HIGH ALTITUDE INTEGRATED NATURAL RESOURCE MANAGEMENT

APPLIED RESEARCH AND CAPACITY BUILDING THROUGH INSTITUTIONAL COOPERATION BETWEEN THE AGRICULTURAL UNIVERSITY OF NORWAY (NLH) AND THE AGA KHAN RURAL SUPPORT PROGRAMME (AKRSP), PAKISTAN

PROJECT DOCUMENT AND ACTION PLAN FOR 1999

AKRSP - NLH, DECEMBER 1998
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This project document was prepared as a joint effort by the Aga Khan Rural Support Programme, Pakistan and the Agricultural University of Norway. It is the basis for a cooperation project (1997 - 2001) funded by the Norwegian Agency for Development Cooperation (NORAD).

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See also addresses of participating NLH departments (Appendix)
PREFACE

The Aga Khan Rural Support Programme (AKRSP) and the Agricultural University of Norway (NLH) have entered into a cooperation programme within the field of applied research and competence building for integrated natural resource management. The cooperation was initiated through a Planning Workshop at NLH in January 1997 and a Field Planning Workshop in Baltistan 23.09. - 03.10.1997. A Project Document and Activity Plan 1998 was finalised by November 1997, as the basis for implementation in 1998.

In August 1998, AKRSP submitted a proposal for a “Natural Resources Management Programme in the Baltistan Region, January 1999 to December 2001”, including a continuation of the AKRSP-NLH cooperation with a total funding of NOK 4.0 million for the three year period.

The main body of this revised project document - reflecting the background and overall direction of the project - remains unchanged from the previous version (AKRSP/NLH, December 1997). However, a new Activity Plan 1999 has been incorporated, reflecting achievements and lessons learned during the first year of implementation (1998), as well as the fact that the institutional cooperation programme is entering into a three year period of cooperation. The project document has been revised jointly by AKRSP and NLH.

Regarding the findings and outcome of the programme in 1998, the partners refer to the report series which is under preparation.
ACKNOWLEDGEMENTS

Since January 1997, the Norwegian Agency for Development Cooperation (NORAD) has funded the institutional collaboration between the Aga Khan Rural Support Programme and the Agricultural University of Norway as an integral part of Norwegian support to the Natural Resource Management programme of AKRSP - Baltistan. We thank NORAD for the continued support, and the Royal Norwegian Embassy, Islamabad, for the consistent good-will towards the cooperating institutions, as well as active interest in the challenges and development potential of Baltistan.

We thank the District Commissioner, Skardu, 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.

During the first year of implementation, participants have enjoyed the opportunity of carrying out field research in the Basho watershed of Skardu District. 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 and interviews. The village organisations and the Basho Development Organisation (representing all the villages in the valley) have shown exceptional hospitality and support.

Support by local people, government authorities and the donor agency will remain a condition of the project achieving its goals. The partners appreciate with humility the good relations and many contributions they have enjoyed so far.

Skardu/As, November 1998
### ACRONYMS AND SPECIAL TERMS

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<tr>
<th>Acronym</th>
<th>Abbreviation</th>
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<tr>
<td>AKRSP</td>
<td>Aga Khan Rural Support Programme</td>
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<tr>
<td>ALF</td>
<td>Agriculture, Livestock and Forestry Sections</td>
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<td>BDO</td>
<td>Basho Development Organisation</td>
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<td>C&amp;S</td>
<td>Credit and Savings Section</td>
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<td>FHIES</td>
<td>Farm Household Income and Expenditure Surveys</td>
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<td>FMU</td>
<td>Field Management Units</td>
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<td>FPW</td>
<td>Field Planning Workshop</td>
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<td>IUCN</td>
<td>International Union for the Conservation of Nature</td>
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<td>JMM</td>
<td>Joint Monitoring Mission</td>
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<td>KKH</td>
<td>Karakoram Highway</td>
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<td>MER</td>
<td>Monitoring, Evaluation and Research Section</td>
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<td>MIES</td>
<td>Mountain Infrastructure &amp; Engineering Services</td>
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<td>MNRSA</td>
<td>Management of Natural Resources and Sustainable Agriculture (M.Sc. Programme offered by Noragric)</td>
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<td>NRM</td>
<td>Natural Resource Management</td>
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<tr>
<td>NAC</td>
<td>Northern Areas and Chitral (the programme area in which AKRSP operates in northern Pakistan)</td>
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<td>NLH</td>
<td>Agricultural University of Norway</td>
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<td>NORAD</td>
<td>Norwegian Agency for Development Cooperation</td>
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<td>Noragric</td>
<td>Centre for International Environment and Development Studies, Noragric, NLH</td>
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<td>PRA</td>
<td>Participatory Rural Appraisal</td>
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<td>P&amp;R</td>
<td>Planning and Research Section at the Core Office</td>
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<td>RPM</td>
<td>Regional Programme Manager</td>
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<td>RPO</td>
<td>Regional Programme Office</td>
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<td>SAARC</td>
<td>South Asian Association for Regional Cooperation</td>
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<td>SFP</td>
<td>Sustainable Forestry Programme</td>
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<td>SOU</td>
<td>Social Organisation Unit</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>VFS</td>
<td>Village Forestry Specialist</td>
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<td>VO</td>
<td>Village Organisation</td>
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1. INTRODUCTION

1.1 Convergence of Interests of AKRSP and NLH

AKRSP has been working in the Northern Areas and Chitral since 1982, with the central objective of capacitating rural communities and their member households to play a greater role in the process of development. This process includes increase in incomes, improved access to information and sustainable technology, the meeting of social sector needs and the generation of capital and its management. In order to achieve this objective, AKRSP bases its approach on three principles of small farmer development: social organisation, i.e. mobilisation of small farmers into broad-based Village/Women’s Organisations; generation of capital through regular savings by individual VO/VO members; and human resource development at the village level through training giving access new skills, information and technology.

This conceptual model is supported by concurrent programming model, which has evolved through a process of close interaction with the communities. As the agricultural sector (broadly defined) is a major source of the household economy, the programmes identified by the communities were in the fields of agriculture, livestock, forestry and land development. In order to respond to these expressed needs, AKRSP developed a sectoral approach which was implemented by the ALF (agriculture, livestock and forestry) sections. While a significant impact has been achieved through the sectoral approach, there are some limitations in its ability to respond to more complex inter-sectoral challenges. Recently AKRSP has begun a move towards a more participatory, broader and integrated approach to management of natural resources. This calls for additional capacity building, both for staff and villagers. AKRSP’s major interest is to gain from the resources and experiences available with NLH to ensure that the region’s natural resource base is improved and used in a sustainable manner. The World Bank’s evaluation of AKRSP in 1995 also highlighted the need to further develop and manage the natural resources in a more integrated manner; emphasis was placed on incorporating the farmers in the process of technology development.

