will likely continue to increase in the future because of increased use of modern devices. Solar energy offers the potential for additional generation of energy because of its relatively easily accessible possibilities of production and storage. Hardly any measures concerning the generation of electricity via alternative forms of energy were to be found in the portfolios of development cooperation.⁹¹ In this respect only a slight improvement of the situation can be attributed to the refurbishment of the existing hydroelectric power plant.

Low earnings/pensions constitute a challenge for 7% of the questioned households. The issue is not the wages and pensions themselves, but rather the disproportionally high market prices making the formal incomes appear marginal. Virtually all earnings and pensions paid by the state are affected. The Tajik state is the most important employer in Murghab; however it does not have the ability to adjust salaries in the face of constant inflation.⁹² The extremely high unemployment rates also constitute great challenges for the population of the entire Rayon. Here, most notably the AKF and ACTED attempt to address this problem. Micro-loans (or trade and livestock rearing), the revitalization of handicraft (by the TYH) and the advancement of „eco-tourism“ (by the META) are measures to provide additional income opportunities through economic diversification. These measures significantly add to a short-term improvement of the situation for parts of the population. The comparison between development activities as demanded by the population and their actual implementation showed that long-term improvements of sustainable livelihoods in Murghab by virtue of development cooperation are limited. A number of various short-term and mid-term projects help households to address some challenges, but a sustainable long-term improvement of livelihoods ten years after the civil war cannot be observed.



Photo 5: Yurts at the summer pastures of Pshart-Valley
Source: F. Kreczi, July 2008

⁹¹ In the course of the second project phase of PHIP, ACTED realised a project named „Promotion of energy saving, alternative energy forms and coal mining“. No evaluation on this project could be sought out from the population, however.

⁹² Salaries are often paid out by the state irregularly or with a delay.

Sustainable livelihoods thus take both old and new routes in Murghab: the importance of mobile animal husbandry making use of pasture lands during the summer (Photo 5) has not diminished while at the same time modern technologies, international integration and opportunities in a globalized world begin to open up.

5 Conclusions and prospects

This paper has analysed the complexity of poverty in Murghab in the Tajik Eastern Pamirs and the contribution of development cooperation in promoting sustainable livelihoods. The Sustainable Livelihoods Approach allowed for analysing the multi-dimensional conditions of poverty in Murghab. A focus on the livelihood assets available to local populations demonstrated available potentials and the challenges people are confronted with. Potentials refer to the areas of livestock rearing, local knowledge, ecological tourism, the mining industry, transportation and transit (between Kyrgyzstan, Tajikistan and China), self-employment, and social networking. Challenges result out of the limiting factors typical to high mountain environments - altitude, periphery, and the sensitive eco-system. Even greater challenges are posed by the transformation process in Tajikistan after independence and its influence on society, politics and the economy. The political and institutional framework of Tajikistan hinders a fuller utilisation of potentials. High bureaucracy, corrupt civil servants, high taxes, low transparency and a lack of democratic structures constrain commercial initiatives. The progressive inflation paired with a continuous increase in market prices in Murghab presents challenges to even the middle or higher income groups.

These frame conditions supported a shift from salaried employment towards livestock possession as a major livelihood strategy. The possession of livestock and cattle in particular performs three significant functions for the local population in Murghab: (i) it serves as means of achieving subsistence, (ii) it functions as a buffer in cases of shock and seasonality, and (iii) it is a source of regular income unlinked to currency issues. However, data analysis has shown that only a mere 14% of households in Murghab have a sufficient number of cattle at their disposal and can exploit all three opportunities. Another 34% of households are able to protect themselves from shocks, trends and seasonality in addition to self-supply. Twenty-one percent of households may be considered vulnerable; they are able to meet their animal protein needs but do not have any backup in case of shocks, trends or seasonality. Thirty-one percent of households do not own any livestock and may therefore be considered as highly vulnerable. A comparison between language affiliation and livestock ownership supports the hypothesis that the Kyrgyz, whose tradition encompasses livestock rearing, own more cattle than the Pamiri. We can therefore assert that Pamiri in Murghab are by trend more vulnerable than the Kyrgyz. However, the analysis demonstrated that a simple generalisation of poverty or „the poor” is not adequate in the context of high mountain areas.

The inventory of development organisations and projects active in the Eastern Pamirs rendered possible an analysis of its contribution to promote sustainable livelihoods. Regional potentials such as cultural diversity, effective pasture utilisation, diverse flora and fauna, and eco-tourism are promoted through projects. Development actors aim to address challenges through promotion of the local economy in order to battle unemployment and lack of commercial activity. A rehabilitation of the medical, social and public infrastructures led to livelihood improvements. With the help of subsidised flour and coal people were supported in coping with disproportionally high market prices for food and energy. However, ten years of development activity in Murghab have not yet led to long-term improvements of sustainable livelihoods. Further research on the complexity of vulnerability in Murghab needs to address a number of open questions: What social and economic interaction patterns characterise sustainable livelihoods in Tajikistan’s high mountain context? What are the reasons for the widespread failure of long-term development projects? A further examination of territorial aspects and group affiliations could shed further light on the challenges and potentials for sustainable livelihoods in high mountain areas and contribute to address the conditions of rural vulnerability.

