

**Review of Aga Khan Rural Support Program's (AKRSP)
Sustainable Forestry Development Program**

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Abbreviations and Conversions

AKES	Aga Khan Educational Services
AKF	Aga Khan Foundation
AKRSP	Aga Khan Rural Support Program
GOP	Government of Pakistan
IUCN	International Union for the Conservation of Nature and Natural Resources
JMM	Joint Monitoring Mission
NA	Northern Area
NORAD	Norwegian Agency for Development Cooperation
NORAGRIC	Norwegian Center for International Environment and Development Studies, Agricultural University of Norway
NRM	Natural Resource Management
NWFP	North West Frontier Province
RPF	Regional Program Forester
SO	Social Organizer
V/WFS	Village Forest Specialist /Women's Forest Specialist
VO	Village Organization
WF	Woman Forester
WID	Women in Development
WO	Women's Organization
WSO	Women's Social Organizer

1 kanal = 0.125 acre = .05 hectare

100 Rupees = 3.30 USD = 21.45 NOK (November 1994)

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1.0 Executive Summary

The Northern Region of Pakistan forms the upper limits of the Indus basin, and cover around 7.04 million hectares (ha). It is dominated by jagged granite, snow covered Hindu Kush mountains in the northwest, the Karakoram mountains in the northeast and the great Himalayan mountain range in the central east. The climate is dry and the precipitation is mostly as snow. Extremes of temperature, dry and hot in summer and dry and cold in winter are characteristic. Precipitation is erratic and varies at the highest elevations between 120-150 mm/year, decreasing with decreasing elevation. The climate in the high mountain valleys is cold and dry with severe winters with minimum temperature touching to below zero. Precipitation is 10-20 mm in summer and 50-100 mm in winter.

The entire Northern region area covers the 5 districts of NA and Chitral district of NWFP. The population is around 800,000 and the people live in villages and small towns in valleys. The cropping pattern is unique, shifting from double cropping to single cropping as altitude increases. Cultivable land is minimal, and with increasing pressure from a growing population the people are dependent on food imports into the area. Fuelwood requirements due to the extremely cold winters are high, and increasing. This has caused much pressure on the natural resources and resulted in the overuse of the resources for immediate fuel and fodder needs.

For the amelioration of the condition of people in the area the Aga Khan Rural Support Program (AKRSP) initiated various activities in certain selected areas in 1982. The objects laid included:

1. Raising the incomes and quality of life of people living in remote mountainous regions.
2. Developing institutional and technical models for equitable development.
3. Evolving sustainable, long-term strategies for managing natural resources productively in a dry and fragile mountain environment.

The activities of AKRSP have included village organization and institution-building, production of physical infrastructure, village savings and credit, agriculture and resources management, commercial and industrial development and human resource development. Starting in Gilgit, the program gradually expanded to other areas i.e. Baltistan, Chitral and Astore.

Forestry in Northern Areas

Historically and traditionally tree planting activities have been going on over a long period for the purpose of meeting the domestic requirements for fuel and construction and to some extent for fodder. These activities were systematized

and increased to a certain extent through early AKRSP initiatives. In 1987, however, a two year program to improve and expand afforestation with funding, from Norwegian Agency for Development Cooperation (NORAD), was initiated. This was followed by a five year Sustainable Forestry Program (1991-95) which promoted a higher involvement of the population in tree planting and conservation activities on old and new farm land. Women's participation was intensified through a one year program (1993-94) which concentrated on the establishment of women's forest nurseries.

Forestry Activity

Enhancement of AKRSP's forestry activities began with the cooperation of village organizations (VOs) in developing and rehabilitating irrigation channels, creating new command areas for planting trees.

Through extension and training VOs are assisted in reclamation of land, planting trees, raising fodder, managing grazing, protection of environment and associated forestry activities provided in the program. Activities pertaining to forestry are carried by VOs and WOs, - the basic units for performance in the AKRSP system.

Evaluation Task

As NORAD's current funding for forestry activities, including the women forestry project, comes to a close, an evaluation was commissioned to determine to what extent NORAD could continue to assist beyond the five year period for which commitments had been made. A two person team, one Norwegian consultant and a Pakistan resource person, were enlisted for this evaluation and terms of reference (TOR) for the evaluation provided. Thereafter the area was visited to meet VOs, WOs, staff at the headquarter and regional level, as well as functionaries from the Government. The field visits took place from 4-14 November, 1994.

Impact of Assistance to Forestry

As has been stated earlier, the meager forestry activities in the three regions namely Chitral, Gilgit and Baltistan had not been on a systematic basis prior to 1991 so as to create an impact in favor of desirability of the activity. The NORAD support opened a new chapter towards local awareness of the potential of tree planting. With induction of trained staff an opportunity was provided for a dialogue with VOs to determine their wishes, creating an interest in them for playing a positive and fruitful role in conservation and tree planting thereby enhancing the natural resource base. Efforts in training the village forestry specialists, providing planting material at the door steps of the communities, creating opportunities for incentives, supplying of superior local stock, a better and adequate linkage between the farmer and AKRSP, developing a system for local and technical monitoring and research, and promoting an understanding of

environmental issues have been the subjects tackled well. Similarly women's involvement through the WOs is a big step towards participation of a sector of the population which has been neglected and ignored in spite of the fact that they play a central role in productive and domestic activities. During the evaluation team's contacts and dialogue with different groups in the field (VOs, WOs, forestry specialists and field staff) the advantage of the program and desirability of continuance became evident. There was clearly a sense of awareness among the villagers for the need for more trees, more fodder, protection against erosion and advantages that accrue out of better pastures. Villagers were active in working towards these goals, with quite dramatic results in terms of new and existing area planted with trees. Thus, a clear breakthrough seems to have been made. Evidently, in this process the afforestation at community level, training on various topics and subjects, environmental messages and a useful basic dialogue has been productive.

Nevertheless, current staff is spread rather thinly, which in the long run will reduce the quality of information to and training of the villagers. The need for increase in field staff and their training over a period would be useful. Regarding the choice of species, the techniques and approach adopted to plant them is moving in right direction, considering the choice limited to a few species. However, there is always the possibility of an improvement in the methodology, and learning from past experiences and initiating new ideas should be encouraged.

The villagers are fully aware of advantages and need for the afforestation and resource protection which is to the advantage of the VO members in general, and are willing to invest a great amount of labor in the project activities. The task of conservation and rehabilitation of the steep slopes that are covered with boulders and pockets of soil is pretty cumbersome and the way the boulders are systematically piled for opening planting area is noteworthy. The VO members are now reasonably aware of the proper utilization of the resources available to them. Regarding the linkages with Government and the other organizations considerable attention is yet to be given to develop a good working strategy for the linkage. The general opinion at various levels seems to be that the time is ripe for initiating a better cooperation. This can form a base for further development of linkages between the villagers and other entities than AKRSP.

With regard to economic development forestry has started to have an impact. Farmers use and sometimes sell fodder, sell plants from private nurseries and material from plantations. However, much more is needed and would continue in future years. Market development will be an issue to be looked into from now on as some of the trees begin to mature.

Women's Program

The local culture has played its role in limiting the participation of women in development activities. Women's participation in productive and domestic

activities, though acknowledged indirectly, had never been properly recognized. Emphasis and encouragement towards enlisting women's support in a direct manner, by creating WOs, has provided a foothold for such recognition. Women could join the WO activities in good number but there are still local taboos in certain areas which slow the process markedly. In spite of this a good number are very actively participating. While the women and nursery project offered a one-year boost to women's participation in forestry activities, it is hoped that more will take part once this activity is integrated in the main forestry program. There is, however, need to give added attention to these activities through strengthening the women staff structure in the AKRSP forestry section. There has been a clear improvement in the quality and extent of women's activities in forestry since recruitment and training of women staff members.

Review of Activities

Based on the site visits to nurseries, afforestation areas, and villages, as well as dialogues at all levels (including the core staff, Govt. functionaries etc.) a favorable picture of the activities and the results has come to light. There is both an awareness and an interest in initiating activities and creating good quality nurseries and plantations. Local systems of resource protection and management, unique to each situation, have been evolved which further confirms the keenness and interest being taken by villages. Continuing the program for another few years, if handled carefully, would be a good investment in improving the lives of the villagers. In particular, there is still a large potential for women's participation - their visible interest will motivate other to follow in the future. A workable strategy for coordinating activities with women organizations would give dividends. In this context it is imperative that women social organizers become more effective in organizing women and better trained in forestry activities for women.

The program has contributed considerably to environmental improvement. It has been useful for biodiversity. The improvement in the overall environment through protection of slopes has been phenomenal. It has encouraged soil development, protected soil, stopped degradation and erosion through planting of trees and fodder. Communities now have a joint responsibility for protection. A big change is visible in the thinking and vision of the communities which is encouraging. Those who have so far participated and have also had pleasant experiences are keen to continue. However, they will need continued guidance and support for some time to further enhance their capabilities and knowledge towards systematic and sustained work. The manner in which protection measures for trees have been locally started is enough proof for their interest. There are, however, pockets that still need extension support - some areas are inactive for various other reasons. Sooner or later their participation is foreseen. Villages with some natural vegetation close to the villages have a little different attitude, however, it is anticipated that they too will participate.

Sustainable Forestry Program - Future Directions

The systematic forestry activities were initiated in 1991, when clear objectives for this activity were laid. These included the conservation of mountain ecosystem, full use of available but minimal land, create capacity of men and women for participation in preserving land, growing trees, improving pastures and protecting soil and environment. A massive afforestation program was chalked for involving the VOs to the maximum extent. Efforts towards sustainability of the activity needed an approach consistent with the situation in each region. The limiting factor has been the staff and the contact at the village level - particularly in so far as women are concerned. Progress in the one-year women's project- a short period for forestry - has been moderate. There are several opportunities to enhance women's forestry activity in the future. Integration of the women's activity within the overall forestry program for future is necessary.

Initial activities were designed to make people interested in trees, fodder, protection and soil conservation. Providing advice on the management of crops on the ground (trees, fodder), improvements and additions of useful activities by using the potential resource is yet to be done. Similarly, consideration for integrated resource management will have to be given priority in the future. The following are some suggestions for what might be appropriate to focus on in future forestry activities:

- A clearer emphasis on local institutional development - building the capacity of the villagers themselves to manage their forestry activities.
- A total integration of planning of and reporting on men's and women's activities.
- An emphasis on training of staff and villagers in skills needed as trees mature, including
- Increased emphasis on promoting women's plantations and nurseries.
- A major adjustment in the type of data collected and reported.
- Improved coordination with other technical sections at the field level.
- Clarification and development of working linkages with the GOP forestry departments in Chitral and NAs.
- Increased professional staff competence in NRM, particularly in the improvement and management of pasture and natural forests.

It is clear that AKRSP's forestry program has had a tremendous impact on the lives of the rural poor in the Northern Areas, and that the creation of sustainable local institutions which can manage their local forest resources is a worthwhile

investment in the development of the region. Based on both past performance and future potential, the review team recommends continued funding for a new 5-year period, i.e. 1996-2000, with a mid-term review in 1988.

