

AGA KHAN RURAL SUPPORT PROGRAMME
BALTIŠTAN



HIGH ALTITUDE INTEGRATED NATURAL RESOURCE MANAGEMENT

REPORT NO. 2

**INSTITUTIONS AND ORGANISATIONS
IN PASTURE AND FORESTRY MANAGEMENT**

**HÅVARD STEINSHOLT
POUL WISBORG
MOHAMMAD AKBAR RAZA
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AKRSP - NLH, DECEMBER 1998

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HIGH ALTITUDE INTEGRATED NATURAL RESOURCE MANAGEMENT: This is Report No 2 of seven progress reports presenting the activities and preliminary findings of joint research under an institutional cooperation programme between the Aga Khan Rural Support Programme, Pakistan, and the Agricultural University of Norway. The report addresses the sub-theme, *Institutions and organisations in pasture and forestry management*.

ADDRESSES:

Aga Khan Rural Support Programme

Regional Programme Office, Baltistan
P.O. Box 610, Satpara Road, Skardu
Northern Areas, PAKISTAN

Telephone: 00 92 575 27 51/28 67

Telefax: 00 92 575 29 42

The Agricultural University of Norway:

Noragric, Centre for International Environment and Development Studies

P. O. Box 5001,
N-1432 As, NORWAY

Telephone: 00 47 64 94 99 50

Telefax: 00 47 64 94 07 60

E-mail: noragric@noragric.nlh.no; poul.wisborg@noragric.nlh.no

Internet: <http://www.nlh.no/Noragric/projects/akrsp/akrsp.html>

Library: Att. Liv Ellingsen, Librarian (liv.ellingsen@noragric.nlh.no)

Department of Land Use and Landscape Planning

P.O. Box 5029
N-1432 As, NORWAY

Telephone: 00 47 64 94 84 10

Telefax: 00 47 64 94 83 90

E-mail: hans.sevatdal@ilp.nlh.no; havard.steinsholt@ilp.nlh.no

TEAM MEMBERS

NLH: Hans Sevatdal, Professor
Håvard Steinsholt, Associate Professor
Poul Wisborg, Senior Executive Officer

AKRSP: Mohammad Akbar Raza, Programme Manager, Agriculture

PROJECT REPORTS 1998

Report No. 1: Summary report

Report No. 2: Institutions and organisations in pasture and forestry management

Report No. 3: Pasture, livestock and biodiversity

Report No. 4: Natural forest inventory

Report No. 5: Gender, resource management and livelihood security

Report No. 6: Information and documentation

Report No. 7: Socio-economic survey of Basho (project site)

More copies of the reports may be obtained from AKRSP, Regional Programme Office, Skardu or Noragric's Library.

Preface

The Aga Khan Rural Support Programme (AKRSP) and the Agricultural University of Norway (NLH) have initiated a cooperation programme on alpine resource management. The programme was planned during mutual visits in 1997, and implementation started in March 1998. The programme is funded by the Norwegian Agency for Development Cooperation (NORAD) as an integrated part of Norwegian support to AKRSP's natural resource management programme in Baltistan. In 1998 the main activity was an integrated study of alpine resource management systems (pasture and natural forest) in the Basho watershed of Skardu district. Appendix 1 lists the main components and AKRSP - NLH counterparts. The project was initiated in the spring of 1998, primarily through joint field research by visiting NLH staff and AKRSP counterparts.

This field report briefly presents preliminary findings of the team working on the institutional and organisational aspects of pasture and natural forest management, particularly land tenure issues. Hans Sevattal (Professor), Håvard Steinsholt (Associate Professor) and Poul Wisborg (Senior Executive Officer/Project Coordinator) visited Skardu and Basho from 27.05. to 03.05.(Sevattal) / 10.06. (Steinsholt/Wisborg). Mohammad Akbar Raza, Manager Agriculture, is the AKRSP team leader for this component and facilitated the majority of meetings/interviews, as well as lead the participatory learning exercises. Dr Abbas, Veterinarian and Project Field Coordinator not only took care of all practical arrangements, but also served as interpreter for several meetings and contributed to the discussions. Appendix 2 gives a list of the main activities and people met.

Basho - the valley of many secrets.....

Basho is the valley of the many secret places!

Dr. Abbas.

Leaving Skardu and driving west in direction of Gilgit for about 2 hours - crossing the long pendulum bridge over the roaring, grey waters of the Indus, you will find yourself at the doorstep of the Basho watershed. What from a distance appears to be a rocky bank of the furious river, turns out to be the fertile green gardens of Matillo, with her famous Basho-wines and apricot and mulberry trees. Still, what you expect to find between the mountains above is a harsh deserted gully.

However, above Matillo is an intensely green valley and a chain of small villages: Bathang, Khar, Guntho, Meito, Doros, Nazimabad - like pearls along the silver chain of the clear, cold Khar Nullah. In the upper watershed, the stream passes between the hill of Ruskin to the west and a giant rock barrier to the east, and here another secret world is opened before your eyes: The plain of Ranga and the green hillside of Sultanabad - all softly embraced by pines and junipers. And around and behind and above - almost reaching the sky - the mountain peaks.

After making such an entry to our research station at the Forest Department's lodge, we realised that Dr. Abbas was right. In the weeks to come, we got a glimpse into more and more of the secrets of this watershed: hidden plateaux in the mountain sides with green pastures and small fields; sheds and secondary homes among blocks and ridges, as if they had grown up from the ground itself; Ibexes and Yaks grazing and playing high up in the vertical walls of the mountains.

The massive scale of the scenery could easily make you blind to detail. Yet, the secrets - the complexity of nature, of human utilisation and organisation - are obviously as rich here as in any other cultural landscape. During our research in Basho, we got only a glimpse of a small number of the watershed's secrets. We could of course never reach the knowledge of the landscape that the people of Basho have achieved through hundreds of years of "research" on their valley. Still, we hope that our glimpse and our way of telling our story could benefit people in Basho, mountain peoples elsewhere, and organisations working for the benefit of such people.

Acknowledgements

During the first year of implementation participants have enjoyed the opportunity of carrying out field research in the Basho watershed of Skardu District. We thank the people of Basho, including their representative, the Basho Development Organisation (BDO), for a warm reception and permission to work in the area. Men and women of the eight villages of the watershed have contributed of their valuable time and knowledge to joint activities, such as participatory learning exercises, field trips, village meetings and interviews. Local people also made their school available for a researcher and her family. The village organisations and the Basho Development Organisation have shown exceptional hospitality and support. It has been agreed that all maps, reports and other documentation shall be made available to the BDO, when appropriate also for display in local schools.

We thank the District Commissioner, Skardu, Haji Sanaullah, and other government officials, for their interest in the collaborative programme and for offering useful recommendations and advice, and in some cases active participation in the programme. The practical implementation of the field programme was made a lot easier by the generous offer from the Divisional Forest Officer, Skardu, Mr Sharif, that AKRSP and visiting researchers could use the Forest Department Guest House in Basho.

We thank NORAD and the Royal Norwegian Embassy, Islamabad, for the continued support and for the consistent good-will towards the cooperating institutions, as well as active interest in the challenges and development potential of Baltistan.

AKRSP made excellent arrangements for field research. All Norwegian participants sincerely appreciate the many efforts without which they would not have been able to carry out research in Baltistan.

Support by local people, government institutions and the donor agency will remain a condition for the project to achieve its goals. The partners appreciate with humility the good relations and many contributions they have enjoyed so far. We hope that the linkage programme may continue and grow to the benefit of local people, the co-operating institutions and relevant government authorities.

Ås/Skardu,

Executive summary

As part of an ongoing institutional co-operation programme, NLH and AKRSP have carried out a study of institutional and organisational aspects of alpine resource management in the Basho Watershed of Skardu District, Northern Areas, Pakistan. The study aimed at a broad understanding and description of major institutions and organisations in natural resource management, with emphasis on land tenure in the high alpine zone. Findings are preliminary and tentative.

The report is based on interviews with government officials; participatory learning exercises; group or individual interviews in five of the eight villages of Basho (Matillo, Meito, Doros, Nazimabad and Sultanabad); discussion with other AKRSP and NLH team members and follow-up investigations by AKRSP staff. Joint field research by AKRSP and NLH was carried out during 28 May to 9 June 1998.

The main findings of the study are:

1 STATE-CLAIMED OWNERSHIP TO COMMONS

The main features of the land tenure system, as it applies to alpine resources, is a combination of state-claimed ownership to land (*Khalisa Sarkar*) and community and household user rights established through a mix of traditional custom, legislation, legal practice and ongoing informal appropriation. One exception is that the *Raja* of Skardu is a major private owner of land above the channel. There is a striking contrast in the practical implications of state-claimed ownership for natural forest and alpine pasture.

2 ALPINE PASTURES

Alpine pastures are managed communally by the eight villages of the watershed. The state has so far not interfered in the pasture management system, so it is a locally evolved and community-based management adaptation to the local environment. Key features of the tenure system are:

- 2.1 Village grazing rights are entered in an agreement dating back to 1918 and held by the Revenue Department.
- 2.2 Villages, groups of households or households hold the grazing rights to land within the village boundary, to defined summer farm pastures (*broqs*) and alpine grazing areas (*sosa*). Such rights may be exclusive or shared with other identified villages. The rights to *broqs* may be restricted to defined households, and locals make a distinction between collective and household *khlas* (summer farm sheds). Unless excluded by users of better title, free grazing is performed. The eight villages hold shared grazing rights to the *Ranga* grazing area around Sultanabad and the *Upper Valley* grazing areas. With respect to grazing rights there is no difference between the forested and non-forested part of the state-owned commons.
- 2.3 Further household appropriation of alpine pastures through *kabza* – ownership established through long-term cultivation - has been an important strategy for expansion of agricultural land and food production. Private appropriation of state owned commons has been banned by the government of Pakistan, so that today expansion of land under cultivation is restricted to community-based projects.
- 2.4 The *Barpa*, *Khapay Mar* and *Rablay* systems of lease animals are important factors in creating social networks and are appreciated by people as a way of minimising risk. They probably contribute to adapting the production system to the unevenly distributed pasture resources.
- 2.5 While local people have complex ways for spreading grazing pressure and utilising every inch of land, it appears that village organisations have not developed rules (at any level) that limit the number of animals on summer pastures. Such future regulations appears to be under discussion in the villages.

3 NATURAL FOREST

In contrast to pasture tenure and use, the natural forest is characterised by strong government presence, some of the major features being:

- 3.1 The governments owns, and has the management right, not only to the land, but also to trees of certain species (including Pine and Juniper) regardless of land ownership (e.g. on *Raja* and other private land).
- 3.2 Villagers' usufruct rights to the natural forest trees are limited to dead fallen fuel wood, dead fallen and dead standing timber (avalanche and flood timber). They have a formal priority for getting concession for timber cutting for domestic use, if the condition of the forest permits harvesting, but this is currently not applied due to the ban on commercial felling of green trees (communicated to villagers as an all-inclusive ban). The procedures for obtaining permission for harvesting, including bureaucratic costs, seem to have made this difficult, even before the ban was introduced in 1986.
- 3.3 Intra- and inter village informal rights to single trees appear to be established through a complex system of use, apparently as a corollary to *kabza* for land
- 3.4 Based on the history of heavy extraction of timber since the Forest Department's construction of the jeep road to the forested upper part (completed 1968), the relationship to the authorities has been one of suspicion. Villagers have perceived government and forest law as institutional constraints on resource utilisation, conservation and development.
- 3.5 The Basho Development Organisation has confirmed and is partly enforcing, the ban on felling of green trees through appointed guards and fining. BDO leaders state that their current internally enforced restrictions on natural forest exploitation are not sustainable without secure rights to an increased stream of benefits
- 3.6 The current initiatives to create legal/institutional reforms permitting greater local participation and benefits from forest harvesting, including the Skardu Divisional Forest Officer's recommendations for new by-laws to the Forestry Act of 1927, represent important institutional reforms regarding the management of natural resources in the Northern Areas. A crucial question is the legal status of the village and/or cluster organisations as a party to an agreement with government regarding rights to felling of timber, revenue sharing and as the agent of internal jurisdiction. The example of the agreement between the Forest Department and two villages (Khaiber in Gilgit Region and Hoshey in Khaplu, Baltistan) is relevant and may serve as a model for institutional reforms in forest management.

4 SOCIAL ORGANISATION AND CONFLICT RESOLUTION

- 4.1 The villages of Basho have a variety of non-formal organisations and individuals for conflict resolution and almost all conflicts are solved through these.
- 4.2 The BDO, established in January 1997, is partly motivated by new opportunities in nature based enterprise development, such as "eco-tourism", but it also represents a continuation of traditional co-operation about alpine resource management. So far its major effort is concentrated on land development through channel irrigation.
- 4.3 Villagers present the BDO as the hub of social organisation in the watershed. They clearly articulate the formal, democratic procedures on which the BDO is built, but also stress the context of other village level associations and groupings that it relies on. The overlay between the "modern", democratic village organisations and traditional organisations, such as elders and religious organisations, is complex. It appears that people bridge old and new "rules" by giving elderly notables prominent roles in the new organisations.
- 4.4 Women have also strengthened their social organisation, but are only indirectly represented in the watershed organisation (BDO). This may be a constraint on its ability to address management of the alpine commons.

The main recommendations are:

- 1 The participating partners should pursue further joint study which is linked to realistic development options and AKRSP's strategy for competence building.
- 2 The many tentative generalisations need further verification through field and literature study. The partners suggest that these are among the specific issues which deserve further study and competence building under the "Institutions and organisations" component:
 - 2.1 Institutional and organisational aspects of grazing systems. Mechanisms regulating access. Interplay between old and new institutions/rules.
 - 2.2 The dynamics of institution building at the local level, including a focus on the legal and social status of the BDO as a partner for government. Document participation in the BDO, including the representation of women's interests.
 - 2.3 Comparison of the organisational and institutional development with that of one to two other watersheds, with emphasis on emerging cluster organisations and the on-going institutional change in forest and wildlife management.
- 3 As for the project in general, continued close cooperation and information sharing with relevant government authorities are very important for this component.

List of acronyms and abbreviations

AKRSP	Aga Khan Rural Support Programme
BDO	Basho Development Organisation
CPR	Common Pool Resource
CPrR	Common Property Resource
DFO	Divisional Forest Officer
IUCN	The World Conservation Union
JFM	Joint Forest Management
JMM	Joint Monitoring Mission
NRM	Natural Resource Management
NLH	Agricultural University of Norway
NORAD	Norwegian Agency for Development Cooperation
Noragric	Centre for International Environment and Development Studies, NLH
PRA	Participatory Rural Appraisal
PKR	Pakistan Rupees
VO	Village Organisation
WO	Women's Organisation

List of selected local terms

Source: local people. Mr Hassan, School Teacher, Sultanabad, and Jawad Ali, AKRSP, provided/checked many of the terms in a session in the Forest Hut on 05.06. Imported terms in brackets.

