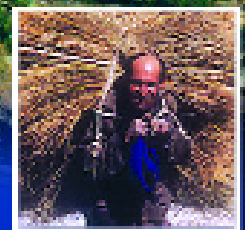
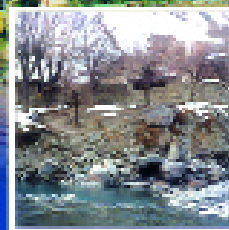
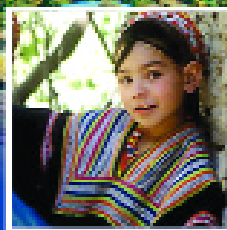
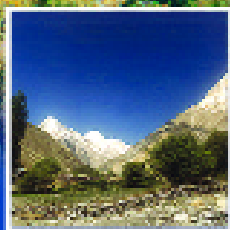


Chitral

AN INTEGRATED DEVELOPMENT VISION





Conservation
Strategy

Chitral



IUCN
The World Conservation Union

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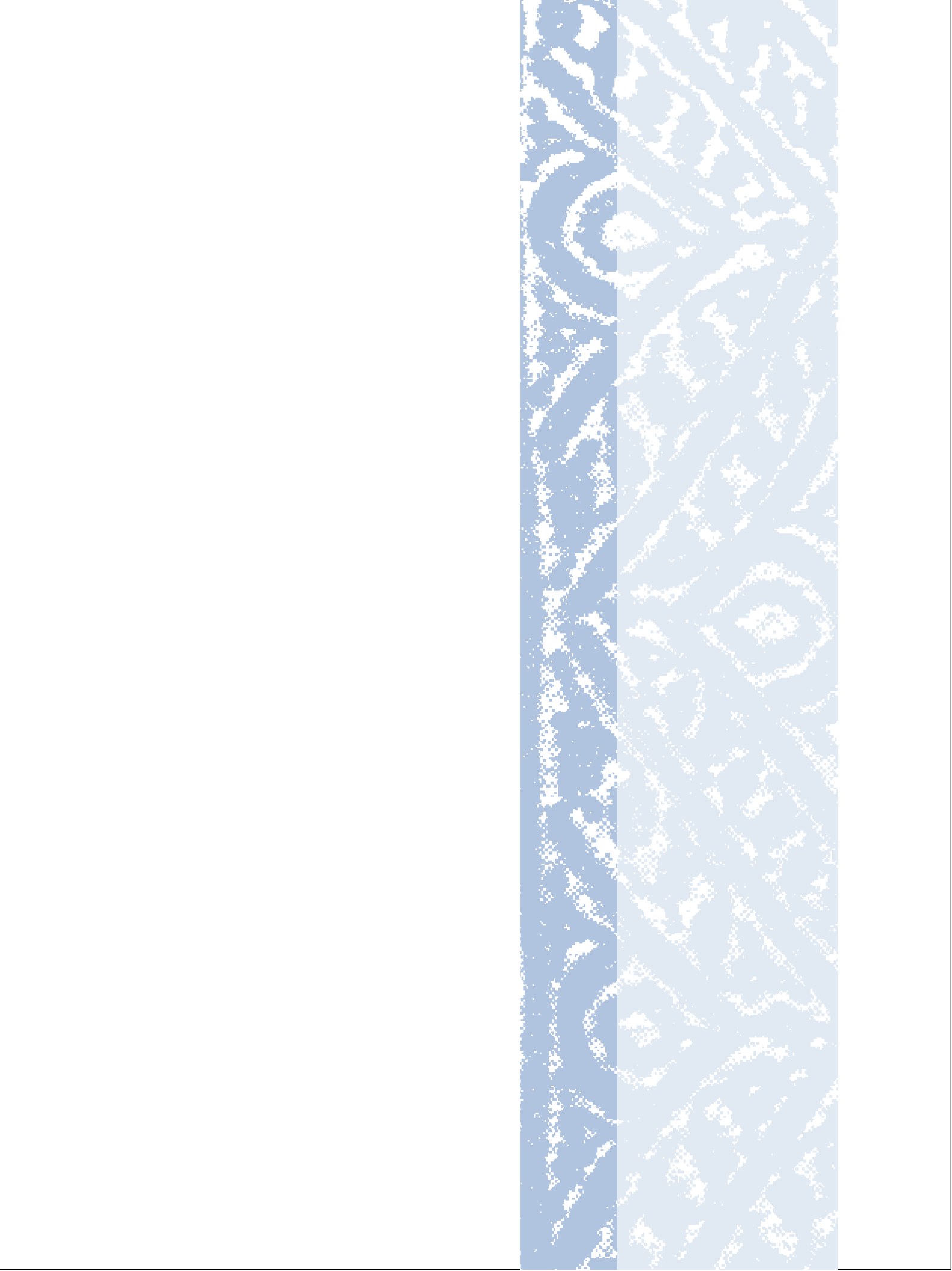
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Abbreviations