2.0 Introduction

2.1 Project area

The Northern Region of Pakistan forms the upper limits of the Indus basin, and cover around 7.04 million hectares (ha). It is dominated by jagged granite, snow covered Hindu Kush mountains in the northwest, the Karakoram mountains in the northeast and the great Himalayan mountain range in the central east. The climate is dry and the precipitation is mostly as snow. Extremes of temperature, dry and hot in summer and dry and cold in winter are characteristic. Precipitation is erratic and varies at the highest elevations between 120-150 mm/year, decreasing with decreasing elevation. The climate in the high mountain valleys is cold and dry with severe winters with minimum temperature reaching below zero. Precipitation is 10-20 mm in summer and 50-100 mm in winter.

The entire Northern Region area covers the 5 districts of the Northern Areas and Chitral district of NWFP. The population is around 800,000 and the people live in villages and small towns in the mountain valleys. The majority of farmers are subsistence farmers with a unique cropping pattern, shifting from double cropping to single cropping as altitude increases. Most households have small and large livestock, which they bring to high pastures for grazing in the summer, and stall feed in the winter if enough fodder is available. Cultivable land is minimal, and with increasing pressure from a growing population the people are dependent on food imports into the area. Fuelwood requirements due to the extremely cold winters are high, and increasing. This has caused much pressure on the natural resources and resulted in the overuse of particularly tree resources for immediate fuel and fodder needs.

Historically, the Northern Region been isolated from the rest of the country due to the rugged terrain and high mountain passes which were (and often still are) impassable during the winter. Politically, the areas were under the rule of local princes (Rajas) until 1974, when the system was abolished and the Pakistani government took control. Despite the government's presence, relatively little investment has been made by the authorities in the development of these areas since they took control. A significant exception to this is the construction of the Karakoram Highway leading to China, completed in 1979, which opened the area to tourism and improved market accessibility. In addition, some limited improvements have been made on other roads within the region, for example the road between Skardu (Baltistan) and Gilgit. Certain central areas, particularly along the KKH have also had some investment in health and education, albeit

limited, and most often implemented for the government through non-governmental organizations (NGOs).

2.2 Project background

In 1982, the Aga Khan Rural Support Program (AKRSP) initiated activities in certain selected areas of the Northern Region. The objects of the program included:

1. Raising the incomes and quality of life of people living in remote mountainous regions.
2. Developing institutional and technical models for equitable development.
3. Evolving sustainable, long-term strategies for managing natural resources productively in a dry and fragile mountain environment.

The activities of AKRSP have included village organization and institution-building, production of physical infrastructure, village savings and credit, agriculture and resources management, commercial and industrial development and human resource development. Starting in Gilgit, the program gradually expanded to other areas i.e. Baltistan, Chitral and Astore.

AKRSP forestry activities

Originally, forestry activities were a small part of the general agricultural activities within AKRSP. Historically and traditionally, however, tree planting activities have been going on over a long period for the purpose of meeting the domestic requirements for fuel and construction and to some extent for fodder. In 1987, a pilot project was funded by the Norwegian Agency for Development Cooperation (NORAD) which was to address the need for more fuelwood and fodder through a systematization and intensification of forestry activities, particularly afforestation. The program was implemented with the assistance of IUCN Pakistan.

Based on an evaluation of the pilot project, a five year Sustainable Forestry Program (1991-95) was initiated, again with NORAD support, promoting a higher involvement of the population in tree planting and conservation activities on old and new farm land. Women's participation was intensified through a one year program (1993-94) which concentrated on the establishment of women's forest nurseries. With the current forestry program phase approaching its conclusion in 1995, there is a need to review the current program, as well as to consider the need for a continuation of the program in a second phase.

2.3 Project review

The program review took place in Pakistan from 2 - 14 November, 1994. The review team was comprised of:

Ms. Ingrid L.P. Nyborg, Researcher, Norwegian Center for International Environment and Development Studies (NORAGRIC)

Mr. K. Hameed Ullah, Consultant, Pakistan.

The team was asked to review the achievements of the program, and to make recommendations concerning future funding and directions for a second phase of the program (see terms of reference in Appendix 1). The review included perusal of secondary information (project reports, evaluations, project data, NORAD documentation etc.), and interviews with program staff, government officials, and men and women villagers. Field visits included private, AKRSP and government nurseries, and individual and village plantations. AKRSP was responsible for arranging our field visits, transport and accommodations. Preliminary conclusions were presented on 14 November to Mr. Ragnvald Dahl, Mr. Olav Ofstad and Ms. Martina Jägerhorn of NORAD/Islamabad.

The team would like at this point to extend an appreciative thanks to both NORAD and AKRSP on making the review go as smoothly as possible, despite the various complications which arose during our stay. Problems with airline connections in London delayed our visit to Chitral by two days, resulting in a loss of one field day and some staff meetings. At the end of the review, a combination of poor weather (canceled PIA flights), political unrest and a road block on the KKH delayed our departure from Baltistan which was scheduled for 13 November. Fortunately AKRSP was able to arrange for one of the program helicopters to transport us to Islamabad on the 14th, for which we extend an extra thanks to AKRSP, and particularly to Mr. Steve Rasmussen, General Manager. Aside from the complications at the beginning and end of the review, the rest of the visit went as scheduled, with AKRSP staff providing invaluable assistance and cooperation, making our work both effective and pleasant (see itinerary and persons met in appendices 2 and 3).

3.0 Achievement of Program Objectives

In examining the overall objectives for the program, the team began with those stated in the program document for 1991-1995. In later documents, however, the objectives have changed somewhat from the original. Table 1 gives a comparison of the two sets of objectives (the numbers in parentheses refer to the original order of the objectives in their respective documents). An attempt has been made to put similar or comparable objectives in the same row of the table.

Table 1
Comparison of Project Documents

Original Forestry Program Document 1991-1995	Forestry Program Proposal for 1995
Overall goal: To improve the standard of living of people in the Northern Areas and Chitral through economically, environmentally and socially sustainable forestry development.	
	Overall goal: To conserve and enhance the fragile mountain environment and overcome shortages of timber and fuelwood in the Northern region through a participatory sustainable forestry development program
Aims: To assist VOs and, increasingly, WOs to plant, and to ensure the survival of a total of 7.5 million trees in the three program areas Chitral, Gilgit and Baltistan	
To assist VOs to develop productive and profitable enterprises based upon the sustainable use of forest plantations.	
	Aims and objectives: To work with the villager organizations for conservation of the fragile mountain ecosystem of the Northern Regions. (1)
Objectives: Capacity-building of AKRSP forestry staff in - forestry dialogs - village needs assessment - forestry techniques - training and extension skills (1,2,5)	To build the capacity of AKRSP staff for effective village forestry development and management of the natural resources (5)
To train and support village forestry specialists (VFS) (3)	To strengthen the capacity of men's and women's organizations in village/farm forestry practices (6)
To ensure adequate supply of high quality planting material, from either local cuttings, AKRSP or VO/WO nurseries (4)	
To develop within AKRSP adequate and efficient monitoring procedure to guide the forestry program so it has the most positive impact in the area (6)	
To enter into arrangements with expert technical organizations outside AKRSP for technical monitoring and advice (7)	
To conduct research to improve the potential of forestry and agroforestry in the program areas through - access to research capabilities inside and outside Pakistan - running own small field research program (8)	To commission research activities for the development of farm forestry and related activities (9)
Seek opportunities to contribute to the NAs Forestry Department's interest and capability in village forestry (9)	
To seek increasing participation of WOs in forestry-related activities which - generate income - reduce burdensome labor - increase overall quality of life (10)	Build the capacity of women for an effective role in forestry and environment, and create income generating opportunities for them (7)
Contribute to school children's' understanding of local environmental issues and the role of trees (11)	Develop and program for environmental education for school children (8)

	To reduce the dependence of the small farmers on scarce natural resources for fuel, timber and forage needs (2)
	To develop strategies and prepare action plans for optimal use of scarce irrigated land for development of village/farm forestry (3)
	To facilitate adoption of improved tree plantation techniques and mass scale tree plantation (4)

No reference has been made to these changes in the newer documents, making it unclear as to why they have been adjusted¹. In some cases, the changes merely represent a re-phrasing of the original objectives. In other cases, some objectives have been left out and others added, which could indicate either the successful meeting of objectives (which are thus no longer necessary) or a shift of direction in some parts of the program.

This review will look at the original goals, aims and objectives as appear in the 1991 document, and discuss the implications of the changes in aims and objectives as presented in the 1995 document. The discussion of the objectives will concentrate on the differences between the two documents, leaving the assessment of targets for the individual program sections.

Overall program goal:

The overall goal of the program to improve the standard of living of the population through forestry development is a difficult one to assess, as the documents give no indication of the definition of this term and how it is to be measured. What constitutes an improved standard of living? While established definitions might provide some guidance, it is perhaps most appropriate to consult the people participating in the program concerning if and how their lives have been improved as a result of the program activities. From interviews with the villagers, the team has the impression that the forestry project has had a positive impact on their lives. The types of improvements named included increases in income, increases in the availability of fodder for livestock, increases in technical knowledge, increases in organizational, political and social skills, and increases in the status and mobility of women. There was also a clear sense that the activities were an investment in the future, both in terms of income and local supplies of firewood and fodder. Particularly in villages where plantations were established, the impact of forestry activities was widely distributed within the community.

The overall goal presented in the 1995 document focuses more clearly on conserving and enhancing the environment, naming specific areas (timber and fuelwood) where the forestry program might make a contribution. However,

¹Due to the logistical problems at the end of the mission, we were unable to meet with Dr Javed Ahmed, the main author of the two documents.

this goal has moved away from the original focus on people as the beneficiaries of development activities. The danger in this is that undue focus might be put on achieving targets (albeit with people's participation) without due attention to activities providing comprehensive improvement to the lives of the people. It would be more in line with AKRSP's people-centered philosophy to return to a goal which more clearly expressed the intended overall impact on the local population.

Program aims:

The first program aim is actually a target for tree planting, which will be discussed in a later section. The second aim deals with the establishment of profitable enterprises based on the sustainable use of forest plantations. Since the trees planted in plantations have yet to mature, the degree to which profitable enterprises can be expected to have developed is limited. There are, however, individuals who have profited in activities related to forest plantations, which will be discussed in detail in section 7.0.

There are several objectives from the original document which have been excluded from the 1995 document, namely objectives 4, 6, 7, and 9. This is unfortunate, as several of these are aspects which the team sees the need to strengthen (see later sections). Objective 8, dealing with research, has been rephrased in the new document from one of conducting research to one of commissioning research. It is not certain whether this shift away from staff involvement in research is completely recommended by this team. Also, objective 10 has been rephrased in a way that focuses on building women's capacity rather than on merely eliciting their participation. This is positive, as is the continued focus on income-earning capacity. It is suggested, however, that the reduction of burdensome labor not be forgotten in future activity development. Finally, there are three new objectives in the 1995 document, namely objectives 2, 3, and 4, all positive additions to the program document. The only adjustment suggested is in objective 3, where there could be a clearer emphasis on building the capacity of villagers themselves to develop strategies and prepare action plans.