Balti (local)	Shina (local)	Urdu	English
Land			
<i>Oul</i>	<i>Geit</i>		Meadow
<i>Broq</i>	<i>Niril</i>	<i>Nullah</i>	Temporary farm on upland pasture. <i>Lower broq</i> has temporary farms, grazing areas and cultivated areas. <i>Higher broq</i> has temporary farms and grazing areas only.
<i>Sosa</i>	<i>Charukush</i>		Grazing area on upland pasture (no <i>khlas</i>)
<i>Khlas</i>	<i>Harai</i>		Summer farm shed
	<i>Gon</i>		Separate piece of land
<i>Sa</i>			Soil
<i>Phrait</i>	<i>Dam</i>		Steep slope, e.g. "Raskin-dam"
Land tenure and tenure processes			
<i>(Khalisa)</i>	<i>(Khalisa)</i>	<i>Khalisa (Sarkar)</i>	State land
<i>(Shamilat)</i>	<i>(Shamilat)</i>	<i>Shamilat</i>	Land adjacent to private land (as far as the shadow of a tree standing on the boundary)
<i>(Murusi)</i>	<i>(Murusi)</i>	<i>Murusi</i>	Inherited land

Balti (local)	Shina (local)	Urdu	English
(<i>Inteqal</i>)	(<i>Inteqal</i>)	<i>Inteqal</i>	Land registration
<i>Natesa</i>			Private land
<i>Chosa</i>	<i>Rajigon</i>	<i>Jagir</i>	Raja-land
		<i>Raja Wallah</i>	Tenant on Raja-land
(<i>Hibba</i>)	(<i>Hibba</i>)	<i>Hibba (Persian)</i>	Give land/exchange land
<i>Not known</i>	<i>Not known</i>	<i>Istamali arazi</i>	Land consolidation, “to bring the land closer”
<i>Bar-hrnas</i>	(<i>Bar-hrnas</i>)		Grass-sharing based on lease of land
<i>Bar-tab</i>	(<i>Bar-tab</i>)		Share-cropping
<i>Choraïs</i>	<i>Waigon</i>	<i>Bari</i>	Turning irrigation
<i>Norais</i>			Grazing system at lower broqs where animals from several households are herded together and the workload is shared by the owners
(<i>Kabza</i>)	(<i>Kabza</i>)	<i>Kabza</i>	Land appropriation by use
People			
<i>Broqpa</i>			Mountain-people. Also used by Baltis about all Shina-speaking.
<i>Tutpa</i>	<i>Dum</i> - lit. smoke, local <i>Dar</i> - lit. door (regional)	<i>Chula</i> - lit. stove	Household
<i>Cho</i>	(<i>Raja</i>)	<i>Raja</i>	(Raja)
<i>Sarma</i>	<i>Baro</i>		One elder
<i>Shakh Baikhan</i>	(<i>Jirga</i>)	<i>Jirga</i>	Council of Elders
Other			
<i>Choo</i>	<i>Wai</i>	<i>Pani</i>	Water
(<i>Jungle</i>)	<i>Jail (Jungle)</i>	<i>Jungle</i>	Forest
<i>Staqji</i>	<i>Tom</i>	<i>Darakht</i>	Tree
<i>Ba</i>	<i>Gawo</i>	<i>Gai</i>	Cow
<i>Khalang</i>	<i>Dono</i>	<i>Bail</i>	Ox
<i>Rabaq</i>	<i>Mugur (f), Ail (m)</i>	<i>Bakri</i>	Goat
<i>Loo</i>	<i>Aash (f), Kara (m)</i>	<i>Bhard</i>	Sheep

Units of measurement

Maund:	Weight	1 maund = 40 kg
Kanal	Area	1 kanal = 1/20 hectare

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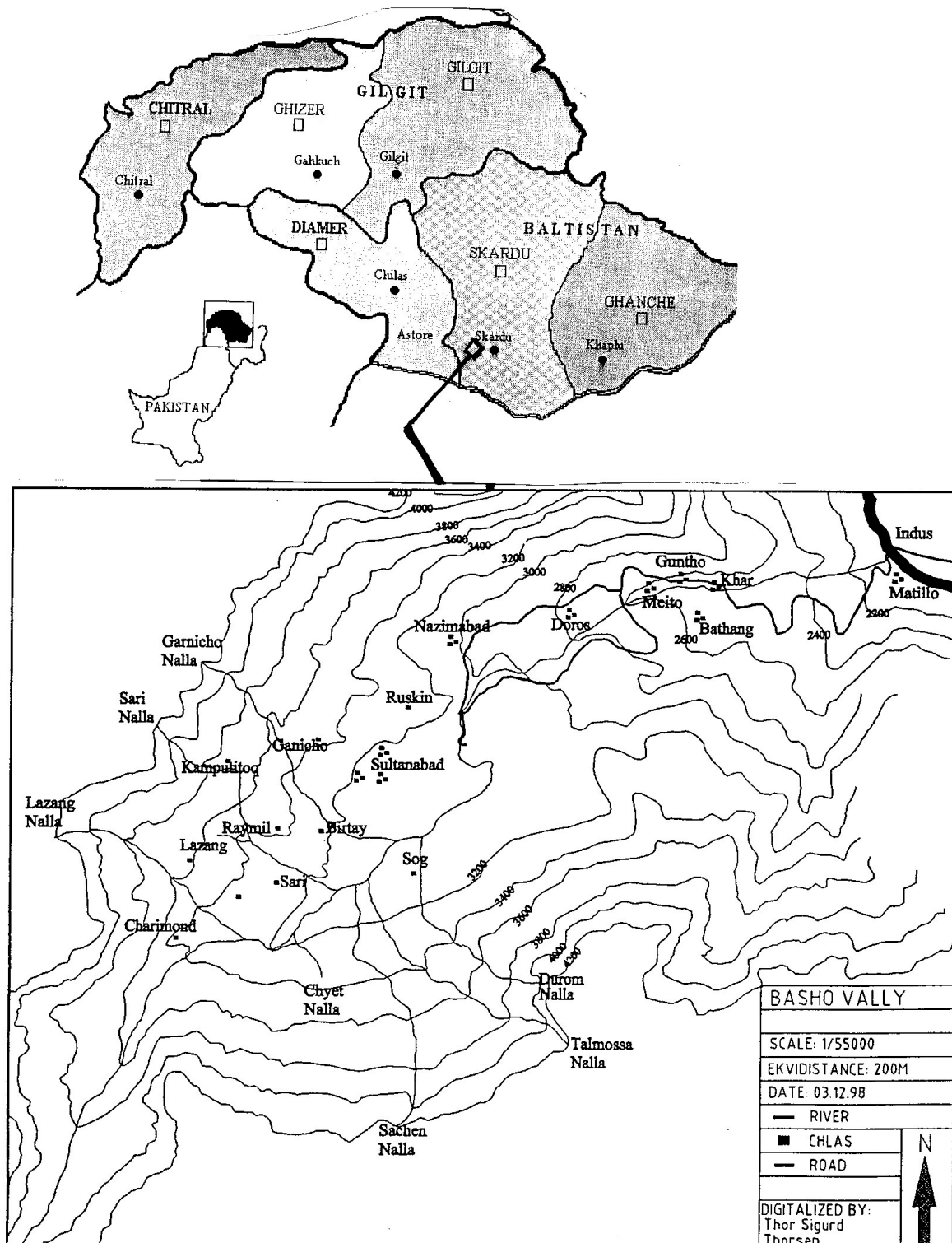
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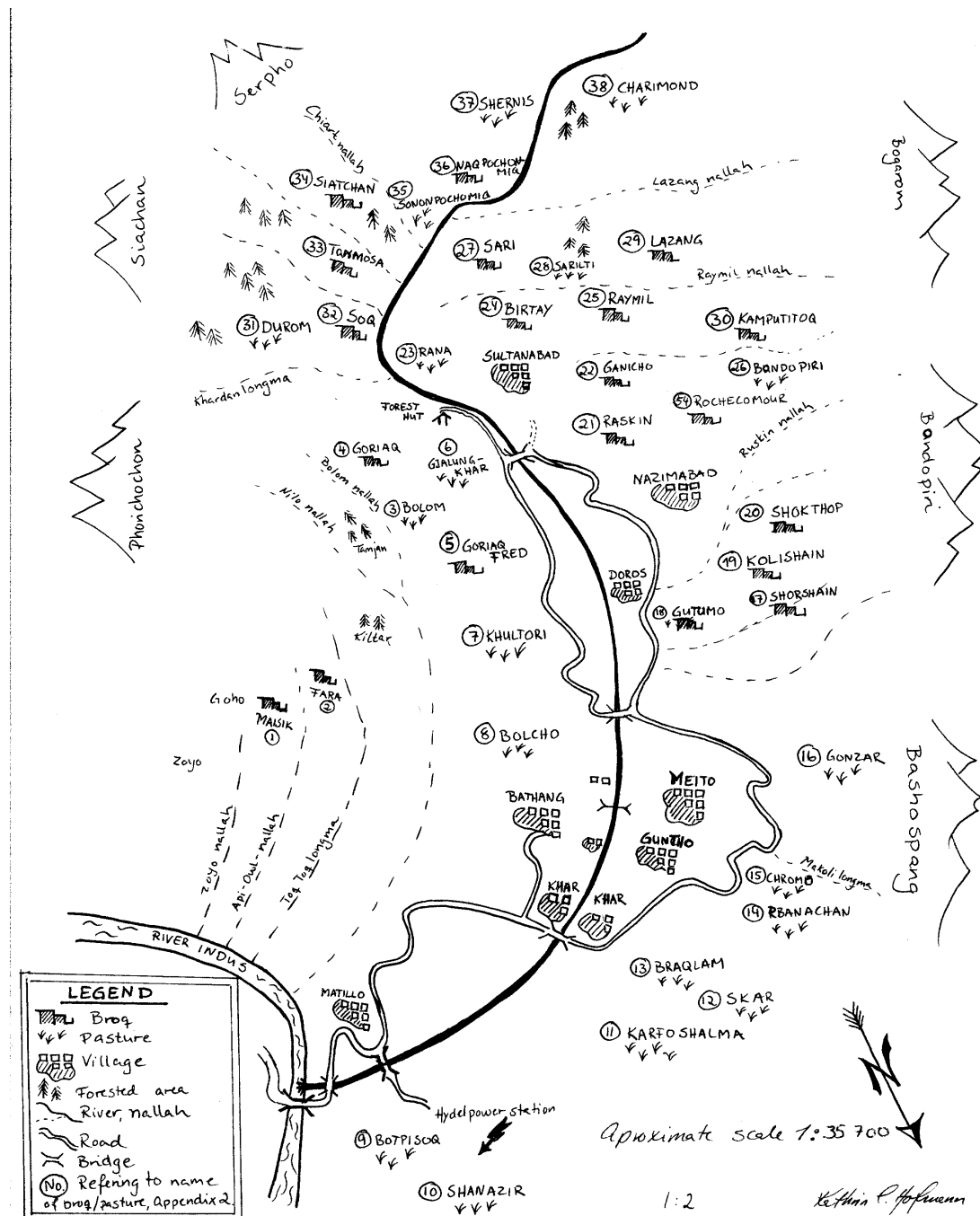
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Map of the Basho Watershed and its location within Pakistan



Map of alpine pastures in the Basho Watershed

Based on participatory learning exercise with the BDO members of Basho (Basho Development Organisation), AKRSP- staff (Dr. Abbas) and NLH-team (Kathrin C. Hofmann, Ingrid Nyborg and Åge Nyborg) on 13th of May 1998. This map is a copy of the BDO's presentation of the high pastures of Basho and has no juridical rights. Made by Kathrin C. Hofmann.



Map of alpine pastures in the Basho Watershed

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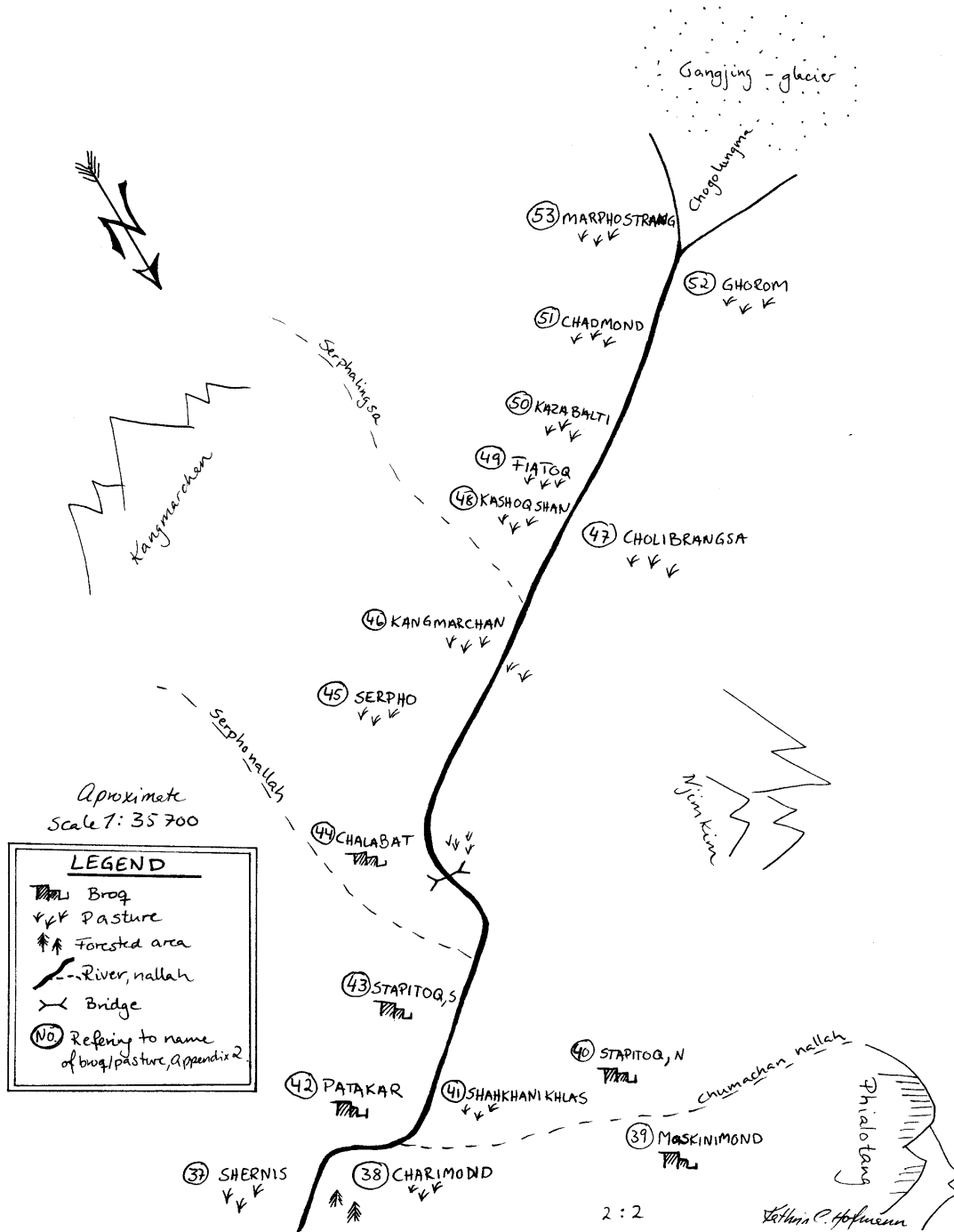


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1. INTRODUCTION

1.1 *Background*

The immediate context of this report is the agreement between AKRSP and NLH to cooperate on a combined programme of competence building and applied research on High Altitude Integrated Natural Resource Management (Project document: NLH - AKRSP, 1997). It is stated here that:

The aim of the institutional cooperation programme is to gain further insights into pasture and forest resources and their role in farmers' livelihood systems. Participatory, applied research shall enhance the capacity of AKRSP to work with village organisations and partner institutions for sustainable management of pasture and forestry resources, through providing knowledge which may be used in developing management and conservation strategies, initially at project sites.

The specific objectives relating to AKRSP are:

- to expand the knowledge of the resource systems of Baltistan through a joint research project in order to enhance the capabilities of project staff to respond to the challenges of integrated resource management in high-altitude areas.
- to improve AKRSP documentation and extension systems with respect to forestry and pasture
- to improve AKRSP's links with national and international research institutions

The specific objectives relating to NLH are:

- to strengthen its knowledge-base for development-oriented research in the region and within fields where NLH are already working
- to gain the opportunity for carrying out applied, participatory research together with an

implementing NGO and farmer-based organisations

- to provide an opportunity for staff, students and ex-students to gain field level working experience in Baltistan, Pakistan

The main **activities** in the programme will be:

- planning and conducting joint, participatory field research/documentation
- training and capacity building for AKRSP staff, primarily through joint research/documentation
- disseminating and sharing knowledge gained through workshops, training sessions, networking and publications
- exchanging information, references and literature through a library link for improved networking and information management
- offering technical advice for field-level application of the knowledge generated through research

1.2 *Development challenges*

The Northern Areas of Pakistan constitute a special territory directly administered by the Government of Pakistan through the Ministry for Kashmir Affairs & Northern Areas Affairs (KANA). Its economic and political integration with Pakistan was altered by the fall of the independent princedoms (Mirs, Rajas, Mehtars) in the early seventies. The construction of the Karakorum Highway, completed 1978 dramatically increased physical access to and from the area. The mountain environment created by the intersection of four major ranges, the *Himalayas*, the *Pamirs*, the *Karakoram* and the

Hindukush, is of global interest in terms of biodiversity and conservation issues. It is estimated that 50% of the land surface is rangeland/pasture land above the level for cultivation and permanent human habitation. Natural forest cover has declined after the construction of the main roads and jeep roads into even the remotest valleys.

Rapid socio-economic change, including a population growth estimated at 2- 3%, creates a complex situation characterised by both positive and negative aspects of increasing regional and global integration. International tourism is increasingly important and offers new opportunities to remote rural communities. Agriculture and natural resource management remain the most important sector of the economy and the basis of the livelihoods of the majority of the population. Processes of empowerment and marginalisation in natural resource management appear to be interwoven. Commercialisation has offered strong incentives in horticulture for a number of years, and more recently in wildlife management. Yet, some new ventures are facing threats to sustainability (such as commercial potato cultivation). Also, there are tendencies that management of the most marginal alpine resources deteriorates as it becomes the niche mainly of poorer households who are unable to benefit from other, new options (Knudsen, 1994).

From across the vast region, there are numerous, current case stories about communities who are reviving or creating new organisations for better managing their natural resources. In doing so, they both respond to external stimuli from NGOs, to international conservation interests and commercial demand for the unique scenery and biodiversity of

the mountain ranges. These initiatives draw upon and move beyond the support and inspiration which the AKRSP have extended since 1984. Whereas the main thrust of AKRSP has been the establishment of village-based organisations, these recent initiatives are normally watershed based. They tend to move “*above the channel*” and look for new organisational arrangements which go beyond the single village. Both AKRSP and other agents are involved in participatory leaning and planning exercises for improved and integrated natural resource management, for example in the “NRM Pilot Sites” (Brouwers et al., 1998; Ali, Gloekler and Hashupi NRM Committee, 1996). The organisational initiatives appear to be part of a trend which is shared for the region and which is growing in response both to a crisis in the subsistence-based village economies and to emerging commercial opportunities. However, the community and cluster/watershed initiatives are vulnerable due to a number of factors relating to both internal community dynamics and the absence of a clear legal-institutional framework supportive of community-based arrangements.