6 Bibliography

- ACTED (2001): Activity Report N° III, 2000-2001, Reflections and perspectives of the extended Pilotphase, ACTED/Murghab
- ACTED (2002): PHIP Phase II, Half-yearly Report N° I to SDC, 2002-2004, ACTED/ Murghab
- ACTED (2002a): PHIP: Eco-Tourism in East Pamir Tajikistan. Draft Proposal to UNESCO
- ACTED (2003): Fact Sheet: Pamir High Mountain Integrated Project. Implemented by ACTED
- ACTED (2003a): PHIP Phase II, Half-yearly Report N° II to SDC, 2002-2004, ACTED/ Murghab
- ACTED (2003b): PHIP Phase II, Half-yearly Report N° III to SDC, 2002-2004, ACTED/ Murghab
- ACTED (2005): PHIP Phase II, Half-yearly Report N° VI to SDC, Final Report Phase II 2002-2004, ACTED/ Murghab
- ACTED (2006): Pamir High Mountains Integrated Project: Phase III - Implementation 2005-2007, Half Yearly Report n° 2, August-December 2005, ACTED/Murghab
- ACTED (2007): Pamir High Mountains Integrated Project (PHIP) 03KZ, Evaluation Report, Field Study Conducted April-June 2007
- ACTED (2007a): Using Governance, Cultural Promotion and Ecological Protection as Pathways to Sustainable Economic Development, Proposal Submitted to The Christensen Fund, ACTED/Murghab
- Agakhanjanz, O. E.; Breckle, S.-W. (2004): Pamir. In: Burga, C. A.; Klötzli, F.; Grabherr, G. (eds.): Gebirge der Erde. Landschaft, Klima, Pflanzenwelt. Stuttgart 2004
- AKDN: Rural Development Activities in Tajikistan. Accessed: http://www.akdn.org/tajikistan_rural.asp (Status: February 23, 2009)
- AKF (2004): MSDSP - Project of AKF. 2003 Base Line Survey of Gorno Badakhshan Autonomous Oblast, Tajikistan. Policy Evaluation Unit, GBAO
- AKF (2005): Final Evaluation: Maternal and Child Nutrition and Integrated Communications (MCN/IC) Project - Tajikistan, Gorno-Badakhshan Autonomous Oblast
- AKHS in GBAO/Tajikistan 2008. Accessed: www.akdn.org/publications/2008_tajikistan_akhs (Status: May 18, 2009)
- Bailey, F. M. (1948): Yaks. In: The Geographical Magazine 21/5, pp. 176-179
- Banse, G. (1996): Risikoforschung zwischen Disziplinarität und Interdisziplinarität. Sigma Publisher, Berlin
- Banse, G.; Hronszky, I.; Nelson, G. (Eds.): Rationality in an Uncertain World. Deutsche Bibliothek Berlin, 2005
- Bechmann, G. (ed.): Risiko und Gesellschaft: Grundlagen interdisziplinärer Risikoforschung. Westdeutscher Publisher, Opladen, 1993
- Berger, Johannes (1996): Was behauptet die Modernisierungstheorie wirklich - und was wird ihr nur unterstellt? In: Leviathan, 1996/1, pp. 45-62
- Bertram, H. (1993): Familie und Haushalt. Gemeinsam wirtschaften, gemeinsam wohnen und wechselseitige Solidarität. In: Gräbe, S. (Ed.): Der private Haushalt im wissenschaftlichen Diskurs, Frankfurt/New York: Campus, pp. 227-254
- Bischof, H. (1996): Der Krieg in Tadschikistan: Zusammenprall der Zivilisationen? Studie zur Außenpolitik 70, Abt. Außenpolitikforschung, Friedrich Ebert Stiftung, Bonn; Accessed: <http://www.fes.de/fulltext/aussenpolitik/00014toc.htm> (Status: April 15, 2009)

- Blaikie, P.; Cannon, T.; Davis, I; Wisner, B. (2005): At Risk - Natural hazards, peoples vulnerability, and disasters. 2. ed., Routledge, London
- Bliss, F. (2006): Social and Economic Change in the Pamirs (Gorno-Badakhshan, Tajikistan). Routledge, London/New York.
- Bohle, H.-G. (1997): Sozialwissenschaftliche Dimensionen der Ernährungssicherung. Ansätze Geographischer Risikoforschung, Mit einem Fallbeispiel aus Nepal. In: Bohle, H.-G.; Graner, E.; Heitkötter, M; Mayer, M. (Eds.): Ernährungssicherung in Südasien, Siebte Heidelberger Südasiengespräche, Franz Steiner Publisher, Stuttgart, pp. 39-44
- Bohle, H.-G. (2001): Neue Ansätze zur Geographischen Risikoforschung. Ein Analyserahmen zur Bestimmung nachhaltiger Überlebenssicherung von Armutsgruppen. In: Erde 132/2, pp.119-140
- Bohle, H.-G. (2007): Geography of Violence and Vulnerability. An actor-oriented analysis of the civil war in Sri Lanka. In: Erdkunde 61/2, pp. 129-146
- Bohle, H.-G. (2007a): Geographien von Verwundbarkeit; In: Geographische Rundschau 59/10, pp. 20
- Brandt, W. (1980): Das Überleben sichern. Gemeinsame Interessen der Industrie- und Entwicklungsländer. Nord-Südkommission, Kiepenheuer & Witsch Publisher, Köln
- Breu, T. (2006): Sustainable Land management in Tajik Pamirs: The Role of Knowledge for Sustainable Development. Accessed: http://www.nccr-north-south.unibe.ch/publications/Infosystem/On-line%20Dokumente/Upload/PhD%20Breu-SLM%20Pamirs_2006.pdf (Status: January 13, 2009)
- Bundesministerium für Zusammenarbeit und Entwicklung (2006): Evaluierungskriterien für die deutsche und bilaterale Entwicklungszusammenarbeit. Referat 120. Accessed: www.bmz.de/de/.../erfolg_und_kontrolle/evaluierungskriterien.pdf (Status: April 6, 2009)
- Chambers, R. (1989): Vulnerability, coping and policy. Institute of Development Studies, Bulletin 20/2, Brighton
- Chambers, R.; Conway, G. R. (1991): Sustainable Rural Livelihoods: Practical Concepts for the 21st Century. Institute of Development Studies, Discussion Papers 126, Brighton
- Davlatshoev, S. (2006): The Formation and Consolidation of Pamiri Ethnic Identity in Tajikistan. Dissertation of the Middle East Technical University. Accessed: <http://etd.lib.metu.edu.tr/upload/12607111/index.pdf> (Status: February 20, 2009)
- Department for International Development (1999-2001): Sustainable Livelihood Guidance Sheet; Accessed: http://www.livelihoods.org/info/info_guidancesheets.html#1 (Status: April 21, 2008)
- Dor, R.; Naumann, C. (1978): Die Kirghisen des afghanischen Pamir. Akademische Druck- und Verlagsanstalt, Graz
- Dettling, W. (2000): Niedergang des sozialen Kapitals. In: Die Zeit-Online: http://www.zeit.de/2000/43/200043_p-putnam.xml (Status: February 25, 2009)
- Domeisen, M. (2002): Marginalized by the Impacts of Transformation. A Study of Post-Soviet Livestock Breeding in the High Mountains of the Eastern Pamirs. Unpublished diploma thesis, University of Basel
- Dorenwendt, T. (1999): Tadschikistan, die Transformation des Bürgerkriegs. In: Orient 38, pp. 353-360
- Ehlers, E. (1996): Traditionelles Umweltwissen und Umweltbewußtsein und das Problem nachhaltiger landwirtschaftlicher Entwicklung - unter besonderer Berücksichtigung asiatischer Hochgebirge In: HGG-Journal, Vol. 10, pp. 37-51