3.1 Afforestation and Extension

Afforestation and extension has since 1991 been the main means by which AKRSP has approached the challenge of enhancing the natural environment for the short and long-term benefit of the villagers. Natural forests close to villages have in many areas been depleted such that villagers must travel long distances to collect firewood and fodder. Women as well as men are involved in these activities, the degree of their involvement varying according to the customs and needs of the specific villages. Tree planting within the village can contribute to increasing the local availability of fuelwood and fodder, decreasing time used in resource collection, and reducing the pressure on what remains of the natural

forests. The program has two packages under this section, the "soft package" and the "refined package."

Soft Package

The soft package is mainly informational, and it targets all of the VOs and WOs in the program area. The activities consist of a *first dialog*, where AKRSP's afforestation activities are explained; a *second dialog*, where VO and forestry staff together carry out a quick field survey and design an afforestation plan; and a *third dialog*, where the terms of partnership between AKRSP and the VO are signed, and the VO is ready to begin the "refined package." The goal of the soft package is thus to encourage villages to start the refined package. To measure their achievements in this endeavor, AKRSP staff records the number of third dialogs held (see table 2)².

Table 2.
Number of VOs completing third dialogs in soft package

Year	Indicative Targets			Actual achievement		
	New	On-going	Total	New	On-going	Total
1991	60	-	60	60	-	123
1992	120	48	168	120	48	168
1993	150	92	242	150	92	242
1994	130	180	310	130	208	338

While the total number of VOs reaching the third dialog is an important piece of information, it does not indicate the true extent of staff visits involved in the soft package - such information is useful in terms of staffing requirements for motivational activities. Reporting the number of VOs participating in first dialogs, and how many of these continue on to second dialogs and then to third dialogs would better reflect the amount of activity by the forestry staff, and the percent of first dialogs which end in third dialogs. Then the program could then begin to question more closely why some villages are not responding, or why it may take so long, and then whether any adjustments might be made in the approach in order to improve the process i.e. cover fewer VOs more thoroughly.

Refined Package

The refined package refers to the actual implementation of the tree planting activities by the villagers. The refined package attempts to not only increase tree planting, but to do so using improved techniques. Some of the main features of the refined package are:

²All tables are based on figures presented in the Six-Monthly Report for the forestry program; figures are current up to June 1994.

- tree plantation in the form of blocks or woodlots
- use of quality rooted plants in place of pollards or sets (branch cuttings)
- tree plantation in lines laid out at recommended spacing
- a properly designed irrigation system, and
- intercropping with alfalfa.

The program operates using a collection of incentives to help to motivate villagers to participate. These include:

- provision of up to 70% of plant stock
- provision of alfalfa seed for intercropping
- help in marketing
- training support, directly or through VFS

VO Plantations

The targets and achievements in the afforestation activities are measured by the number of trees planted by the VOs (table 3), area planted (table 4), tree survival rates (table 5), and quality of work (table 6).

Table 3
Number of trees planted

Year	AKRSP contribution		VO contribution		Total	
	Target	Actual	Target	Actual	Target	Actual
1991	470 400	443 800	201 600	225 500	672 000	669 300
1992	588 000	687 500	252 000	227 700	840 000	915 200
1993	1 176 000	1 039 900	504 000	366 900	1 680 000	1 406 800
1994	1 295 000	1 555 000			1 800 000	1 991 700
Total						4 983 000

The total number of trees planted lies somewhat below the overall target of 7.5 million trees as stated in the original objectives of the 1991 program document. Nevertheless, progress has been steady and survival rates very good as compared to other similar forestry planting projects in Pakistan (see table 5). AKRSP has in fact shown itself to be extremely effective in reaching targets in areas which are known for their difficult terrain and remote villages. It is also clear that the program is beginning to understand the fact that while targets are useful, they should not be so strictly adhered to such that quality suffers. It is perfectly acceptable to reduce or adjust targets during a program period when justified. It is important, however, to document the reasons for these adjustments, and reflect them in the reported tables, something which is not always evident in current reporting

The area planted is impressive, particularly when relating these figures to field observations (see table 4). What the table of area is not able to indicate is the concentration of planting through the program, and ambitious plans of the

farmers themselves in later years. Field visits confirmed that tree planting was concentrated at the village level such that it made a real impact on the environment of the village, and had the potential of offering significant future returns. Also, farmers who have already planted some area, were eager to expand their area planted - often much more than the staff had anticipated. It would be interesting to see some figures on the extent to which farmers has expanded the area under tree plantation.

Table 4
Area Planted

Year	Area	
	Target	Actual (estimated)
1991	300	358
1992	375	338
1993	750	458
1994	720	796

Table 5
Tree Survival Rate
Reported as number of VOs falling within a range of survival rates

Year	Total No. of VOs	>75%	50-74%	25-49%	<25%
1991	123	72	24	10	17
1992	168	76	42	23	27
1993	242	136	70	25	11

Quality of work is another way progress has been measured in the afforestation activities. Quality of work refers to the extent to which VOs have planted trees according to the recommendations of AKRSP staff i.e. with proper spacing, pruning, watering etc. This type of monitoring is intended to give an indication of how effective the staff is in conveying their extension messages. From table 6 we see that the percentage of VOs classified as poor are decreasing, with more VOs moving into the fair and good categories. This could be a sign of improving extension work, although the information given in these statistics is too general, and the criteria used to determine quality too difficult to standardize to make any certain conclusions. A more detailed breakdown of VOs might help, explain. for example, what has happened to the quality of VOs established in 1991. How many have moved from poor to fair to good to excellent, or worsened in quality? It would be useful for the staff to look more closely at which types of recommendations the VOs follow more often, and which they seldom follow, and which they follow to some degree (i.e. spacing *almost* to the recommended distance). Perhaps changing the name to "extent of adoption" might be

considered. Also, determine which other types of criteria would be useful to use in quality control which are flexible enough to use despite the large variations between VOs. This would give a clearer picture of how effective extension is, and give some idea as to what might be done to improve the situation.

Table 6
Quality of work in number of VOs
(Percent of total in parentheses)

Year	Total No. of VOs	Excellent	Good	Fair	Poor
1991	123	30 (24)	33 (27)	37 (30)	23 (19)
1992	168	44 (26)	48 (29)	52 (31)	24 (14)
1993	242	53 (22)	84 (35)	80 (33)	25 (10)

WO Plantations

In the 1993 NORAD funded Women's Nurseries project, there was also a component which dealt with the establishment of women's plantations. The original targets for this activity were the planting of 1 million plants, and the supply of 2 000 kg of alfalfa. The quantitative results of this program, although somewhat unclear, were below these targets.³ AKRSP has identified several reasons why the targets were not able to be met. First, the establishment of plantations is demand driven, and is thus dependent on the interest of the villagers. Second, the villagers named several constraints in establishing women's plantations, including lack of community land for afforestation, shortage of water, labor constraints, and free grazing problems. In addition, there are severe staff constraints due to the limited number of women foresters in the forestry section - there are for example no women junior foresters. Table 7 gives the total number of WO plantations, and plants planted.

Table 7
Total number of WO plantations and plants planted

	Gilgit	Chitral	Baltistan	Total
WO plantations	66	30	93	189
Plants planted	250 000	90 873	282 450	623 323

Some lessons learned from the project were summarized in a Final Report by AKRSP WID staff, and a consultancy report by Jane Clark prepared in August 1994. Their conclusions should be read carefully by the forestry section, as they offer valuable insight and suggestions as to how future plantation activities

³The Six-Monthly Report stated the number of plants planted at 346 008 and the amount of alfalfa seed supplied at 205 kg. More recent figures from staff showed 623 323 plants planted.

could better address the needs of women. Concerning the content of AKRSP's report, there is a clear emphasis on reporting physical targets, and less of an emphasis on reporting other aspects of development. For example, the final report emphasizes nursery area, plants planted and alfalfa supplied. It does not, however, give adequate information on the number of fruit and forest nurseries, and whether they are combined or separate, or the number of WOs establishing plantations and how many of those have planted alfalfa. This type of reporting would give a better idea of the degree of participation and institutional development which the forestry activities are promoting. Also, inclusion of the information collected on the quality of nurseries and plantations would improve the document.

In general, response has been positive and enthusiastic where WO plantations have been established, and there is a growing demand for the establishment of additional WO plantations. Women, although positive to the VO plantations and their benefits, nevertheless feel the need to have areas where they have the main decision making responsibility in deciding what types of plants are planted, and control over the income from plantation production. AKRSP could play a greater role in encouraging the male community members to allocate community land for WO plantations, and providing the necessary PPIs for proper WO plantation development, as has been done in the case of VOs.

Tree Planting Campaigns

Another activity within the afforestation section is tree planting campaigns. This is a motivational activity only, and is performed by the SOs and forestry staff during regional and valley conferences of the VOs and WOs. Villagers share experiences, posters and handbooks are distributed, and prizes awarded to the best VFS and the best tree farmers in the SOU. The number of campaigns held for the years 1991-1994 were 4, 11, 6, and 10 respectively. The review team sees these activities as useful ways to make forestry activities more visible and to bring communities with common interests together.

Suggestions

- record the number of first and second dialogs (soft package) to better reflect staffing requirements.
- improve reporting of WO activities (standardize with VOs etc.)
- reevaluate the information used in monitoring the quality of work done by the V/WOs. Standardize criteria across regions.

long-term interests of village women investing in forestry activities. First, there are several areas where men, including those who are AKRSP staff, are not allowed to meet with village women. It would in these cases be more appropriate to train women to train women. In addition, it is an important goal in itself to emphasize women in human resource development, since they are more often than not left out of skills training programs in development projects. Rather than jumping immediately to the training of Master Trainers, it might have been wiser to first train a cadre of female VFSs, after which several could be upgraded to master trainers. While lack of mobility is a real hindrance in some areas, it is less of a hindrance in other areas, and experiences in other sections of AKRSP have shown that women who have received training can increase both their social status and mobility. In the end, with better planning the training component of the Women and Nursery project could have made a more significant impact on improving the skills level of women. This cannot be said to be wholly the fault of forestry project staff. In fact, the staff was faced with the difficult task of implementing a very ambitious women's program in a one year time span at very short notice, and without knowing whether or how activities would continue in the future. While the overall effect of the NORAD project has been positive, certain problems could have been avoided with better coordination between NORAD funding and the forestry planning process.

While the number of villagers trained and courses held are one type of indicator of the progress within HRD, they give little indication of the quality of the training. Information in terms of skills retained and effectiveness of V/WFS at village level would give a better idea of how successful the training program is, and how it could be improved on an on-going basis. Involving the villagers in the evaluation of the effectiveness of the V/WFSs and the appropriateness of their skills could be one way of ensuring their active participation in defining their needs.

Training of staff

The building of a competent forestry staff has concentrated on formal training of staff and candidates. At the start of the forestry program, AKRSP had only three professionally trained foresters. In 1991, 6 men were sent to Kashmir Forest school, Muzaffarabad, for a one year diploma course in forestry, all of which were hired by AKRSP on the completion of their course. In addition, 4 staff have been sent to Pakistan Forest College for higher degrees (B.Sc. and M.Sc.). AKRSP staff in other sections, i.e. SOs, have not received specific training in forestry, but have been briefed in forestry techniques and activities in monthly review meetings.