1.3 *AKRSP Strategy*

The AKRSP Programme Proposal 1997 - 2001 states that,

“the goal of the Natural Resource Management (NRM) programme is to improve the living standards of people in northern Pakistan through building local capacity for more productive, integrated and sustainable management of their natural resources.”

The proposal indicates an increased strategic emphasis on “above the channel” resources:

“..in the next phase, AKRSP intends to make environmental concerns a greater part of its planning and programming.....NRM efforts will have environmental interests as one of its central aspects alpine pastures and natural forests will be included in the discussion of village and watershed plans...”.

The 1997-2001 proposal also addresses the institutional challenges involved, when above the channel resources and wider environmental concerns are given a more prominent status:

“Subject to future agreements, AKRSP will, in principle, support joint Government - VO/WO initiatives in forest conservation and pasture development”....“links with IUCN biodiversity projects have already been established..”.....“pasture development will be integrated with watershed level planning.....appropriate user-based institutional arrangements for improved pasture management will be introduced....”

AKRSP is involved in several innovative projects in institutional cooperation for natural resource management, including cooperation with the IUCN and Forest Department as partners. How new institutional cooperation arrangement can best be grounded in and relate to village-level institutions is still a major a challenge. While the contradictions between resource management below and above the channel should not be exaggerated, a list of differences and new challenges may be summarised, as indicated in Text box 1.

Text box 1: Summary of differences between “below and above the channel”

“Below the channel”	“Above the channel”
<ul style="list-style-type: none"> • Sectoral • Land development: from common to private property • VO/WO/AKRSP jurisdiction • VO/WO • Bilateral Terms of Partnership • Agro-biodiversity • Package • Control 	<ul style="list-style-type: none"> • Integrated • Mix of public - common pool - private property • Government jurisdiction • Cluster/Watershed • Multi-lateral • Wild biodiversity • Process • Advocacy/catalyst

Source: Project Document

Such differences create special challenges for a project with its main focus on the high altitude natural resources. The aim remains to seek an integrated understanding of resource management, reflecting the integrated nature of local ecosystems and livelihood strategies.

1.4 Focus and aim of the study

AKRSP and NLH formulated the aim and focus of this (and other) project components in a project document (AKRSP - NLH, 1997). Joint research/documentation is based on a model of interaction between actors, institutions (rules) and land use, with the emphasis on institutions and institutional change relevant for pasture, forest and possibly other alpine zone resources, such as wildlife and eco-tourism. Examples of how people and organisations respond to changes in the institutional framework and to changes in the ecological status of production systems were thought to be of particular interest.

The study addresses both formal institutions (Statutory law, regulations based on statutory

law, and enforcement practices) and informal institutions (norms, values and traditions, customary (local) law and enforcement mechanisms). Property rights (both formal and informal) are a major focus of attention, covering individual and household ownership, common property at different levels (village, inter-village and watershed), state (governmental) ownership and the distribution of property between the actors.

The objective of the study under this theme was stated as:

to gain new insight in the relationship between institutions, actors and land use which can be operationalised, meaning that the practical implications for resource use, sustainability, living standards etc. should be highlighted.

The “results” projected for 1998 were:

- Preliminary analysis and understanding of institutional issues for both partners
- Villagers’ interests and participation established
- Competence-building in analytical skills for counterpart
- Information about work, methods and perspectives shared with relevant partner institutions

It should be pointed out that the aim with research in 1998 was to “gain an overview and basic documentation about alpine resources and their role in local livelihood systems, and to determine the main parameters, conditions and relationships which require further study”. This report, therefore, presents material and hypotheses which need further testing and exploration in future joint work.

2. KEY CONCEPTS

In the context of ecological and socio-economic crises in the drylands of Africa and Asia, the issue of common pool resource management has received increasing attention (e.g. Bromley and Cernea, 1989; and Ostrom, 1990). Common pool resources may play a significant role in local livelihoods of the rural poor (Jodha, 1994).

There is a large and fast growing international literature on common pool and common property issues, ref. the annual conferences of the International Association for the Study of Common Property. Institutional arrangements (the relationship between old and new), environmental and economic efficiency, and local knowledge are major issues of concern. The search for and experimentation with co-management arrangements involving communities, NGOs and government is currently a major trend.

A core assumption in the debates on property rights and environmental issues is that lack of, or unclear, ownership patterns are a major cause of environmental degradation and a disincentive for resource development. Typologies of property rights (private, state, common property, open access) have been one of the analytical entry points (e.g. Bromley and Cernea, 1989). In most real world situations a combination of property rights apply, and resources may be located somewhere on a continuum from open access to common pool, common property, state and private property. Effective arrangements are therefore normally complex and situation specific:

All types of property-rights regimes - including private property, common property and state property, whether locally selected or externally imposed - may reduce the costs of open-access regimes, but perform differentially depending on the attributes of the resource, the local community, and the specific rules used. Thus evolved or self-consciously designed property-rights regimes are essential to regulate the use of natural resource systems (Ostrom and Schlager, in Hanna et. al., 1996).

Current theory and debate is moving from a “pure” analysis of property rights to complex situations of institutional arrangements, rights and management practices. Common pool resources, resources that are used jointly by a group of people, are characterised by such complexity.

Text box 2: Some key concepts

Property right: The right to a stream of benefits and enforceable authority to undertake particular actions related to it.

Property regime: The decision-making arrangements that define the conditions of access to and control over a range of benefits arising from a collectively used resource system (Edwards and Steins, 1998, 349)

Common Pool Resource (CPR): Resources that are accessible to and jointly used by people living in a particular geographical location such as a village or a cluster of villages (Singh, 1994, p.6).

Common Property Resource (CPrR): A resource to which ownership and use rights are shared co-equally and are exclusive to a well-defined group of people (after Singh, 1994, p. 5)

Institutions: Formal or informal rules about who makes decisions, according to which procedures, what actions are permitted, what information must be provided and what pay-offs will be assigned to individuals. Institutions are a constellation of rights, rules, conventions and contracts (after (Edwards and Steins, 1998, 349, quoting Ostrom, 1986, 4)

Rights of:

Access: The right to enter an area and enjoy non-subtractable benefits

Withdrawal: The right to obtain resource units and products of a resource

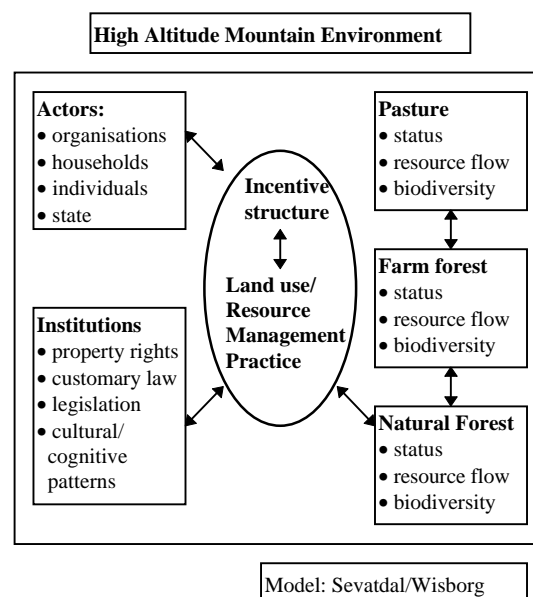
Management: The right to regulate internal use patterns and transform the resource

Exclusion: The right to determine who will have an access right and how that right may be transferred

Alienation: The right to sell or lease the above rights (after Ostrom and Schlager, in Hanna et. al., 1996)

The integrated analysis of social and ecological aspects of natural resource management is supported by a conceptual model, linking the different project components.

Figure 1: Conceptual model



3. METHODOLOGY

3.1 Study area

3.1.1 Selection of study area

As a part of the NRM programme of AKRSP-Baltistan, the cooperation project focuses on Baltistan, the eastern-most region of the Northern Areas, covering the districts of Ghanche (District centre: Khaplu) and Skardu (District centre: Skardu Town). During the NLH-AKRSP Field Planning Workshop in Baltistan in September 1997, the Basha

watershed was suggested by AKRSP as the site for a joint case study. After visiting both Hoshe (Ghanche District) and Basho (Skardu District), Basho was chosen as the main study area in 1998. Some of the criteria were:

- The presence and importance of alpine resources, including natural forest assumed to be among the largest patches left in Baltistan
- Local people's active interest in the alpine commons, partly expressed through the recent formation of a cluster organisation (the BDO)
- Accessibility (less than two hours driving distance from Skardu)

Basho was selected, therefore, as an interesting and illustrative case for both AKRSP and NLH, given the interest in the high alpine zone. Alpine natural resource management in Basho is probably similar to that of many other watersheds in Northern Areas or Baltistan, but in a strict scientific sense it was not selected to be representative of a certain larger area.

3.1.2 *Location*

The Basho watershed (75°15' E, 35°25' N) on the Khar Nullah is located about 45 km west of Skardu Town in the District of Skardu, Baltistan, and is surrounded by the Deosai Plains to the south, Kachura valley to the east and Skoyo-Karabathang-Basingo Catchment to the west. The total area of the watershed is approx. 120 km². The watershed is a side-valley to the Indus valley, and the river Indus outlines the northern boundary of Basho. It ascends from the southern side of river Indus at an altitude of approx. 2,150 m elevation to the Banak La mountain at 5,520 m elevation. The uppermost village of Sultanabad is situated at approx. 3,200 m. elevation. A jeep road runs from the Indus river all the way up to and across the last end moraine

step at 3,100 m, almost reaching the village of Sultanabad.

3.1.3 *Climate, geology and physical characteristics*

Situated in the western-most arm of the Himalayan range, Basho is found within a semi-arid and rugged mountain landscape ("mountain desert"). It falls within the "rain shadow" of the Himalayas, and average rainfall in the valley bottoms is estimated to be between 100 and 200 mm, but rising with elevation to create a moist environment at the extensive, high-altitude rangelands. Because of the altitude, the area has a marked seasonal climate comparable to that of the temperate zone. The mean maximum temperature during summer revolves between +30 - 35° C, while the mercury drops to -15° C in winter.

The bedrock in Basho Valley is mainly igneous (plutonic) and metamorphic with a granitic composition. This bedrock can only be seen as shear cliffs and peaks high above the valley floor. The valley sides and bottom are covered by sediments, in some places with a thickness of several hundred metres.

Big and small end moraines cut across the valley and mark the terminal point of several periods of glaciation. The biggest one, located between Nazimabad and Sultanabad, marks a dramatic change in the landscape. The moraine has functioned as a sediment trap, which has resulted in the formation of a wide river plain with meandering stream channels.

The valley sides are covered with thick layers of glacial deposits that have been reworked by

the action of water and gravity to form steep slopes, gullies and fans. A thin layer of wind blown silt (loess) covers large areas on the valley sides and gives the surface a smooth appearance.

As in the rest of the Northern Areas, all human cultivation in agriculture and plantation forestry is based on irrigation. A major geographical distinction is therefore between areas *above the channel* and *below the channel*. The distinction here is primarily a functional one: between the areas that receive irrigation and those that do not (i.e. an area may be below one or several channels in terms of altitude, but *above the channel* because it is still out of reach by irrigation due to other constraints of landscape or infrastructure). Past and on-going channel construction and cultivation projects are changing the mountain sides and cultivated lands. Channels bringing snow melt from the glaciers to the fields are the blood veins of agriculture in Basho. Channels create a distinct line between the deserted grey colours above and the fresh greenness of afforestation sites (dominated by alfalfa and poplar) and cultivated fields beneath.

3.1.4 *Vegetation*

The area falls under three major vegetation types (Schweinfurth, 1957). The lower north-eastern part from the river Indus to about 2,500 m elevation is described as ***Sub-tropical semi-desert***. This area is dominated by dry, steep slopes with outcrop of rocks. The average annual rainfall ranges between 130 - 160 mm, lacking a defined rainy season. People practise double-cropping agriculture and sub-tropic horticulture based on irrigation channels leading the glacial water from higher up the valley. The area above the sub-tropical semi-desert is classified as ***Steppe of Artemisia***, dominated by scrubs such as *Artemisia maritima*, *Eurotia*

ceratoides and *Kochia*. The average rainfall may approach 400 - 500 mm, depending on location, and most of the precipitation is received as snow during winter.

This upper-most part of Basho is shaped as a cup with alluvial plain, cultivated areas, houses and patches of trees covering the valley bottom. High snow-covered mountain peaks surround the valley and slides into moraine slopes form the valley sides. Vegetation varies greatly from the drier south-eastern facing slopes to the moister north-western slopes. Natural blue pine forest covers the north-western facing moraine slopes above Sultanabad. The forested moraine slopes are led by deep gulches and glacial fluvial gravel fans sparsely vegetated by pine trees, willow (*Salix sp.*) and shrubs. Grassy slopes and juniper (*Juniper macropoda*) cover areas where the forest has been cut down. Above the pine forest patches of birch (*Betula utilis*) delineate the upper forest line at about 3,800 m. Steep slopes with artemisia (*Artemisia maritima*) characterise the south-eastern facing parts of the valley up to 3,600 m. Patches of blue pine (*Pinus wallichiana*) and juniper are found around the lower broqs at about 3,300 m. Average rainfall is 400 - 500 mm, depending on location and precipitation is received primarily as snow during winter. The altitude limits cultivation to single cropping favouring alpine species such as barley.

The vegetation described as ***Moist alpine scrub and meadows*** borders the ***Steppe of artemisia*** at about 3,600 m. This type is dominated by glacial fluvial gravel fans and

deposits along streams, scree slopes and precipitous cliffs. Signs of avalanches and landslides are frequent on higher slopes.

3.1.5 Wildlife

No complete inventory has been done in the area. Wildlife known to be found in Basho is Asiatic ibex (*Capra ibex sibirica*), snow leopard (*Panthera uncia*), wolf (*Canis lupus*), red fox (*Vulpus vulpus*), marmot (*Marmota caudata*) and mouse hare (*Ochotona sp.*). Musk deer (*Mochus mochiferus*) is known to be found in the area, but has been highly priced and hunted for its musk. Common birds include chukor partridge (*Alectoris chukar*), jungle crow (*Corvus machrohynchos*) and Himalayan snowcock or ram chukor (*Tetraogallus himalayensis*). Asiatic ibex is probably the most abundant Caprinidae in Pakistan, in terms of relative numbers (Schaller 1977). Distribution of Asiatic ibex is restricted to the relatively dry mountains of Northern Pakistan which include the inner Himalayas, Hindukush, Pamir and Karakoram. Population numbers for the Northern Areas (District Gilgit, Diamer and Baltistan) were estimated to be between 9,000 and 10,000 ibex in 1993 (Hess et al. 1997). Other mammals known to be found in the study area are listed in appendix 12 of Report No. 3, *Pasture, livestock and biodiversity*.

3.1.6 Socio-economic characteristics

People in Basho live in eight different villages distributed from top to bottom of the zone of permanent habitation along the Khar Nullah: Sultanabad, Nazimabad, Doros, Meito, Guntho, Khar, Bathang and Matillo (ref. map on page x). Agriculture and livestock production are the major sources of livelihood; the pastoralist system involves a seasonal transhumance between villages

and temporary settlement in the high alpine zone. Off-farm employment play an increasing role. Most visitors would find the natural scenery of Basho very attractive, but so far trekking or other forms of tourism are not developed in the watershed.

The majority of people are *Balti* speakers, while a minority are *Shina* speakers (immigrants from the Astore Valley) (AKRSP, 1997, PRA at Village Basho). *Shina*-speakers are also termed *Broqpa* (mountain people, sometimes used derogatorily) and make up the majority of inhabitants in Sultanabad.

The total number of households in Basho is estimated at 297 and approximate number of inhabitants at 2,400, based on an average household size of eight (Socio-economic survey by Aurang Zeb Zia, AKRSP, 1998).

AKRSP has worked in Basho since 1987. Today, seven of the villages have a Village Organisation (VO) and four to five have a Women's Organisation (WO). A cluster organisation, Basho Development Organisation (BDO) was established in January 1997, but as with the VOs, it grew out of a long-standing tradition of cooperating within the watershed. Villagers refer to a tradition of shared ownership and use of alpine resources.

Already during field visits in September 1997, the Basho watershed was found to represent a dynamic social situation with respect to institutions and organisations in management of forest and pastures. People depend on scarce natural resources and on creativity in

reshaping natural conditions through terracing, irrigation etc. Their capacity for physical reshaping of nature is crucial for their survival and heavily dependent on institutional arrangements. While it is true that villagers claim that the sharing and distribution of rights in forest and pasture are based on generations old traditions, dynamic processes of change may also be observed. There are examples of institutional changes in response to changes in pasture and forest conditions (for instance limiting access to a certain pasture, when land degradation is observed).

3.2 Data collection

This first round of field study (1998) aimed at a broad understanding and description of major institutions and organisations in natural resource management, with emphasis on land tenure “above the channel”. The research was not based on specific hypotheses, rather, the descriptions and models of this report may be read as hypotheses to be tested with Basho people, AKRSP specialists and other skilled persons.