NLH is increasingly being recognised for its involvement in natural resource management. Noragric has gained a reputation for leading inter-disciplinary research efforts, using its own scientific staff as well as skills and resources available from various NLH departments. NLH’s own strategy and priorities call for further internationalisation of its work. NLH regards the collaboration as scientifically challenging, as it will involve direct and hopefully long-term links between research and development efforts. Cooperation with AKRSP may further strengthen NLH capacity for serving Norwegian development cooperation in the region and will allow NLH faculty and students to learn from and contribute to one of the leading implementing agencies in natural resource management and rural development.

1.2 Institutional capacities, needs and interests

1.2.1 AKRSP

AKRSP’s programmes have evolved in a process of interaction with, and learning from, rural communities and are based on their expressed needs and potentials. While the network of VO/VOs was being developed, concurrently AKRSP staff held participatory dialogues for identifying key priority issues for programming at the village level. Given that the resource base of the farmers was shrinking due to population growth, and there was a potential for productive land augmentation, most communities identified irrigation infrastructures as their main infrastructure priority; other key sectors
were link roads, micro-hydels and protective works. This was followed by identification of their needs in the natural resource management sectors (agriculture, livestock and forestry, ALF). Natural resources provide the basis for the livelihood strategies and mechanisms of the people of the programme area. The other key sector identified was credit, as essentially farmers had no access to facilities from formal institutions, despite government policies to provide interest free credit.

Over the past 10 years, both as a result of huge government investments in infrastructure and due to the rapid growth in the private sector, the ground realities have been changing rapidly and the level of complexities at the farm household, community and regional levels have been increasing. As a result of this, the relationship between AKRSP and its primary partners needed a clearer articulation, which has been reflected in AKRSP’s new strategy (1997-2001).

In order to develop suitable responses to this changing situation, AKRSP has also evolved its strategies, both organisationally and in terms of programmes. The work done to prepare the 1997-2001 strategy and donor proposal also contributed to the evolutionary process. In 1995, the basic organisational structure of AKRSP was changed and a great number of roles and functions were decentralised. The core office (head office) bore the brunt of this change; the number of Programme Managers based at the core office was reduced from 15 to 4. The core Programme Managers now deal with Planning & Research (P&R), Credit & Savings (C&S), Finance and Human Resources (HR).

Generally, areas under two SOUs have been placed under a Field Management Unit (FMU). Each region has 4/6 FMUs. Each FMU has a range of ALF and other professional staff members. For example, FMU Khabalu, in the Baltistan region, has an agriculturist, a veterinarian, a forester, a field accountant, a monitor, an engineer, a social organiser and a female social organiser. FMUs are headed by experienced staff coming from different disciplinary backgrounds. The current batch of FMU Managers have been Social Organisers, ALF professionals and engineers. With this decentralisation, the pace of activities and interaction with communities has picked up. There is now a greater potential for developing responsiveness to the articulated needs and priorities of the rural communities.

As regards the programming strategies, a major breakthrough was made when it was agreed that the ALF sections would follow a more inter-disciplinary approach to their work and that they would adopt more participatory approaches to working with the rural communities, technology development and dissemination.

To allow for more learning to take place, each region had agreed to select 2 to 3 pilot sites for integrated management of natural resources. This integration, particularly at the planning level, allowed for greater clarity while working in the traditional ALF areas, but also contributed to the realisation that if a systems perspective is to be used then other village resource bases, particularly the high summer pastures, would need to be incorporated in programmes for integrated management of natural resources.

AKRSP’s major interest is to gain these additional skills and to learn from the experiences available with the Agricultural University of Norway, in order to ensure that the pace of development accelerates and that the natural resource base is improved and used in a sustainable manner.
1.2.2. **NLH**

The Agricultural University of Norway is Norway’s main academic institution within the fields of agriculture and natural resource management. It has about 2,000 students, and 900 staff. The cooperation with AKRSP is consistent with NLH’s Strategy 1993 - 2000 which states that,

*NLH shall be an education and research institution at an international university level, with a national and global involvement. The primary task of NLH is to develop and communicate knowledge, understanding and skills necessary to safeguard the sustainable use of natural resources and the development of viable local communities.*

In its contribution to society and development, NLH Strategy 1993-2000 has singled out the following five main priority areas:

- environment, natural resource management and land use
- food production and processing, food quality and nutrition
- rural development and primary industries
- forest management and processing of forest products
- international cooperation

NLH is, therefore, committed towards improving and strengthening its overall international involvement in research and higher education. NLH is also committed to the effort of building long-term institutional relationship with institutions in developing countries. Noragric is central in fulfilling the NLH strategy for internationalisation with respect to partners in Africa, Asia, Latin America and Eastern Europe. For NLH it is a priority concern to have a long-term relationship, which gives the opportunity for incorporating activities in annual and long-term planning. A long-term relationship is also the basis for carrying out research which is both relevant locally and of high international standard.

NLH recognises that the proposed collaboration will offer new opportunities for postgraduate students from NLH in doing their field work in a developing country within a sound institutional setting. Student research will as far as possible be integrated with research in the identified areas of collaboration.

1.3 **Norwegian Policy on Environment and Development**

The cooperation programme falls within priority areas of Norwegian policy on development cooperation. The programme aims to strengthen institutional capacities for “environmentally-oriented development” (Government of Norway, Report No. 19 to the Storting, December 1995). In line with the concept of ‘environmentally-oriented development’ the programme will place the emphasis on understanding and addressing the links between poverty, environmental degradation and development.

The application of new knowledge, through new or modified AKRSP programmes, can potentially have a positive impact on the environment of the Baltistan Region and is relevant for national or regional conservation strategy formulation and implementation. Examples are

- knowledge and advice regarding institutional and ecological aspects of pasture and forest management, aimed at improved management, natural regeneration of plants and animals, and reduced soil erosion
- knowledge and advice aimed at sustainable intensification of agro-forestry for reducing soil erosion and the pressure on natural forest
- improved understanding of development trends and options within an integrated natural resource management perspective
1.4 Gender

In recent years, AKRSP has been accelerating its efforts in addressing the specific needs of women in agriculture and resource management. The project aims at creating knowledge for pasture and forest management where gender aspects are considered from the outset. Both men and women resource managers will thus be central actors and participants in the agenda-setting, planning and implementation of research activities.

Within the given constraints, both the partner institutions will aim at gender balanced participation in the project.

1.5 Principles and Approaches for Institutional Collaboration

The proposed project will follow principles of participation and mutual cooperation between NLH, AKRSP and villagers, at all stages, from concept to planning and from implementation to monitoring and evaluation. At the field level, NLH and AKRSP staff would be working with, and learning from, resource users.