The forestry program has made an important contribution to the building of staff competence in forestry. And while there are now three female foresters in the program (one in each region), thus far only three women have been sent for forestry training with support from the program (2 this year). There is now, however, strong staff awareness of the need for more women foresters, particularly at the junior professional and field levels. This need became

apparent this year with the difficulties in implementing the women and nurseries project⁷, and will become more acute as women's forestry activities increase.

Concerning training of other AKRSP staff in forestry, there is a need to consider both the short and the long term. In the short-term, each technical section will most likely continue having different field schedules which constrain the extent to which they can meet together. It is therefore important that each section is aware of the activities of the other sections so they can better suggest solutions which are complementary rather than competitive. Male and female social organizers should also be trained in forestry - presently they can offer little to the villagers in terms of support between forestry staff visits. This is particularly important for WSOs, who have played almost no role in the forestry program to date. The interaction between the forestry program and the social organizers will be discussed further in section 8.0. In the long term, AKRSP should consider whether to train all field staff in all disciplines to better address the challenges of integrated resource management.

Training and extension materials

The forestry program has developed several types of training and extension materials, including videos, posters, slides from posters, wall calendar with motivational photographs, and extension booklets and leaflets. The materials are designed for different audiences, from staff conversant in English to illiterate villagers. Since a major portion of the training in forestry by staff is of village forestry specialists, it is important to develop materials specifically for this group. Currently, the forestry program requires that a person chosen to be a V/WFS by the village be able to read and write. In the case of men this may be possible, however, for women this can represent a significant barrier to training. Even men who can read and write may not be so skilled as to function adequately in a course developed for literates. AKRSP does not deal directly with numeracy and literacy training. However, the forestry program, faced with the very low literacy rates of the NAs and Chitral, should consider the challenge of opening the training of village specialist up to illiterates. This would involve an shift in emphasis in the training programs, and require the development of materials designed for illiterate audiences.

Suggestions

- standardize criteria for categorization of VFS as active or inactive. Perhaps a combination of AKRSP information (number of visits, plants planted) and local criteria chosen by the villagers could be collected.
- train women (nursery owners or others) for the specific purpose of functioning as VFSs for WOs.

⁷Women field staff were "borrowed" from other AKRSP sections to assist in implementing the program.

- train staff from other section in forestry techniques.
- develop VFS training programs for illiterate villagers, particularly women.

3.4 Research and development

The forestry program's original objectives included the conducting of research to improve the potential of forestry and agroforestry through access to research capabilities inside and outside Pakistan, and running its own small research field station. The forestry program has been very active in conducting and/or commissioning forestry and forestry-related studies. Research has been conducted in the following areas;

- honey bee farming,
- silk worm rearing,
- clonal selection of trees,
- introduction of exotic plants,
- development of local volume tables of poplars,
- biomass production of farmland trees,
- mechanical properties of timbers,
- selection of poplar plus trees,
- survey of diseases and pest of farmland trees,
- local manufacture of fruit crates,
- fuel efficient cooking technology, and
- introduction of forage plants.

Cooperation in research activities has been mainly with two institutions in Pakistan, the National Agricultural Research Center (NARC), Islamabad, and Pakistan Forest Institute, Peshawar. In addition, IUCN has assisted in identifying private consultants to undertake studies.

While this review team did not have the opportunity to read every research report produced (several were in-progress at the time of the review), the topics chosen for the studies are clearly relevant to the activities of the forestry program. The Six-Monthly Report where the studies are conveniently summarized, however, is not clear on how women's needs and views have been considered when designing, conducting and interpreting research results. While some the topics are clearly addressing technical issues, they all have social and economic implications which may have different impacts on men and women farmers, depending on who gains access to new or improved technologies. Also, including women actively in problem identification could influence research topic choice and design. These are issues which the forestry program should keep in mind in future research activities.

The forestry program has not taken advantage of the possibility for visiting interns as the other technical sections have. Incorporating interns into the program may be something to consider for the future. Institutional contact with universities within and outside of Pakistan dealing with forestry and natural resource management should be encouraged. While interns do require a certain amount of supervision by project staff, they can offer new perspectives on topics not covered by the forestry program's research activities.

Another aspect that the review team feels the program could consider is incorporating a limited element of research at the AKRSP nurseries. While the program staff is not equipped for extensive research, some small experiments to use as demonstration and test local ideas would encourage staff to use their imaginations to solve local problems. Some of the nurseries are already conducting limited trials on different species. Other types of research could be done on, for example, advantages of different fodder crops used on steep slopes, vegetable planting in tree beds etc., depending on local needs and conditions.

Suggestions

- continue cooperation with research institutions within Pakistan
- establish contacts with other institutions abroad which might have researchers/students with similar interests which could conduct useful studies.
- have a clear plan for how each research project will be incorporated into the forestry program, particularly through training of staff and dissemination to villagers.
- promote the active involvement of women villagers in the defining of research topics relevant to them.
- promote simple research by staff at AKRSP nurseries.

3.5 Women in forestry development

This task was developed to address the objective focusing on increasing women's participation in forestry-related activities which generate income, reduce burdensome labor and increase overall quality of life. The activities were to be based on a study which would explore the range of forest-related activities which would be appropriate for women in the NAs⁸.

The following activities have been suggested by the project staff for women:

- nursery development
- silkworm rearing, raising legume fodder and producing legume seed for sale
- forest plantations

⁸As mentioned earlier, such a study was not conducted.

- improved livestock feeding practices
- use of improved stoves
- honey bee farming

Most of these activities are still in the experimental stage (see research and development section). Other activities, i.e. nursery development and plantation establishment are discussed in sections 3.1 and 3.2 of this report. The discussion here will be confined to how the program is dealing with women in forestry issues in general.

The forestry program has since its beginning been exploring ways to incorporate women in to the program activities. Until the one-year Women and Nurseries project, however, the efforts were mainly exploratory and small-scale, receiving a limited portion of program funding. Coordination between WID foresters, the WID section and the forestry section has been difficult in the past, and areas of responsibility unclear. Until recently, the WID foresters were administratively under the WID sections. As of the end of 1994 all of the WID technical staff have been fully integrated into their respective technical sections. Now the WID foresters report directly to the regional program foresters (RPF). This is an important shift which will hopefully simplify planning, implementation and reporting procedures. With this shift in reporting, however, is also a shift in responsibility. The RPF is now ultimately responsible for the planning, implementation and reporting of WID forestry activities. Again, it is hoped that this will facilitate true integration of WID activities into the mainstream of project activities, making women's needs more visible throughout the forestry program.

While the program is moving in the right direction in terms of responding to the needs of women farmers/foresters, there are still several constraints which need to be addressed by the program.

- lack of women forestry staff, both junior professionals and field staff.
- poor interaction with WSOs and SOs
- lack of a clear strategy to deal with women and gender in the forestry program

The first two are discussed in sections 3.3 and 8.0 respectively. The third involves a process in which all of the forestry staff, with assistance from the WID section staff, should be involved. Such a strategy should include a presentation of general objectives and rationale, including a clear statement dealing with the integration and mainstreaming of women in the forestry program. The process of strategy development would include detailed discussions on the specific constraints in reaching the desired objectives. Actions suggested for addressing these constraints should be specific. Integration of the strategy into the existing forestry program activities and workplan is essential, as is follow-up, which should be an integral part of the existing forestry monitoring and evaluation system.

Suggestions

- integrate the men and women-focused forestry activities in the planning and reporting documents, but continue to specify activities and results by gender within each section.

3.6 Environmental Education

This task has as its main objective to contribute to school children's understanding of local environmental issues and the role of trees. The project targets Aga Khan Education Services (AKES) schools and GOP schools, collaborating with an existing IUCN environmental education program and the school teachers and administrators.

There are two main types of activities in this task; the development of materials and training, and the establishment of nature clubs in schools. The first two years of the program the majority of time was spent on program planning, the development of activity packs for students starting nature clubs, and training of teachers in environmental issues. Some of the topics for teacher training have included environmental education, water and soil conservation, environmental journalism, and the development of environmental packages. In 1993 the nature clubs were launched. At its inception, this program intended to concentrate on boys schools, however, with the addition of WID foresters in each region contacts with the girl's schools have been established (see table 10). The main activity of the nature clubs will be the establishment of nurseries at the schools, where trees will then be planted, and perhaps sold as well. While only a small percentage of the students in each school participate formally in the Nature Clubs, all of the student participate in special activities and campaigns, lead by the club members.

Table 10
Extent of Nature Club establishment

	Boys	Girls	Total
No. of schools with Nature Clubs	8	2	10
No. of Nature Clubs	8	2	10
Total no. of members in Nature Clubs	160	40	200

The idea of introducing environmental education to school children, however, is very good, and AKRSP could play an important role in motivating future generations to participate actively in forestry activities. It is particularly positive that efforts are being made to include girls schools. Since one of the major

constraints in establishing independent women's organizations is the lack of literate women to keep records, the motivation of school girls could play an important role in recruiting them to become WO secretaries and, in the future, WO leaders. Also, the girls will learn skills in nursery development, an activity which is promoted specifically for women by the forestry staff.

Suggestions:

- Increased efforts at girls' schools to motivate girls for participation in forestry activities of their mothers, as well as their own in the future.

3.7 Technical assistance

A final aspect of AKRSP's activities is the role technical assistance has played in the development and implementation of the forestry program. AKRSP's main cooperating partner for technical assistance in forestry has been IUCN. Since the program's inception, IUCN has provided assistance in identifying a technical program advisor, designing research activities, linking AKRSP with other forestry and environmental institutions, and locating qualified consultants from both within and outside of Pakistan to give technical advice.

In general, the assistance provided by IUCN has been critical to the development of an effective and technically sound forestry program. The technical advisor provided strong leadership which motivated the forestry staff to achieve quite ambitious targets. The consultancies conducted have been relevant to AKRSP's technical needs.

As the program has developed, however, the need for a direct link with IUCN has diminished. As more emphasis is placed on institution-building within AKRSP, more control over the program by regular AKRSP is necessary. Institution-building is perhaps one area where IUCN has not been as effective. A more conscious effort on the part of the technical advisor to hand over responsibility to AKRSP staff would have made this transition easier. However, a period of overlap in 1995 is helping to make the change to full AKRSP control as smooth as possible.

There have, however, also been key changes in the institutional set-up which have helped the forestry program become an established entity within AKRSP. Prior to the current program, the forestry activities (a NORAD-funded pilot project) were quite separate from the overall AKRSP organization - being run by IUCN from a separate office in Gilgit. In 1991 there was full integration of the forestry program and staff into AKRSP. Another important change was in the disbursement of funding for the forestry program. Originally, all NORAD funding was channeled through IUCN. From 1994, however, AKRSP has received funding directly from NORAD to manage as it likes. The advantage of this is that it gives AKRSP staff more control over decision-making in the program. While technical assistance is still a part of the program, the funds are

not tied to a specific institution - AKRSP is free to choose consultants from institutions other than IUCN if it wishes. This is not to say that AKRSP should not have close contact with IUCN. IUCN has a large network of consultants and institutional contacts which can continue to provide technical assistance to the forestry program when needed. It does, however, give the forestry program the option of establishing direct links with other institutions when appropriate.