The brief field research carried out during 28.05. to 09.06.1998 involved:

- Interviews with key government officials
- Participatory learning exercises in Sultanabad, Basho (on i) grazing systems, ii) organisations and linkages and iii) the history of Basho)
- Group or individual interviews in five of the eight villages of Basho (Matillo, Meito, Dores, Nazimabad and Sultanabad)
- Discussion with other NLH and AKRSP team members

All interviews with Basho people were translated by AKRSP team members. In some cases two

interpreters were involved (Balti-Urdu-English), the Balti-Urdu interpretation being conducted by a local person. Interpretation gives rise to problems of accuracy of registered information. Other problems may come from the fact that our interpreters and counterparts are skilled persons with views on and involvement in the issues at hand. To some extent we were able to cross-check information from different sources and with different interpreters

Institutionalist theory stresses the importance of getting into the "cognitive pillar" (Scott, 1995) or back-curtain of institutional games. (“The underlying rules of strategy of the players”, ref. North, 1990). We share the view that these aspects are important, particularly in societies like that of Basho, where formal and state institutions are often absent or hardly trusted and local traditions and social networks handle most problems. Still, at the present stage, the work does not aspire to go into the deeper cultural aspects of the community’s institutional life. As such, it reflects both the constraint of time and the fact that the main competence of the team is within a tradition of agriculture-related law.

4. MAIN FINDINGS

4.1 Community history

Like other rural communities of the Northern Areas, Pakistan, Basho has experienced dramatic socio-economic change over the past half century. Appendix 3 lists some of the historical events to which people attach importance (based on a participatory learning

exercise with men). All the events speak of a rapidly increasing physical, economic and political integration at the regional and national level. Improvements in infrastructure and services through, first, government and, later, AKRSP interventions are major “fixed points”. A trend diagram (Figure 2) portrays the local perception of important changes within the watershed.

Figure 2: Trends of change during fifty years

Year	1948	1972	1987	1998	2008*
Quality of life**	10	13	15	18	20
Cultivated land (kanal per hh)	6	4	3	2	3
Large ruminants (total no.)**	10	11	15	17	20+
Small ruminants (total no.)**	10	8	6	4	10
Forest**	10	7	6	3	5
Population:					
Households	250	300	350	355	
People per hh.	5	7	7	9	
Total	1,250	2,100	2,450	3,200	3,450 (+250 heads)

*) Expected situation after ten years

**) Taking 10 as the arbitrary 1948 starting point

Source: Participatory learning session 31.05. Diagram drawn on ground, numbers indicated with beans. All information represents participants’ views. See Appendix 3.

The trend diagram in Figure 2 depicts the dramatic “crunch” that villagers are facing (and their acute awareness of it): significant population growth and a dramatically declined per capita land base¹, including a reduction in what used to be a major asset: the forest. The group’s firm assertion that the quality of life had steadily increased in the past was linked primarily to improved infrastructure and services. It must also be based on increased off-

farm employment and monetary incomes, as found by the household survey (AKRSP, 1998) and Nazir Ahmad (1998). The optimism when looking ahead was linked primarily to the ongoing expansion of the land base though AKRSP supported irrigation and afforestation projects. The way people stressed an increased and increasing number of large ruminants as part of “the good life” may also be noteworthy².

The trend diagram is one indicator of the dynamic socio-economic situation which the communities of Basho are facing. The outside world brings changes and the local resource situation makes it imperative for local people to exploit new opportunities. The emerging social organisation at village and watershed level (sub-chapter 4.8) is one forward-looking response. However, one should not overlook the ambivalent attitude to change expressed by this group (which had a majority of male elders). Inputs from outside are the major factors behind increased welfare, but people’s fears also relate to aspects of increased contact with a larger world.

¹ The figures given for cultivated land are at odds with those found by the socio-economic survey (AKRSP, 1998), which gives an average per household cultivable land holding of 11 kanals (0.55 ha). This may partly reflect large differences within villages, partly different use of concepts.

² Some AKRSP participants saw reason to question the realism of the livestock trend as portrayed by villagers.

Text box 3: Factors improving or threatening welfare

Main factors behind improvement in welfare:	Main threats to continued improvement in welfare:
<ol style="list-style-type: none"> 1. Education 2. More land 3. Organisation 4. AKRSP input 5. Health facilities 	<ol style="list-style-type: none"> 1. Threat to religion by modernisation 2. Nuclear threat 3. Environmental degradation 4. Diseases from foreigners 5. Imported foods

Source: Participatory learning session 31.05 (see appendix 3)

Some younger people explain that there is a gap, sometimes conflict, between cautious elders and a young generation who welcome change and new community ventures. This tension could be sensed in the group³. More careful analysis would show great variation in such perceptions along lines of gender, age, and social status.

4.2 Land use

4.2.1 Altitude zones

At the foot of the watershed, the village of Matillo is situated. Here at approx. 2,150 metres above sea-level, people practice double-cropping agriculture and sub-tropic horticulture. These productions are important to this village, which economically has been in a relatively favourable situation due to location, climate, soil fertility and access to infrastructure.

The next six villages, Bathang, Khar, Meito, Guntho, Doros and Nazimabad, could be described as the "central villages", at altitudes from approx. 2,400 to 2,900 metres, all with single-cropping, but still with a variety of agricultural and horticulture products. In spite of similarities within this group of villages, it appears that the importance of cultivation decreases and importance of pasture-based husbandry increases as one moves up the valley.

The upper-most village, Sultanabad, is somewhat different than the others (see Nazir Ahmad, AKRSP, 1998, for a more thorough description). It is situated in the summer pasture zone. Its old name *Thurmik* probably means "away from the eye" (which gives visual meaning as it is hidden to someone standing among the central villages below). Sultanabad's altitude (above 3,000 metres) limits cultivation to alpine species, particularly barley. The village households practice intensive cultivation of fields by their summer farms (Balti: *Khlas*, Shina: *Harai*) at Sari and Ruskin (the last also intensively used by Nazimabad households). Sultanabad is relatively more dependent on animal husbandry and pastures. Historically, Sultanabad (*Thurmik*) was established by people coming over the mountain from Astore valley. Even after some hundred years of coexistence, they still speak *Shina* as their first tongue. People have also learned *Balti* used by the majority of Basho villagers.

³ More specifically, a heated discussion about the amount and effect of increased land holdings emerged during the history session. A young leader envisaged much more rapid improvements in land holdings and welfare than did the elders, who dominated the outcome in this case.

4.2.2 Land use beneath the channel.

Walking from the village houses towards the mountains, one passes spaces of different categories and use:

- In the centre of villages, *public houses and public spaces*, such as houses for religious activities, schools (four in the watershed), dispensaries (one in Matillo, one is currently being built in Khar), jeep roads, channels and children's playgrounds.
- Spaces for small-scale, *private secondary production*, like flour-mills (water mills⁴), small saw-mills etc.
- Central in the farm production are the *household compounds with homes, home gardens, animal sheds and pens* for housing animals during winter and for milking in spring and autumn.
- Near the settlements are the *infields, cultivated plots* irrigated by channels which carry the run-off from glaciers and snow-melt in the high alpine zone. *Old plots* closer to the streams are of irregular shape and surrounded by grown, broad-leaved trees of different species. The majority of plots are under full cultivation, though a few are resting under grass cover and a few have recently been brought back under cultivation by turning the grass turf. *New plots*, based on recently constructed water channels, are divided in more regular, geometrical shapes with young plantations, primarily of poplar. In between plots and along the channels there are narrow paths for

transportation to the fields. Fencing of plots is uncommon in the seven lower villages. In Sultanabad infields are surrounded by a solid fence: a rock wall facing the Raja-owned land on the upper side, and a wall of thorn-bush branches facing the all Basho grazing land *Ranga* on the lower side.

- Meadows with natural grass (Balti: *oul*, Shina: *geit*) are found both beneath the channel and above the channels where water is available from wells.

The areas below the channel are used for animal grazing in snow-free periods of winter and in early spring. Even the yak comes down from his high-slope kingdom to be feed in these areas in winter (at least to the upper villages). In June, few big animals are seen close to the village. Hens, calves and some other young animals are moving around among homesteads and fields. The cultivated zone is otherwise not regularly used for grazing during the crop season.

4.2.3 Land use above the channel

The slopes closest to the village but above the channel are used for grazing more or less the whole year around - but most intensely in spring and autumn.

Above the highest channels, one finds more than fifty grazing areas of different names, uses, users and qualities (ref. Appendix V). The Balti word *Broq* is generally used to mean "high pasture". In Basho, people make a clear distinction between *broqs* (alpine grazing areas with a *khlas*) and *sosa* (alpine grazing areas without a *khlas*). The borders between the

⁴ We counted two water mills in Khar and at least 3 in Sultanabad. A miller in Khar informed us that his mill had capacity of 200 kg of flour a day. The price for milling was 5% of the flour.

areas are most often natural, such as cliffs, steep slopes, gulches and ridges. One massive fence of timber and conifer branches stops animals in Stapitok grazing area ("Upper Valley") from getting into the Sari *broq*⁵.

A good walk (often climb) from the village, one finds the *lower summer farm* (ref. Figure 3) with its constructions (Balti: *khlas*, Shina: *harai*) with rooms for living, milking and milk processing, as well as pens and sheds for small animals and its nearby pasture land (*summer farm area*) (Balti: *Broq*, Shina: *Niril*, Urdu: *Nullah*). At this lower summer farm there are often plots (sometimes irrigated) with barley and other alpine crops. Other fertile land at this site is kept as meadow. Close to, and most often above the *broq*, there may be a defined area for grazing "from" a *khlas*, but without any constructions.

After some more hours of walking (climbing) up the valley or up the mountain side one will reach a *higher summer farm*. The buildings of this *khlas* are similar to the lower *khlas*, but the upper

⁵ This fence dates several generations back in time, but the inter-village agreement about it had been formalised after a conflict in 1984/85 (interview Mr Ahmed Ali, former District Council member). Sultanabad people had made a complaint about animals coming from up the watershed and trampling their fields. They reported the case to the police. The District Council Member resolved the case, after consulting elders, who had pointed out the old boundary-line and fence in the terrain. According to the resolution, any household exercising grazing rights in the Upper Valley (above Sari) has to contribute to construction and yearly repair of the fence. If they have not, and still bring their animals, a fine of 50 PKR should be paid and the animals should return to areas below. Sari right holders and Sultanabad villagers may take stray animals into arrest at animal-owners' cost.

constructions always provide possibilities for staying overnight. We have not seen examples of cultivated plots at these higher *broqs*. The reason for this could be the altitude, the short season of cropping and even the short season that people are present. It could also be the considerable distance to the village combined with and the fact that women traditionally do most of the cropping and face constraints on staying overnight at *broqs* (pers. comm. Ingrid Nyborg).

Not all households perform this two-step summer farming movement: due to good *broq* conditions in the lower area or lack of *broq* rights in the upper areas, they stay at one *broq* during the whole summer-grazing season.

Even further up the valley, approaching the big glacier, we will reach grazing areas (*sosa*) without any buildings or defined connections to any specific *khlas*.

4.2.4 Forest and forest use

Above the channel and below approx. 3,700 metres we find Basho's "natural forest". In some areas there are sparse bushes and small, scattered trees. In the areas at the level of Sultanabad the density of these bushes and small single trees is somewhat higher - but partly damaged by floods, avalanches and human exploitation.

At the plateaux of Goraiq and Bolom, at the slope of Soq, Tangmosa and Siatjan, below Sari and a the Charimond hill, the tree cover takes the form of forest (Balti/Urdu: *Jungle*, Shina: *Jail*) with timber-size blue pine and juniper (ref. Report No. 4 Natural Forest

Inventory). As a light-green belt towards the bare mountain and at shelves high up we will find birch trees. Through the forests runs corridors of bare land, due to avalanches⁶. Trees at the edge of these corridors show signs of the impact of the avalanches. Stumps and timber transportation ditches are remains of former large scale logging, which has now been stopped due to national and local bans. Concessions for logging of single trees may be given by forest authorities. A few examples of logging could be observed. The ground is almost free from branches and other dead tree material due to firewood collection.

Forest production in Basho is much more complex than a mere "planting - logging business". A range of cultivation techniques could be observed on forest or single green trees:

- Broad-leaved tree and bushes are cut for fodder (Zia estimates that households collect an average of 12 maunds per year of fodder from the forest, Report No. 7)
- Sharp cuts (approx. 20 cm wide, 30 cm deep) are seen on living trunks of coniferous species. This technique was used for production of carosine (*lashi*) burned for lighting. Cuts seemed quite fresh, but we were told that this technique had been abandoned with the introduction of electric light to homes.
- Deeper and longer carvings are made at the base of the trunk (often on trees somewhat damaged deformed by floods or avalanches) to

produce resinous wood chips for lighting a fire.

- Up to two metres of the tree base is sometimes carved away, to the very core of the log, to make the outer part of the trunk to imbue and the core to rot; this is a technique for production of wooden water half-pipes (Shina: *wai*), used in water-mills and as aqueducts.
- On mature pines, branches almost to the top are cut approx. 40 cm from trunk, making the timber to imbue in a natural way (Balti: *zudoshing*, "dry top").
- Tree stumps are set to fire, and wounds on green trees are burned. We observed many examples of this, but so far we have not found any explanation.

Animals graze both the forested and non-forested part of state owned commons.

4.2.5 Other uses of the outfields

On our way through the outfields we would meet people practising many techniques and harvesting natural resources such as: picking mushrooms and berries, collecting rhubarb, wild onion, wild thyme and other wild vegetables and herbs, including medicinal plants, finding minerals etc.. Probably anyone has got access to these resources (open access), but it is likely that the villagers exercise some informal exclusion of outsiders.

A few years ago, a number of Basho men had a part-time occupation in hunting. Luckily for our wildlife researchers - and for future sports hunters and tourists - they still know how to find the animals and how to approach them. No one described any special rights for this

⁶ A huge avalanche in 1988, destroying a lot of forest, was mentioned by VO members as a "historical event" during participatory learning exercise 31.05.98 (Appendix III).

former hunting activity, even though only a few men were referred to (with respect) as "hunters" (*Shikari*).

Occasional transportation on roads, footpaths and in outfields is based on open access, even though transport for residential or economic purposes (including the transportation of people, fodder and milk products to and from *broqs*) may be regulated by local customs or culture. There are examples of specially named livestock transport routes or zones, and rules about which paths should be used by men and women (Ingrid Nyborg, pers. comm.).

4.3 *Livestock and the grazing system: above the channel animal husbandry*

4.3.1 *Categories of livestock.*

A Livestock Census conducted by AKRSP staff among VO members in Basho in June 1997 reported 7,099 animals of mammal species belonging to 278 households of the 7 upper villages (AKRSP, Dr Abbas et. al).

These animals utilise pastures above the channel, but different groups of animals use different area categories at different times (Figure 3). Such grouping is also an aspect of the tenure system and the way tenure is performed. Based on information given in interviews, we roughly divide the major livestock into three categories:

Group 1: Small ruminants and lactating large ruminants:

Sheep and goats are herded continuously and are kept close to people at night, in pens or sheds. Lactating cows and *zomos* (female yak-cow hybrid) have to be kept in return-able distance from milking places. In the morning, they are directed to the day's pasture (where they remain unattended), and brought down to milk pens at night.

Group 2: Dry or weak cattle and yak-cattle hybrids:

This group includes non-lactating cows and *zomos* that are grazing independently of milk sheds, but are still not strong enough to walk the greatest distances and to climb the steepest slopes. These animals are not continuously herded, but still kept under some attendance because of the predation danger.

Group 3: Strong cattle, yak-cattle hybrids and yak:

The yak (who is communally owned and used merely for breeding) is capable of grazing at high altitude and in steep slopes under most weather conditions. He is not endangered by predators and is capable of defending a herd of other animals following him. These animals are the *zo* (infertile male offspring yak-cow), young *zomos*, cows and oxen.

Cows and hybrids move between the groups during the year depending on pregnancy, lactation and health condition. During periods when the *zo* is used for ploughing and other heavy work, he will stay together with group 1 or 2.

During the interviews we were also told of certain other groups like "sick cattle", who would be kept in the shared grazing area, *Ranga*, during summer. We also noticed calves and other young animals kept by the villages even during the cropping season, probably partly because of the predation danger and partly to keep them away from the lactating animals. They were said "not to create crop damage" (interview). Males of sheep, goats and cattle are kept apart from females in periods.

4.3.2 *Movement of livestock*

Winter time is the hard time for livestock in Basho, surviving on fodder harvested and stored through the summer and autumn season

and what is to be found of crop residues and natural sources in the areas close to the village. During a considerable part of winter, most animals are kept inside. Even the yak comes down to the doorsteps of the upper villages.

"Small ruminants and lactating large ruminants" are the prioritised group of animals. This group's movements in spring and summer to higher pastures "push" the other groups higher up. When this group returns to lower areas the other groups are allowed to follow them down again. Apart from cultivation rights, it is to this group of animals that the different exclusive rights of pastures are most firmly linked. Group 2 (Dry or weak cattle and yak-cattle hybrids) is only partly herded but mostly graze at "pastures above the *broq*" individually or in loose flocks (with respect to title to animals and pastures). Group 3 (Strong cattle, yak-cattle hybrids and yak) mostly roam around in dense flocks around the yak.