ADP

Annual Development Programme

AKES

Aga Khan Education Services

AKHS

Aga Khan Health Services

AKPBS

Aga Khan Planning and Building Services

AKRSP

Aga Khan Rural Support Programme

CADP

Chitral Area Development Project

CBO

Community-based organisation

CCB

Citizen Community Board

CCS

Chitral Conservation Strategy

CFSD

Chitral Fund for Sustainable Development

DCO

District Coordination Officer

DFO

Divisional Forest Officer

EDO

Executive District Officer

FMB

First MicroFinance Bank

GoNWFP

Government of the North-West Frontier Province

GoP

Government of Pakistan

IFAD

International Fund for Agricultural Development

IUCN

The World Conservation Union

KfW

Kreditanstalt für Wiederaufbau

NGO

Non-governmental organisation

NWFP

North-West Frontier Province

PHED

Public Health Engineering Department

PHP

Project for Horticultural Promotion

PNCS

Pakistan National Conservation Strategy

SAP

Social Action Programme

SDC

Swiss Agency for Development and Cooperation

SHYDO

Sarhad Hydel Development Organization

SPCS

Sarhad Provincial Conservation Strategy

TMA

Tehsil Municipal Administration

UNICEF

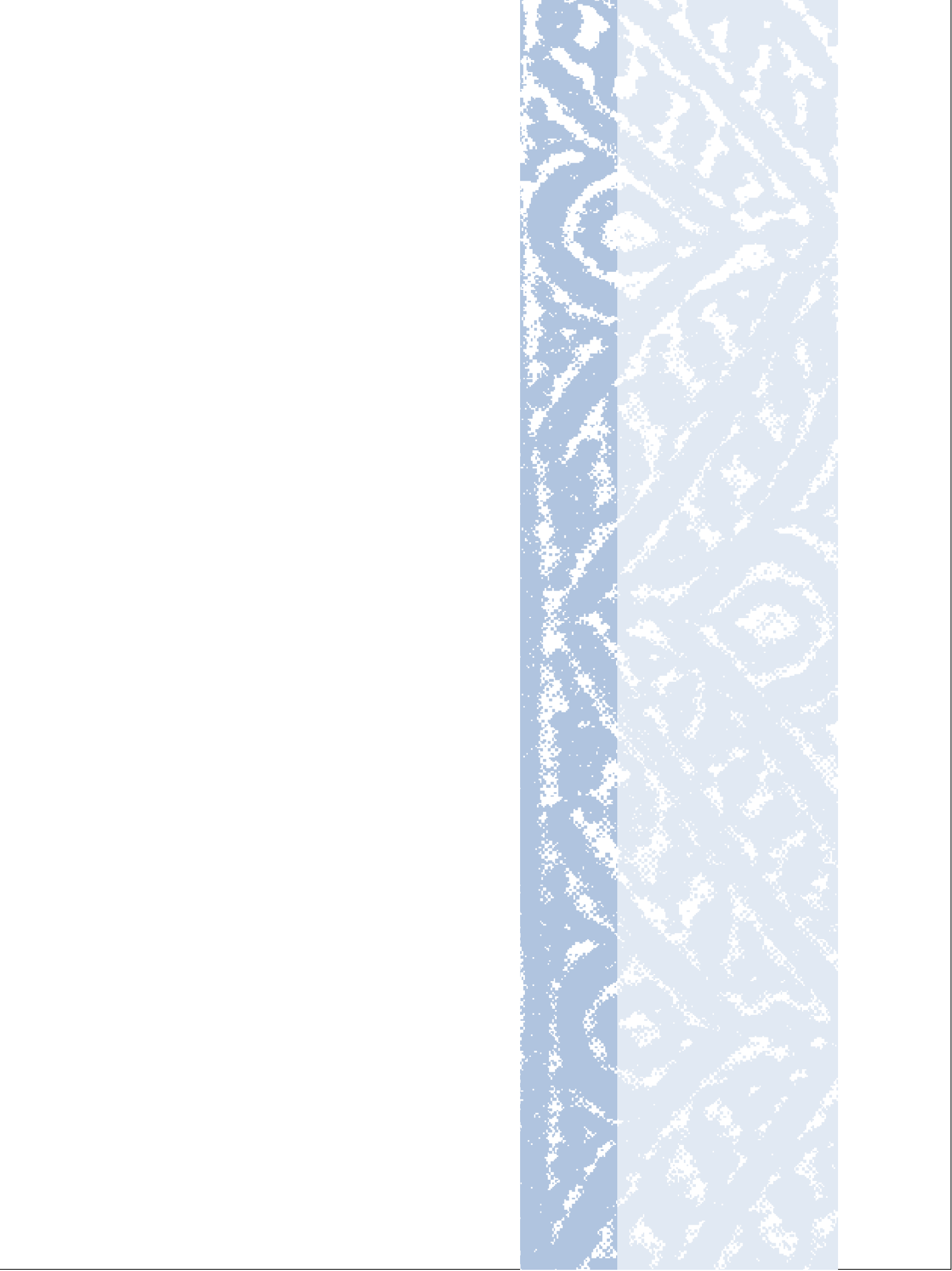
United Nations Children's Fund

WAPDA

Water and Power Development Authority

WWF

World Wide Fund for Nature



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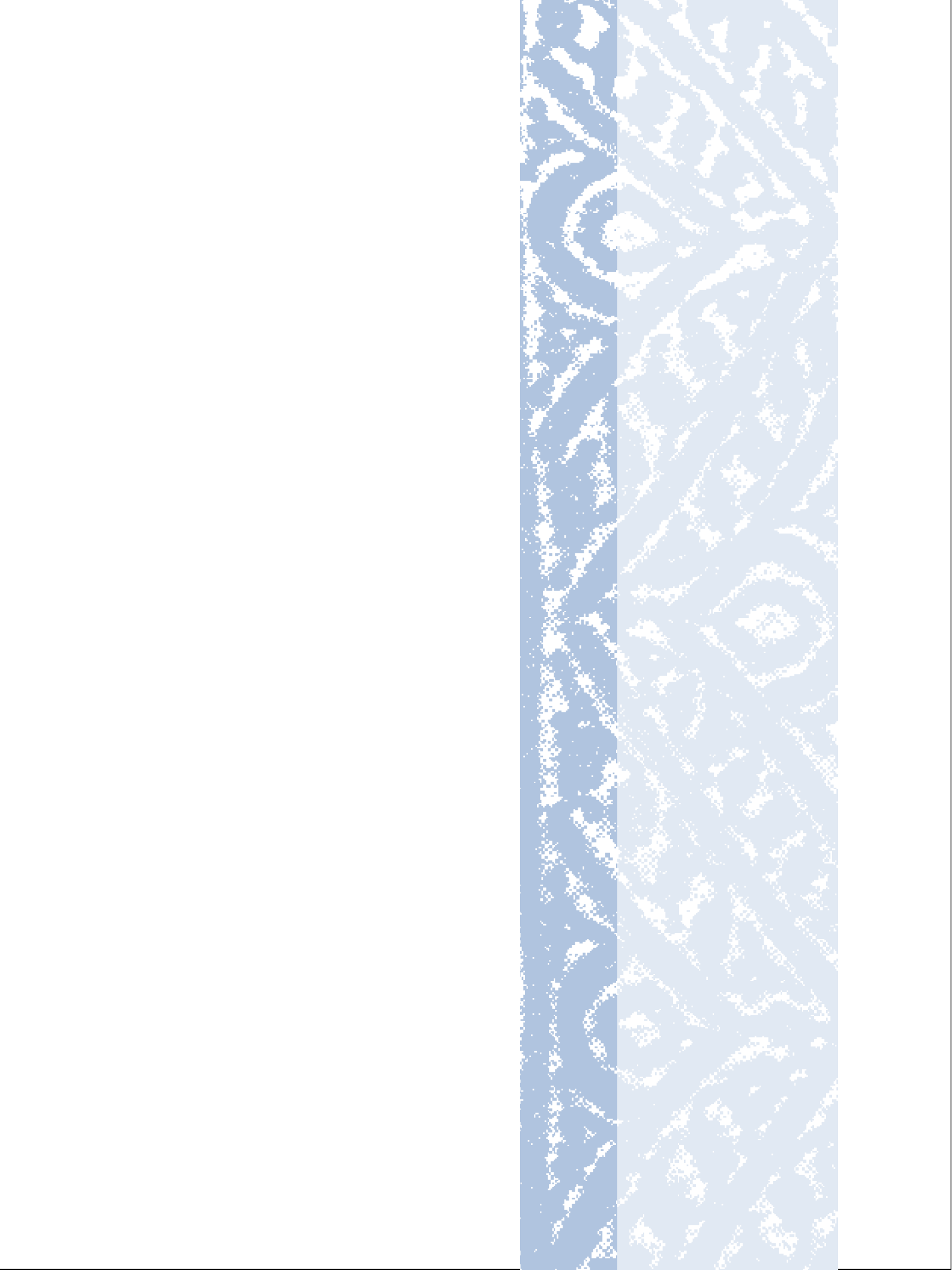
Credit for the formulation of the Chitral Conservation Strategy (CCS) goes first and foremost to the people of Chitral who flocked to the district, tehsil and village meetings held to elicit their views and assess their needs. These meetings shaped the strategy and served to determine its priorities. Our thanks are also due to members of government and non-governmental organisations working in the district.