Suggestions:

- establish links with relevant national and international institutions which could provide technical assistance through either research or consultancies
- continue to use IUCN as one of several resource centers.

4.0 Management of Project Resources

Following a recommendation of the 1993 Joint Monitoring Mission, an Audit of Achievements of AKRSP's activities was conducted by three independent consultants. This audit concluded that the program data reported by AKRSP (including the forestry section) were reliable, and that the program was indeed achieving the positive results referred to in their literature. The forestry program review team thus confines its comments to general trends of resource allocation within the forestry program.

It is clear in our view that the resources for the project have been used in an effective manner to achieve the impressive level of forestry development in the program area. Compared with other forestry projects in Pakistan, and particularly government programs, AKRSP's forestry program has used its resources, particularly vehicles and staff, in a very efficient manner. Despite the difficult terrain and weather conditions, an impressive number of villages have been visited and trees planted. It is clear that the motivation and dedication of the staff has played a large role in using program resources for the benefit of the local population.

It is also clear, however, that there is a danger of the efforts of the field staff to be stretched too thinly. The program's approach of training V/WFSs to take on the role of extensionists at the village level is a sound one in the long run. However, shifting of professional responsibility should be done carefully and thoroughly, over a proper period of time to ensure the quality of performance. Currently, the VFSs do not have the ability to act as extensionists in lieu of AKRSP staff. A better approach in the short run would be a more intensive training of both the V/WFS and the villagers in general, strengthening the base of knowledge at the village level. This implies more field visits on the part of AKRSP staff. This could be achieved in two ways, reducing the number of new villages targeted, and increasing the number of field staff. Both are recommended, however, the increase in field staff should be met exclusively

through the hiring/training of women due to the serious lack of women field staff in the forestry program⁹.

Also elsewhere in this report we propose several adjustments which in the end would have to be reflected in the budget of the program. In general terms, there should be a strengthening and an intensification of training efforts for villagers, V/WFSs, and forestry staff, more of the main budget going to support women's forestry activities, and a special effort to train/recruit women forestry field staff. One way of economizing could be to use the budget for consultancies sparingly, rather promote cooperation with research institutions to take advantage of studies which could be conducted by researchers and interns.

Suggestions:

- concentrate staff resources at field level
- increase the number of women junior foresters and forestry field staff.

5.0 Technical Aspects

Traditionally, to meet domestic needs, villagers had been planting the indigenous trees (particularly poplar, and willows) along the water channels, field boundaries and any space available around the houses. With the initiation of AKRSP activities, tree planting was regularized for improved production.

The initial emphasis on encouraging people to participate in tree planting entailed the transfer of useful preliminary technology. This technology, when combined with local knowledge, formed the basis for the development of large areas with planted trees. Initial activities included mainly area reclamation, preparation for planting, and actual planting. The technical aspects of the first phase of activities have been shown, after some adjustments, to have been reasonably appropriate and effective¹⁰. There has been less rigidity in the recommendations given to farmers over the past few years. Through working closely with villagers, the staff gained valuable experience in dealing with the mesh of technical knowledge introduced by the program, and local knowledge used by the farmers through many generations of tree planting. During the review team's field visits, the staff could give several examples of things they learned from the farmers which were better or more appropriate than the technology being promoted through the program. One such example was the planting of several cuttings in one hole, hoping grazing animals would browse on the outer cuttings and allow the inner cutting to mature. This would be particularly appropriate where there is still free grazing. Another example is with spacing. In certain areas it was found that if poplars were planted too far apart (according to recommendations), they would have a greater chance of being

⁹It might also be possible to utilize women from other sections if there was a general reorganization in the NRM sections in the future.

¹⁰An exception might be in water management, which is discussed in section 9.0.

infested with a particular pest which enjoyed the warmth of the sun between the trees. In other instances, the farmers had economic reasons for not following technical advice to a tee. For example, constructing beds on slopes wider than recommended made room for planting vegetables in addition to the fodder. Unfortunately, the program's monitoring routines which record only the extent to which recommendations have been followed do not reflect the level of innovation in the field, field staff are thus not "rewarded" for their innovative ideas, and recommendations may not be adjusted in light of these findings.

While the technical aspects for these activities are basically sound, there is always scope for improvement. Staff need to be adequately trained in new and improved techniques, and have a forum within the program where their questions can be answered and ideas vented. This will allow field staff to intensify the training of villagers to ensure a more solid base of expertise in the field. Our field visits confirmed the fact that village people need to be trained and retrained and retrained in order for the messages to stick and become a permanent part of their knowledge base. Thus, no matter how good a technique or technology may be, unless both the staff and the villagers understand and accept it into their knowledge base it is useless.

As the program expands and the planted trees take root, new management challenges arise. These challenges demand new types of technical expertise which need to be assimilated by forestry staff and presented to the villagers in a way they can understand. Silvicultural techniques in particular are becoming increasingly important, including proper pruning and thinning (for fuel and fodder), and the determination of regeneration/growth cycles for plantations. The appropriateness of different harvesting methods such as selective versus clear-cutting should be discussed with villagers, as well as the economic aspects of when to harvest different tree species to get the optimal economic return. For example, farmers growing poplar for timber need to know how to get a cleaner bole, good height and diameter, irrespective of the site situation. Too close spacing between trees for too long (poor thinning), too wide spacing initially, inattention towards low branches, retention of more than one shoot on a stump, inattention to the soil situation are bound to result in less benefits. Therefore timely information from technicians is a prerequisite; delay and negligence can cause losses to the farmer. Information should be given in a form understandable to the farmer (both literate and illiterate), and translated onto a sheet so that it can remain at the village for future consultation.

Any new technique considered will have to be adapted to the complex and unique ecological conditions existing in the NAs. Land quality brought under plantation varies from sandy to waterlogged and saline, from rocky slopes to moderate areas. Both the choice of species and the treatment given will have to be determined in consultation with the owners.

Most of the species planted through the program are improved local species or introduced species well known to the local population. The most common

include poplars, willows and Russian Olive and Robinia, however, quite a few villagers are requesting walnut, mulberry and other species appropriate for the area¹¹. While these species are common to the areas, there is still a need to handle technical challenges in depth depending on the site specific conditions. For example, further research in finding species which perform well on, for example, saline soils at high altitudes which can stand cold and snowy winters and hot, dry summers. In general, however, the staff has a sound technical understanding of the basics of tree planting and management. This knowledge must now be enhanced with information on management aspects of plantation development.

The technical aspects of nursery development are also basically sound, particularly at AKRSP nurseries. Field visits confirmed that there was a significant difference in the quality of, for example, government nurseries and AKRSP nurseries. AKRSP nurseries were by far the better managed. There is, however, scope for improvement, particularly in the dissemination of these techniques to the farmers. The men and women owning the private nurseries need comprehensive training in seed collection, sowing and other preparation, selection of plants, treatment for better growth and grading, and protective measures after extraction from nurseries. There should also be a better understanding of when and whether it is necessary to leave parts of a nursery fallow. For AKRSP nurseries which rent their land for relatively short periods, and which will eventually be replaced by private nurseries, it may not be wise to leave portions of the productive land in fallow. Farmers, however, which may be establishing nurseries on their land for longer periods of time, should be able to receive advice on when and if parts of their nursery land should lie fallow, or how best to rotate different species to gain the most production with the least negative impact on the soil.

A new area where staff will need additional technical skills is in the management of natural forests. While natural forests are officially the domain of the government forestry department, they are an intricate part of the production system of the villagers who are dependent on natural forest trees for fuelwood, fodder and as a habitat for wildlife. Collaboration with the government, which has a certain level of technical expertise on forest management, would be desirable. However, in order for forest management to benefit the villagers, the villagers must be involved in the process. AKRSP staff could play an important role in working with both villagers and government.

Suggestions:

- better documentation and use of technical lessons learned in the field
 - in adjusting recommendations
 - in refresher training of field staff

¹¹See Appendix 4 for a list of trees and plants common in the NAs.

- further training of professional and field staff in tree management techniques.
- improved technical training to villagers in nursery development
- training of forestry staff in natural forest management (regeneration management etc.)

6.0 Institutional Aspects

At the highest levels of regional government, there is very strong support for AKRSP activities. This was evident in the review teams meeting with the Chief Secretary and the Planning Secretary of the NA administration. There is also support among many of the lower level government forestry staff, many of which have been employed by AKRSP, or have an innovative and cooperative manner. Other levels of forestry administration have been cooperative, but rather inactive in really taking advantage of the work which AKRSP's forestry staff is doing. Nevertheless, it is clear that a positive relationship exists between the Government bureaucracy and AKRSP in NAs and Chitral. This relationship has developed over several years. Government forestry functionaries have now begun to realize the benefits of participatory activities initiated by AKRSP in the region. AKRSP and GOP have in fact started sharing the implementation of social forestry activities in a program funded through a government PC-I. This provides for use of 75% of funds by AKRSP and 25% by GOP forestry department in NAs. Similarly, in Chitral the government has embarked on a project with activities almost identical to AKRSP's (including forestry activities) but being implemented by a semi-autonomous authority. AKRSP and the GOP project coordinators have met to discuss how they best could coordinate their activities.

These activities has had mixed results. The social forestry program seems to function well, however, it is not always clear what the government's contribution has been or should be. In Chitral, the government and AKRSP sometimes work in the same villages, something which seems a waste of resources. They also have different incentive packages, something which creates competition for programs within the same village. In addition they compete for the use of qualified villagers for staff. While competition can be good in some cases, it may not be conducive to promoting a feeling of mutual trust between staff and villagers. Longer-term institutional maturity depends on a strong component of commitment on the side of the villagers, something which may not develop if a village jumps at a better short-term offer. A more productive way of working might be to define separate areas and villages where the government and AKRSP work. If the government wishes to expand its activities, it could then take over responsibility for AKRSP villages. It might also be that AKRSP has better skills in the establishment of cooperation, something which the government could take advantage of by giving AKRSP the responsibility for setting-up cooperation, and government responsibility for

longer-term follow-up. This would only work if government was able to learn the proper skills in dealing with the villagers from AKRSP staff.

In any case, areas of cooperation with government need to be addressed more systematically. A longer term plan for the development of forestry resources in the area needs to be developed by AKRSP and the government forestry department. Who will deal with which issues now, i.e. research, extension, management? Who will have responsibility for what ten years from now? Such questions need to be addressed so that AKRSP staffing and training needs can be anticipated.

Institutional collaboration with the private sector in forestry matters is currently limited to promotion of private nurseries. As forest products begin to become marketable, however, other possible areas of cooperation could be developed. Apprentice programs with private timber mills or furniture carpenters could be developed, and agreements with private marketing channels both locally and down-country facilitated.

Suggestions:

- hold a planning meeting where AKRSP forestry staff and GOP/NA forestry staff discuss current and future ways of cooperating in forestry matters.
- explore the possibilities for linkages with the private sector in the marketing, processing and development of forest products.

7.0 Economic Aspects

Forestry activities are in general long-term activities due to the time it takes for the trees to develop to their full economic potential. Since the forestry program is relatively new, it is too early to evaluate the actual economic gains from the villagers' investment in tree planting. There are, nevertheless, some villagers who have been able to profit in the relatively short-term. These include those who have invested in nurseries, and those who have been able to sell the alfalfa which they have planted between the trees of their plantations.