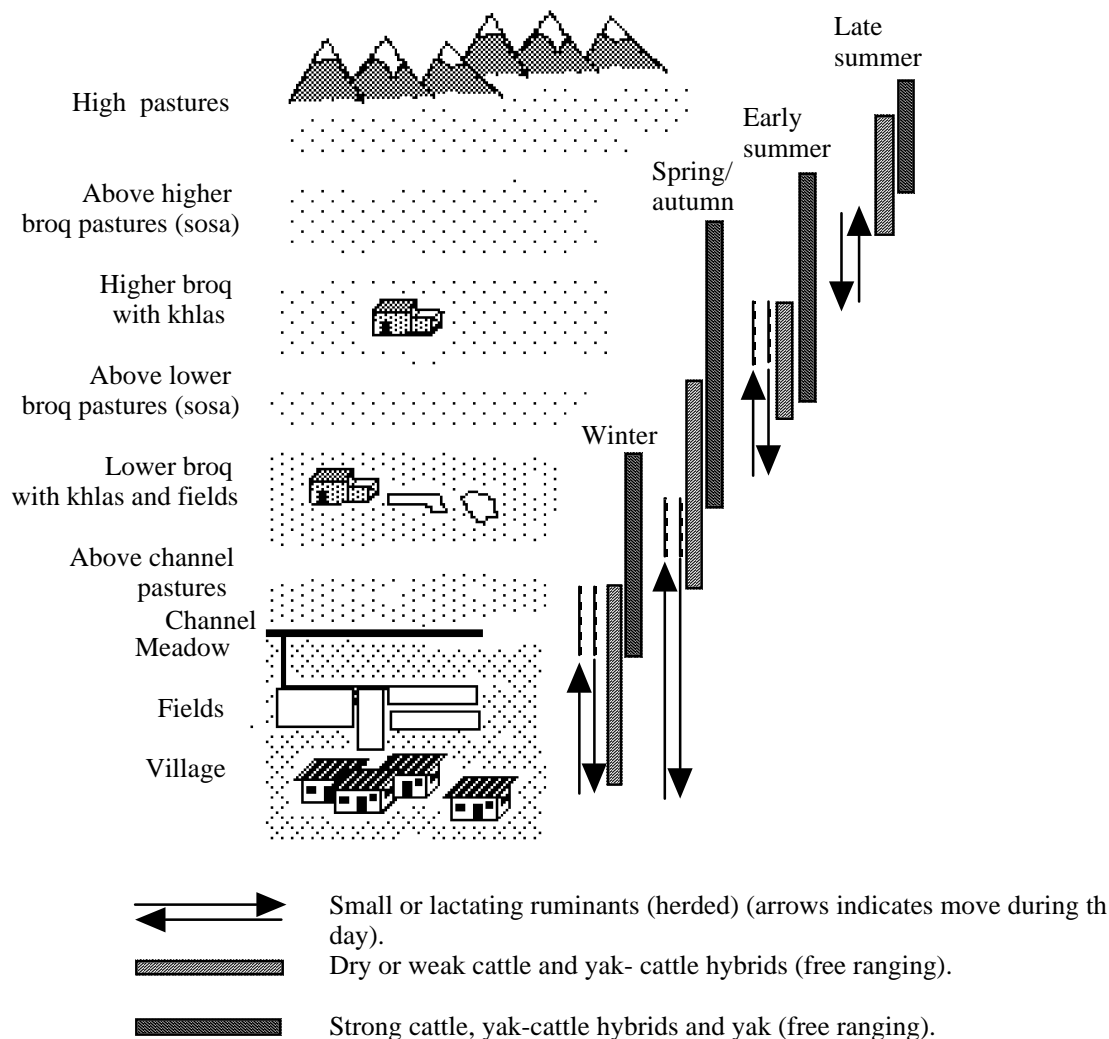
When spring comes, the group of yak and strong cattle move upwards first, following the retreating snow and the first greenness of the higher pastures. The group of dry or weak cattle follow. The group of small animals and lactating cattle are kept nearby villages until conditions allow a collective move to the lower *broq*. This happens normally in mid May, but in 1998, with its late spring, it was postponed to mid June. Some households hold rights to a second *khlās* and *broq* at higher elevation. According to the conditions, the second move to the higher *broq* takes place in July. The

higher *broq* is normally inhabited by men only (pers. com. Ingrid Nyborg and Veronika Seim).

Households stay at the *broq* until winter arrives, normally at end of August to mid September. From our interviews it seems that small animals and lactating cattle move directly from the higher *broq* to the village, without settling at the lower *broq*. Yet, from Matillo we learned about a "waiting area" (*Tobabo*) where livestock moving from the upper *khlās*, Fara, stopped and waited for conditions to be right in the village. While waiting, animals and people could take shelter in a great cave. The shared grazing area, Ranga, is reported to be a similar "waiting area" for other villages during the autumn move. The Soq *khlās* is reported to be accessible for everyone during such occasions - at least when it is not in use by the entitled households.

Figure 3 gives a sketch of the broad pattern of ruminant movements through the year. Among the group of "small ruminants and lactating ruminants", the cattle are kept in a different group and herded in a different way than the small ruminants. In relation to villages and altitude they still represent the same pattern. The free ranging ruminants roam everywhere if not chased away. They may be found all around the watershed to all times, but still tend to graze in the zones indicated.

Figure 3: Movement of ruminants through the year



4.3.3 Production

During summer, most of milk production and processing is performed at the Broq. Butter and butter-oil dominates. The buttermilk is consumed or boiled to cottage cheese (*Bros*), which is mainly eaten by children. People produce fermented milk in special goat-skin bags (*changal*).

The butter production is partly performed by individual households, but more often the milk

is processed collectively (*oress*) by households sharing a *khl*as, by households in nearby *khl*as'es or even by "poor people" with no access to a *khl*as (milking performed in the field). The milk is measured, and products are divided on the basis of input. Sharing may be done by physical sharing, by sharing money after selling the products (butter sells at approx. 230 PKR/Kg at the Skardu market); the butter may also be matured underground and presented collectively at occasions such as weddings.

4.3.4 Decision-making about when to move livestock

What are the important reasons underlying collective decisions about moving livestock? There appear to be factors which "push" the animals up as well as factors that "pull" them from above. On the other hand, there are reasons to "hold" animals at village or lower *broq* levels before moving up.

"Push factors" are:

- The beginning of cultivation and the need to protect fields from animal grazing. This factor may also push the animals from those lower *broqs* where cultivation is important. (One opposite force may be the conflict between the demand for labour to manage the fields and the demand for labour for herding and milk processing in the *khlas*.)
- The heat of summer in the village with the accompanying insect menace, smell, diseases and reported bad quality of milk and butter. This aspect was mentioned in Matillo, Khar and in Meito⁷
- The lack of grazing resources near villages after winter
- The need to separate different groups of livestock (male from female; lactating female from young animals).

The "pull" factor is the winter's retreat and the growth of plants in the high pastures. The need

for proper germination and plant growth on pasture, and unpredictable spring weather, are the major reasons to hold animals back.

"Hold" factors (reported by Ingrid Nyborg and Veronika Seim) are:

- The organisation of human labour: spring field work and weeding has to be finished before people can be transferred to herding and field protection at the *broq*.
- Field crops at *broq* should be well established before large flocks of ruminants arrive in the area.
- There is a tradition of a collective move to the *broq* with all the households in one or more villages. This demands that households "hold" until everybody is ready.

According to one interview, this issue "is discussed and decided by the elders of the entitled households of the *broq*". Asking villagers more about this has given somewhat different answers. In the lowest village of Matillo, the "pushing" forces are stressed. In the upper village of Sultanabad, the "pull" argument are mentioned. This could be explained by local differences: Matillo has relatively rich winter-fodder resources while those of Sultanabad are more limited. Agricultural crops are of great importance in Matillo, while Sultanabad people rely more on pastoralism (ref. Livestock census by Dr Abbas et. al., AKRSP 1997), although crops are also important. The summer climate is hot in the narrow valley of the Indus as compared to the alpine airs of Sultanabad. Population is denser and space is less in Matillo.

⁷ Meito, with its steep, south-facing location, probably has a particularly hot local climate: "Meito" is the name of the hot iron for frying *roti* bread!

The autumn retreat towards the village will be forced by colder temperatures, snowfall and perhaps also overgrazing at high level. On the other hand, crops must be harvested before animals arrive back home.

4.4 *Land tenure: pastures*

4.4.1 *The formal system of land records and village rights*

During an interview with Deputy Commissioner, Skardu⁸ the team was presented to the local land settlement officer (*Patwari*⁹).

⁸ The Deputy Commissioner, supreme representative of the Pakistan State in Baltistan, Mr Haji Sanaullah, is also a most skilled person in land tenure and local cadaster systems. The following is based on this interview and on discussions with AKRSP staff and Basho villagers.

⁹ The *Patwari* is traditionally something of a mythic person on the sub-continent. The *Patwari*'s judgements and recordings directly affect people's daily life, primarily by making decisions in land disputes. Before the abolishment of the land revenue system, the *Patwari* also determined the amount of the burdensome land revenues. This also gave a favourable position for taking bribes. His assessments and measurements were difficult to control from outside. According to Basho villagers, "A feet's length (fields size) is dependent on *Patwari* bribes!". Another story was told by AKRSP staff: "A Maharaja of Punjab once wanted to give his minister some land as reward for well done duty. The Maharaja wrote a diploma which said that the minister should receive 60 kanals of land in a certain watershed. So the minister went to the local *Patwari* demanding his land measured and recorded. The *Patwari* so did, but didn't like the job at all - because the minister denied him bribes for obeying orders from the Maharaja. Some time later,

He has responsibility for land registration and keeping of records regarding Basho and a couple of other watersheds. We were informed about and shown the different records of land registration (*Inteqal*) of Basho. These records are:

1. Draft map of cultivated plots: A fabric where the different cultivated private owned plots are drawn. This piece of cloth also serves as physical cover (wrapping) around the different land record documents

the minister wanted to visit his new holding, but no one could point out where it was. So he went to the *Patwari* asking for his land. So the *Patwari* pointed out the ministers land, correctly measured, mapped and recorded - 60 kanals on top of the mountain! Then people said: "Nobody, neither the minister nor the Maharaja, could match a *Patwari*!"

Interviews in Basho appeared to indicate that the *Patwari*'s poor reputation was not extended to the former actual collector of land revenue, the *Nambardar*. Even though the *Nambardar* collected revenue goods from people, the *Patwari*, setting the figures, was far more unpopular. The *Nambardar* probably was considered to be merely executing orders from the *Patwari* records. The act of collecting revenue could be performed in a reasonable way, the *Nambardar* sometimes even could be the executor of Raja mercy. Recorded taxation figures, set more or less once and for all, show no mercy. The former *Nambardar*, Mr. Ali Ali of Meito would still presenting himself with his title eventhough the office's duties have been abolished (interview). The *Nambardar* was considered a village notability, being part of traditional village leadership and problem solvers together with religious teachers and elders. Probably no one would go to the *Patwari* for conflict resolution, except to point out formal land conditions.

- of the watershed. The map is updated when changes in the plot structure, such as development of new fields, subdivision, enclosure etc., occur. The map contains references to the different records connected to plots.
2. Record of Owner: Connected to each plot reference on the map, there is a document describing the present owner and his ancestors to the land title. This document has the form of a family tree for the owner and his fathers.
 3. Record of Rights: Connected to each plot reference on the map, this record contains descriptions of the rights connected to the plot, such as access, irrigation source etc. and description of the field, owners and owners' total holdings in the village, valuation of the plot (reference to former taxation revenue).
 4. Transaction record: This record gives a day-to-day report of any agreement or transaction connected to the plot. Every sixth year the information of the Transaction Record is transferred to the Record of Rights on a special occasion when all Patwaris under the Deputy Commissioner's jurisdiction are assembled to work day and night to transfer this information. If information of the Transaction Record is disputed, a verification process is performed. Thus, Transaction Record information may be stated as correct by a village assembly.
 5. "Record of crops": This is described as a diary-like report of current use of the land, crops grown and a wide reporting of almost any activity in the watershed. This record should document land lease (also informal and short term) and is useful to document later statements of appropriation by use (10-15 years of rent-free use may give actual possession).

In addition to these records, the Revenue Department keeps important documents of land tenure in special files. From this closed room a record of pasture rights of Basho valley was brought to us. This record, also wrapped in a draft map showing the different grazing areas,

referred to an agreement from 1918 with later adjustments. The agreement and the record described different villages' access to different named (and mapped) grazing areas.

4.4.2 *Local adaptation of the formal system: village and household rights*

The State claims formal land ownership to the commons (*Khalisa* or *Khalisa sarkar*), but appears not to have interfered in the pasture management system. It may therefore be regarded as a locally evolved and community-based management adaptation to the local environment.

Villagers are aware of the existence of the 1918 document and express their respect for it as the basic document on pasture tenure (group interviews). The concept of villages having rights is also a locally a common way of describing the situation. Asked about who are the right-holders to different grazing areas in the watershed, villagers answer by naming the entitled villages (interview, BDO members).

However, later interviews showed that this was just the frame system, and the record of alpine grazing areas presented in Appendix V gives a much more detailed picture than what was reflected in the Patwari's map and records. The rights have been passed on from "the village" as title holder to the practical users, the basic pasture management unit being the household. The household's rights are connected to the summer farm with its houses (*khlas*) surrounded by a defined area of small fields, meadows and pastures (*broq*). The household's rights also includes defined grazing areas next to (above) the *broq* (nearby *sosa*).

This may be seen as an intra-village subdivision and distribution of the village grazing rights to share-holders of the village with respect to more limited pasture areas. The local conception of *broq* rights is still described as a land-owner position to *broq* fields or meadows (pers. comment. Ingrid Nyborg). From such title to *broq* land follows rights of raising a *khlās* and grazing rights at the *broq* and first right of pasture in nearby *sosa*. These *sosa* rights are sometimes shared with additional or other household's than those having rights to the *broq*.

The higher *broq* contains no cultivated fields. The group of titled households to a lower *broq* may be different than to a higher *broq* (the group may split on their way up). Legitimate *khlās* construction in the higher areas probably derives directly from grazing rights. A household may have the right and possession of one or two *khlās* of their own, or one *khlās* may be shared by more households. Some villages have a common *broq* and/or specific areas for the whole village. Villagers may have access to fellow villagers' household *khlās* at times when the proper title-holders are not present. In *broq* and *sosa* with rights primarily held by households, some comments indicate that fellow villagers of entitled household enjoy special access or priority over others.

Similar recessive *khlās* use is performed by any "qualified Basho villager", at least at some localities (for example the Soq *khlās*). There are also areas with common Basho rights: One example is the Ranga river plain below

Sultanabad. This area is used as a transport area at spring or autumn move and as observation field for sick animals. It was formerly a social assembly arena (Polo ground). This all-Basho area continues upstream through Mabangalla - a "transport section" of the valley bed divided from the nearby Soq *khlās* by a stone fence. The rights to the Upper Valley grazing areas are also shared by all eight villages.

It was noted during the 1997 Basho visit that a village assembly had decided to reduce the number of right holders of one *broq* by moving some right holders to another *broq*. This indicates that even if household rights to *broq* is considered exclusive and solid privileges, still the village (or a cluster of villages) holds a kind of supreme right to the area.

Figure 4 illustrates the local adaptation and sophistication of the formal system. Certain formal positions (ownership, tenancy to fields), inheritance, residence, but also social factors give a person or family position as member of entitled households (the most important title-holder), "qualified member of entitled village" or "qualified Basho villager". Membership in an entitled household gives all three positions. These positions give certain rights to pastures.

Figure 4: Land tenure on mountain pastures of Basho, Baltistan: Rights of access for different groups of entitlement.

	1. Member of entitled household	2. Member of entitled village	3. Basho inhabitant
Recessive open grazing	X	X	X
Recessive use of specific khlas	X	X	X
Grazing in common Basho areas	X	X	?
Use of village khlas	X	X	
Grazing in village broq	X	X	
Grazing in village sosa	X	X	
Use of household's khlas	X		
Grazing in household's broq	X		

We were informed that ownership to cultivated plots in villages does not automatically give access to pastures: it is the legitimate use of fields that is one of more keys to these resources through membership of household or village. As an example it was stressed that the Raja and other non-resident owners of land in Basho were supposed to have no rights to bring animals (from outside the valley) to the outfields. Their tenants hold grazing rights. There are other obvious reasons, in addition to the problem of absentee landholders, for not connecting pasture rights to plot ownership only. Fragmentation of land (and farmers owning plots in many villages) could affect pastures and make management troublesome. In times of population growth and land fragmentation the household is quite a stable management unit with a stable decision-making system.

The third position as merely "Basho inhabitant" is unfavourable in terms of rights of

use. Into this group fall immigrant minorities and probably also some land-less people of Basho origin. This group's animals may only graze as long as no one with "real title" intervenes, or they may lease rights. Still it appears that these people's animals are more welcome than livestock coming from outside the watershed.

4.4.3 Practical adaptation through prioritised rights.

As indicated in Figure 4, the system of pasture tenure is given a practical, local adaptation to the grazing and animal movement system illustrated in Figure 3: Movement of ruminants through the year. This is a system of recessive uses and rights to such use. "Recessive" is here used to indicate that such a use may lawfully be performed until a use of higher tenure priority occurs. With reference to the grazing system, illustrated in Figure 3, we believe to see a system of prioritised rights in which priority comes into force at times when there is a conflict between overlapping uses.