- Flick, U. (2004): Triangulation. Eine Einführung. Verlag für Sozialwissenschaften, Wiesbaden
- Food and Agriculture Organisation of the United Nations (2006): The role of local institutions in reducing vulnerability to recurrent natural disasters and in sustainable livelihoods development. Asian Disaster Preparedness Center, Rom
- Franz, H.-J. (1973): Physische Geographie der Sowjetunion. VEB Hermann Haack, Geographisch-Kartographische Anstalt, Gotha/Leipzig
- Giese, E. Sehring, J., Trouchine, A. (2004): Zwischenstaatliche Wassernutzungskonflikte in Mittelasien; In: Geographische Rundschau 56/10, pp. 10-16
- Grubb, P. (2005): Order Perissodactyla. In: Don E. Wilson, DeeAnn M. Reeder (Eds.): Mammal Species of the World: A Taxonomic and Geographic Reference. Johns Hopkins University Press, Baltimore
- Halvorson J. S. (2008): Critical Water Problems in Tajikistan: Inventory and Prospect. In: Geographische Rundschau International Edition 4/4, 2008, pp. 12-18
- Hay, I. (2000): Qualitative Research Methods in Human Geography. Oxford University Press, Oxford
- Herbers, H. (2001): Vom Proletariat zum Bauerntum: Transformation im tadschikischen Pamir. In: Geographische Rundschau 53/12, pp. 13-22
- Herbers, H. (2002): Ernährungs- und Existenzstrategien im Hochgebirge: der Haushalt und seine Livelihoodstrategien - mit Beispielen aus Innerasien. In: Petermanns Geographische Mitteilungen 146/4, pp. 78-87
- Herbers, H. (2004): Bergflucht aus dem tadschikischen Pamir. Die Transformation der Gebirgs-Umlandbeziehungen. In: Alpenwelt - Gebirgswelten: Inseln, Brücken, Grenzen; 54. deutscher Geographentag, Bern 2003
- Herbers, H. (2006): Handlungsmacht und Handlungsvermögen im Transformationsprozess. Schlussfolgerungen aus der Privatisierung der Landwirtschaft in Tadschikistan. In: Geographica Helvetica, Vol. 61/1, pp. 13-20
- Herbers, H.; Khaydarov, A. (2007): Demographische Entwicklungen in Tadschikistan: Ein Spiegel politisch-ökonomischer Veränderungen? In: Mitteilungen der Fränkischen Gesellschaft, Vol. 53/54, pp. 211-224
- Hurni, H.; Breu, T.; Ludi, E; Porter, B. (2004): Der tadschikische Pamir. Entwicklungsprobleme und Perspektiven einer Hochgebirgsregion in Zentralasien. In: Geographische Rundschau 56/10, pp. 60-65
- Hurni, H.; Breu, T. (2003): The Tajik Pamirs. Challenges of Sustainable Development in an Isolated Mountain Region. Center for Development and Environment, Bern
- International Helsinki Federation on Human Rights (2007): OSCE Human Dimension Meeting. Aus: http://www.ihf-hr.org/documents/doc_summary.php?sec_id=&d_id=4438 (Status: April 15, 2009)
- Jakob, C.; Reichmuth, J. (Eds.): Community Development: Local and Global Challenges, interact Publisher, Lucerne 2008
- Kelle, U. (2007): Die Integration qualitativer und quantitativer Methoden in der empirischen Sozialforschung: theoretische Grundlagen und methodologische Konzepte. Verlag für Sozialwissenschaften, Wiesbaden
- Kloiber, J. (2007): Mountain Eco Tourism. A case study of the High Pamir Mountain Kyrgyzstan/Tajikistan. Unpublished diploma thesis, University of Eberswalde
- Kraudzun, T. (2005): Die institutionellen Dimensionen des Transformationsprozesses im Ost-Pamir, Tadschikistan. Unpublished diploma thesis, University of Rostock