For those men and women who have invested in nurseries, there are now several markets for their plants. First and foremost is AKRSP, which is dependent on the purchase of trees grown outside of their own nurseries to meet the demand for seedlings within the program. Second are private farmers, which are, slowly but surely, purchasing plants for their own use. This was particularly evident in Baltistan, where VO nursery owners from Katpana village sold 8000 plants in the Skardu marketplace, receiving 3, 4 or 5 rupees per plant depending on the grade of quality.

Most of the WO nurseries are too new to evaluate in terms of income earned, however, the potential can be calculated. For example, each WO nursery is ca. 1 kanal, with ca 3000 plants. The minimum price for forest trees would be Rs. 3, making a potential income of 9 000 Rs. per kanal. In order for these nurseries to be of high technical quality and economically viable, however, the program must offer further training in nursery management, general business skills and marketing (see section 3.2).

While the plantations are too young to harvest the trees or branches, those who have planted alfalfa between their trees have benefited either through increased availability of fodder, or through the sale of the alfalfa for income. In Jutal Village, Gilgit, for example, two farmers are able to grow double of what they need for their livestock. They will sell the surplus for a profit of 10 000 Rs each.

While men and women villagers have received some direct economic gains from working as paid laborers in AKRSP nurseries, the amounts earned, particularly by the women in seasonal operations, is minimal. Continued emphasis should be put on finding more profitable ways in which women can invest their scarce time.

There have also been attempts at producing and selling wooden fruit crates, however, this is still in development. For the future, timber sale, carpentry and saw mill activities are expected to provide direct income to the villagers.

Suggestions:

- evaluate the economic viability of the private nurseries (particularly WO nurseries), including existing and potential marketing channels, to ensure proper investment in terms of nursery size and number of quality trees produced. This is particularly important for those nurseries in difficult, single-cropping areas.

8.0 Social Aspects

AKRSP in general addresses the welfare and needs of several groups, be they very poor, conservative, liberal, remote, central, men, women or children. The forestry program continues this focus, and has been able to offer activities which are particularly suited to the poorer, more remote populations. Community plantations for the production of fuel, firewood and timber, for example, represent a relatively equitable distribution of the benefits of the development of new areas. In the more remote villages where it is difficult to find productive activities for market sale, the forestry program has motivated villagers to plant tremendous numbers of trees and alfalfa to help satisfy their current and future fodder and fuelwood needs.

These broad-based activities have activated entire communities and encouraged cooperation between several communities in the same valley. Villagers have together found innovative ways to overcome serious constraints to tree planting. For example, one of the biggest threats to the survival of newly planted trees is free grazing. To deal with this, several communities have banned free grazing, and imposed a fine for those in violation. Others have developed a system of common protection where villagers take turns guarding the trees¹². These are just some examples of how the forestry activities have led to innovative thinking within local institutions.

In terms of addressing the needs of women, the forestry program has been improving over the last year with the initiation of the Women and Nurseries (or Women and Greenery) pilot project. Nurseries have been identified as an important activity which could provide income for individual women. Other types of activities which would address other needs of women, and which have a wider impact in the community for women, however, have been limited. While the forestry activities implemented through the VOs also benefit women in many ways, women are not directly involved in the decision making process, and are not making the final decision on the types of plants planted or the management strategy. A few women's plantations have been established where communities have made land available. In these we see women choosing different trees and mixes of trees than their husbands choose on the VO plantations. This indicates that there is a need for women to both have control over forestry activities as well as participate in those organized through the VOs. Forestry activities promoted through WOs will help strengthen these social organizations, making them better able to participate in community issues which affect them.

Working through VOs and WOs inevitably involves working with AKRSP social organizers. The forestry program depends on the SOs to introduce the programs available to the villagers, and to inform the forestry section on which villages are interested in completing the dialog process and implementing forestry activities. This implies a certain amount of understanding of forestry on the part of the SOs. While some of the early male SOs received general training in forestry while forestry was a part of the agricultural section, there has been no training for SOs (male nor female) since. While the forestry staff itself has been able to support the work of the male SOs through visiting the villages themselves and relying on VFSs, this has not been so easy in the case of women.

One constraint in promoting women's forestry activities is that women foresters can only be active where there are existing WOs. They are thus dependent on the success of the women SOs in forming WOs. Unless the women SOs are active, and are able to promote forestry activities amongst the women, there is little the

¹²These fines are either imposed on the animal owners, or the guard responsible for watching the trees that day. Fines usually range from 5-10 Rs per animal found in the grazing area. One village in Chitral, however, imposed a much sticter fine - slaughtering of the animal without compensation! While the monetary fines are, in fact, collected in a common fund, there has not yet been an example of slaughtering a trespassing animal.

women foresters can do. Another constraint is that women have not been trained as VFSs (see section 3.3). This limits the extent to which women's forestry needs are expressed to and met by project staff.

Suggestions:

- review, together with the SO leadership, the positive and negative aspects of current cooperation between forestry staff and social organizers, in order to find an approach that will be more effective.
- give particular attention to the need to expand the number of WOs in areas where VOs are active in forestry.

9.0 Environmental Aspects

An environmental review of AKRSP's activities, recently conducted by a private consultant¹³ concluded that AKRSP's activities have had 'hardly any direct adverse effects on the environment of the NAs of Pakistan. Indeed, in terms of landscape, soils, CO₂, biodiversity and wildlife conservation, the program has provided many environmental benefits.' This review team has found this to be particularly the case for the forestry program. In areas where little or nothing has been able to grow, the program's planting of trees and grasses, most often nitrogen-fixing Robinia and alfalfa, has contributed to the development and enrichment of the soils. Biodiversity is enhanced through the creation of new ecosystems as the home of insects, birds and rodents and other wildlife.

There are, however, areas where improvements could be made to avoid more serious problems in the future. Salinity in the NAs is not a major problem as it can be in irrigated systems in other areas. Nevertheless, some riverbed plantations do suffer from salinity problems. These problems were not necessarily brought on by the project - they were evident before the planting of plantations. However, unless salinity is adequately addressed, the plantations could deteriorate. There is room for further research in finding salt-tolerant species which can be grown at high altitudes with a cold winter season. Erosion from rainfall is not normally a problem in the NAs, however, poor water management on steep slopes could result in the loss of newly-formed soils. The forestry program has been actively promoting the use of deep trenches and alfalfa to hinder erosion between trees, and in many cases the farmers have complied. The adoption rate of alfalfa according to AKRSP reports, however, appears to be low. From discussions with staff, there are several reasons why farmers have not always adopted alfalfa, the most common being that when time and labor is scarce, the farmers cannot prioritize alfalfa¹⁴. However, the staff feels the farmers

¹³Driver, Paul (LG Mouchel and Partners Ltd. UK). June 1994. AKRSP Environmental Review. Consultancy report for IUCN Pakistan.

¹⁴In Skardu, for example, villagers had planted a plantation on a steep slope with the intention of planting alfalfa. However, the government offered a wage to farmers for the planting of trees in

do understand the importance of alfalfa, both in reducing erosion and providing fodder. Perhaps a better system of recording uptake of alfalfa would give a better picture of the actual situation.

Despite the importance of water in the forestry program (as well as other programs), water management has not received much attention in AKRSP. This is probably due to the belief that there is more than enough water available, and that once a channel is constructed and maintained the water problem is solved. There are, however, several problems which could arise due to, for example, overwatering, or late watering, which would affect the production of trees. Improved management of both the timing and amount of water are areas where AKRSP could offer better assistance to villagers.

Suggestions:

- improve the monitoring of alfalfa production - for example, what is the adoption rate of alfalfa in those areas classified as steep (areas are where alfalfa is most important for controlling erosion).
- conduct a seminar/training course in water management for staff and VFSs.

10.0 Forestry Program's Response to Changing Conditions

It is difficult to assess specific changes within the Northern Areas since 1991 which have affected forestry activities. The major change in the NAs in recent times occurred in 1979 with the opening of the Karakoram Highway. This led to the opening up of larger-scale trade both with down country Pakistan and China, as well as increased tourism. This continues to have an impact on all of AKRSP's activities.

One could say, however, that in recent years there has been an intensification of several trends which have, in turn, affected the forestry program. These include a rapidly increasing population rate, and increasing off-farm employment in some town areas due to tourism, and migration down-country for employment. An increasing population (of both animals and people) has increased the demand for forest products such as fodder and fuel, particularly in remote areas. This has put intense pressure on natural resources in summer pastures and natural forests. Employment in towns and down-country has created a male labor shortage in not only selected households, but entire villages. This has an effect on participation in forestry activities, since in many places the digging of holes is gender specified for males, and women often face increased workloads due to small tree care and alfalfa harvesting.

another area, thereby redirecting labor from alfalfa planting. The villagers, understandably, chose to receive a wage for their labor rather than invest in alfalfa production.

At the same time, the position of women in the NAs can be said to have improved in general. In areas where the government and/or AKES have established girls schools in the early 1980s, there are now young girls with education which can assist in the activities of the WOs. Women who were immobile in the early years of AKRSP have in recent years been able to participate in training and new productive activities. Men who are participating in VOs are more open to the idea of their wives participating in WOs than they were at the onset of AKRSP activities. This means that in recent years the forestry program has a much better chance of involving women than previously.

Changes within AKRSP since 1991 have also affected the forestry program. In general, as AKRSP has increased the number of viable VOs and WOs, the forestry program has more opportunities for starting-up forestry activities. Also the increased emphasis on women in development in general in AKRSP over the past few years has had a positive effect on the forestry program. Since 1991, more women foresters have been employed, such that there is one for each region (although one of these has left for further training). Two more women have recently finished their forestry training and will be placed within the program.

Donor involvement has also affected the forestry program during this period. Since 1992 the JMM has visited the program annually, making professional suggestions on how each section might improve their efforts. The suggestions made by the JMM concerning NRM have had an decisive impact on the types of issues addressed in the forestry program.

The forestry program has responded well to the challenges mentioned above. It has shown itself to be flexible, forward-thinking, and self-critical enough to respond quickly and effectively to suggestions for improvement. It has not, however, lost its identity in the process, and continues to steer its activities according to the organization's own priorities. Future directions of specific aspects of the forestry program has been discussed in earlier sections. The next section will deal with broader directions and objectives for the future.

11.0 Suggestions for a further Sustainable Forestry Program

In general, the forestry program should in the future continue with the type of work they have been doing, adjusting their course to respond to changing conditions. Some specific adjustments have been suggested in the body of this report. In this section we will draw out key areas or themes which should be addressed when the forestry section prepares its plans for a new phase.

- *A clearer emphasis on local institutional development - building the capacity of the villagers themselves to manage their forestry activities.*

This implies:

- An intensification of forestry staff coverage at the village level. This would involve more staff (particularly women), visiting villages more often to develop a more solid, sustainable knowledge base, and to provide technical support to the VFSs.
 - Development of a more thorough system of continued training for staff and villagers
 - Development of more extensive training materials specifically for the training of illiterate villagers, including VFSs.
 - Consider introducing a component of functional literacy and numeracy into training, particularly for women VFSs.
- ***A total integration of planning of and reporting on men's and women's activities.***

This would include standardizing the reporting of men's and women's activities. Integration does not imply that women's activities become invisible. On the contrary, disaggregating data by gender makes women more visible in the development process. Such integration would give RPFs, who now have responsibility for the implementation of men's and women's activities, a better idea of the balance of activities by gender.