Priority 1: Individual or household right to exclude grazing from residential areas and fields in the village

Priority 2: Individual or household right to exclude grazing from meadows (*oul*) and *broq* fields

Priority 3: Entitled households' exclusive right of grazing at *broq*

Priority 4: Entitled households' exclusive right of grazing at specified grazing area (*sosa*).

Priority 5: Entitled villages' exclusive right of grazing at specified grazing area (*sosa*).

Priority 6: Open grazing access for Basho free ranging large ruminants (Groups 2 and 3, chapter 4.3.1.).

Priority 7: Open grazing access for Basho herded ruminants (Group 1 chapter 4.3.1.).

4.5 *Management of natural forest*

The basic principle of forest tenure and management is based on the legal principle of State (Forest Department) having management monopoly - in practical terms ownership to all trees of "natural species" regardless of ownership or other rights to the ground. In Basho "natural species" means Blue Pine, Junipers and probably also Birch. Other species (broadleaf trees) on private or village land are under private ownership and management. Other species of trees and tree-like bushes on state land seems to be out of reach of state forest management, (though not in the case of land classified as "Forest"¹⁰).

This means that one could find "private" or "not owned" trees on state land, private trees on private land, state-owned trees on private land (example: Junipers on Raja land above Sultanabad) and state-owned trees on state-owned land. Our discussion will focus on the latter.

The pasture rights to forest are similar to those to government-owned commons without trees, but state management may include regulations

¹⁰ The forest is classified as "protected forest" according to Pakistan forest legislation, but the size of the area and the practical implications were not confirmed during the investigations.

on other uses to protect forest and its regeneration. Forest affects pasture quality (reported to be mainly negative during a "broq quality" evaluation, Appendix V, areas no. 7 (Goriaq), 31 (Durum), 32 (Soq¹¹) and 38 (Charimond), which are all forested areas). Negative effects from grazing on forest regeneration were mentioned. Forest and former forested areas with low or no regeneration were observed as well as grazing damage to young pine trees¹². On the other hand, dense regeneration was observed on areas with a significant livestock presence just south-west of Soq *khl*as.

The State theoretical supreme ownership to tree-bare common land is vague and not reflected in practical management of the areas. In natural forests, on the other hand, management is characterised by strong government presence.

Villagers depend on the forest for fuel, construction and fodder. Villager's usufruct rights to the natural forest trees are limited to dead fallen fuel wood, dead fallen and standing damaged timber (avalanche and flood wood). All interviewed parties have referred this as a "right", even if we have not confirmed this to be a title protected by law. Several interviewed villagers stress that "all have rights in the

¹¹The name "Soq", "thorn", derives from the miserable conditions in this *broq*. To "sit on the thorn" is, of course, no pleasure.

¹² According to soil studies by Aage Nyborg in 1998 (Report No. 3), trampling by animals may contribute to development of a hard surface layer on loess soils and be one the factors affecting

forest". Ingrid Nyborg reports of a detailed inter-village sub-division and organisation of the forest utilisation, including rules about specific fire-wood collecting areas for different villages/groups. These areas for forest utilisation are not identical with the overlapping pasture rights system. The observed troublesome manipulation of green trees with a long-term perspective indicates that there must exist some local and individual privileges to the output of this work. Apparently this follows a principle of "right by use" - a corollary to the *kabza* for land (gaining title by long-term cultivation). Probably these techniques are carried out according to some kind of local sub-division of the forest.

Villagers have a priority for getting concessions for timber cutting for domestic use if the condition of the forest permits harvesting. This is currently hardly applied due to the ban on commercial felling of green trees (communicated to or at least perceived by villagers as an all-inclusive ban). The procedures for obtaining permission for harvesting (even dead fallen timber), including bureaucratic costs, seem to have made this almost impossible, even before the ban was introduced in 1986. Problems of bureaucracy-based management systems is enlarged by the distance to the officers in charge and by the fact that the majority of villagers are illiterate. Based on the history of heavy extraction of timber by the state and other outsiders since the Forest Department's construction of the jeep road to the forested upper part (completed in 1968), the relationship to the authorities has

been one of suspicion. Villagers have perceived the government role as an institutional constraint on resource utilisation, conservation and development. Elders and BDO leaders now stress that they want a good relation to the authorities. It was mentioned that the District Forest Officer on several occasions have stopped loads of fuel wood and timber going from Basho to Skardu, considered a brave, but to some people unpopular, decision (also to some Basho people).

On the other hand, local management is not a guarantee for sustainability. Historically, villagers were busily engaged with timber cutting and transportation at the times of heavy extraction. Later on they worried about the forest's future and established a local resistance against timber extraction and export from the watershed. Even if all villagers understand their dependency on forests, they do not necessarily agree with central or local management decisions. There may also be some differences in interests and attitudes linked to the location of residence in the watershed.

The current initiatives to create legal institutional reforms permitting greater local participation and benefits from forest harvesting include the Skardu Divisional Forest Officer's recommendations for new by-laws to the Forestry Act of 1927 and the recent *Joint Forest Management* initiative. They appear to be potentially important institutional reforms regarding the management of natural resources in the Northern Areas.

regeneration of forest on such areas.

BDO leaders state that their current internally enforced restrictions on natural forest exploitation, and "land use plan" for solving present forest conflicts which they are currently discussing, will not be sustainable without secure rights to an increased stream of benefits.

It is problematic for the state to accept local privileges as formal lawful rights. Another problem is the legal status of the village or cluster organisations as a party to agreement with government regarding rights to felling of timber, revenue sharing, and as the agent of internal jurisdiction. The example of the agreement between the Forest Department and two villages, Khaiber in Gilgit Region and Hoshey in Khaplu, Baltistan, regarding wildlife utilisation is well known to people and relevant in this context¹³. It is also interesting to note that quite recently the Forest Department has invited AKRSP to further develop cooperation and experience sharing, among other things with respect to extending the Social Forestry Programme above the channel.

4.6 *Land tenure and efficient land use*

So far we have described the land tenure system. We have mentioned the framework of the public recorded "official" system, described the local distribution of "rights" and indicated the system of practical adaptation of the rights. So far we have not been able to see conflicts of principle between these layers of land tenure.

¹³ The agreement between villages and government involved an 80 - 20% sharing of revenues from trophy hunting on Ibex.

Even if Basho is not an isolated place, and even if animal husbandry and agriculture are not the only economic activity among people, the inhabitants of the valley depend on full utilisation of the watershed's natural resources within frames of sustainability and culture.

The land tenure system has exposed itself as a flexible and in some respects efficient for utilisation of natural resources. Still utilisation efficiency cannot be provided by systems of rights alone. Inefficient distribution of factors like capital, winter fodder, manpower, local conditions and skills give rise to other problems.

Basho has sophisticated systems of trade, exchange and tenancy. These systems refer to different factors such as land and rights, animals and labour. Such transactions should not be seen in a narrow tenure or economical perspective. They are performed within a social network and themselves represent important actions in establishing or strengthening relations between the involved parties and their households. These personal or family ties are important for maintaining social position, capability of action and security¹⁴.

¹⁴ Contributions to weddings and other important occasions with well-stored butter, other foods or gifts is mentioned as important and an aspect of production planning. After the abolishment of the land revenue system in 1972, some people still maintain a personal relation to the Raja (and other landlords) by presenting gifts at special occasions. Tenants on Raja land (Urdu: *Raja-wallah*) usually still pay rent partly in animals or local produced

Most kinds of labour are hired or exchanged. Services in the village, work in fields, herding, milking, milk processing etc. Exchange of skills and labour is common also within the women's fields of responsibility (pers. comm. Ingrid Nyborg).

4.6.1 Village land transactions

Land is traded, exchanged, leased and hired - such transactions occurs frequently - both with absentee landholders and among villagers. This may have some consolidating effects on land use structure. Land title acquisition is established by:

- inheritance (inherited land: *Murusi*)
- voluntary purchase
- compulsory or pseudo-voluntary purchase (jeep roads, water channels).
- gift (*hibba*)
- exchange ("mutual *hibba*")
- occupation of common land by cultivation (*kabza*).
- title to land by prescription (10-15 years of free cultivation).
- leasing

Cultivated plots and meadow areas at lower *broq* are also traded. We suppose that these transactions normally are limited within the groups (villages) with some title to the *broq*. Ownership to *broq* areas is considered to be

foods or goods. There is still a tradition of presenting these goods personally at the Raja's residence in Skardu. If not done by jeep, this is a two-day walk!

the key to building a *khlas* and to grazing rights at the *broq* and in nearby grazing areas.

In one conflict case during the summer of 1998, it was in the end accepted, by support of the Basho Development Organisation, that land-ownership at *broq* could (in this case) permit the raising of a new upper *khlas* in an above the *broq* grazing area. However, this BDO solution to the conflict also included other aspects and compensation.

Systems of lease animals are important in Basho. Villagers use different terms for at least three different categories of animal sharing:

- *Barpa*: Long-term sharing of large ruminants¹⁵
- *Khapay mar*: Short-term (one season) sharing of large ruminants
- *Rablay*: Short-term, intra-village sharing of small ruminants

Each of these are accompanied by different and flexible rules about investment-, risk- and production-sharing. Apparently a fifty-fifty percent sharing was normal in the case of *barpa*. These systems might be a contribution to adapt the production system to uneven access to pasture resources or uneven labour

¹⁵ Some *barpa* examples from Basho: in Matillo, one villager estimated that 10-12 households have *barpa* animals in the higher villages; in Doros, 250 out of 400 large ruminants are *barpa*, while villagers lease out approx. 100 (group interview). In Sultanabad, we were told that all *zos* are held on *barpa* basis. Zia found that on average, households own as many cows, *zos* and *zomos* as they hold on *barpa* basis (AKRSP - NLH, 1998, Report no. 7).

situation (Sultanabad, with a great number of nearby pastures and a relatively smaller occupation in agriculture, also has a great proportion of lease animals). Basho villagers receive lease animals from other villages, but also from outside the watershed. The systems are appreciated by people as a way of minimising risk and are an important factor in creating social networks.

4.6.2 *Land fragmentation and consolidation.*

Big families and relatively low average age in combination with Islamic inheritance rules create a potential for fragmentation of plots. In principle, both sons and daughters inherit a part of their father's land. As marriages happen between villages (and between watersheds), fragmentation tends to happen both within the village and between villages: Plots or pieces of plots may be owned by households from other villages or watersheds.

Such fragmentation forces call for consolidating processes. These occur both on formal land tenure and on mechanisms connected to use of plots. Even if fragmentation is a problem and even if plots in one village may be owned and run by outside people, consolidating mechanisms appear to reduce some of the problem. This is apparent visually, as we did not see many terrace plots that were artificially subdivided - so far the natural given entity of plots seemed mostly to be cultivated as one unit. In addition, almost all cultivable land seems to be under cultivation. Fragmentation has not gone so far that land structure makes cultivation of certain plots unprofitable or impossible. The only exception was found in some Raja land above

Sultanabad, where some former agricultural terraces with rich soils (confirmed by sampling of Åge Nyborg, June 1998), is now only used as pasture land. This low level of utilisation can not be due to fragmentation: Basho men reported that tenancy of Raja land could be inherited - but this tenancy is passed on undivided to one son.

Considering the strong forces of fragmentation by the inheritance system, the visually observed appearance of relatively consolidated plots could not exist without rather advanced pooling and redistributing processes. They take place even though normally no external professionals or officials are involved. There exists a voluntary official land consolidation scheme (*Istamali - arazi*) run by the Patwari or the superior Kanungo, but these schemes are reported never to have been implemented in Basho. In Baltistan there are systems of exchanging plots or parts of plots at times of inheritance. This could take the formal form of mutual donation (*hibba*) of plots. This could also be time for selling and buying or even donating from one child to another. From AKRSP staff we learnt that in Baltistan daughters often do not claim their inherited land (but give *hibba* to their brother). From Basho it was reported that this was normally not the case here. We also learnt that absent or non-farming heirs often lend their land to their farmer brothers.

4.7 *Conflict resolution*

As in any society, various conflicts between people and groups of people occur in Basho. Given the high importance of natural resources,

it is no wonder that several of such conflicts are about land, primarily cultivated land, but also over rights and behaviour in commons.

The situation in Basho¹⁶ is the absence, in practical terms, of state conflict management institutions, such as courts and political or bureaucratic decision-making bodies. Even if present, people of Basho could hardly afford a police case or a trial. However, there is a long-standing and well functioning tradition of local conflict-solving institutions where the title of "Elder" (Balti: *Sarma*, Shina: *Baro*) and Council of elders (Balti: *Shakh Baikhan*, Shina and Urdu: *Jirga*) have a central position. Present or former officials, like the former *Nambardar*, and other notabilities are also consulted about conflict resolution. The term "Elder" does not indicate people who are necessarily old of age. Mr. Haji Haider performed as elder at the age of twenty-five! It is more important that people are recognised and chosen for their wisdom, competence, and integrity¹⁷. Another group of conflict solvers

¹⁶ The description and discussions are based on interviews and discussion with AKRSP staff and Basho people. Of special significance was the conversations with Mr. Haji Haider, sixty-two year old Nazimabad villager and a respected Elder, and prominent member of the Conflict Resolution Committee under the BDO; Mr. Ahmed Ali of Matillo, former District and Union Council Member and still village Chairman and Elder; the religious scholars (father and son) Sheikh Ghulam Hussein and Sheikh Ghulam Rasool of Meito.

¹⁷ Or as reported from a AKRSP workshop on conflict management in October 1996: Conflict managers should be "...researchers, neutral, confident, honest, competent, have a sense of judgement, influential, experienced, kind, have a creative mind, be able to decide at the moment, be

are the religious scholars, primarily giving advice or answers on the basis of the Koran and Islamic law. People may go to whatever Elder they want with their problems or to a religious leader. Sheikh Ghulam Hussein stressed this freedom of choice. According to the nature of the conflict one may call competence and moral answers from the Koran, or also include other aspects. People are also free to prosecute their opponent party through the state systems of police or District or Union Commissioners. Mostly such channels are used as a symbolic act to express the severity of a case. Sometimes public prosecution is chosen just to annoy the other party. Cases may be referred from state authorities back to local institutions or local Elders who take action parallel with prosecution. Hardly any Basho conflict goes on to the courts. Baltistan court cases are also formally hindered from going on to Pakistani higher and supreme courts.

A conflict manager at the local level may pass a case on to another person of similar position, or conflict solvers may group themselves in different ways depending on the case. This flexibility also includes the state system. An attempt to solve a conflict always includes a Koran and a custom consultation, a hearing and a mediation attempt, often leading to an agreement proposal from the mediator. The aim of most conflict solving processes are an *agreement* or a consensus. In some cases Koran consultation may give clear *answers* to the problem. State officials may take *decisions* on the matter. This was probably also the case

well aware of Shariat, law and customs".

by handling in the Council of Elders, and nowadays if conflict is brought to the VO or BDO. An "agreement" does not necessarily mean full degree of voluntary support. Problem managers and social networks are capable of laying sufficient pressure on the parties to make agreements on pseudo-voluntary basis. A solution of a land dispute or a dispute of land rights could be secured by registration into public records.

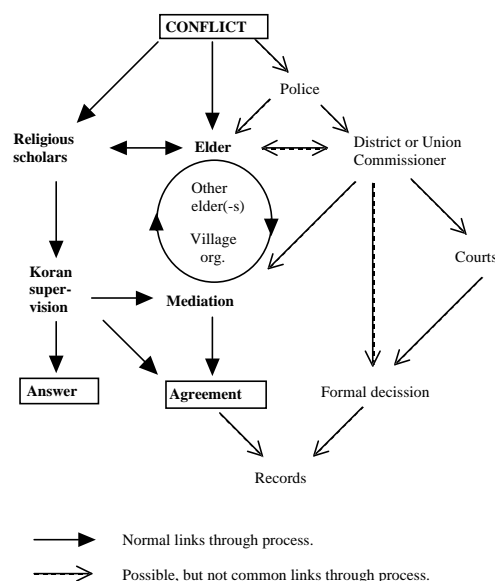
Figure 5: Elders' conflict solving procedure, draft.



Figure 5 gives an overview of an Elder's conflict resolution scheme as reported by informants describing former cases. It seems to be a standard part of the procedure, not to give up after one failed attempt: a new round could be directed by another Elder, an Elder from another village or even from another watershed. Probably social pressure and embarrassment among the parties will grow heavier for each new round.

Figure 6 gives an overview of conflicts management pathways through the available conflict solving institutions in Basho.

Figure 6: Basho conflict resolution pathway



A local conflict manager may include more aspects of a conflict in his procedures and solution attempts than the "law" and "material facts" of ordinary western courts. These are aspects which were brought up during our conversations in Basho:

- Holy Koran texts and Islamic law.
- Material facts (including recorded information).
- Pakistan law and regulations.
- Local culture and local habits
- The parties' concepts of personal honour and decency.
- Social networks and social pressure

This could be illustrated by an old case, as narrated by an Elder of Basho:

Two brothers had a dispute about dividing land inherited from their father. The younger brother claimed a bigger portion as his share (and was probably right by law). But having cared for the old parents for many years, the older brother found the established division reasonable. The younger

went to the Nambardar, but this Raja official could not make the brothers agree. The big brother was firm on his view - particularly now, when the dispute had been brought before public's eyes. So the younger went to the Magistrate Court.....Then an Elder from a neighbouring village first took the older brother aside, reminding him of his former responsibilities as a big brother and his new inherited paternal duties. He then took the younger aside explaining the disgraceful act of prosecuting family members in public. At last he brought the brothers together in their fathers house. The younger brother then gave the older brother a goat, apologised his disgraceful acts of prosecution, and declared: "You are my father now!" The older brother then offered a new and fair division of the land.