A long list of institutions and individuals helped to map out this strategic framework for integrated development at the district level in Chitral. The provincial government's Planning and Development Department, the former district administration of Chitral, district line department partners, representatives of funded projects, the steering committee and Zilla Council CCS Committee played an active role in the development of the strategy.

Participants of the multi-stakeholder District Roundtable delineated the broad outlines of the CCS document and monitored its progress.

The Swiss Agency for Development and Cooperation and IUCN–The World Conservation Union provided financial and technical support. All deserve our gratitude for their contribution.





Executive summary

Imposing mountains dominate the landscape of Chitral, forging a rugged terrain that is home to 162,000 males and 157,000 females. The topography of the area is varied, with 28.5% of the region covered in glaciers, snow-clad mountains, bare rock and barren ground, and 62% of the land supporting only pasture with sparse vegetation. The district's most important productive resource is irrigated farmland totalling 45,017 ha, which feeds and provides employment to the majority of its people. Critical as a food source as well as a means to augment farm income are about 700,000 head of livestock (75% goats and sheep). Forests cover 70,045 ha, mainly in Chitral and Drosh tehsils. Of this area, 25,000 ha is suitable for commercial harvesting. Despite widespread hunting by the local people, the remote mountain valleys of Chitral are home to a considerable variety of wildlife.



Major Achievements

The grit of the people, the efforts of provincial government departments, and donor assistance channelled through development initiatives such as the Aga Khan Rural Support Programme (AKRSP) and Chitral Area Development Project (CADP), have allowed Chitral's inhabitants to maintain a precarious toehold on survival despite a threefold increase in population since 1951. In addition to major roads to Garum Chashma, Gilgit, Mastuj and Peshawar, the district is traversed by 800 km of link roads which create access to widely scattered settlements. Meanwhile, voluntary social organisation and the application of gruelling labour have enabled water to be conveyed great distances over rocky ground to irrigate farmland. Electricity is available to 67% of households, and piped water to 88% and 41% of urban and rural households, respectively. Approximately 10% of the population has access to telephones.

Of individuals aged 10 years and above, 10% have received primary education, 7.5% have studied up to the middle level and 6.5% have completed matriculation, while 2% each have obtained secondary and degree-level education. Some 12% of students drop out before completing primary school. Currently 51% of males and 31% of females between the ages of 5 and 24 are engaged in education.

Health care is provided through a district headquarters and three tehsil headquarters hospitals, as well as three rural health centres, 22 basic health units, 22 dispensaries, three mother and child health centres, and three specialised centres, one each for immunisation, leprosy and malaria.

The efforts of local farmers, agriculture and forestry scientists, as well as the AKRSP and CADP, have brought about a considerable increase in crop yields, as well as a decline in the incidence of livestock disease. Close to 9 million forest trees have been planted since 1988, although their survival has not been monitored.

Major Constraints to Further Development

Chitral is the only district in all of Pakistan to become cut off from the rest of the country for several months during the winter when the Lowari Pass (3,200 m) is blocked with snow. Winter snow and summer floods also disrupt communications within Chitral.

The area's isolation during the winter casts a shadow on every aspect of daily life, restricting the mobility of labour, disrupting agricultural exports, and interfering with imports of grain, livestock feed and agricultural inputs. Deficiencies in the internal communications network, combined with a short working season, impair the quality and reach of health and education services, and hinder development work in general.

Chitral's most important potential asset is human capital. Yet recent statistics show that some 24,000 men and 40 women from 15 to 64 years of age are unemployed (GoP, 1999). Human resource development is constrained by the fact that expansion in certain key sectors has proven difficult. Primary health care, reproductive education, curative medicine, potable water supply, and quality education and training, especially among women, are areas that require urgent attention. In addition, reliable communications both within the district, and between Chitral and the rest of the country, are essential. Other constraining factors include lack of awareness among the population and a scarcity of material resources required to initiate remedial measures on an effective scale.

Agricultural activity in Chitral depends on irrigation. Since the overall area under irrigation is small, as are individual land holdings, an immediate increase in household farm income only becomes possible if both the productivity and profitability of agriculture can be improved. This in turn requires that measures are taken to bolster the agriculture sector: protecting farmland from soil erosion, preventing the diversion of agricultural land to non-agricultural uses, maintaining irrigation channels and levelling ground for more effective irrigation. The government's

current agricultural research and extension service must also respond more effectively to the requirements of local communities.

In the medium and long term, new land will need to be brought under irrigation—a fact not lost on the people of Chitral themselves. The sector has already received considerable attention and significant resource outlays from the AKRSP and CADP. To increase the area under irrigation, detailed studies will be required to determine the potential of remaining level land to support agriculture. The adequacy of available water resources will also need to be investigated, along with the cost-effectiveness of conveying water to the areas selected for irrigation. In addition, disputes over ownership of land and water will need to be resolved. While the task of irrigating new land is arduous, expensive and time consuming, its critical role in enabling agricultural activity makes irrigation a critical part of any plan to alleviate poverty and create employment in the long term.