- ***An emphasis on training of staff and villagers in skills needed as trees mature, including***
 - silviculture techniques (pruning, thinning etc.)
 - harvesting techniques
 - plantation management techniques
 - tree product processing and development skills
- ***Increased emphasis on promoting women's plantations and nurseries.***
- ***A major adjustment in the type of data collected and reported.***

The forestry section¹⁵ should redefine the purpose of the data being collected, who it should be collected by, how it should be reported, how it should be analyzed, and how the results will affect project operations. More emphasis should be put on the interpretation and use of data by the section itself for improving the impact of its activities. The section should have a clear idea of how it will respond to changes in the data. i.e. adjustments in program activities, training content etc. The role of villagers in monitoring the quality and effectiveness of activities should be defined (perhaps small

¹⁵This suggestion is just as relevant to the other technical sections, and could best be addressed within the "NRM-section" concept.

groups of men and women who can act as quality control units). All data should be disaggregated by gender.

- ***Improved coordination with other technical sections at the field level.***
 - consider developing an "extension staff" common for all three technical sections at the field level.
- ***Clarification and development of working linkages with the GOP forestry departments in Chitral and NAs.***
 - develop longer-term forest development strategies (below and above the irrigation channels) where AKRSP and GOP collaborate according to their respective areas of expertise.
- ***Increased professional staff competence in NRM, particularly in the improvement and management of pasture and natural forests.***

12.0 Further Funding

It is clear that AKRSP's forestry program has had a tremendous impact on the lives of the rural poor in the Northern Areas, and that the creation of sustainable local institutions which can manage their local forest resources is a worthwhile investment in the development of the region. Institution-building and forestry development, however, are long-term activities, needing continued reinforcement in the early years to become strong enough to endure independence from the project in the future. There is also a potential for the spread of forestry activities in the more remote areas of the AKRSP program area. Future activities could therefore consolidate and strengthen existing activities, as well as expand slowly into new areas. Based on both past performance and future potential, the review team recommends continued funding for a new 5-year period, i.e. 1996-2000, with a mid-term review in 1988.

TERMS OF REFERENCE

REVIEW OF AGA KHAN RURAL SUPPORT PROGRAMME'S
(AKRSP) SUSTAINABLE FORESTRY DEVELOPMENT
PROGRAMME

I BACKGROUND AND SCOPE OF THE ASSIGNMENT

AKRSP's sustainable forestry development programme was launched in February 1991. Under the programme AKRSP has aimed at mobilising village organisations for tree plantation on newly developed irrigated lands.

The target beneficiaries of the project are the members of men's village organisations (Vos) and women's organisations (Wos) established by the AKRSP in the northern region. During 1991-95, it was planned to introduce improved farm forestry practices in at least 600 Vos. The aim is to assist Vos to plant and ensure the survival of approximately 10 million trees. The ultimate goal has been to reach out to all 1,762 Vos and 700 Wos existing in the area where AKRSP is working.

The aims and objectives of the programme have been:

- ▶ to ensure that, within AKRSP, there is a capability to conduct dialogue with the Vos: to determine which Vos wish to plant trees, the most appropriate technical requirements and terms of partnership with Vos, and their precise planting targets.
- ▶ to train selected villagers to assume the primary extension and training role in village forestry (as Village Forestry Specialists); and to strengthen the training and extension capabilities of critical AKRSP staff for programme implementation.
- ▶ to support the Village Forestry Specialists in their extension work, to serve as the main effective link between the Programme and Vos.
- ▶ to ensure an adequate supply of high-quality planting material by procuring cuttings from superior local trees, and - increasingly - from AKRSP-sponsored supply nurseries and VO/WO nurseries.
- ▶ to establish, and to train where appropriate, an adequate forestry staff within AKRSP.
- ▶ to develop within AKRSP an adequate and efficient monitoring procedure to guide the Forestry Programme so that it has the most positive impact on the area.

- ▶ to enter into arrangements with expert technical organisations outside AKRSP for technical monitoring and advice.
- ▶ to conduct such research as is necessary to improve the potential of forestry and agroforestry in the programme area; by (a) providing access to research capabilities, both inside and outside Pakistan, as required; and (b) by running a small field research programme.
- ▶ to seek opportunities to contribute to the Northern Areas Forest Department's interest and capability in village forestry.
- ▶ to seek increasing participation of Women's Organisations in forestry-related activities, where it assists them in income generation and the reduction of burdensome labour, and where it contributes to increased overall quality of life.
- ▶ to contribute to an understanding of local environmental issues and the role of trees among school children in the Programme area.

The programme is divided into seven tasks:

- 1) community afforestation and extension
- 2) training
- 3) training and extension materials
- 4) forestry Research
- 5) women in forestry development
- 6) environmental education, and
- 7) technical assistance

With the present phase of the forestry programme coming to a close in 1995, there is a need to review achievements, changing needs, and prospects to meet those needs. On the basis of the review, NORAD may wish to work with AKRSP for a second, different phase of work.

II ACTIVITIES

1 Review achievements of programme objectives

Review the achievements of the programme since 1991 in attaining its original objectives and targets for:

- 1) afforestation,
- 2) nursery development,
- 3) human resource development,
- 4) research and development,
- 5) women in forestry development,
- 6) environmental education, and
- 7) technical assistance,

outlining the main facts, successes, shortcomings, and constraints; and how they were dealt with (a calendar approach).

1.1 Technical aspects

Review the technical approaches adopted: notably suitability of species and silvicultural techniques for site and intended purpose.

1.2 Resource management aspects

Review the efficiency of utilisation of manpower, materials and finances in meeting the programme objectives.

1.3 Institutional aspects

Review the alliances with government, commercial companies, and other non-profit NGOs. Review the institutional collaboration with the public and the private sector.

1.4 Economic aspects

Review the development of natural resource capital through the programme: is AKRSP developing the right kinds of forestry resources for meeting local and commercial economic needs and opportunities? Review supply constraints and market (under)utilisation. Have the various productive activities been economic? What has been the programme's direct income effect in the area?

1.5 Social aspects

Assess the ways in which the programme has taken account of the welfare and development needs and potentials of all partner groups (different types of VOs and WOs, etc), paying particular attention to the differentiated roles and needs of women. Assess to what extent women's potentials have been utilised in forestry activities. Review how the programme has worked with AKRSP social organisers and has contributed to social organisation in general.

1.6 Environmental aspects

Assess whether the programme has contributed to environmental stabilisation and improvement; and whether it has avoided environmentally-damaging activities that can be associated with forestry, e.g. soil erosion, water contamination, biodiversity reduction, invasive species introduction. Assess to what extent the forestry programme has been integrated with other land-based natural resource activities.

1.7 Technical support

Assess the technical support provided to the programme by

other organisations. Look, in particular, at the collaboration between IUCN and AKRSP.

2 Review original objectives and changes that have taken place since their formulation

2.1 Review changes since 1991

Review changes since 1991 in a) Northern Areas and b) AKRSP as far as they affect forestry activities. Address problems, needs and opportunities. What new demands have been placed on the forestry programme since 1991; how has it responded; and where has it not yet responded? How flexible has it been?

2.2 Define how the forestry programme can and should respond to these changes

Review the original objectives and the capacity that has been built up in the forestry programme, and suggest possible changes in objectives, methods and capacity to address new problems, needs and opportunities. The feasibility, desirability, and economic sustainability of further AKRSP forestry work in the following fields should be addressed:

- management of the planted forest
- management of the natural forest and pasture
- management of other natural resource based economic activities, e.g. nursery development, sericulture, apiculture, handicrafts, and forest industries
- enterprise development, product development, marketing, distribution, and trade within the sector of natural resource management
- human resources development
- forestry activities for specific (disadvantaged) groups e.g. very remote communities
- forestry activities for women
- others as defined in 2.1

2.3 Outline a further AKRSP sustainable forestry programme

Make suggestions which could guide AKRSP in the development of further sustainable forestry programme. Assess future programme potential such that a decision on whether a further forestry programme is required can be made.

III IMPLEMENTATION

The review is to be carried out two persons: one Norwegian consultant and one Pakistani resource person.

The two consultants should meet AKRSP management and forestry workers at the regional offices in Chitral,

Baltistan, Astore, and Gilgit and at the core office, social organisers, and NORAD and IUCN employees. The engagement should also include some field visits to VOs and WOs.

Reference material should include AKRSP reports, JMM reports, and SDC material.

The review is to be completed in two weeks. The time frame would be 1.11 - 14.11.1994, subject to agreement with NORAD. The final report should be submitted to NORAD/Islamabad by 15.12.1994.

The report should include an executive summary.

Ragnvald Dam 02.11.1994 Islamabad.

FIELD ITINERARY

November

- 2 Briefing with NORAD/Islamabad
- 3 Document collection and reading
Review team meeting
- 4 Travel to Chitral by Helicopter
Lunch meeting in Gilgit
- 5 Field visits to: AKRSP Nursery, Singur
Mogh village
Garum Chashma
Roei village
Meeting with Divisional Forest Officer, Chitral
- 6 Attended first session of annual planning meeting for NRM in Chitral.
Field visits to: Buni, Huncroijunali WO
AKRSP Nursery
Spent night in Mastuj
- 7 Drove towards Gilgit over Shandur Pass

Field visits to: Gasht Pain
Gasht Bala
Harchin Lasht
Kitimar
Bahramandeh
Gilgit: Karimabad (Teru Cluster)
Teru Center ("")
Teru Bala ("")
Teru Bahich ("")
Guaghuklmoli, Pain and Bala ("")
Tirch ("")
Spent night in Gupis
- 8 Field visits to: AKRSP Nursery, Gupis
Mollabad WO
Jutal Bala
Hatoon (Punyal)
Golodass
Gich
Sher Qilla

PERSONS MET

Islamabad

Ragnvald Dahl, Resident Representative, NORAD
Olav Ofstad, Assistant Resident Representative, NORAD
Matina Jägerhorn, Project Officer, NORAD

Chitral

Ghulam Jilani
Regional Program Forester, Chitral (AKRSP)

Hashim Ali
Divisional Forest Officer, GOP Chitral

Asaf Majeed
Project Forester (AKRSP)

Bushra Masood
Project Forester, WID (AKRSP)

Said Nazir
Junior Forester (AKRSP)

Gilgit

Jahan Ara
Project Forester WID (AKRSP)

Khalil Ahmed
Project Forester (AKRSP)

Raja Yousuf Ali
Conservator of Forests, GOP NAs

Mahmood Khan
Chief Secretary of Northern Areas

Qurban Jan
Secretary of Planning, GOP NAs

Ali Gohar
Program Manager, Forestry (AKRSP)

Skardu

Ismail Zafar
Regional Program Forester, Skardu (AKRSP)

Jawad Ali
Project Forester (AKRSP)