2. THE OBJECTIVES OF INSTITUTIONAL COOPERATION

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 is 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

3. ACTIVITIES, RESULTS AND IMPLEMENTATION

3.1 Activities

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

3.2 Results
The main results of the programme will be:
• increased capacity and quality of AKRSP in participatory approaches to management of forestry and pastures (indicators: number of staff involved in studies or training; number of studies/reports; number of workshops or other activities at local learning centres)
• improved procedures for user-oriented research and development within the fields of pasture and forestry management (indicators: examples of village inputs to joint projects; examples of new locally adapted experiments and support; results of sessions for user-evaluation)
• increased scientific competence of NLH on the social, economic and environmental aspects of pasture and forest management in the region (indicators: the quality of research processes from agenda setting to the communication of results; the number of reports and/or scientific publications)
• strengthened international library and information exchange links between AKRSP and NLH, as well as other institutions (indicators: improved links for information sharing and networking)

3.3 Master and Ph.D. students
Currently one Ph.D. project (Ingrid Nyborg) is integrated and coordinated with the project. Other Ph.D. or M.Sc. research projects linked with the project will be encouraged. Studies related to the focus and geographical area of the project will be given priority. The project may support travel and field research expenses for interested students and has covered the international travel of two ex-students working for AKRSP as local consultants (1997 - 1998).

3.4 Organisation and administration
The two institutions have formulated an agreement which defines the roles and responsibilities of each. The agreement defines the main responsibilities and procedures for administration of the programme. The overall responsibility for implementation of the project rests with the Regional Programme Manager, AKRSP Baltistan and the Director of Noragric, the Agricultural University of Norway.

Annual activity planning and budgeting will be carried out through mutual consultations, either during visits or through correspondence. The daily administration of the Agreement shall be carried out by Project Leaders to be appointed by each partner. According to internal practice, the institutions may define Project Groups to implement activities.

At NLH, Noragric will be responsible for coordination and for maintaining a shared, interdisciplinary approach to research. One appointed desk officer will be responsible for programme coordination. Responsible researchers and an information consultant have been identified for each of the sub-themes identified.

On AKRSP’s side, the Regional Programme Manager is responsible for coordination and progress. A Coordinator has been identified for each of the sub-projects; the coordinator will be supported by teams of relevant staff, as required. Implementing responsibilities within AKRSP could be at the regional or FMU levels.

AKRSP will report to NORAD as part of the reporting regarding the NRM programme, after consulting and incorporating inputs from Noragric.
3.5 **Inputs**

The major inputs for **AKRSP** will relate to:

- field expenses related to the logistics of joint research projects
- expenses for human resource development, including time for AKRSP staff to complete analysis and report writing
- infrastructure for information management and networking
- travel to Norway for joint writing, workshop and field visits in year 2000

The major inputs for **NLH** relate to:

- staff time (honoraria), for research, competence building/information sharing and coordination.
- travel for staff and students
- administrative support functions and miscellaneous expenses

The funding for the project comes in addition to NORAD support to AKRSP’s NRM programmes in Baltistan (7.221 million NOK for the period 1997-1998), and the majority of funds will be spent to enable NLH participation in applied research and competence building. The approved budget for the period 1997 to 1998 (initiation phase) was 10.491 mil. Pakistan Rupees (approx. 1.8 mill NOK). The application for support for 1999 - 2001 (Phase 1) has been forwarded in August 1998 as an integrated part of AKRSP’s application for support for the NRM programme. The budget applied for is NOK 4.5 mil. for the three year period 1999 - 2001.

3.6 **Time frame**

Subject to approval of the 1998 application, the initiation phase (1997 - 1998) will be followed by a Phase 1 01.01.1999 to 31.12.2001.

The partners aim at securing the funds for a continued and expanded cooperation beyond Phase 1.

4. **HIGH ALTITUDE INTEGRATED NATURAL RESOURCE MANAGEMENT**

4.1 **Challenges in integrated NRM: pasture and forestry management**

The livelihood systems of the rural people of NAC are dependent on their natural resource base and the interactions between field and horticultural crops, agro-forestry and livestock. Over the centuries the farmers have adapted strategies to manage their environment for meeting household subsistence needs. The high altitude resources are an integral part of resource management systems and rural livelihoods. Over the past few decades, especially since the construction of the Karakoram Highway, outside influences, goods and opportunities are impacting on farmers traditional productive patterns. Tourism is the second source of income after agriculture, and has a significant impact in localised settings.

4.1.1 **Pastures, livestock and biodiversity**

All farmers have cattle, sheep/goats and poultry. In Baltistan, farmers also have access to communally managed yaks and individually owned Zo/Zomos, i.e. crosses between yak and cows. Women play a leading role in livestock management. In more than one way, the livestock sector plays the central role in the farmers’ decision making process, as it is an important source of household wealth and income. Data from the 1991 and 1994 FHIES surveys indicate that the livestock sector contributes between one-quarter to one-third of the farm household income. The importance of livestock in the household economy increases with altitude and distance from major townships, i.e. its importance is greater in the remoter areas.
Livestock provides consumption products, e.g. milk and meat; inputs for farm and crop activities, e.g. power and manure; is often a source of social status; and, perhaps most importantly, is a means for risk management in a fragile environment, e.g. livestock are thought of as “mobile assets” to be liquidated in times of dire need. Crop residues are an important source of feed for livestock, and farmers often give preference to straw yields as opposed to grain yields. In agro-forestry, multi-purpose species are grown with a preference for fodder production.

Fodder for livestock is available from fodder crops, fruit and forest trees, crop residues and summer pasture grazing. All livestock, except for milch cows, is sent to the high pastures at the end of spring and is brought down at the beginning of autumn. Some villages have their own pastures, but in most cases a number of villages share pastures and over the centuries have developed their own management systems. Pastures also have a diversity of plant genetic resources, as well as hosting wildlife. Some pastures suffer from soil degradation through erosion.

Some alfalfa and clover are planted on irrigated areas, and are dried after harvesting for winter feeding. Wheat straw and maize/millet stalks are also stored. Grass cuttings from irrigated or natural pastures are also stored. Despite all this, winter feeding is a major problem, which causes weight loss, susceptibility to diseases and reduced production.

AKRSP efforts in livestock development have concentrated on four cross-cutting themes: feed improvement, breed improvement, disease control and poultry development. In feed improvement, the focus has been on conservation of feed through silage making, urea straw treatment, construction of mangers and alfalfa inter-cropping at new afforestation sites. To date, no serious effort has been made to analyse the role and potential of pastures; AKRSP’s focus has been on irrigated lands at the settlement level.