- Kreutzmann, H. (1995): Mobile Viehwirtschaft der Kirgisen am Kara Köl: Wandlungsprozesse an der Höhengrenze der Ökumene im Ost-Pamir und westlichen Kun Lun Shan. In: Petermanns Geographische Mitteilungen 139/3, pp. 159-178
- Kreutzmann, H. (1996): Ethnizität im Entwicklungsprozess. Die Wakhi in Hochasien. Reimer Verlag, Berlin.
- Kreutzmann, H. (1997): Vom Great Game zum Clash of Civilizations? Wahrnehmung und Wirkung von Imperialpolitik und Grenzziehung in Zentralasien; In: Petermanns geographische Mitteilungen 141/3, pp. 163-186
- Kreutzmann, H. (1997a): Überlebensstrategien der Kirgisen in Afghanistan. In: Geographische Rundschau 53/9, pp. 52-56
- Kreutzmann (2000): Weltpolitische Wirkungen zwischen Pamir und Hindukusch; In: Geographische Rundschau 52/1, pp. 60-63
- Kreutzmann, H. (2001): Entwicklungsforschung und Hochgebirge. In: Geographische Rundschau 53/12, pp. 8-15
- Kreutzmann, H. (2002): Gorno-Badakhshan: Experimente mit der Autonomie - Sowjetisches Erbe und Transformation im Pamir. In: Internationales Asienforum, Vol. 33, No. 1-2, pp. 31-46
- Kreutzmann, H. (2003): Ethnic minorities and marginality in the Pamirian knot. Survival of Wakhi and Kirgiz in a harsh environment and global context. In: The Geographical Journal 169/3, pp. 215-253
- Kreutzmann, H. (2004): Mittelasien: politische Entwicklung, Grenzkonflikte und Ausbau der Verkehrsinfrastruktur. In: Geographische Rundschau 56/10, pp. 4 - 9
- Kroll, C. (2008): Social Capital and the Happiness of Nations - The Importance of Trust and Networks for Life Satisfaction in a Cross - National Perspective. Peter Lang Publisher, Frankfurt am Main
- Longy, A.; Gely, J. (2000): Kyrgyz revival in Eastern Pamirs. Accessed: <http://groups.yahoo.com/group/KYRGYZNEWS/message/139?l=1> (Status: May 13, 2009)
- Luhmann, N. (1991): Soziologie des Risikos. De Gryter Publisher, Berlin
- Lüthi, R. (2003): Human Influence on the Marco Polo Sheep in the Eastern Pamirs. Unpublished diploma thesis, University of Basel
- Minaev, V. E. (2002): Mountain Resource Mining Potential of Pamirs. Centre for Development and Environment; International Association on the Genesis of Ore Deposits, Bern
- Müller-Mahn, D. (2007): Perspektiven der Geographische Risikoforschung, In: Geographische Rundschau 59/10, pp. 4-11
- Nohlen, D.; Nuscheler, F. (Eds.): Handbuch der Dritten Welt. Dietz Publisher, Bonn 1992
- Nuscheler, F.; Roth, M. (Eds.): Die Millenniums-Entwicklungsziele. Entwicklungspolitischer Königsweg oder ein Irrweg? Texte der Stiftung Entwicklung und Frieden. Dietz Publisher, Bonn, 2000
- Nyerere, J. (1991): Bericht der Süd-Kommission: Herausforderungen des Südens. Stiftung für Entwicklung und Frieden, Bonn
- Olimov, I. (2001): Murghab Region: Problems of socio-economic development. Report on behalf of Centre for Development and Environment, Bern
- Olimova, S.; Bosc, I. (2003): Labour Migration from Tajikistan. International Organisation for Migration in the Cooperation with Sharq Scientific Research Center. Accessed: <http://www.untj.org/library/?mode=details&id=73> (Status: May 5, 2009)