**LIST OF TREES AND PLANTS COMMON IN
THE NORTHERN AREAS OF PAKISTAN**

SCIENTIFIC NAME	COMMON NAME
TREES	
1. <i>Pinus wallichiana</i>	Blue Pine
2. <i>Cedrus deodara</i>	Cedar, Deodar
3. <i>Abies pindrow</i>	Fir, Silver Fir
4. <i>Picea smithiana</i>	Spruce
5. <i>Juniperus macropoda</i>	Juniper
6. <i>Juniperus communis</i>	Juniper
7. <i>Pinus gerardiana</i>	Chilgoza Pine
8. <i>Tamarix spp</i>	Tamarix
9. <i>Populus ciliata</i>	Poplar
10. <i>Populus nigra</i>	Poplar
11. <i>Populus alba</i>	Poplar
12. <i>Salix spp</i> (seven species)	Willow
13. <i>Pyrus aucuparia</i>	Pyrus
14. <i>Betula utilis</i>	Birch
15. <i>Quercus ilex</i>	Oak
16. <i>Morus spp</i>	Mulberry
17. <i>Platanus spp</i>	Chinar
18. <i>Elegnus angustifolius</i>	Russian Olive
19. <i>Robinia pseudoacacia</i>	Robinia
SHRUBS	
20. <i>Prunus padus</i>	Prunus
21. <i>Rosa spp</i>	Rose
22. <i>Lonicera spp</i>	
23. <i>Berberis spp</i>	
24. <i>Cotoneaster spp</i>	
25. <i>Daphne oleodis</i>	
26. <i>Viburnum spp</i>	Viburnum
27. <i>Hippophae spp</i>	Hippophae
MEDICINAL PLANTS	
28. <i>Artemesia spp</i>	Artemesia
29. <i>Ephedra spp</i>	Ephedra
GRASSES	
30. <i>Poa spp</i>	

- 9 Attended annual planning meeting session for WID, Gilgit.
Field visits to: AKRSP Nursery - GOP Social Forestry Program
Jutal Bala
Besin WO (Nager Valley)
- 10 Meeting day in Gilgit
Met with: Conservator of Forests, NA
Chief Secretary , NAs
Planning Secretary, NAs
AKRSP Program Manager, Forestry
Social Organizers
Forestry staff, Gilgit
- 11 Travel to Skardu
Planning meeting with Regional Program Forester and Project Forester
in evening
- 12 Field visits to: Gole
Karis (GOP Nursery)
Barchong Karis
Gole Karis
Gon Balghar
Bordas Thallay
Sogha
Saling (AKRSP Nursery)
- 13 Field visits to: Olding (AKRSP Nursery)
Sikamaiden
Shigri Khurd WO Nursery
Private Nursery (Ashraf)
Shigri Khurd (AKRSP Nursery)
Katpana
- 14 Meeting with Skardu forestry staff
Traveled to Islamabad by helicopter
Debriefing with NORAD in evening

TADZHIKISTAN

AFGHANISTAN

CHINA

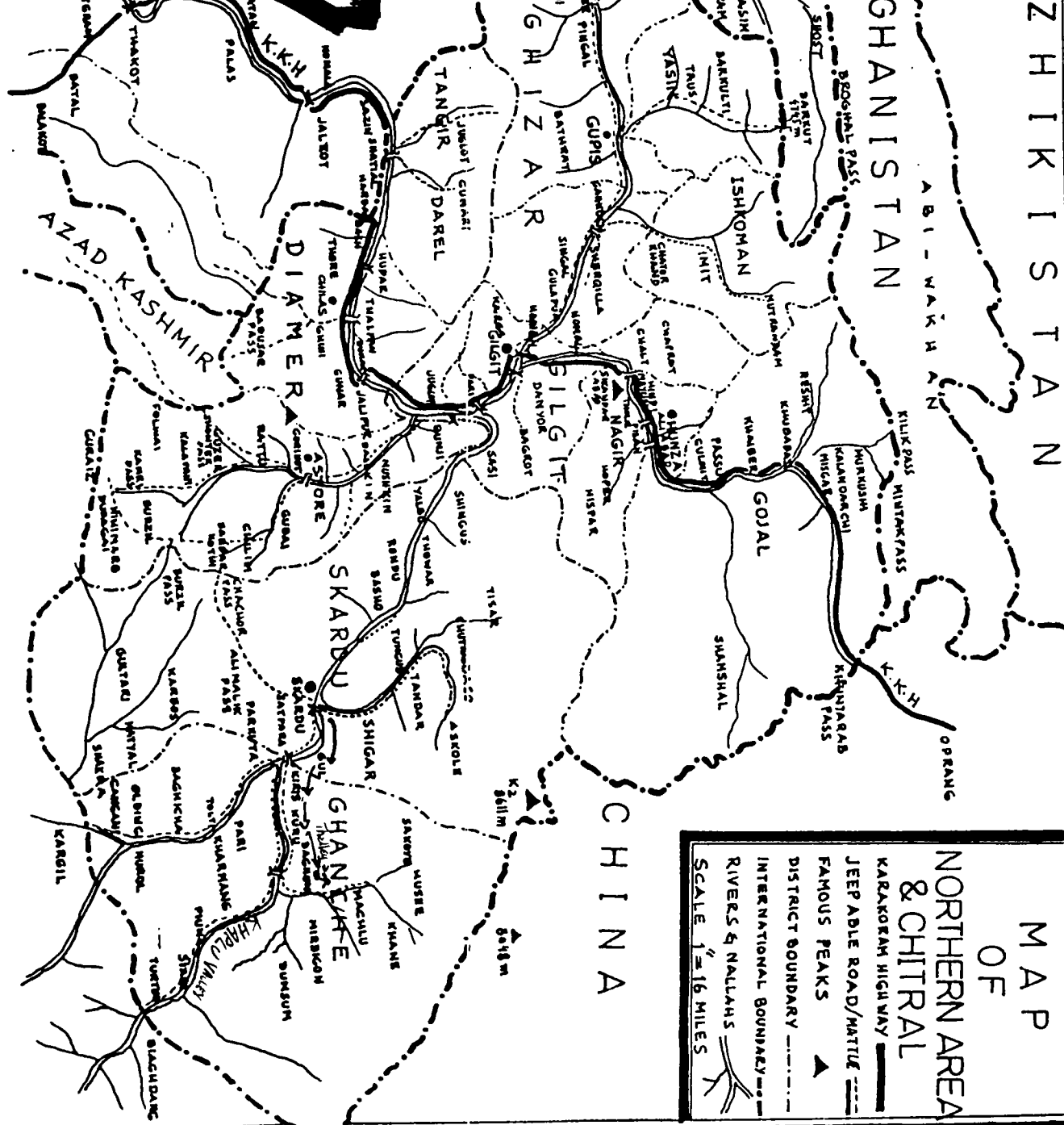
MAP OF

NORTHERN AREA & CHITRAL

- KARAKORAM HIGHWAY
- JEEP ABLE ROAD/WAY
- FAMOUS PEAKS
- DISTRICT BOUNDARY
- INTERNATIONAL BOUNDARY
- RIVERS & NALLAS
- SCALE 1"=16 MILES

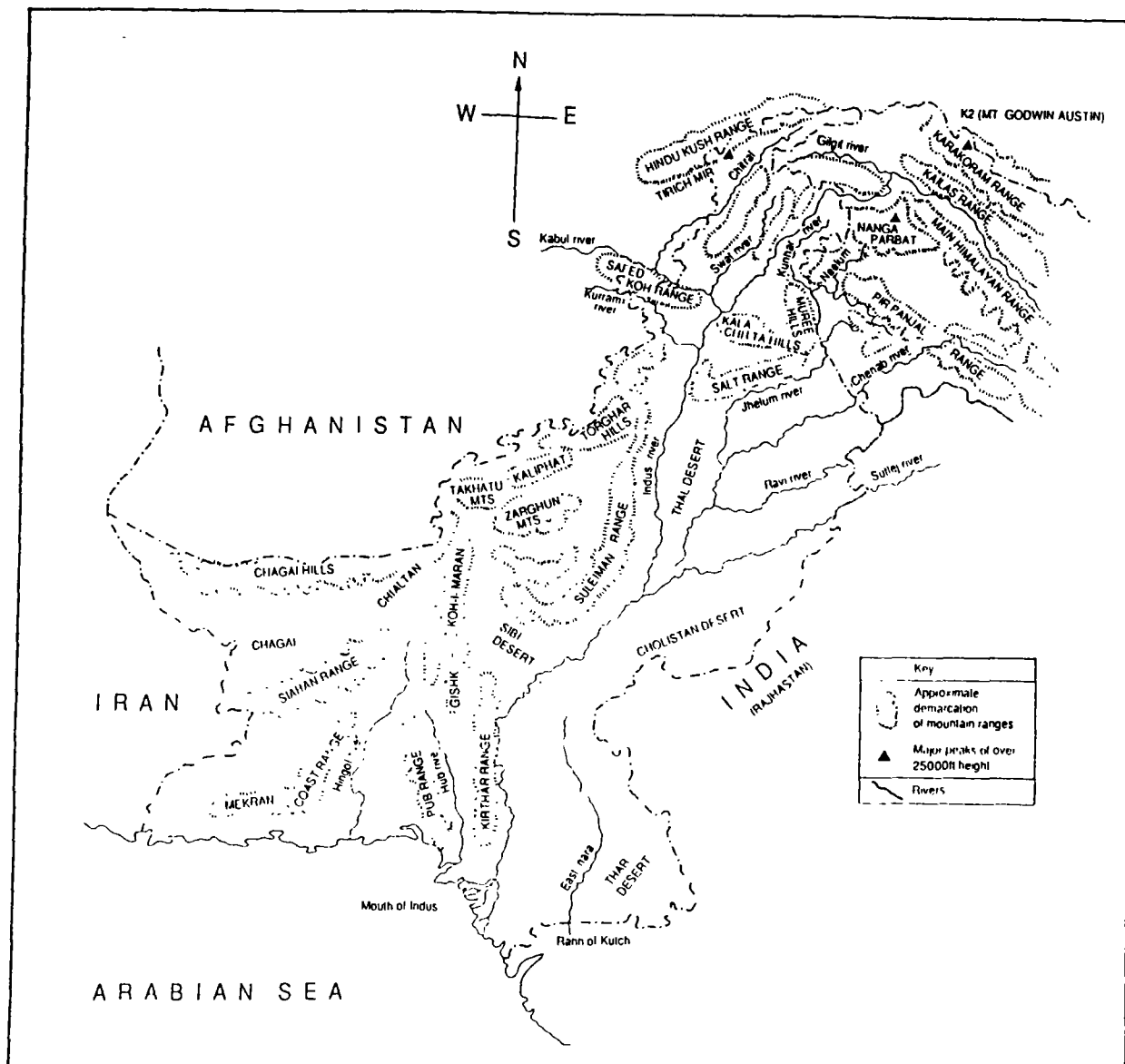
INDIAN HELD TERRITORY

INDUS RIVER



SHAHID HANEBD (DESIGNER)
HRD (AKR57)

MAP 2.1: PHYSIOGRAPHIC DIVISIONS OF PAKISTAN



Source: Mallon (1991)