A major challenge is to enhance the capacities of AKRSP staff and villagers to incorporate pasture resources in the process of development. The project should contribute new knowledge about high altitude farming systems, particularly by analysing how farmers manage one of their larger natural resources, pastures. One component relates to the analysis of the pasture management systems, i.e. the analysis of the common property management regimes followed by the village men and women; how and in what form these regimes change; and how they relate to livestock management. Other components deal with the extent and quality of pastures and management of animals and feed resources; the interaction between livestock grazing and biodiversity; community wildlife utilisation (for instance, preparing an inventory of plant genetic resources on the pastures and their current and potential uses, for fodder purposes as well as medicinal); and to analyse soil erosion problems and suggest and implement measures for soil conservation. Major activities are to prepare a participatory profile of the selected pastures, focusing on such issues as the physical extent of the pastures, user rights, grazing systems, conflict management, wildlife management etc. And, why and how these are changing and who plays the leading role. And, for soil conservation, to analyse the problem with villagers, review their traditional soil conservation practices and propose solutions based on these.

Post-project activities include communication and sharing of findings locally and internationally (publication). Results must be disseminated to both farmer, staff and partner institutions. Innovative field action by AKRSP, villagers and partner institutions would draw upon the recommendations coming out of the research.
4.1.2 Natural forest and farm-forestry

Forestry and agro-forestry play a significant part in the region’s small farmers’ farming and livelihood systems. Trees provide timber for construction, fodder for livestock, fuel wood for cooking and heating, nutrients for soil enrichment, stability against soil erosion, are important assets, and are a source of cash income (regularly as well as in times of emergencies). Within the region, there is a general shortage of forest trees, however there are pockets where villagers have access to natural forests, which are being depleted at a rapid pace. Most household needs are met from on-farm sources or from irrigated plantations/wood lots.

When AKRSP began its work in 1982 and initiated a series of dialogues, it soon noted the importance of this sector in the farm economy. As AKRSP sponsored irrigation projects were being completed and new land was coming under irrigation, AKRSP initiated plantation campaigns among the Village Organisations to plant more trees. Soon it was realised that a more formal approach would be needed if the potential for afforestation is to be realised. Therefore, in 1987 a pilot forestry project, with the support of NORAD and IUCN was initiated in the Gojal area of the Gilgit region. This was a two-year project and focused on identifying new species and technologies for afforestation in conjunction with the rural communities. Based on the success of the pilot project, NORAD supported a full-fledged five-year Sustainable Forestry Programme (SFP) covering all the three regions.

Under SFP, a large number of village forestry specialists (VFS) were trained, AKRSP and VO forest nurseries were developed, and large areas were planted by the participating communities. At the same time, significant research into forestry was initiated, e.g. plant spacing trials, species trials, volume tables, women’s role in forestry, etc. Over the last two years, AKRSP’s direct role in nurseries has been decreasing as more and more VFS have set up their own nurseries, to sell plants to AKRSP as well as in the market. While external reviews of SFP have been indeed very favourable, there have also been expressed concerns about the focus on large afforestation sites (block plantations), relatively greater focus on poplar species, relative neglect of fuel wood-related issues and depletion of natural forests. This last mentioned issue is particularly complex as natural forests are government owned and managed.

A major challenge is to enhance the capacity of AKRSP staff and villagers to sustainably develop and manage forestry and agro-forestry resources in an integrated manner. There are several concerns: to document the extent, status and use of natural forest; to gain a greater understanding of farmers' agro-forestry practice and the integration of agro-forestry in agro-ecological and socio-economic systems; to analyse the fuel wood production and consumption systems, with an emphasis on consumer preferences, including gender priorities and gender-sensitive planning in plantation development. The ability of agro-forestry/plantation forestry to relieve the pressure on natural forests locally and regionally will be assessed.


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
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..... 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/VO 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 are summarised in the table below.

<table>
<thead>
<tr>
<th>“Below the channel”</th>
<th>“Above the channel”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sectoral</td>
<td>Integrated</td>
</tr>
<tr>
<td>Land development: from common to private property</td>
<td>Mix of public - common pool - private property</td>
</tr>
<tr>
<td>VO/VO/AKRSP jurisdiction</td>
<td>Government jurisdiction</td>
</tr>
<tr>
<td>VO/VO</td>
<td>Cluster/Watershed</td>
</tr>
<tr>
<td>Bilateral Terms of Partnership</td>
<td>Multi-lateral</td>
</tr>
<tr>
<td>Agro-biodiversity</td>
<td>Wild biodiversity</td>
</tr>
<tr>
<td>Package</td>
<td>Process</td>
</tr>
<tr>
<td>Control</td>
<td>Advocacy/catalyst</td>
</tr>
</tbody>
</table>

Table: Caricature summary of differences between below and above the channel

While such differences do create special challenges for a project with its main focus on the high altitude natural resources, the aim of AKRSP and the project will remain to provide an integrated understanding of resource management, reflecting the integrated nature of local ecosystems and livelihood strategies.

5. PROJECT AREA

The partners have chosen the Basho watershed of Skardu District as the main project area. The area includes extensive alpine pastures and the largest natural forest in Baltistan. Basho is located approximately 45 km west of Skardu, in a watershed stretching south from the Indus river towards Astore. Approximately 2,400 people live in Basho, distributed on eight villages and a total of approx. 300 households. The villages share rights in alpine pastures and forest and have recently developed a cluster organisation, Basho Development Organisation (BDO) for pursuing shared concerns.

The partners may choose to include other areas for comparative research on selected issues or for learning and information sharing exercises.
6. PROJECT THEMES

Pasture and forestry management have been selected for cooperation as per the application to NORAD (AKRSP, May 1997). In line with policy concerns and the new strategic emphasis in AKRSP’s long-term planning, forest and pasture are viewed within the wider context of the alpine environment and its biological diversity. The partners found it most useful to integrate pasture and forestry within the frame of one integrated project with five sub-themes plus a supportive project in information and documentation. The sub-theme *Farm resources* has been added as per the new three year period beginning 1999.

Project title: *High Altitude Integrated Natural Resource Management*

1. **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)

2. **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 cover)

3. **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)

4. **Farm resources** (selected linkages and interdependencies between *above* and *below the channel* resources, as well as to provide analysis of management of “*below the channel*” resources, which include crops, fodder, fruit and vegetables)

5. **Gender, resource management and livelihood security** (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)

6. **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)

The project aims at a high degree of conceptual and practical integration between sub-themes; links between different sub-systems and analytical perspectives will be explored throughout the project. When feasible, NLH staff will visit in teams for integration of research and for conducting mini-seminars together. The integration is supported by a conceptual model (Sevatdal/Wisborg) for the project:

![High Altitude Mountain Environment Diagram](image-url)
7. **TOWARDS A NEW THREE YEAR PHASE 1999 - 2001**

7.1 *Initiation phase 1997 - 1998*

The first one and a half years of the cooperation project between NLH and AKRSP have focused at:

- establishing institutional and individual linkages and getting an understanding of strengths and weaknesses of both partners
- preliminary investigations of natural resource management issues, including building up NLH research teams first-hand experience of the Baltistan setting through focusing primarily on one watershed (Basho)
- developing the local links necessary for NLH participation in participatory research and development
- carrying out in-depth field research for PhD on gender, NRM and food security

For more detailed information please refer to the progress report prepared by the partners in 1998.