Livestock rearing is a key component of Chitral's economy, providing food and allowing local communities to supplement their income by selling wool and hides. Since husbandry is managed primarily by women, income generation schemes aimed specifically at women can be channelled through this sector.

Expansion in this sector is constrained primarily by the shortage of animal feed in the winter. Animals are kept indoors from late autumn to early spring, during which time they are fed crop residues and dry fodder. Feed shortages not only affect the health of livestock, but also restrict the number of animals a household is able to rear. In late spring and early autumn, herds forage in subtropical and temperate grazing lands covering 57,600 ha, spending the summers in alpine and subalpine grazing lands extending over 316,000 ha. Many of these areas are being rapidly denuded. Other constraints to the development of husbandry include parasites, disease and inadequate shelter.

Besides advancements in the farming and livestock sectors, harnessing Chitral's

hydroelectric potential will considerably improve the quality of life for the majority of the population. Work in this direction is already underway with the small-scale Reshun and Shishi-II hydel projects currently under construction. Upon completion, these schemes will increase overall production. Supply to Chitral's scattered habitations, however, will depend on the speed with which a distribution grid can be set up. Communities to whom supply cannot be extended cost-effectively will need to build their own microhydel power plants, relying on social organisation. In addition to subsidies, the success of these initiatives will require the establishment of a fully equipped workshop in Chitral where repairs may be carried out, and training for village residents in operation and maintenance.

A matter of critical concern for the people of Chitral is reliable access to a year-round supply of potable water. According to the 1998 census, 88% of the urban population of Chitral receives piped water. But among rural inhabitants, who comprise 90% of Chitral's total population, only 41% receive water through pipelines. The rugged terrain of the area, coupled with its severe climate, create a major obstacle to expanding the supply of potable water. During the winter, pipelines are known to freeze and eventually burst, cutting off supply to large segments of the population.

Renewable resources in Chitral are under heavy pressure from a forestry system that does not take into account the needs of the people. Meanwhile, fodder scarcity and domestic energy requirements contribute to the denudation of watersheds and grazing lands.

Ecotourism is a valuable potential asset for Chitral, bringing in its wake a number of synergistic improvements in other sectors. Development issues that are important in and of themselves—facilitating access; improving health care; increasing the supply of potable water; protecting the environment; upgrading areas of ecological interest, such as forests, alpine grazing

lands and biodiversity areas; and conserving cultural heritage—are also likely to make the area a more attractive tourist destination.

■ Removing Constraints

For the inhabitants of Chitral, to eke out a living is a challenge fraught with difficulty at every turn. Generating meaningful development in the area will require the sustained involvement of both the government and the people. The Chitral Conservation Strategy (CCS) endorses a bottom-up approach to development planning and expects local communities to make their contribution at every step of the process, from planning and design to operation and maintenance. To help finance such initiatives, the CCS envisions

the launching of a Chitral Fund for Sustainable Development. At the same time, however, major investment will be required from the federal and provincial governments in sectors that are the state's responsibility: providing infrastructure facilities for governance, communications, education, health, potable water, sanitation and electricity.

The time frame for implementation of the CCS is 10 years. A review is to be conducted after the first five years, at which stage the strategy may be amended by the Zilla Council. The CCS will come into effect upon approval by the Zilla Council. The Zilla Nazim will lead implementation and monitor progress, with the assistance of the District Coordination Officer and the district Finance and Planning Office.

Reader's guide

The Chitral Conservation Strategy (CCS) takes stock of the area's resources and investigates ways in which to sustainably increase their productivity. Developed under a District Roundtable comprising local residents and government functionaries, the strategy formulation process was facilitated by the CCS Unit of IUCN–The World Conservation Union. Views of participants at district, tehsil and village consultations determined the content of this strategy. Additional information required for its preparation was obtained from specially commissioned sector papers, and from the concerned government and non-government agencies.

Chapter 1 sets the stage for the development of the CCS, providing brief overviews of the international context in which area-specific conservation strategies have been prepared in Pakistan and the consultation process that led to the formulation of a strategy for Chitral. Chapter 2 contains a sector-by-sector survey of the district, covering physical geography, demographics, climate, employment, natural resources, infrastructure and public-sector services, as well as social organisation, cultural heritage and tourism. The structure of the new local government system, introduced following the promulgation of the North-West Frontier Province Local Government Ordinance 2001, is also described. Chapter 3 outlines major development projects undertaken in the past, along with programmes currently in operation. Together, these chapters provide the context in which the CCS has been formulated.