- Pearson Bericht (1969): Bestandsaufnahme und Vorschläge zur Entwicklungspolitik. Bericht der Kommission für internationale Entwicklung. Wien/München
- Plate, E.; Merz, B. (Eds.): Naturkatastrophen. Ursachen, Auswirkungen und Vorsorge. Schweizerbart Publishers, Stuttgart, 2001
- Poth (2005): Der Preis der Vision. In: Südwind-Magazin No. 4a, Wien, pp. 14-16
- Rauch, T. (2007): Von Basic Needs zu MDGs. In: Peripherie 107: Millenniumsziele. Entwicklung von Armut., Westfälisches Dampfboot Publisher, Münster, pp. 216-245
- Rzehak, L. (2004): „Das tadschikische Phänomen“ - Zum Verhältnis sprachlich und regional begründeter Identitäten; In: Geographische Rundschau 56/10, pp. 66-70
- Schaller, G. (2003): The Conservation Status of Marco Polo Sheep in Tajikistan. Report to the Wildlife Conservation Society and National Geographic Society
- Scharmer, C. O. (2009): Theorie U - Von der entstehenden Zukunft her führen. Carl Auer Publisher, Heidelberg
- Scholz, F. (1999): Nomadismus ist tot - Mobile Tierhaltung als zeitgemäße Nutzungsform der kargen Weiden des altweltlichen Trockengürtels. In: Geographische Rundschau 51/5, pp. 248 - 255
- Scholz, F. (2006): Entwicklungsländer - Entwicklungspolitische Grundlagen und regionale Beispiele. Westermann Publisher, Braunschweig
- Scoones, I. (1998): Sustainable rural livelihoods: a framework for analysis. Overseas Development Institute, Brighton
- SDC (2006): SDC in Centra Asia. Pamir High Mountains Integrated Project. Accessed: http://www.swisscoop.kg/en/Home/Activities_in_Tajikistan/Local_Development_Projects/Pamir_High_Mountain_Integrated_Project (Status: May 15, 2009)
- Sen, A. (1993): Capability and Well-Being. In: Sen, A.; Nussbaum, M. (Eds.): The Quality of Life, Clarendon Press, Oxford, pp. 30-53
- Shankland, A. (2000): Analysing Policy for sustainable livelihoods. Institute of Development Studies, Brighton