7.2 *Main thrust of the three year programme 1999 - 2001*

A three year continuation 1999 - 2001 will give the partners the opportunity to build on the basis in pursuit of the stated objectives.

Activities during the three years should have an overall direction and thrust, so that by the end the partners can confidently state and document that the programme has substantially increased AKRSP learning processes, skills and competence for integrated natural resource management.

The thrust through the three year period may be summed up as:

**1999**  
Continuation of joint applied field research; strengthened focus on competence building and dissemination through local training and learning workshops and local presentation of findings); preparation, discussion and initiation of applied research experiments (e.g. experiments with regeneration of pasture plots, rejuvenation of natural forest); supporting information management at AKRSP - Baltistan.

**2000**  
Widening the scope of field research, through supervised comparative case studies by AKRSP staff, applying new methods developed; workshop and field study in Norway for AKRSP staff; NLH involvement in NRM planning and evaluation process; continued monitoring of selected research experiments; supporting information management at AKRSP - B; regional workshop at Gilgit in connection with fieldwork (AKRSP, NLH, local and international partner institutions).

**2001**  
Continuation of field research; publication of research findings; preparation of one to two training manuals linked to the main focus of study; continuation of training and learning programme; one regional level seminar; supporting information management at AKRSP - B. Advice about and/or preparation of future linkage and networking programmes.

The programme will depend on considerable flexibility of plans to respond to emerging issues, AKRSP needs and availability of NLH staff. Each year the project document will be revised through preparation of an activity plan (to be completed by December 1) for the following year.
8. AIMS AND OUTPUTS 1999

In 1999, the partners aim at:

1) Consolidating the institutional relationship and contact with villagers for a participatory project relevant to local people’s concerns

2) Based on the overview and findings from 1998, pursue the main issue of the role of alpine resources in local livelihood strategies, through more focused and in-depth investigation and competence-building

3) Strengthening the integrated perspective by incorporating work on farm resources and pursuing the issues of below the channel forest and fodder production more than was possible in 1998

4) Initiate the process of expanding the geographical scope of the project by discussing results with more Baltistan FMUs and cluster organisations, and by making the first steps towards comparing the Basho case with one or two other watersheds (information sharing between cluster organisations)

5) Focus more on competence-building for AKRSP staff through
   • An NRM workshop (immediately following the main field research period), using the Basho case to discuss issues with staff from larger area
   • More emphasis on counterpart cooperation in planning, analysis and write-up, e.g. supervised contributions towards national level workshop
   • Explore possibilities for higher degree training for AKRSP

6) Continue the information and documentation component with increased emphasis on making information resources available to AKRSP-B

7) Further develop coordination with other important development agents in Basho, particularly Forest Department and IUCN, and increase regional/national-level communication on themes and findings through participation in joint workshops.

The specific results and outputs in 1999 include:

1) Strengthened AKRSP skills and understanding in documentation and integrated analysis of high altitude natural resources

2) Strengthened NLH regional and local specific competence

3) Local workshop for AKRSP staff and partner institutions on each of the sub-themes of the case study in an integrated NRM perspective

4) Strengthened information base and improved institutional net-working for AKRSP-Baltistan
9. PROJECT THEMES AND ACTIVITY PLAN 1999

9.1 Institutions and organisations in pasture and forestry management

9.1.1 Introduction

In 1998, the main features of institutional and organisational issues in management of forest and pastures in the Basho Watershed were described. A major emphasis was put on land tenure in a very dynamic social situation. The main features of the land tenure system, as it applies to alpine resources, is a combination of state ownership to land (Khalisa Sarkar) combined with community and household user rights established though a mix of traditional custom, legislation, court cases and ongoing informal appropriation. User rights have for long been secured and registered in public records. There is a striking contrast in the practical implications of state ownership for natural forest and alpine pasture.

The Basho Development Organisation (BDO) represents an important development and “democratisation” of local organisations. Current initiatives to create legal/institutional reforms permitting greater local participation and benefits from forest harvesting appears to be important institutional reforms regarding the management of natural resources in the Northern Areas. An important question is the legal status of the village and/or cluster organisations as a party to an agreement with government, and as the agent of internal jurisdiction.

9.1.2 Focus

Further study will address
- 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 BDO as a partner for government. Document participation in the BDO, including the representation of women’s interests.
- Compare the organisational development (particularly cluster organisations) with that of one to two other watersheds.

9.1.3 Objectives

The objective of the study remains to gain new insight in the relationship between institutions, actors and land use in management of alpine resources, and the practical implications for resource use, sustainability, living standards etc.

9.1.4 Approach

Field research using primarily interviews and other qualitative methods, combined with document review and the results of the household survey. Visits to one or two other watershed shall facilitate information sharing and give basis for crude comparison of the main issues. This work may draw upon AKRSP’s work on institutional maturity and the baseline survey.

9.1.5 Inputs

Inputs from NLH side suggested approx. the same level as in 1998
- Prof. Sevatdal (Supervision and technical backstopping) (Approx 4 weeks)
- Associate Professor, Håvard Steinsholt: Approx 8 weeks total, including approx. 4 weeks field research/local workshop
- Senior Executive Officer, Poul Wisborg: Approx. 4 weeks, including 4 weeks field research/local workshop (the same visit also covers coordination purposes)
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- AKRSP: Counterpart team, including interpreter

9.1.6 Outputs

- Field workshop Skardu with AKRSP and relevant partner institutions
- Research report/joint publication

9.1.7 Results

- Testing of hypotheses and generalisations based on field research in 1998. Deepened analysis and understanding of specific institutional issues in pasture and forest management
- Organisational development potential assessed on broader geographical basis. Awareness and information sharing between different cluster organisations.
- Competence-building in analytical skills for counterpart
- Information about work, methods and perspectives shared with relevant partner institutions

9.1.8 Activity Plan 1999

- Field research 4 weeks, May/June (Steinsholt, Wisborg) (to be coordinated with main other field research activities)
- Local NRM workshop (approx. 4 days total)
- September - October: Analysis and write-up of results
- November: Planning of the next field season

9.2 Pasture, livestock and biodiversity management

9.2.1 Introduction

During joint field research in 1998, NLH and AKRSP have documented:

- The names, location and main uses of more than fifty alpine pastures identified by local people
- Broad identification of soil types
- The size and composition of the local livestock population
- The rough distribution of vegetation types
- Grazing systems and foraging behaviour on selected pastures
- The approximate size and distribution of the Ibex population before and after livestock are brought to the upper pastures

Thanks to excellent logistics and assistance from local people in the valley, the first field season has provided valuable information on the pastoral system, grazing dynamics and wildlife in Basho. We now have a sound basis for planning and prioritising next years’ work. Because substantial time and resources are required for collecting adequate research data on the ecology and the highly dynamic pastoral system prevailing in Basho, and limited resources are available within this component of the Project, we recommend the following themes to be researched during the remainder of the Project.