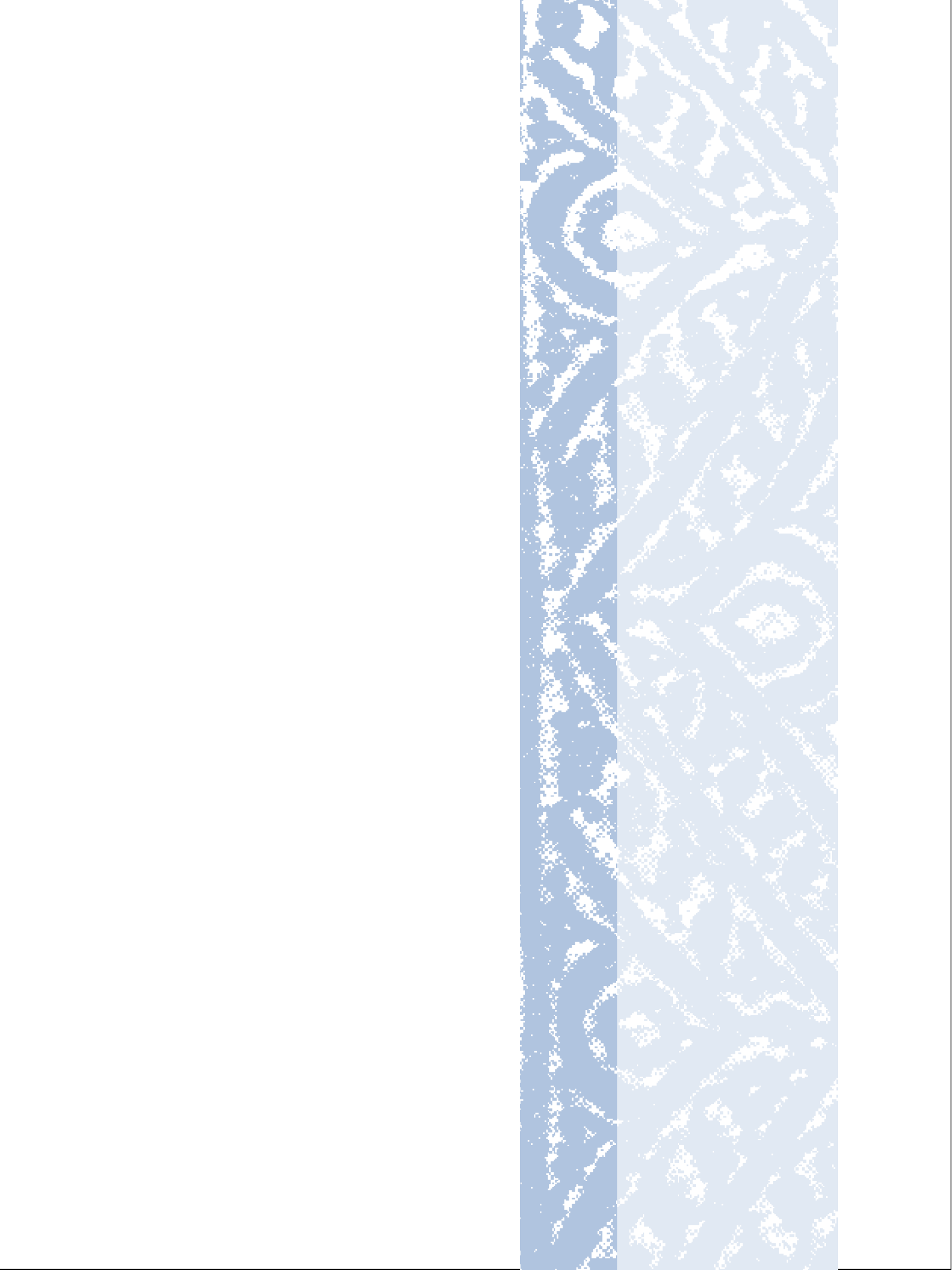
The strategy itself is developed in chapters 4 to 7. Here, individual sectors discussed in the overview are grouped thematically into four chapters: governance, human resource development, municipal services and infrastructure, and natural resource management. Each chapter is devoted to a single theme and, where necessary, individual sectors are discussed separately. Issues affecting each sector are analysed and a strategy proposed for improvements in that sector.

The last two chapters focus on translating the CCS proposals into action. Chapter 8 discusses implementation mechanisms and suggests ways in which scarce resources can be utilised more efficiently. Chapter 9 synthesises the strategy into an easy-to-reference table, listing 38 initiatives grouped according to time frame, along with the actors expected to be involved in execution.



Part 1

Context



Chapter

1

Background



1.1 Chitral Conservation Strategy

Since the merger of the former state of Chitral with Pakistan in 1969, sizeable resources have been expended by both government and donor agencies for the development of the district. Growth has nevertheless failed to keep pace with the people's needs or reflect their rising expectations. At the same time, the sustainability of gains achieved has not been ensured.

The Chitral Conservation Strategy (CCS) searches for ways in which to foster the sustainable development of Chitral's meagre resource base. The strategy aims to identify the capacity of the people, and to increase their income by enhancing productivity and optimising the use of natural resources. In the light of past experience, the CCS attempts to find new institutional arrangements through which local communities, supported by the government, can become the prime engine for development.

1.2 Genesis of the CCS

International concern for sustainable development emerged following the launch in 1980 of the *World Conservation Strategy: Living Resource Conservation for Sustainable Development*, prepared by IUCN–The World Conservation Union with

Formulation of the *Pakistan National Conservation Strategy* (PNCS) got underway in 1987. Approved by the Federal Cabinet in 1992, the PNCS recommends the implementation of 14 programmes:

- maintaining soils in croplands,
- increasing irrigation efficiency,
- protecting watersheds,
- supporting forestry and plantations,
- restoring rangelands and improving livestock,
- protecting water bodies and sustaining fisheries,
- conserving biodiversity,
- increasing energy efficiency,
- developing and deploying renewables,
- preventing/abating pollution,
- managing urban wastes,
- supporting institutions for common resources,
- integrating population and environmental programmes, and
- preserving the cultural heritage (GoP and IUCN, 1992).

In 1996, the North West Frontier Province (NWFP) approved the *Sarhad Provincial Conservation Strategy* (SPCS) which focuses implementation of the PNCS on development concerns specific to the NWFP. The SPCS action plan identifies the following priority areas:

- governance and capacity development;
- poverty alleviation and population;
- non-governmental organisations;
- communication and education;
- urban environments and sustainable cities;
- sustainable industrial development;
- natural resource management;
- biological diversity, parks and protected areas; and
- cultural heritage and sustainable tourism (GoNWFP and IUCN, 1996).

Implemented by the provincial government's Planning and Development Department, the SPCS is the principal strategic environmental framework for the NWFP.

The province-wide public consultation process leading up to the formulation of the SPCS identified governance as a sector that required improvement. Decentralisation of

The CCS attempts to find new institutional arrangements through which local communities, supported by the government, can become the prime engine for development.

the assistance of the United Nations Environment Programme, the World Wide Fund for Nature and other agencies (IUCN, 1980). Modelled on this international conservation document, a number of countries began to prepare their own natural resource conservation strategies with IUCN assistance.



CCS Support Unit

A CCS Roundtable in progress

planning and decision making from the provincial to district level emerged as an important prerequisite for improved governance. In the SPCS, the provincial government makes a commitment to test the concept of district-level strategic planning. SPCS support projects include two such initiatives, one each in Chitral and Abbottabad districts.

The CCS is funded by the Swiss Agency for Development and Cooperation. In January 1997, a CCS Unit was established within the IUCN to assist in the strategy formulation process. Preparation of the CCS was spearheaded by the then Deputy Commissioner Chitral and the District Roundtable, a multi-stakeholder advisory body. The process, facilitated by the CCS Unit, involved public meetings at district, tehsil and village level.

1.3 Public Perception

A total of 48 public consultations were held: one at district, 11 at tehsil and 36 at the village level. Women and minority communities were consulted in separate meetings. Environmental issues were mentioned either directly or indirectly at all tehsil meetings. Concern over environmental degradation was voiced frequently, and participants demonstrated a keen awareness of issues

such as the depletion of natural resources and the destruction of biodiversity.