- Spranger, H.-J.; Wolff, J. (2003): Armutsbekämpfung durch Demokratisierung? PRSP: Chancen und Widersprüche einer neuen entwicklungspolitischen Strategie. Hessische Stiftung Friedens- und Konfliktforschung
- Sumner, A.; Tribe, M. (2008): International Development Studies. Theory and Methods in Research and Practice. Sage Publications, London
- Swiss Development Cooperation (2006): Pamir High Mountain Integrated Project. Accessed: http://www.swisscoop.kg/en/Home/Activities_in_Tajikistan/Local_Development_Projects/Pamir_High_Mountain_Integrated_Project (Status April 15, 2009)
- Tetlay, K.; Jonbekova, M. (2005): Social Organisation Development in Tajikistan: MSDSP'S APPROACH IN THE MOUNTAINS AREAS. In: Strategies for Development and Food Security in Mountainous Areas of Central Asia. Paper 10
- Tiel, R. E. (Ed.): Neue Ansätze zur Entwicklungstheorie. Deutsche Stiftung für internationale Entwicklung, Bonn 1999
- United Nations Development Program (2007): Human Development Report 2007/2008. New York
- United Nations Office for the Coordination of Humanitarian Affairs (1999): 1999 Mid-Term Review and Revision of United Nations Consolidated Inter-Agency Appeal for Tajikistan. Accessed:

<http://www.reliefweb.int/rw/rwb.nsf/AllDocsByUNID/f69795d5dbceb182c12567b600468c21>
(Status: January 9, 2009)

Watts, M. (Ed.): Struggles over geography: Violence, freedom and development at the millennium. Hättner - Lecture, University of Heidelberg, 2000

Walter, H.; Breckle, S.-W. (1986): Ökologie der Erde: Geobiosphäre. Fischer Publishers, Stuttgart

Watts, M.; Bohle, H.-G. (2003): Verwundbarkeit, Sicherheit und Globalisierung. In: Gebhardt et al.: Kulturgeographie, Heidelberg: pp. 67-82

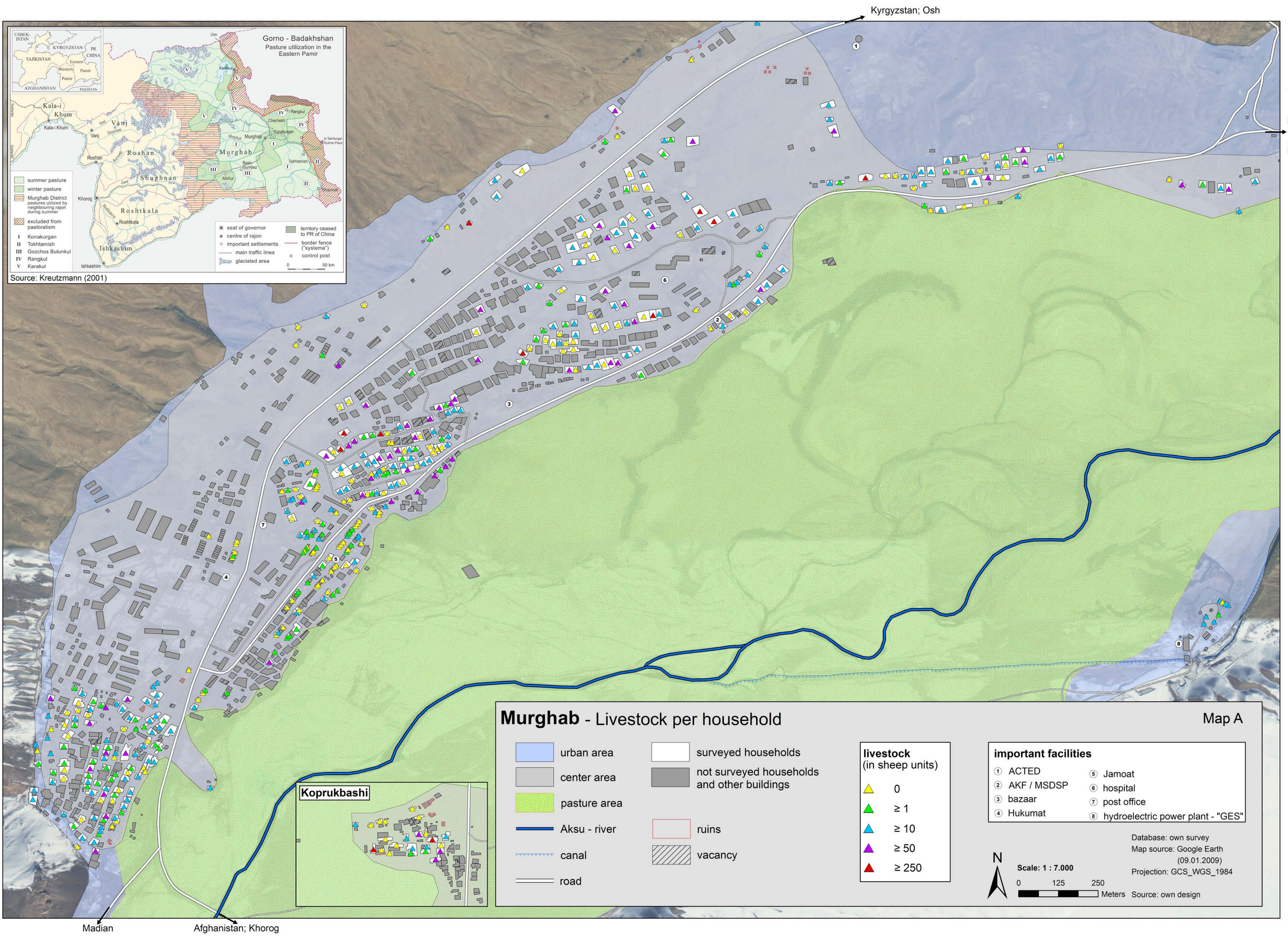
Watts, M.-J.; Bohle, H.-G. (1993): The Space of Vulnerability - the Causal Structure of Hunger and Famine; Progress in Human Geography 17/1; pp. 43-67