9.2.2 Focus and approach

The focus of the study will remain the main high pastures and local people’s management strategies in relation to these. The Basho watershed delineates the study area.
Livestock and grazing dynamics

Under this sub-component we suggest that the field research should focus on the following four topics, which are all related and thus is a time and cost-effective approach:

1. Movement pattern of livestock in relation to pasture quality. The hypothesis to be tested is that livestock are moved or herded along a gradient of optimum quality and quantity of natural forage. The methodology will consist of measuring quality and quantity of forage at fixed locations from the lowermost broqs to the alpine pastures during the whole grazing season, and mapping the spatial distribution and latitudinal movement of livestock during the same time period. A number of small plots need to be fenced throughout the latitudinal range of pastures for measuring quality and quantity of ungrazed vegetation. The introduction of small experimental enclosures will be carefully discussed with villagers; enclosures are expected to have an important demonstration value.

2. Determination of grazing pressure. To determine the relative grazing pressure of plots is quite complicated. In order to assess the condition of the main pastures we propose to establish small fenced enclosures at selected broqs/pastures. Because grazing pressure is expected to vary with access and distance from khlas, site selection needs to be stratified according to vegetation type, elevation and distance from broq/khlas. Biomass production will be determined by clipping vegetation at intervals both inside and outside the enclosures. Floristic composition and changes in vegetative cover (relative coverage of «increasers» and «decreasers») will be recorded.

3. Foraging behaviour on pastures of different quality. Preliminary observations during this field season indicate that foraging behaviour of small ruminants may serve as an indicator of pasture quality. Presumably, animals on poor pasture are less selective and spend more time walking between feeding patches than animals on good quality range which can afford to be more selective while grazing. We propose to continue the field study on foraging behaviour by selecting four groups and monitor their foraging behaviour: Two groups will be herded to pastures believed to be of good quality and two groups to poor quality pastures. Their foraging behaviour will be recorded quantitatively. Quality and quantity of forage biomass will be measured simultaneously.

4. Productivity of livestock related to pasture quality. Little information is yet available on the productivity of the livestock in Basho. Weight gain and milk production are two indicators of productivity which can be recorded and used as indicators of pasture quality. We propose that such measurements be collected during the summer grazing season from selected animals within selected flocks of small ruminants. In order to determine the extent to which pasture quality affects the productivity, some animals should receive supplemental forage or concentrates twice during the day (morning and evening). Similar comparative feeding trials by AKRSP may also be continued during the winter season in order to detect quality of the current stall feeding practices in the valley. It is also suggested that AKRSP carries out a NLH supervised investigation of the availability of fodder resources from farms in selected villages.

Wildlife

Ibex is an important wildlife resource in Basho. Interviews with the local inhabitants disclosed that people have a deep-rooted affection for wildlife, including ibex, and that they are concerned about the apparent decline in number of ibex during the last decades. The decline is most probably due to previous legal and illegal hunting. Furthermore, there are interests in Basho for developing eco-tourism and possibly a trophy hunting program for generating revenues to the communities.
Livestock predation by wolves and snow leopard has negative effects on the pastoral system in the valley. Over the years, the «costly» system of herding and keeping small-stock within stone-walled corrals has evolved as a means of protecting animals against predators. At the same time, the snow leopard is now classified as an internationally threatened species, and the presence of predators enhances the potential and value of Basho for eco-tourism.

The information collected on wildlife during the first field season was preliminary. The ibex surveys probably underestimated the population size and gave very inconsistent results on recruitment of young animals. The information on interaction between ibex and livestock indicated that competition for forage is probably insignificant, as the two groups of herbivores were spatially separated. Temporal overlap of habitat use may occur, but probably also only to a minimal extent. Because field work to disclose the precise extent of overlap and potential competition is very time-consuming and difficult, we propose that the research on wildlife be changed to focus on the two following themes:

1. **Intensive census of the ibex population.** Such a census should be carried out during the rutting season in December (1999) when the two sexes are mixed and animals occur in more readily observable groups. Reliable data on population size and composition from December inventories will indicate recruitment rate and, hence, the extent of kid and yearling survival. Such data are basic requirements for making management plans for sustainable harvesting. Any census work in Basho should be coordinated with IUCN’s similar programs in the adjacent S-K-B valley and elsewhere in Pakistan.

2. **Predation on domestic and wild ungulates.** The extent of predation by wolves and snow leopards on domestic stock should be quantified in order to assess the relative importance of these predators in the pastoral system in Basho. Ideally, the losses incurred by predators on the ibex population should also be quantified in order to determine safe hunting quotas for hunting. The methods to obtain these data should be a combination of systematic searches for carcasses and a reporting system in cooperation with the local villages. An attempt should also be made to quantify the number of predators which regularly use the Basho watershed. Although a difficult task, such information may be generated through a combined method of remote camera trapping and pugmark tracking, probably in late autumn and early spring when the ground is snow-covered.

**Soils**

In depth study of selected broqs with respect to soil conditions. The fieldwork should include:
- Detailed study of soil compaction (inside vs. outside fenced area).
- Investigation/mapping of agricultural soil.
- Training of AKRSP staff in soil investigation techniques.

9.2.3 **Objectives**

The objective of this component is to support AKRSP, village communities and partner institutions through providing knowledge and skills relevant for the development of a management strategy for domestic livestock and targeted wild ungulates on high pastures.

9.2.4 **Inputs**

Total level of input approximately as in 1998, but main field research with NLH participation as far as possible to be carried out in more concentrated period, and with maximum team coordination.
- Project Leaders: Ass. Prof. Øystein Holand and Prof. Per Wegge (each: 7 weeks, including 3 weeks for field research and local work shop)
• Pasture and soils on pastures: a) Researcher pasture: field research, data analysis and write-up (8 weeks, incl. 8 weeks field research); b) Researcher soils: (6 weeks, including 6 weeks for field research and local workshops, period beginning of July to mid- August)

• Wildlife survey: Researcher field research, data analysis and write-up (4 weeks, incl. 3 weeks field research)

• AKRSP teams for participation in joint research, competence building and supervised studies

• Equipment and facilities for plant sampling and analysis (110,000); soil sampling and analysis (soil auger, pH-kit, core sampler, scales, soil temp/soil moisture meters, 10,000); Enclosures (10,000); photographic wildlife survey (45,000).