There is more to this story than merely a happy ending. It shows how a brilliant, local mediator can turn a conflict situation and reach an agreement, by redefining the conflict, by timing actions of resolution and also by choosing the right settings and environments. In this case the Elder at once saw that the material conflict had become a frozen discussion. Then he went on to the other dimension of the case - about duties and honour: Stressing the disgrace of prosecuting an older brother, but also stressing bad execution of paternity. Wisely the Elder stressed these aspects with the parties separate. Feelings of disgrace and remorse grow strongest in solitude! The material conflict called for a win - loose solution: One brother claimed more land. If success - the other had to lose land. By making the resolution focus primarily only on other aspects, the Elder had brought a win-win possibility into the game: The younger brother could win his land (but

lose a goat and perhaps some prestige). The older could win respect for his paternal rank (in his brother's, other people's and - perhaps most important - in his own eyes) – and, less important, a goat. Due to rank, the importance of the little brother's possible loss of prestige was probably far less than the importance of the "new fathers" restored honour.

Probably it was important to approach this solution step-by-step. A package solution of exchange of goat and land couldn't possibly be accepted. But by first giving the big brother full strength and duties of paternity he could (and probably felt obliged to), as the next step, easily and generously fix this inter-family land problem. The best setting to perform the last act of the drama was, of course, their fathers house, where the memories of their childhood and parents were strongly present.

And best of all: Even if the Elder did choose a wise - even smart - strategy, no one was fooled or cheated in any way.

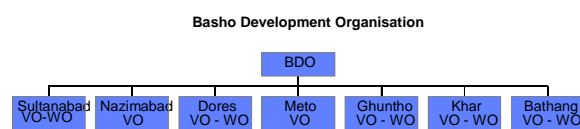
4.8 Social organisation: continuity and change

The villages of Basho have a variety of formal and non-formal organisations. The development of Village Organisations (7) and Women's Organisations (5), as well as a cluster organisation (Baltistan Development Organisation) are recent phenomena, but have grown out of and reflect much older institutions and patterns of cooperation and decision-making. Membership in Village Organisations are close to those of previous

(and existing) councils of village elders¹⁸. A similar forum to the BDO, in which elders from different villages would meet, has existed for generations (pers. comm., Ingrid Nyborg).

The BDO was formally established in January 1997. Village men are very clear when articulating the formal organisation and rules of representation of VOs and BDO, as summarised in Figure 7 and Text box 1.

Figure 7: Organogram of BDO and VO/WOs



Text box 1: The BDO and Committees under the BDO

<p>BDO membership and Leadership:</p> <ul style="list-style-type: none"> • Members: managers and presidents of VOs (14) • Leadership: President and General Secretary. Elected by VOs. Not fixed term.
<p>Principles for formation of committees:</p> <ul style="list-style-type: none"> • 10 members, nominated by BDO • Both BDO and non-BDO members (always VO members) • Membership flexible (BDO can change)
<p>List of committees under the BDO:</p> <ol style="list-style-type: none"> 1. Forest, Wildlife and Environmental Conservation (*)

¹⁸ In Doros, three hamlets (Saral, Bulcho and Khuno) used to be the main organisational units for people, while the elder councils of each would meet for certain purposes, including making decision about when to move to and from pastures. The members of that “joint council” also became the members of the VO.

2. Islahi (Conflict Resolution), (*)
 3. Education
 4. Health
 5. Project Execution (Channels etc.) (*)
 6. Maintenance
 7. Auditing (for projects)
 8. Credit
 9. Communication
- Marriage

*) “Active Committee”, according to one leader (May 1998)

At the time of field research, Matillo was not formally represented in the BDO¹⁹; the explanation given was that Matillo had not formed a VO (but was in the process of doing so). Yet, it appears that also the traditional cluster organisation united only the upper seven villages, so that there is a continuity between the traditional organisation and the modern one, perhaps reflecting Matillo’s different socio-ecological position in the lowest part of the watershed.

A participatory learning exercise gave a glimpse of another way of perceiving local organisation (Figure 8: Organisations and linkages). Villagers (men, all VO and BDO members), did present the BDO as the central organisation of Basho; yet they did not highlight the formal and hierarchical order of the organogram above²⁰. In stead, they showed the BDO as surrounded by a number of different positions and associations, partly of religious character. It may indicate the reliance of the BDO on these associations, for instance in conflict resolution as discussed above (4.7). It may illustrate the pragmatic complexity of Basho thinking about social organisation.

¹⁹ But a prominent villager of Matillo is the “Honorary President” of the BDO.

²⁰ One AKRSP staff reproached villagers for their

The interaction between old institutions and (new) organisations for resource and environmental management are assumed to be representative of wide areas in Baltistan and other parts of the Northern Areas; for instance, regulations and rights to pasture and forest shared between villages in different altitude zones are very common. In the case of Basho, it is not clear what implications the “modernisation” of social organisation and decision-making will have for resource management. The roles that the BDO is seen to have today are:

- Leading and coordinating channel construction for expansion of the resource base
- Working on conflict resolution and even taking decisions in inter-village cases
- Articulating demands concerning local people’s rights to forests and presenting itself as a potential legal partner for the government in forest management
- In support of the above, trying to address resource use conflicts (e.g. between grazing and forest regeneration) by introducing measures of internal control (a local ban on green forest harvesting, though the level of enforcement is unclear)
- Articulating interest in some new development options, such as wildlife management and eco-tourism²¹

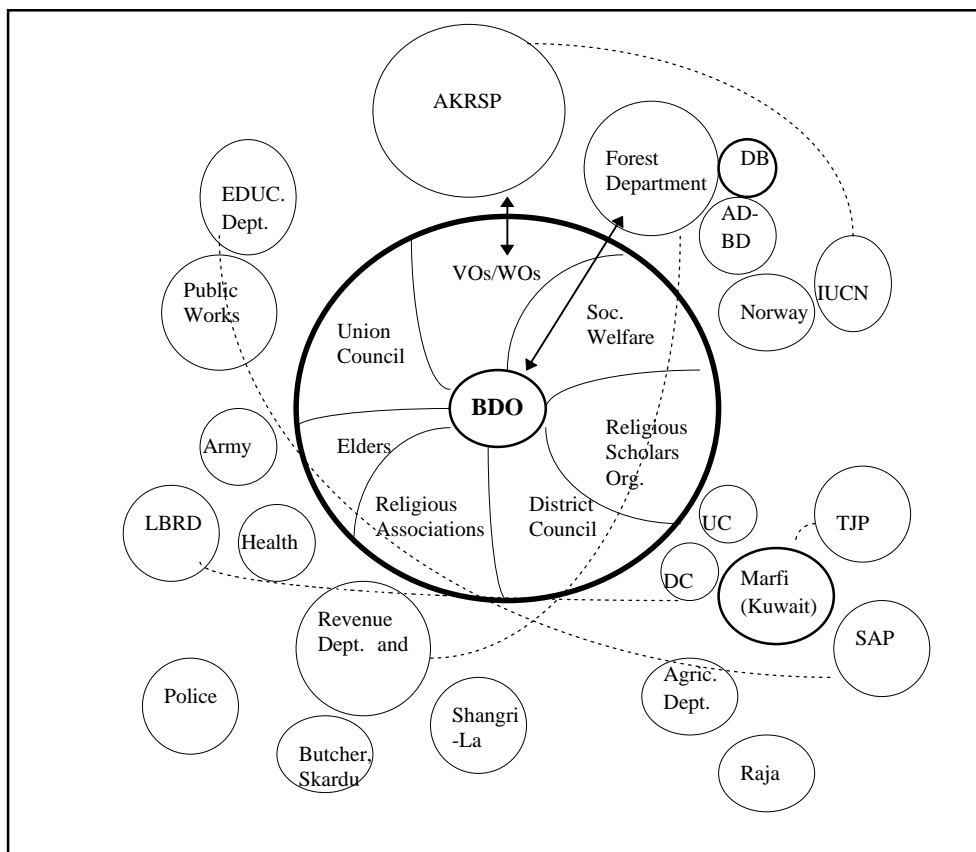
- Interviews showed that some BDO members have discussed the sustainability of pasture use, but the BDO does not appear to have introduced regulation or development of measure beyond those that have been shown to work at village, hamlet and household levels.

It is possible that the BDO will strengthen shared “Basho villager rights”; it is possible that it will provide a stronger platform for younger members and for groups who have been traditionally less powerful; women’s representation are indirect through the corresponding VO leaders, and therefore does not break with a traditional confinement of women to hamlet and village. At this stage therefore, these questions remain unanswered; the specific role of the BDO in natural resource management is evolving and issue of great interest for future study.

mistaken way of presenting the order of things.

²¹ In practical terms, the BDO is heading the construction of a channel to create an artificial lake as a fishing pond. Apart from that, receiving Norwegian researchers was occasionally referred to as practical training in handling visitors.

Figure 8: Organisations and linkages



Source: Participatory learning exercise, Forest Hut, Basho, 30.05.1998: Sheikh Ghulam Rasool (Rel. Scholar), Meito; Haji Haider, Nazim./Dores; Ahmad, Pres., Nazim. VO; Mahboob Ali; Fida Mohammad, Meito; Ali Hussain, Meito. Main facilitator: Moh. Akbar Raza, AKRSP

Notes: The *japati* diagram was drawn on the ground, beginning with the internal organisation, and then moving to external agents and linkages. The representation was transferred both to a poster (used for presentation) and via a researcher's note book to this illustration. There are several distortions in these transfers, and the figure should be interpreted with caution. Linkages were only lightly treated

LBRD: Local Bodies and Rural Development Department; Marfi: Kuwait based NGO; DC: District Council; UC: Union Council; ADBD: agricultural development bank. SAP: Social Action Programme

5. DISCUSSION

5.1 Interpretation within the theoretical framework

The theoretical framework suggested for the project (ref. Figure 1: Conceptual model) gives a crude overview of features in an integrated analysis of natural resource management:

- **land use/resource management practice:** the way people use land resources
- **incentive structure:** the set of rewards and punishments which resource users

face, reflecting both ecological, socio-economic and cultural factors

- **pasture, natural forest etc.:** the sub-sets of the resource systems under study
- **actors:** the individuals and organisations which play a role vis-à-vis resources
- **institutions:** the formal and informal rules which govern resource use, including property rights

Other key-terms were defined in Text box 2.

Some major findings are summarised in

Text box 4.

Text box 4: Overview of some major points

Key features	Natural forest	Pastures
Property right	State (<i>Khalisa sarkar</i>)	State (<i>Khalisa sarkar</i>)
Category (ref. Singh, 1994)	Common pool resource	Common pool resource
Management	State-based (predominantly)	Community-based (predominantly)
Actors (in descending order of importance)	<ul style="list-style-type: none"> • Forest Department • Local people • BDO • External, commercial interests 	<ul style="list-style-type: none"> • Local people • Village organisations
Local people's rights	<ul style="list-style-type: none"> • Access • Withdrawal (limited) 	<ul style="list-style-type: none"> • Access • Withdrawal • Management • Exclusion (hh/village/ watershed) • Alienation (informal)
Collective decision-making	Curtailed Basho Development Organisation	All-encompassing Village
Internal regulation of access	Yes. Traditional and BDO regulation.	Yes. But does not appear to address total level of entry/extraction by livestock from within the watershed.
Land development	Management by the Forest Department, using local people as a source of labour	<ul style="list-style-type: none"> • Through household <i>kapza</i> (cultivation) • Through community-based land-development (irrigation), often with AKRSP support • <i>Broq</i> development through intra- and inter-village negotiations and change of rights

As *Khalisa Sarkar*, state claimed ownership applies to both pastures and natural forest. The difference in implications of state ownership is an example of the general point (ref. Introduction) that a bare classification of the ownership category (*state - common property - private property*) may not in itself be very informative. It is a more complex “situation” of property rights, use rights, decision-making and mediation arrangements and informal rules which govern resource use. In both cases, we have to do *with common pool resources*, rather than *common property resources* (Singh, 1994).

Regarding the **natural forest**, the management right rests with government. Villagers have specified, limited rights to physical extraction. Probably these rights are sub-divided among groups of locals as a locally managed system of access and extraction. With this exception, villagers have no rights in decision-making and no rights to change the management rules. State management is applied to an area defined according to functional criteria: the land where coniferous forest is left, including even single, scattered trees. Forest legislation and the ban on commercial harvesting of timber limits the incentives for local investment in and long-term management of forest. BDO leadership make the point that these institutional constraints make local conservation efforts troublesome.

Regarding **alpine pastures**, government authorities do not intervene in management except in the rare case where a conflict has been brought to the police or other official

body. As far as we understand, such government bodies then function as elements of local management or conflict resolution processes, rather than as top-down management arrangements.

Local people organised in households, kin groups, hamlets and villages are the main **actors**, and the main **institutions** are locally evolved rules and regulations applying to those same levels. This gives a highly decentralised and dynamic management system and land-use pattern. It is prone to conflict, but the community also has rich traditions and mechanisms for conflict resolution (p 27). The management system is adapted to the characteristics of the pasture resources: complex, scattered and diverse. While outsiders are excluded from Basho-pastures, it appears that the villagers have so far not addressed the task of limiting overall, internal access and extraction. The limited supply of winter-fodder is often assumed to be the major factor in limiting the total number of livestock and, thus, pressure on alpine pasture. On-going land development may change this situation. Processes of commercialisation are another complicating factor. Whether there is a problem of pasture resource degradation (harvesting at non-sustainable levels) will be examined through research under the *Pasture, livestock and biodiversity* component. How people perceive and respond through developing organisations and institutions is an integrated concern.

5.2 Implications for social change and development

The findings of the first, short field season are not adequate basis for properly understanding the issue of natural resource-based development, even in the relatively small

watershed of Basho. It is by no means adequate for making recommendations about strategies for any of the actors involved. The overview in Text box 5 should therefore be read merely as a pointers toward what we think are interesting, emerging issues.

Text box 5: Overview of some aspects of change and development

Resource system	Contextual change	Possible risks	Institutional innovation	Examples of development options
Natural forest	1) From abundance to scarcity: <ul style="list-style-type: none"> • Access • Market demand • Population growth 2) Recent change of political authority system 3) National conservation (ban on harvesting 1986)	1) Degradation through excessive harvesting. 2) Regeneration problems 3) Limited local benefits and incentives for long-term management.	1) Formation of BDO <ul style="list-style-type: none"> • Advocating expansion of rights • Local enforcement of conservation measures 2) Revenue-sharing in wildlife management	1) Develop recognised local partner for government 2) Develop systems for resource and revenue-sharing 3) Forest management plan for multiple use etc.
Alpine pasture	1) Increasing economic integration 2) Population growth 3) Cultivation expanding 4) On-going land development below channel (increased winter-fodder)	1) Land degradation through increased grazing pressure 2) Competition/resource conflict 3) Weakening of local institutions	1) Continuous process of adapting local rules and regulations in community-based management system 2) Possibly emerging: BDO regulation	1) Livestock improvement and management 2) Multiple use: wildlife, tourism etc.

6. CONCLUSIONS AND RECOMMENDATIONS

This report is one of the products of a joint research and competence-building effort by AKRSP and NLH. As a study, it presents a preliminary analysis of the topic, as summarised in the abstract and briefly discussed in the preceding chapter.

The many tentative generalisations need further verification through field and literature study. The following areas could be given major emphasis in future:

- Institutional and organisational aspects of grazing systems. Mechanisms regulating access. Interplay between old and new institutions/rules.
- The dynamics of institution building at the local level, including a focus on the legal and social status of the Basho Development

Organisation as a partner for government.
Participation in the BDO, including the representation of women's interests.

- Comparison of the organisational and institutional development with that of one to two other watersheds, with emphasis on emerging cluster organisations and the on-going institutional change in forest and wildlife management

As within other themes of the co-operation, it is essential that the partners maintain dialogue and information sharing with government institutions.

Shared AKRSP - NLH ownership of the learning process should be a major concern, to ensure real competence building and relevance to the important effort of AKRSP to continue to refine its grasp of and relations with the rural communities of the Northern Areas, with their rich traditions and complex processes of organisational, institutional, economic and ecological change.