The people of Chitral viewed these consultations as the first serious attempt ever made by the provincial government to solicit their views on development. While appreciating the role of the Aga Khan Rural Support Programme (AKRSP) and Chitral Area Development Project in fostering self-reliance and social organisation, they insisted that Chitral's development concerns could only be tackled effectively if the government were to become fully involved in the process as well. Local residents were of the view that community participation could help stem the misuse of development funds, and ensure maximum transparency in the execution of social sector programmes and development projects. The participatory approach adopted in formulating the CCS was also endorsed.

During these consultations, participants highlighted more than 20 areas of concern, some of which have been grouped together for the purpose of this strategy. The following are 10 major issues brought up during the consultation process, ranked according to the number of times a topic was raised and the number of meetings in which it was discussed:



CCS Support Unit

The CCS public consultation process

1. irrigation;
2. potable water;
3. communications and infrastructure;
4. agriculture, floods and land erosion;
5. hydel power and alternate fuel sources;
6. deforestation;
7. education;
8. sanitation, drainage and sewerage;
9. poverty reduction and employment; and
10. cultural heritage and tourism.

Based on these priorities, sector-specific papers were commissioned on the following topics:

- n irrigation;
- n access to clean drinking water;
- n infrastructure;
- n agriculture;
- n energy;
- n forests, grazing lands and watersheds;
- n biodiversity, parks and protected areas;
- n human resource development;
- n sanitation and solid waste disposal;
- n microenterprise development; and
- n cultural heritage and ecotourism.

Drawing on the detailed studies undertaken in the CCS sector papers, guidelines provided by the District Roundtable and views

expressed by participants at public consultations, a draft strategy was prepared in December 1999. This draft took into account interviews with the AKRSP Chief Executive Officer, and various heads of line departments and non-governmental organisations, as well as the deliberations of the June 1999 workshop on institutional reform organised by the Planning and Development Department in Peshawar.

In January 2002, the draft strategy was updated to reflect changes in the structure of local government following the promulgation of the NWFP Local Government Ordinance 2001. At this stage, the comments of two special referees (Professor Israr and Miraj Ud Din) who reviewed the first draft were incorporated, the District Coordination Officer and Executive District Officers of various government departments were consulted, and additional material was gleaned from a special study (Cyan, 2001).

The final draft, prepared in July 2002, responds to five critical reviews of the January draft by heads of partner organisations.

Chapter

2

Overview of Chitral District



2.1 Physiography

Surrounded by some of the tallest mountains in the world, Chitral is Pakistan's northern-most district, situated just across the border from Afghanistan. The valley is bounded on the north-west by the Hindukush mountains, on the north-east by the Karakoram and on the south by the Hindu Raj range. With more than 40 peaks over 6,100 m packed in an area of 14,850 km², altitudes in this rugged terrain range from 1,094 m at Arandu to 7,726 m at Tirichmir. Land access beyond the valley is restricted to a few passes, all situated above 3,500 m.

The Chitral valley and some 30 subsidiary valleys are drained by the Chitral river, which is known by different names along various stretches, and its tributaries. Originating in the Chiantar glacier, the river enters Afghanistan at Arandu. Chitral's



COS Support Unit

A Nomad with his child

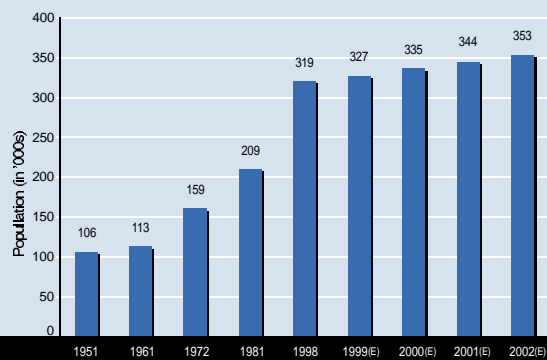
main valley is 354 km long and varies in width from 4,800 m at some locations to barely 180 m, while the side valleys are even narrower. Fan deposits may be found in open spaces along both the main and side valleys. Villages and cultivated areas are for the most part confined to these alluvial deposits which occur at the mouths of streams and hill torrents.

2.2 People

The area that is now Chitral has been inhabited for at least 4,000 years. Its people belong to over a dozen different cultures and speak more than 14 languages. As a result of its unique location and historical links with Central Asia and Europe, the material and non-material culture of Chitral bears traces of Greek, Iranian, Mongolian, Tatar and Turk influences.

According to the 1998 census, Chitral's population stands at 318,689 (162,082 males and 156,607 females). These statistics show that the population has increased at an average rate of 2.5% annually since the 1981 census, as opposed to 3.3% growth during the period 1972–81 (Figure 1). Close to 90% of the population resides in 463 rural settlements, ranging in size from 20 to 3,573 inhabitants (Figure 2). Nearly 75% of these habitations are small, with a maximum population of 800 (Figure 3). Chitral town is the only urban settlement in the district, with a population of 20,622.

FIGURE 1 Population growth, 1951-2002



E = estimated population

Source: Government of Pakistan, 1999.

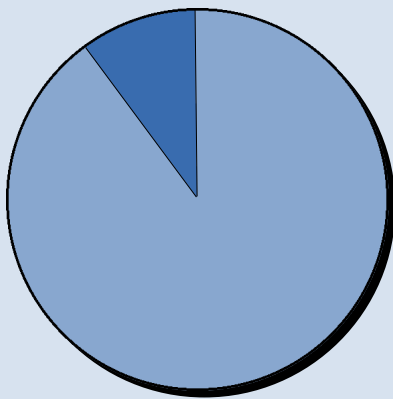
CCS Support Unit



A panoramic view of suburbs of Chitral Town

2

FIGURE 2 Chitral district urban/ rural population ratio



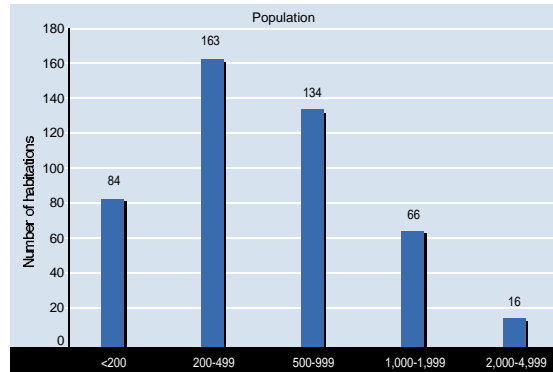
- 90 % Rural
- 10% Urban

Source: Government of Pakistan, 1999.