9.2.5 Outputs

• Workshops in Skardu at the beginning and end of field research period

• Research report, including preparation of research design for further activities

• Analyses of soil samples

• Publication

9.2.6 Results

• Deepened understanding of pasture management issues

• Improved basis for assessing livestock development programmes in environmental context

• Villagers’ main interests in pasture issues and participation in project consolidated

• Competence-building in analytical skills for AKRSP

• Information about work, methods and perspectives shared with relevant partner institutions

9.2.7 Activity Plan 1999

• Field research 3-8 weeks, May/June/July (to be coordinated with main other field research activities)

• Local level NRM workshops (planning/presentation), Skardu (approx. 2 + 2 days)

• September - October: Analysis and write-up of results

• November: Planning of the next field season

• November-December: Ibex-survey in cooperation with IUCN, if agreed (3 weeks)

9.3 Farm Forestry and Natural Forest Assessment

9.3.1 Introduction

There is very little forested areas in Pakistan’s Northern Areas, in particular in Baltistan where there is only a few “large” intact forest reserves. Basho forest ranges from an elevation of 10,000 ft to about 12,000 ft. The forest is dominated by Pinus wallichiana, with some Juniperus excelsa at the driest and rockiest locations, and Betula utilis at the upper elevation forest belt (timberline). Unfortunately little quantitative information exist on the condition of the forest, but there is clear evidence of recent felling of trees in the forest despite a national ban on logging since 1988. The BDO imposed a ban on cutting of green trees in 1996 for the villagers.

The Forest Department has sole jurisdiction of the timber. Dry trees and tree-parts can be harvested after permission has been obtained from the Forest Department. The allocation of trees to villagers is on a needs basis. Grazing is free to the villagers. The forest is used for grazing animals for milk
production and for early and late season grazing. This is not serious for the existing forest, but it severely restricts regeneration. Goats are particularly active in grazing on the young pine plants.

During 1997 and 1998, AKRSP and NLH have established a good links with the Forest Department (viz. Divisional Forest Officer, Skardu) about the project, and the 1998 inventory of the natural forest has been carried out as a joint project. This cooperation should be further developed in years to come.

Lacking a stable supply of wood for domestic uses, farmers have adopted tree-growing as a part of their farming strategies. This process is to a large extent the result of active intervention from AKRSP through their project support. Farm forestry also has considerable environmental benefits to offer, both to the farmer himself, and to the local community or village as wind and soil protection. Wood is utilised in the villages for firewood, construction wood and for animal fodder. In this sense trees can also be seen as a labour-saving strategy chosen by farmers, which may in particular benefit women who are usually responsible for firewood collection.

9.3.2 Focus
The focus of the research will be on two distinct topics with a strong relation between them, natural forest and farm forestry.

Natural forest
A forest inventory was carried out in August 1998. Further work is suggested on:

1. Regeneration of the natural forest. Findings in 1998 showed that regeneration is a major challenge in management of the natural forest. Further study should investigate the variation in regeneration on different categories of land and relate it with other elements of land use. The study could also involve plot trials.

2. Criteria and knowledge-base for sustainable management of natural forest. The inventory carried out in 1998 added substantial knowledge especially on structure, size, species composition and standing stock of the forest. Growth rates and annual increments should, however, be subjected to further studies. The same applies to methods for estimation of volumes of single trees as well as volumes of tree stands. The lack of indigenous volume tables led us to use Norwegian functions that might not be appropriate in Baltistan. Collecting statistical data on the forest is thus important to establish a knowledge base contributing to improve the quality in composing a management plan for the forest. It would also be relevant to further document practical forest use, including sub-division between villages and hamlets, and the role of men and women.

Farm forestry
Most woody forest products come from domestic production of trees either on farm plots or on communally managed village plots. Either of these may be desirable systems where both wood products and fodder can be supplied locally. An increasing number of trees are being planted by farmers on their own plots. This is mainly a result of extension and plant material delivery through external agencies, for example through AKRSP or the Forest Department. Farmers are seen to adopt these practices, but no analysis of the supply and demand of farm produced tree products has been undertaken. Four species, willow, Robinia, Russian olive and Populus, are being used which all show impressive growth and yield under the rather severe conditions of the high altitude location of villages in Baltistan.

9.3.3 Objectives
The major objective is to improve the knowledge about the natural forest and farm forestry and their role in local people’s livelihood strategies.
9.3.4 Approach
• Study on factors affecting natural regeneration of natural forest (including student project)
• Establish and monitor demonstration plots in cooperation between Forest Department, local people, AKRSP and NLH aimed at assessing the impact of different regeneration practices (natural/planting/sowing) with/without free grazing. (Careful discussion and specific agreements with local people about this kind of intervention is essential)
• Further analyse and present household survey data
• Farm forestry assessment through supervised MSc student project (two NLH forestry students)

9.3.5 Inputs
• One researcher to follow up forest inventory, study of natural regeneration/regeneration experiment. (5 weeks, including 3 weeks field research)
• Two students to conduct MSc project, on silvicultural, ecological and socio-economic aspects of farm forestry, including estimating present and future production potential (approx. 12 weeks). 5 weeks including 3 weeks field research for supervisor/researcher (not confirmed).
• One student (Noragric MNRSA student from AKRSP) to conduct MSc project

9.3.6 Outputs
• Contribution to Local NRM workshop
• 3 MSc studies on farm forestry/natural forest regeneration in the Basho watershed
• Reports on i) factors affecting natural regeneration and ii) farm forestry (not confirmed)

9.3.7 Results
• Consolidate villagers’ main interests in forest issues and participation in project
• Continued local learning process regarding approaches to forest regeneration
• Improved understanding of the relative contributions, and interplay between, natural and farm forest
• Information about work, methods and perspectives shared with relevant partner institutions

9.3.8 Activity plan 1999
• Two MSc students: field research May - July (estimated 12 weeks) . Supervisor visit May/June (3 weeks - not confirmed)
• Noragric/AKSRP MSc student field research July - October
• Natural forest inventory/natural regeneration three weeks May/June or August. Workshop in Skardu (2 days)
• September-October: Analysis and write-up of results
• November: Planning of the next field season

9.4 Farm resources

9.4.1 Introduction and focus
Private farm resources are an important component of the livelihood supporting resources of the rural people of Baltistan. The natural resources “above the channel” are commonly managed and directly linked and interdependent with the resources available “below the channel”. The purpose of this theme is to outline some of these linkages and interdependencies, as well as to provide analysis of management of these “below the channel” resources, which include crops, fodder, fruit and vegetables. Also, the role of these in food security strategies of the households will be analysed.
9.4.2 Objectives

To analyse how different groups of households fuse private and common pool resources in livelihood strategies, and major changes that have taken place, or are going on, in this respect.

9.4.3 Approach

Develop a framework for getting an overview of farm resources and how they vary within and between selected villages of the Basho watershed, and carry out preliminary surveys as the basis for further study.