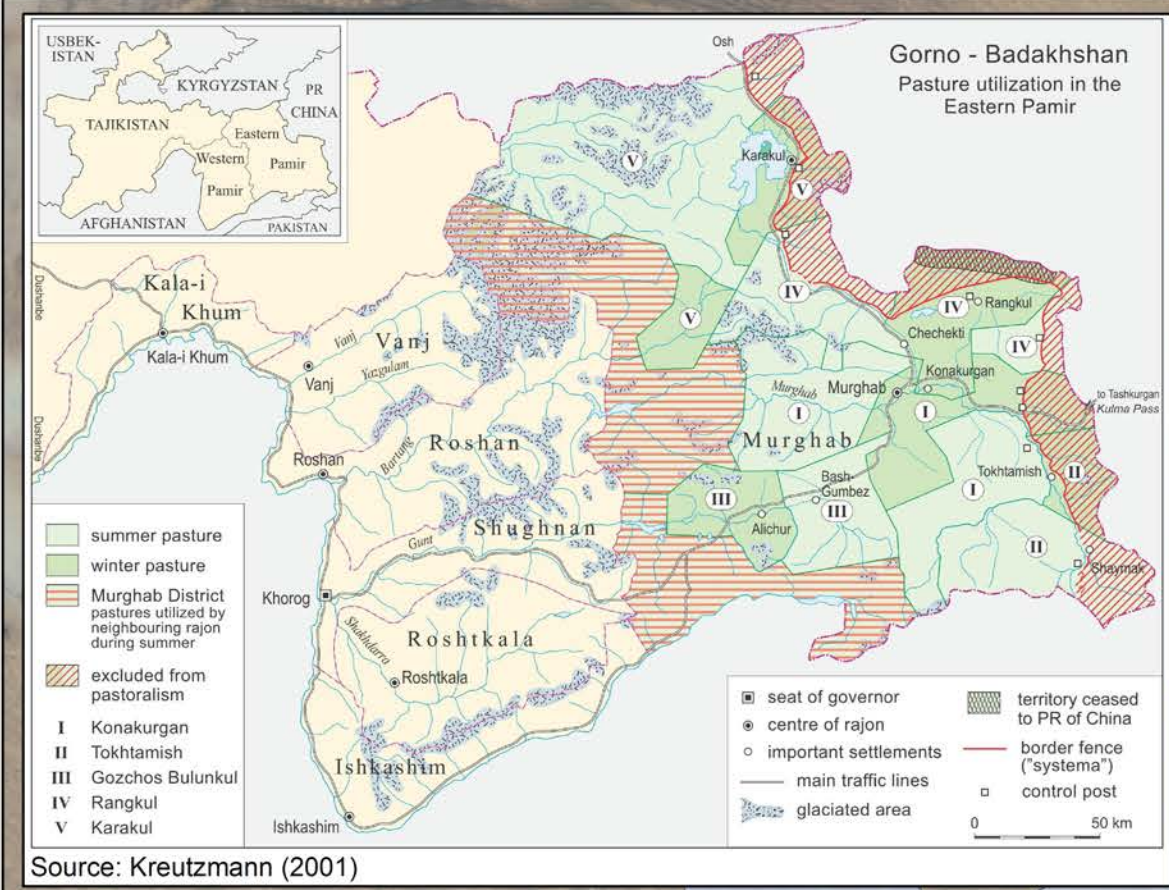
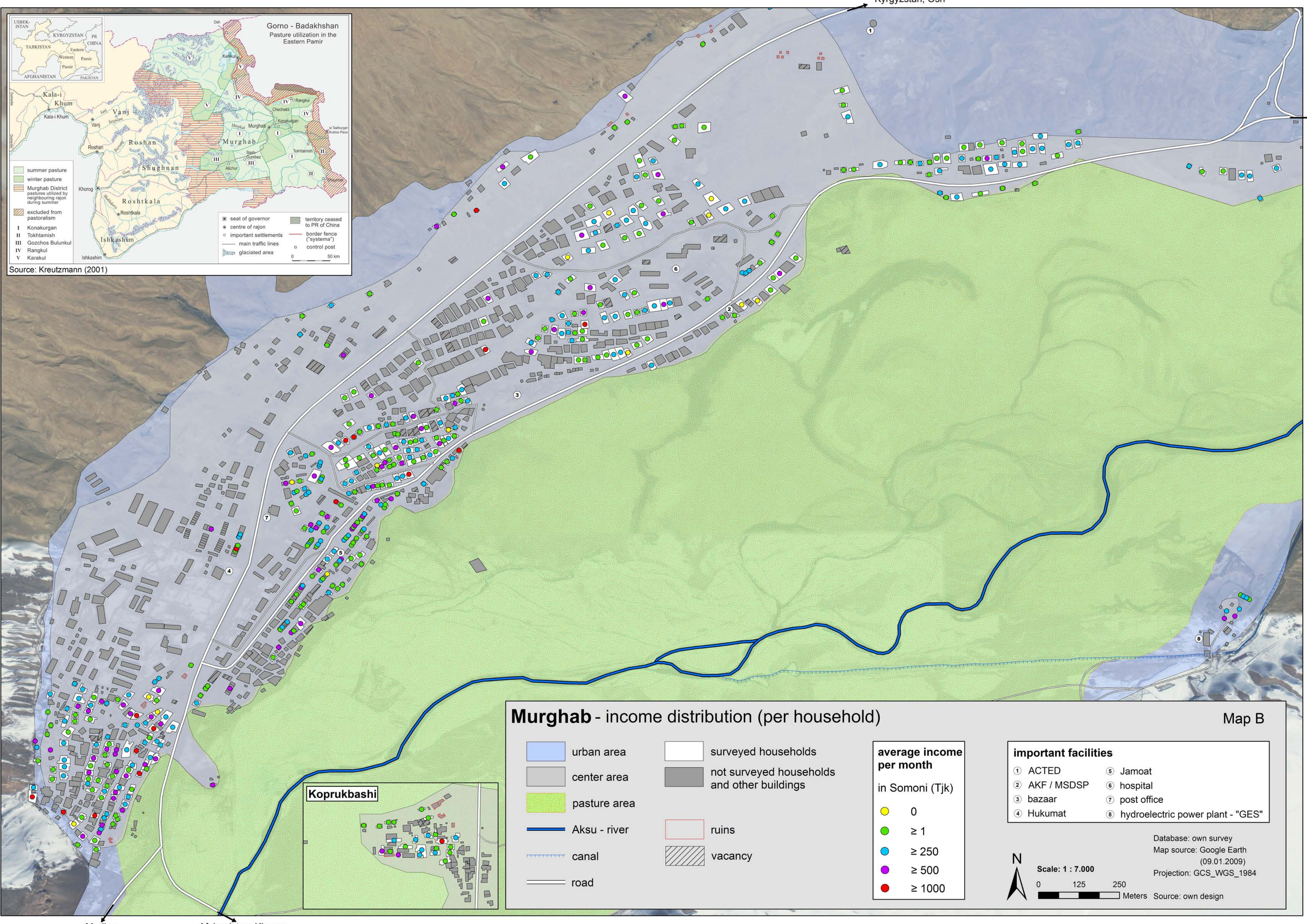
Wiegmann, G. (2005): Global Alliances Providing Local Governance in Tajikistan? Ost-Europa Institut, Freie Universität Berlin. Accessed: www.oei.fu-berlin.de/en/projekte/cscga/downloads/gw_pub_rome.pdf (Status: February 7, 2009)