2.3 Poverty

Compared to the rest of the country, the people of Chitral are poor. Asocio-economic study of 220 households (110 each from single- and double- cropping zones) distributed throughout the Aga Khan Rural Support

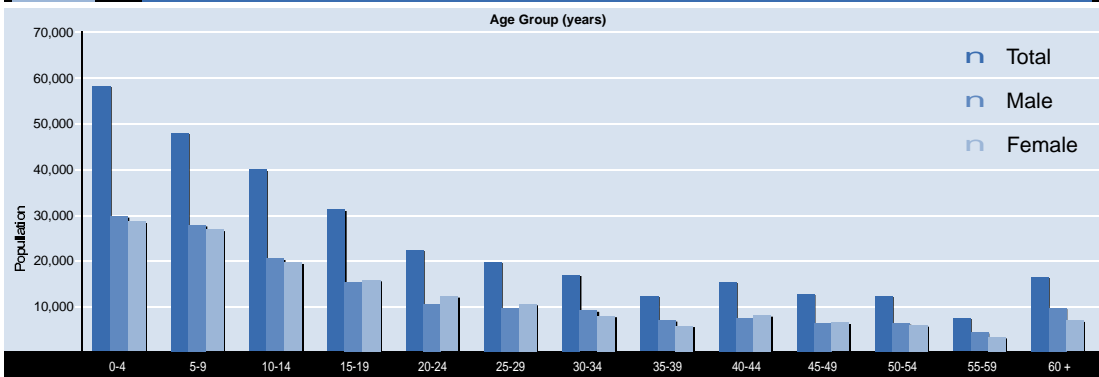
FIGURE 3 Distribution of rural habitations by population



Source: Government of Pakistan, 1999.

Programme (AKRSP) project area reveals that average per capita income stands at Rs 9,543 at current factor cost and Rs 4,939 at 1991 constant factor cost (AKRSP, 1997). This figure is about half the average per capita income for Pakistan as a whole. Moreover, 36% of households live below the poverty line of Rs 6,165 per capita, determined by a baseline survey carried out in the area in 1998, while 11% live below the halved poverty line. The Gini coefficient for the households sampled is 0.36 (on a scale of 0 to 1, the former value indicating perfect equality and the latter

FIGURE 4 Population by age group, 1998



Source: Government of Pakistan, 1999.

perfect inequality). Thus poverty is distributed more evenly in Chitral, compared to the rest of Pakistan with a Gini coefficient of 0.40.

Contributing to poverty in the area is the age distribution of the population (Figure 4). Chitral’s inhabitants are predominantly young, with the majority below the age of 19 years. As a result, the size of the workforce is limited, which in turn restricts the capacity of local communities to generate resources. Between the ages of 20 and 50, meanwhile, women make up more than half of the population. However, women in Chitral do not participate equally in economic activity, further constraining socio-economic development in the area.

2.4 Climate

2.4.1 Rainfall

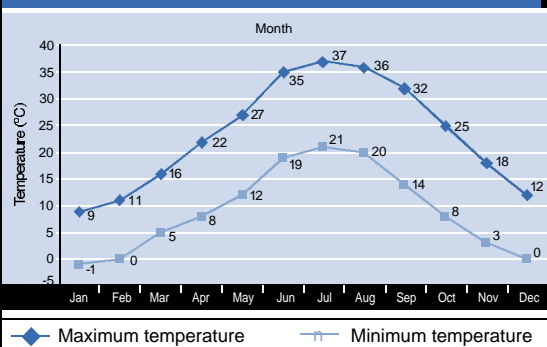
Since Chitral is surrounded by mountains, it does not receive the monsoon rains. Mean rainfall in Drosh and Chitral towns (Lower Chitral) is approximately 650 mm and 500 mm,

respectively, occurring mainly in the spring and winter (Table 1). Summer and autumn are dry, with the area receiving barely 10–25 mm of rain per month. In Upper Chitral, annual precipitation is as low as 200 mm, received mostly as snow in the higher elevations.

2.4.2 Temperature

Mean maximum and minimum monthly temperatures in Chitral and Drosh are

FIGURE 5 Mean maximum and minimum temperature in Chitral



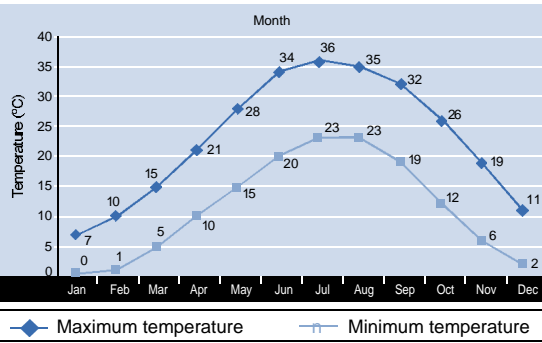
Source: Pakistan Meteorological Department, 1998.

TABLE 1 Mean rainfall in Drosh and Chitral

Month	Drosh			Chitral		
	Total (mm)	Share of annual rainfall (%)	Average (mm)	Total (mm)	Share of annual rainfall (%)	Average (mm)
Jan-Feb	162	25	81	94	18	47
Mar-Apr	245	37	123	278	54	139
May	61	9	61	41	8	41
June-Nov	150	23	25	62	12	10
December	40	6	40	44	8	44
Total	658			519		

Source: Pakistan Meteorological Department, 1998.

FIGURE 6 Mean maximum and minimum temperature in Drosh



Source: Pakistan Meteorological Department, 1998.

TABLE 2 Mean maximum and minimum temperature in Drosh and Chitral (°C)*

Month	Drosh		Chitral	
	Maximum	Minimum	Maximum	Minimum
January	7	0	9	-1
February	10	1	11	0
March	15	5	16	5
April	21	10	22	8
May	28	15	27	12
June	34	20	35	19
July	36	23	37	21
August	35	23	36	20
September	32	19	32	14
October	26	12	25	8
November	19	6	18	3
December	11	2	12	0

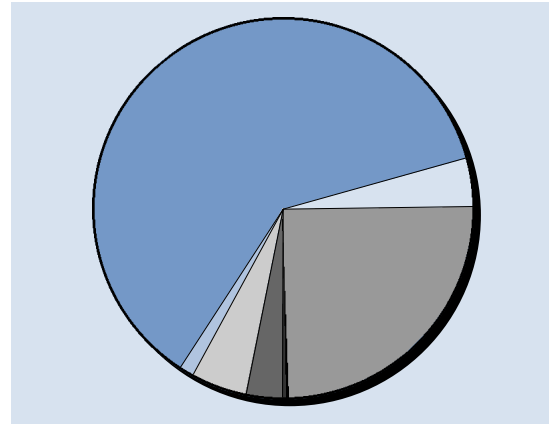
*Temperatures rounded to the nearest degree. Source: Pakistan Meteorological Department, 1998.

shown in Table 2 and Figures 5 and 6. As is the case with rainfall, no temperature records are maintained for Upper Chitral.