9.4.4 Inputs

AKRSP team leader and support staff.

NLH will contribute to this component by broadening the scope of the components addressing fodder production and farm forestry, and by working with AKRSP staff to prepare a framework for the analysis.

9.4.5 Results

• a framework for analysing farm resources, which highlights linkages/complementarity with common pool resources
• findings of preliminary survey, giving new insights into the linkages between common and private resources in household livelihoods and a basis for preliminary discussion of how this is likely to change in future

9.4.6 Activity plan 1999

• further discussion and formulation of this component in early 1999
• prepare analytical framework, finalised through joint planning sessions in May
• field work and report-writing

9.5 Gender, resource management and livelihood security

9.5.1 Introduction

Experience from development initiatives in Baltistan, as well as from other parts of the Northern Areas, has shown great diversity in the roles women and men play in resource management. Knowledge of these roles, however, is mainly static and descriptive; there has been little work in studying the dynamic, interactive, and interdependent nature of men's and women's strategies within resource management. This becomes particularly important as local resource management is increasingly influenced by population changes, economic trends, and new development opportunities. How do men's and women's access to and control over resources change over time, and why? What are the consequences of such changes for, for example, household food security? What role do local institutions and new organisations play in determining the effects of gendered access to resources? How does gender intersect with class, caste and culture? Addressing these questions will contribute to the knowledge-base for integrating gender concerns in natural resource management and social change.

In 1998, Ingrid Nyborg, in cooperation with AKRSP, has carried out field research for the PhD project, Gender, Resource Management and Food Security. The PhD project explores how gendered changes in access to and control over resources affects household food security. Nazir Ahmad of AKRSP has
presented a study, “Household Strategies for Livelihood Maintenance and Enhancement in the Western Himalayas: A case Study from the Basho Valley” as part of his participation in the Training and Learning Programme in Social Development and the AKRSP-NLH co-operation. In 1999, Ingrid Nyborg’s focus on publication will put limits on her direct project participation. All project components must draw upon the inputs made by the NLH-AKRSP team in 1998, and contribute to developing the gender dimension further.

The documentation and understanding of household and farm resources should be strengthened, partly through incorporation and analysis of the household survey carried out in 1998 (this component will be closely linked to the one on farm resources).

9.5.2 Focus

Gender awareness should be maintained throughout the components and stages of the project. This includes:
- Differentiation in men’s and women’s natural resource use and perceptions
- How the welfare impact of natural resource use, including work load, affect men and women differently
- Men’s and women’s participation in new organisations and decision-making processes
- Gender sensitive assessment of household and farm resources

9.5.3 Objectives

- The project as a whole should contribute to describing women's and men's use, access to, control over, and perceptions of natural resources and their impact on human welfare
- The PhD project will continue to provide some specific input on links between gender, NRM and food security

9.5.4 Approach

- Integrate gender aspects in project planning and field research implementation
- PhD student revisit

9.5.5 Inputs

- From Norway: Ingrid Nyborg, PhD researcher (Salary provided by Norwegian Research Council)
- Counterpart
- Interpreter/researcher on special contract with AKRSP (one year)
- International travel and travel allowance for PhD revisit to the project area, including two children

9.5.6 Output

- Gender-dimension included in publications, workshop and seminar
- Expected: PhD articles and degree

9.5.7 Results

- New insights in gender aspects of resource management

9.5.8 Activity Plan 1998

- Field research (to be coordinated with other field research activities), with participation by the AKRSP gender counter part and female interpreters, followed by local level workshop
- Field visit by PhD student (6 weeks July - August)
9.6 **Information and documentation**

9.6.1 *Introduction*

Information resource management is central for an international, interdisciplinary research project and for AKRSP activities more generally. In 1998 the foundation has been made for a special collection of literature within the thematic areas of the project and the geographical areas covered. Project documents have been published on WWW for internal and external information exchange. A database of institutions and networks for strengthening AKRSP Baltistan’s information exchange activities has been developed. Daily service has been offered to team members in Norway, who through cooperation share information with their counterparts in Baltistan.

9.6.2 *Focus*

The focus will remain on documentation, information sharing and making networking links available to AKRSP.

9.6.3 *Objectives*

- To continue the activities started in 1998.
- To facilitate increased exchange of information between project counterparts in Baltistan and Norway
- To strengthen the support of AKRSP Baltistan’s efforts in networking for information access

9.6.4 *Approach*

Continuous scanning of literature databases and Internet resources will be carried out.

9.6.5 *Inputs*

- Liv Ellingsen will spend approx. 6 weeks (1999) on collection and registration of resources, preparation of WWW resources and library services to project members and AKRSP counterparts
- AKRSP staff resources will be increased through contract with research assistant also working on the gender component.

9.6.6 *Results*

- The special collection of literature and bibliographical database will be further developed.
- WWW information will be added as needed.
- Directory of relevant organisations and information networks will be taken into use by AKRSP Baltistan

9.6.7 *Activity plan 1999*

Bibliographical work and collection building will be going on continuously, peaks will be determined by activities within the thematic projects.
APPENDICES

Appendix I: Overview of project component counterparts

<table>
<thead>
<tr>
<th>Project</th>
<th>NLH</th>
<th>AKRSP (Coordinators)</th>
<th>AKRSP (Teams)</th>
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<tr>
<td>Institutions and organisations</td>
<td>Hans Sevatdal/Håvard Steinsholt/ Poul Wisborg</td>
<td>M. Akbar Raza</td>
<td>Any other staff as agreed in planning and on need basis, including staff from</td>
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<tr>
<td>Pasture, livestock and biodiversity</td>
<td>Øystein Holand, Per Wegge, Åge Nyborg</td>
<td>Iqbal Hussain</td>
<td>other RPOs, villages, government agencies and</td>
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<td>Knut Velle</td>
<td>Jawad Ali</td>
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<td>Poul Wisborg</td>
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### Appendix II: Overview of activities 1999

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**Legend**

- **F**: Field Visit Programme
- **W**: Workshop (1/2 - 2 days). Integrated when feasible.
- **R**: Report
- **AP**: Activity Plan Revised

Updated: 11.11.99

All timing subject to revision through more detailed field visit planning.
Appendix III: Some addresses at NLH/Partner institutions

Agricultural University of Norway  
P.O. Box 5003  
NO-1432 Aas, NORWAY  
Tel: +47 64 94 75 00  
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Centre for International Environment and Development Studies, Noragric  
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Tel: +47 64 94 99 50  
Fax: +47 64 94 07 60

Department of Land Use and Landscape Planning  
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Fax: +47 64 94 83 90

Department of Biology and Nature Conservation  
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Fax: +47 64 94 85 02

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Fax: +47 64 94 79 60

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Fax: +47 64 94 88 90

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Fax: +47 64 94 97 86