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APPENDIX I : OVERVIEW OF PROJECT COMPONENTS AND COUNTERPARTS

Project	NLH	AKRSP
Institutions and organisations in pasture and forestry management (property rights and other formal and informal institutions interpreted as the rules for behaviour; organisations/actors within the institutional framework)	Hans Sevatdal, Håvard Steinsholt, Poul Wisborg	M. Akbar Raza, Dr Abbas; Wazir Ghulam Haider
Pasture, livestock and biodiversity (the dynamics of high pasture management, fodder demand and fodder production, quality assessment for land use planning and conservation of soil and vegetation)	Øystein Holand, Per Wegge, Kathrin C. Hofmann, Åge Nyborg, Veronika Seim, Thor Sigurd Thorsen	Iqbal Hussain, Dr Abbas, Jawad Ali, Ulrik Motzfeldt
Farm forestry and natural forest assessment (forest and tree resources assessment, regeneration evaluation, and analysis of the supply and demand of forest products and linkages between farm-forestry practices and natural forest)	Knut Velle, Johnny Valen	Jawad Ali,
Gender in natural resource management (dynamics of changes in women's and men's use, access to and control over resources, and the effects of changes on household food security)	Ingrid Nyborg	Nazir Ahmed, Gulcheen Aquil
Information and documentation (creating a common information resource base relevant to all project sub-themes, facilitating exchange of information between project counterparts in Baltistan and Norway and supporting AKRSP Baltistan's efforts in networking for information access)	Liv Ellingsen	M. Maqsood Khan/ Nazir Ahmed
Coordination	Poul Wisborg	Khaleel Tetlay

APPENDIX II: FIELD RESEARCH (ACTIVITIES AND PEOPLE MET)

Date	Activity and People met
T 26.05.	Travel Ås - Islamabad
W 27.05.	Travel ISB - Skardu. Participation in AKRSP NRM Network meeting with AKRSP NRM staff. Meeting with Dr Abbas, AKRSP Field Coordinator, Wazir Ghulam Haider, Social Organiser, Skardu and other staff. Meeting with NLH team members
T 28.05.	Official visit/interviews Skardu: Deputy Commissioner, Haji Sanaullah; Land Settlement Officer (Patwari) Mr Akbar Ali. Divisional Forest Officer, Skardu, Mr Sharif. Coordination/Planning: Azafar Abbas, Financial Manager, AKRSP; Aurang Zeb Zia: household survey
F 29.05.	Travel to Basho. NLH - AKRSP meeting. Dr Iqbal, Moh. Akbar Raza, Dr Abbas, Ingrid, Åge, Ulrik, Kathrin. Meeting with BDO representatives. Ghulam Rasool, President, BDO; M. Younus Shezad, G. Secr., BDO; Haji Moh. Haider, Chairm. Confl. Res. Comm.; Mahboob Ali, Man. Doros VO; M. Hassan, Pres. Sult. VO; Haji Ahmed, Pres. Bathang VO; Ghulam Abass, Member, Khar VO; Haji Fazil, Memb. Ghontho VO; Ali Hussein, Memb. Meito VO; Fida Moh., Man., Meito VO; Akhund M. Khan, Man. Ghuntho VO; Haji Mehdi, Bathang VO; Salman, Ashraf and Zurmanali, Members Sultanabad VO
S 30.05.	Participatory learning exercise: external actors and internal organisation Sheikh Ghulam Rasool (Rel. Scholar), Meito; Haji Haider, Nazim./Dores; Ahmad, Pres., Nazim. VO; Mahboob Ali; Fida Mohammad, Meito; Ali Hussain, Meito, Hans, Moh. Akbar Raza, AKRSP, Poul. Team meeting, info sharing. Meeting with Elders at Nazimabad Rahman Ali (83), Haji Haider (60), Ghulam Mathi (50), Mr Haji (72)
S 31.05.	Field trip to Raskin With Abas, Field Assistant. Participatory learning exercise: the history of Basho: Sheikh Ghulam Rasool, Meito; Haji Mohd. Haider, Nazimabad; Mahboob Ali, Manager VO, Doros; Younus Shehzad, Guntho; Hans, Moh. Akbar Raza, Poul. Participatory learning exercise: Pasture map/grazing systems (Håvard, Kathrin, Ulrik, Jawad). Lunch with participants. Presentation of findings.
M 01.06.	Meeting with Ahmed Ali, Chairman/former District and Union Council member, Matillo. Visit to Farmashot power station on the Khar Nullah. Visit to Khar Fort. Walk through Khar and Guntho. Meeting Meito: Sheikh Ghulam Hussein and Ghulam Rasool (son), and the former <i>Nambardar</i> of Meito. Team meeting.
T 02.06.	Meeting with BDO leadership and members: . Ghulam Rasool, President, BDO; M. Younus Shezad, G. Secr., BDO; Ghulam Hassan, Man. VO, Bahtang.
W 03.06.	Meeting with VO Members, Dores: Mr Salaam, Mr Iqbal, Sultan Hassan, Mr Isaaque, Mr Ghulam Hassan, Mr Mahboob (Manager), Mr Ismail (President). Meeting with Sheikh Sahib of Sultanabad, Mr Hassan, VO Manager, Sult.
T 04.06.	Planning meeting with Jawad Ali and Mr Shabir, AKRSP, about forestry component. Field trips to Sultanabad and Raymil broq (Poul/ Ulrik)/ to wall below Upper Valley (Håvard, Mr Abas). Team meeting: planning of 09.09. seminar.
F 05.06.	Meeting with Mr Hassan, School teacher Sult. and Jawad Ali, AKRSP. Meeting with Ahmed Ali, Matillo, at Forest Hut. Travel to Skardu.
S 06.06.	Meeting with Khaleel Tetlay, Project Leader, and NRM staff at AKRSP Skardu. Planning of seminar. Discussion. Report writing
S 07.06.	Recreation and report writing. Meeting with Khaleel Tetlay, Moh. Ali (RPO) and Jawad Ali.
M 08.06.	Discussing field report (Moh. Akbar Raza and NLH members). Brifing: Deputy Commissioner, Haji Sanaullah. Printing, copying etc.
T 09.06.	09.00-13.00: Seminar, presentation of preliminary findings 14.00 - 18.00: Discussion of progress, problems and future cooperation. Evening: Meeting with Øystein Holand (IHF) and students Veronika Seim and Thor Sigurd Thorsen.
W 10.06.	Travel: Skardu - Besham
T 11.06. -	Travel: Besham to Islamabad. 14.00: Briefing to and from the Norwegian Embassy: Jan Erik Leikvang, Ambassador; Janne Knutrud; Arshad Gill; Abdul Assiz.
F 12.06. - 13.06	Travel: Islamabad - London. Flight to Oslo cancelled due to strike. London - Gothenburg - Ås

APPENDIX III: SOME EVENTS IN THE HISTORY OF BASHO

Source: Participatory learning exercise 31.05., Forest Hut, Sultanabad. Participants: Sheikh Ghulam Rasool, Meito; Haji Mohd. Haider, Nazimabad; Mehboob Ali, Doros; Younus Shehzad, Guntho; Hans Sevatdal, NLH; Moh. Akbar Raza, AKRSP (main facilitator); Poul Wisborg, NLH. The information is by village participants.

Year	Event/Situation
About 500 years ago	Three brothers, Said Mahmood, Said Haider and Said Ali, come from Iran, bringing Islam and the black grape (<i>Basho</i>) to the Basho valley. Settle as preachers. At the time the whole of the valley was forested, except some settlements near Indus. People were animists. The local language was Balti, but some already new Persian and could interpret. The three left no descendants. Immigration from Astore (Shina speakers) and Kashmir began shortly after.
1945	Epidemic of small pox
Around independence	Situation: Poor, no infrastructure, totally dependent on subsistence, left behind. Little trade, except salt brought in from Kashmir in exchange for dried apricot and phatta (through Astore). A little trade also with Ladakh. First Primary school constructed.
1948 - onwards	Skardu growing as head quarter of Baltistan. More exchange. Wheat.
1952	Jeep road from Gilgit to Skardu constructed
1960	Flood and change of river course across Ranga
1963	Army started cutting trees for army barracks in Skardu. Also cutting for the civil hospital in Skardu.
1968	Bridge across River Indus and Jeep Road to top of valley constructed by Forest Department (FD). Followed by "ruthless cutting" by FD and external contractors. Contractor constructing Forest Hut paid in kind: timber from the Basho forest.
1972	Fall of Raja and <i>Nambardar</i>
1973	Increase in religious awareness after education in Iran
1975	Medical dispensary, Matillo
1977	Veterinary dispensary, Matillo
1979	Primary school Khar
1980	Power house
1982	Middle school, Matillo
1983	Religious school (<i>madrassa</i>) established
1986	Ban on cutting green forest
1987	First VO established (Meito). First PPI: Channel
1988	Big avalanche destroyed much forest
1991	VOs in Nazimabad and Sultanabad. Self-help primary school, Sultanabad
1992	Electricity. Another VO
1993	Dores Link Road
1997	Basho Development Organisation

APPENDIX IV: LIST OF VILLAGE NAMES

Source: Local people. Mostly used name underlined-

Balti	English meaning	Urdu (new name)
<u>Basho</u>	The indigenous variety of black grape grown in Matillo	<i>n.a.</i>
<u>Matillo</u>	The bottom of a stick used for resting the neck.	<i>n.a.</i>
<u>Bathang</u>	The place where the animals graze (was previously the pasture for people in Guntho)	<i>n.a.</i>
<u>Khar</u>	Fort. Buddhist stone fort facing the valley, situated outside the village	<i>n.a.</i>
<u>Guntho</u>	Pale grape (because too high to ripen)	(Azizabad.)
<u>Meito</u>	Hot as the iron on fire (for heating roti); hot place, steep south-facing wall just behind)	<i>n.a.</i>
<u>Doros</u>	Uncertain. perhaps linked to cold wind from glacier.	<i>n.a.</i>
<u>Rivong</u>	Rabbit(s). Lived there in the past. Were eradicated by local people.	<u>Nazimabad</u>
<u>Thurmik</u>	“Away from the eye” (not seen from below, or: the lake which was there before disappeared from the eye). Or: “lower outlet”, from past lake	<u>Sultanabad</u>

APPENDIX V: OVERVIEW OF ALPINE PASTURES IN THE BASHO WATERSHED.

Research team: NLH: Kathrin Hofmann, Håvard Steinsholt. AKRSP: Dr Abbas, Dr Iqbal, Ulrik Motzfeldt, Jawad Ali. Partly based on participatory learning exercises with local people on 30.05 and 31.05.1998. The overview presents the understanding gained by the research team on the days of the participatory learning exercises; the state of resource use and rights is flexible and continuously undergoes change. The documentation should not be used to support legal claims.

No.	Name	Broq	Grazing area	Pasture rights	Grazing period	Livestock species	Other uses	Broq quality	Notes
1	Maisik	X		Matillo	June	All livestock		5	Only used by Matillo
2	Fara	X		Matillo	July-Aug	All livestock		5	Only used by Matillo, good milking prod. and fodder quality
3	Bolom		X	Bahtang, Khar, Guntho	Aug	Zo/Zomo, small anim.		5	Low accessibility, danger, forested area, some snow leopard, less wolf
4	Goriaq	X		Khar, Bahtang, Guntho	May- late Aug	All livestock	Some cultiv. barley	1	Dry area, predation by wolf b.c. passing by. Low milk prod., but high fat content. Stay from August, but take small ruminants up daily from May.
5	Goriaq Fred	X		Khar, Bahtang, Guntho	Bef. 15 June and in august	Zo, Zomo	Cultivating barley, June-Aug	1	No irrigation, only rainfed
6	Gjalungkhar		X	Guntho, Meito, Nazimabad, Sultanabad	June - August	Sheep and goats			Boulder area
7	Kholtori		X	Guntho, Meito (shared)			Fodder harvesting	5	Mostly for fodder harvesting; partly irrigated
8	Bolcho		X	Guntho	Winter-autumn	All livestock	Fuel wood collected, fodder harvested	5	
9	Botpisoq		X	Guntho, Khar	Winter-autumn	All livestock	Cultivation (1/2 area)	3	Stony, no water channel
10	Shahnazir		X	Guntho, Khar, Bahtang	Winter-autumn	All livestock	Cultivation (1/2 area - named Harmasko)	3	
11	Karfoshalma		X	Guntho, Khar		All livestock		3	Khar Nallah
12	Skar		X	Guntho, Khar	March-April and Sept-Dec	Goats, Sheep		2	Water shortage, good soil
13	Braqlam		X	Guntho, Khar	March-April and Sept-Dec	Goats, Sheep		1	Route to Skar, steep, dangerous
14	Rbanachan		X	Guntho, Meito	Winter	All livestock		1	Dry area, landslides
15	Charomo		X	Meito	Winter	All livestock		1	Dry area, landslides

No.	Name	Broq	Grazing area	Pasture rights	Grazing period	Livestock species	Other uses	Broq quality	Notes
16	Gonzar		X	Meito, Doros, Nazim.	Winter	All livestock		4	Some dry periods
17	Shorisain	X		Meito, Doros, Nazim.	Mid June-July	All livestock	Junipers, fuel wood	3	Hot, dry, Anim. go from here to Chalabat
18	Gutummo	X		Meito (4 households)	August	All livestock	Cultivation most important	4	Khlas only for men, water shortage.
19	Kolishain	X		Doros, Nazim., Sult.	Mid June-Aug/Sept	All livestock		4	Cold, moving dependent on temperature. Water shortage, used in connection with Raskin.
20	Shokthop	X		Sult., Naz., Doros (?)	May-Oct	All anim.	Cultivation	5	Part of Raskin
21	Raskin	X		Sult., Naz., Doros	May-Oct	All anim.	Cultivation	5	Khlas inhab. June - Aug. Gentle, wide, water, firewood, good grass quality, no pred. Good milk and butter quality.
22	Ganicho		X	Doros, Sultanabad			Cultivation		Raja land. Partly irrigated. Cult. by 10-12-hh. (Or: 2 hh in Doros and 3 hh in Sult.)
23	Rana		X	All villages	May-Sept	All animals		5	Important grazing area for drie/week animals all summer, and for dairy cows in early spring and autumn. "Waiting area" and grazing area for sick animals.
24	Birtay	X		Sultanabad	May-Oct	All animals (incl. hens)	Cultivation	5	Cultivation by 3 households, grazing for all.
25	Raymil	X		Doros, Nazimabad	End June - end Aug	All animals		5	Inhabited end June - first Aug. Easy access, close to water, good grazing quality.
26	Bondopiri		X						
27	Sari	X		Meito, Naz., Sult.	End June - mid Aug	All animals	Cultivation	3	Too many households, overgrazed. Used by dried animals before June. Meito h.h. moves on to Lazang and then back. Predation by wolf and snow leopard.
28	Sarilti		X						
29	Lazang	X		Meito + Nazimabad	Mid. Aug- end Sept	Dry anim., sheep and goats		4	Sometimes cultivation, fuel wood
30	Komputi Toq	X		Doros, Nazimabad	Late Aug - end Sept	Dry anim., sheep and goats, yak		4	Livestock taken from Raymil and then back later in autumn. Good grazing quality.

No.	Name	Broq	Grazing area	Pasture rights	Grazing period	Livestock species	Other uses	Broq quality	Notes
31	Dorum		X	All villages	June, free grazing area	All	Forested area, fuel collected	3	Wider area (includes 32, 33, 34, 39) where all Basha has rights. Water shortage in September.
32	Soq	X		Khar, Bahtang, Guntho	June - Aug	All		3	Small place
33	Tangmosa	X		Guntho	June - Aug	All		3	
34	Siachan	X		Guntho	June - Aug	All		3	
35	Sononpochomiq		X	Sultanabad	June - Aug	All		3	
36	Naqpochnmiq	X		Meito	June - Aug	All		3	
37	Shernis		X	All villages	June - Aug	All		2	Narrow pathway to other areas
38	Sharimond		X	All villages	June - Aug	Dry and big animals		2	High alt., dry area, dangerous terrain, predation.
39	Moskinimond	X		All villages (Naz. khlas)	June - Aug	Dry and big animals		2	High alt., dry area, dangerous terrain, predation.
40	Staqpitoq (northern)	X		Nazimabad	July - end Aug	All		3	
41	Shahkani khlas		X	All (former Khar khlas)	July-Aug	All		3	Small passage-area
42	Patakar	X		Guntho	July-Aug	All		4	
43	Staqpitoq (southern)	X		Guntho	August	All		4	Only one month.
44	Chalabat	X		All villages (2 Sultanabad. khlas)	August	All		4	Good pasture, only rain water, no firewood, lynx.
45	Serpho		X	All villages	June	All		3	Little patch of grass.
46	Kangmarchan		X	All villages	June- until snow	Dry and big animals		3	Rocky, Dangerous, free ranging animals
47	Choli Brangsa		X	All villages	June- until snow	Dry and big animals		1	Cold, boulders, slides, no firewood
48	Kashoqchan		X	All villages	June- until snow	Dry and big animals		1	Excellent pasture, but cold, boulders, slides, no firewood
49	Fiatoq		X	All villages	June- until snow	Dry and big animals		1	Excellent pasture, but cold, boulders, slides, no firewood
50	Kaza Balti		X	All villages	June- until snow	Dry and big animals		1	Excellent pasture, but cold, boulders, slides, no firewood

No.	Name	Broq	Grazing area	Pasture rights	Grazing period	Livestock species	Other uses	Broq quality	Notes
51	Chadmond		X	All villages	June- until snow	Dry and big animals		1	Excellent pasture, but cold, boulders, slides, no firewood
52	Ghorom		X	All villages	June- until snow	Zo only		1	
53	Marphostang		X	All villages					
54	Rohecomour	X		Sultanabad	End June	All animals		Not yet known	Newly established khlas based on new water channel.
55	Phialotang		X	All villages	June-Sept	All except milking anim.		3	Hot area, plain, good grass, water supply, no predators