Wisner, B. (1993): Disaster Vulnerability - Geographical Scale and Existential Reality. In: Bohle, H.-G. (Ed.): Worlds of Pain and Hunger, Breitenbach: Saarbrücken/Fort Lauderdale, pp.13-52

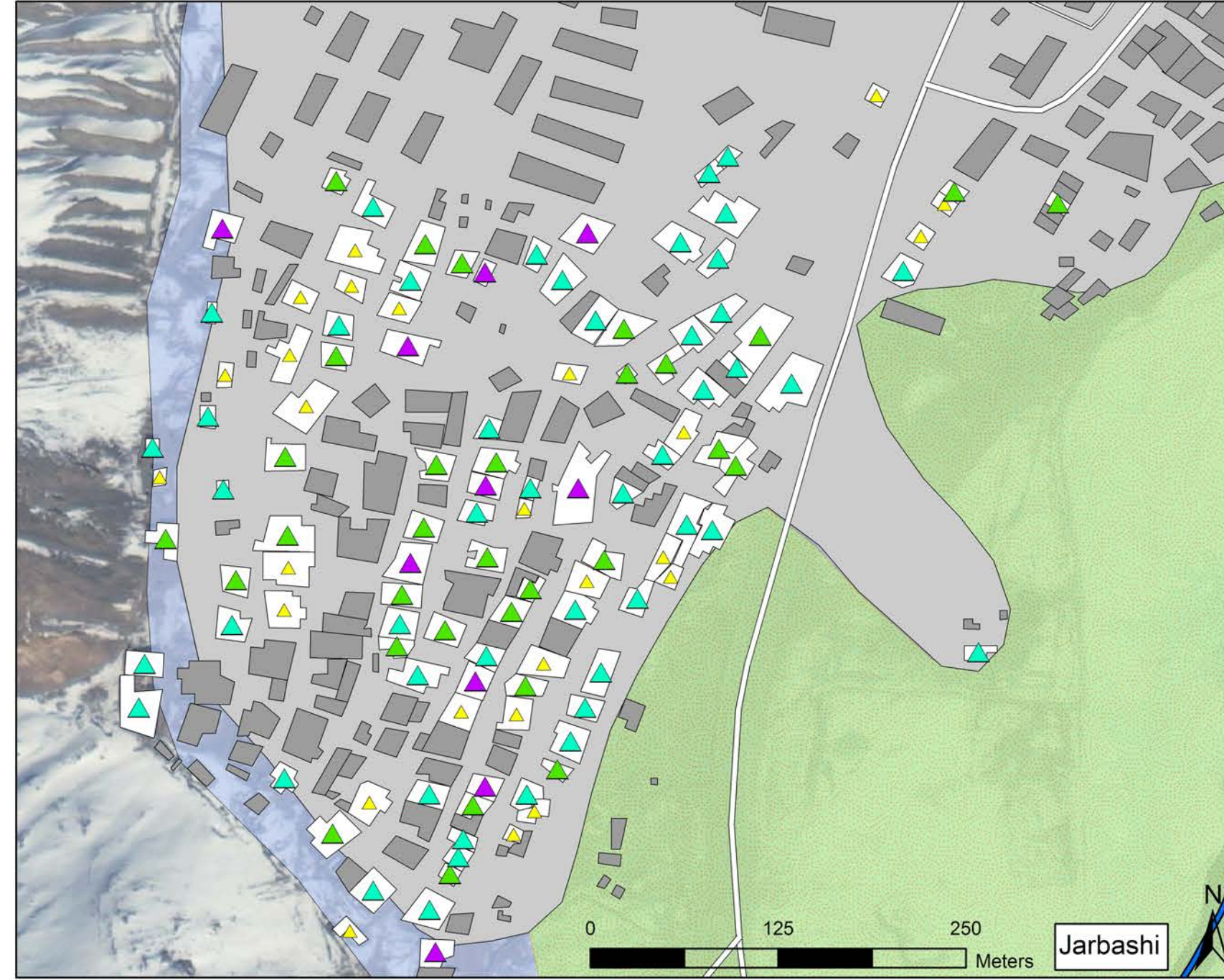
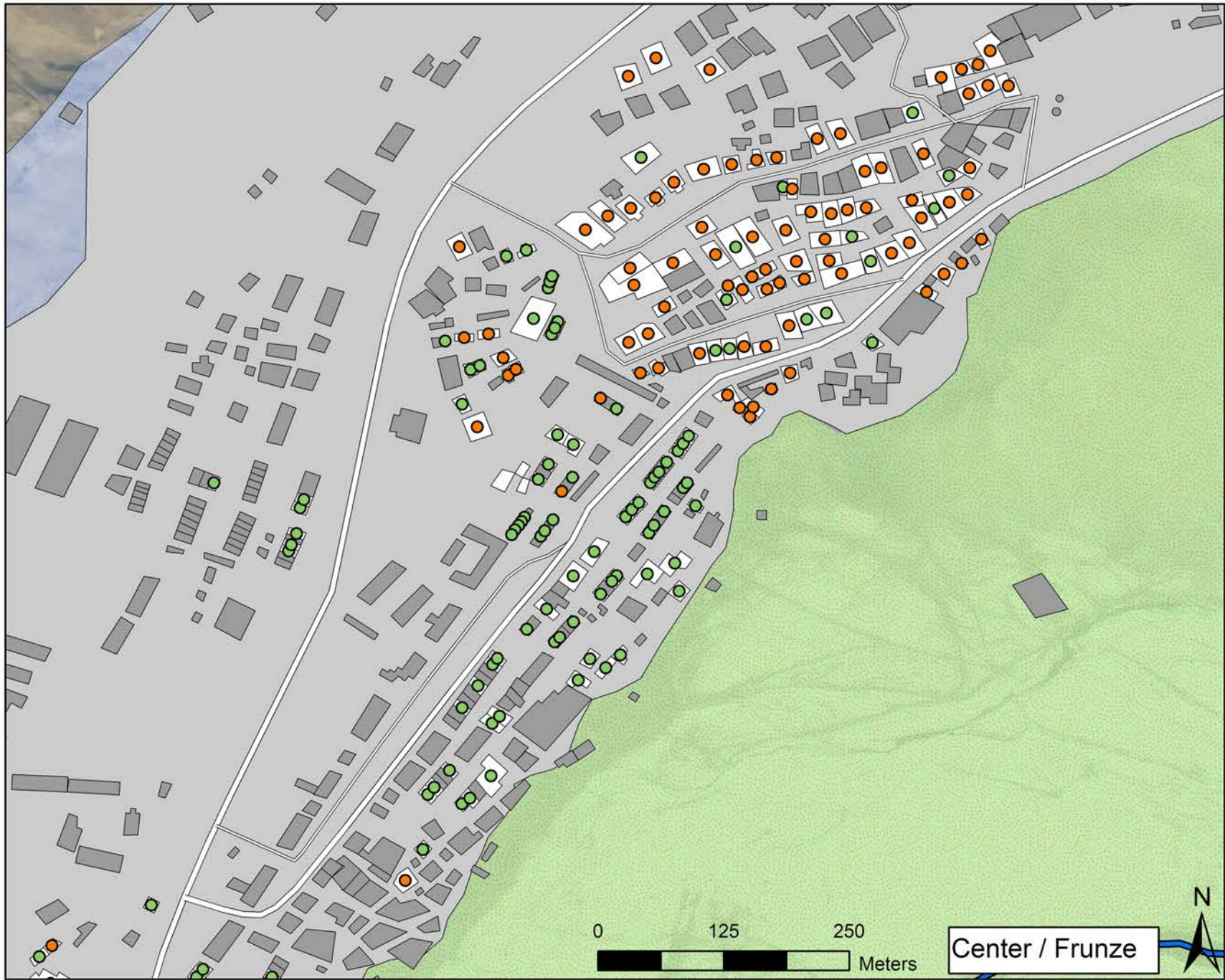
Zibung, D. (2002): Eine integrale Analyse der Infrastrukturausstattung und Energieversorgung in der Großregion Gorno-Badakhshan, Tajikistan. Unpublished diploma thesis, University of Bern

Ziai, A. (2007): Globale Strukturpolitik. Westfälisches Dampfboot Publishers, Münster





Map C



Comparison of livestock and ethno-lingual groups