2.5 Land Cover

According to the 2001 land cover map of Chitral District developed by the CCS Support Unit of IUCN–The World Conservation Union using satellite images, the percentage of total land area under various cover classes is shown in Figure 7.

FIGURE 7 Land cover and land use



- 3% Agriculture
- 4.7% Forest
- 1.2% Shrubs and bushes
- 62% Rangeland with sparse vegetation
- 4.1% Rock
- 24.39% Glaciers and snow
- 0.46% Riverbeds
- 0.02% Lakes
- 0.13% Main habitation

Source: CCS Support Unit, IUCN.

2.6 Gender

Chitral is one of the country’s most deprived areas and massive resources will be required to improve the livelihood of its people. It is essential that these inputs are applied precisely and sensitively to meet the requirements of men as well as women.

Traditionally, women have enjoyed a high status in Chitrali society. Old proverbs like “*Khowistan aurat abad*” (“the land of Kho is prosperous owing to the ability and skills of its women”) and “*har chamoto tan hunar*” (“each finger has a skill”) are a clear reflection of this fact. Financial and resource utilisation discipline, known as *madiri*, is considered to be the exclusive domain of women. Historically, women have inherited property and managed large estates. During the reign of Chitral’s former rulers, the Mehtars, the women of the ruling family played a significant role in statecraft.

Chitrali society is comprised of two distinct social and cultural groups, the Kalash and the Khow, each with its own norms and tra-

2



Kalash children

ditions governing gender roles. An analysis of their lifestyles serves as a useful indicator of the state of gender equity in the region.

2.6.1 Kalash

The Kalash are confined to three valleys in southern Chitral and, to this day, live according to ancient traditions. The women do not observe *pardah* (the veil), work mostly on family farmland, and do not generally participate in decision making related to inheritance and other family matters.

2.6.2 Khow

The Khow population is predominant in the district. In Khow areas, *pardah* is strictly observed. Although the mobility of women here is for the most part restricted, they engage in farm-related activities. Kitchen gardens, dairy products, and the production of silk and woollen handicrafts are the exclusive domain of women. Under Muslim family law, which the Khow follow, women are permitted to inherit property.

2.6.3 Women and Work

Across Chitral, the gender division of labour is evident in every sphere of activity. Men

and women are for the most part expected to adhere to gender-specific roles that have been developed over generations. Occasionally, a departure from tradition is forced by a dramatic change in social, economic or ecological circumstances.

2.6.4 Changes in Traditional Gender Roles

In response to changing socio-economic realities, traditional gender roles are beginning to change (Tables 3 and 4). With the departure of men from the fields in order to pursue education or employment, women are left with the responsibility of managing farmland. Relatively affluent households are able to employ labour and here women take on managerial roles. In families that cannot afford to employ labour, women perform many of these tasks themselves.

TABLE 3 Changes in traditional gender roles among the Kalash		
Gender	Traditional roles	Emerging roles
Female	Farming, embroidery, child rearing, music, dancing	Increasing education is likely to change traditional roles
Male	Hunting, herding, spinning, knitting, carpentry, masonry, weaving, farming	Employment in business and trade, weaving and farming

Source: Hemani and Warrington, 1996.

TABLE 4 Changes in traditional gender roles among the Khow		
Gender	Traditional roles	Emerging roles
Female	Cooking, knitting, spinning, embroidery, child rearing, kitchen gardening, poultry, livestock husbandry	Small-scale business, farm management in addition to traditional roles, herding by elder women to spare children for education
Male	Farming, weaving, herding, carpentry, masonry, music, dancing, sports	Business and trade, employment, farming, cottage industry

Source: Hemani and Warrington, 1996.



CCS Support Unit

2

Traditional farming being practiced

As education opens up new avenues of employment for both men and women, some traditional practices are being abandoned. For instance, in households where men are employed off-farm, grazing is now either entrusted to Gujars or the number of livestock kept is reduced, depending on the circumstances of each household. Increasing female education, meanwhile, has raised the workload of women who stay at home, since school-going girls are exempt from household and farming chores.

With the assistance of rural support programmes, women in Chitral have also begun to participate in microenterprise activities, setting up shops in towns and villages. These shops are managed individually as well as collectively through women's organisations.

2.7 Agriculture

The people of Chitral have traditionally practised subsistence agriculture focused on grain production and livestock rearing. Their diet of cereals and dairy products is

supplemented with fruits and nuts, grown as single trees in marginal land on field boundaries.

2.7.1 Farming

Chitral's rugged terrain limits the amount of land that may be brought under cultivation, while freezing temperatures over about half its area prevent the production of more than one crop a year. Some 22,552 ha was cultivated in 1999–2000 (Agricultural Statistics Wing, 2001). Approximately half of this land is located in the single-cropping zone comprising Lotkuh, Mastuj, Mulkhov and Torkhow tehsils. The remainder lies in the double-cropping zone of Chitral and Drosh tehsils. The net area under cultivation is 20,999 ha with 6,187 ha sown more than once, bringing the total cultivated area to 27,186 ha.

With annual evapotranspiration at more than 2,500 mm, agriculture depends on irrigation. This is demonstrated by the fact that in 1999–2000, the per-hectare yield of rain-fed wheat was one fifth that of wheat grown on irrigated land. Not surprisingly, a mere 1.6% of the cropped area was under

rain-fed agriculture (340 ha wheat, 94 ha moong and maash pulses) during the same period. Irrigation is carried out by means of water channels, one fourth of which have been constructed by the government and the remainder by local communities.

Agricultural production is dominated by cereals which are sown over 82% of the cropped area and yield 47,796 t of food grain. An additional 30,000 t of wheat is brought in from outside the region each year in order to meet local needs.

2.7.1.1 Land Holdings and Tenure

With a 1998 population of 42,533 households and a cultivated area of 22,552 ha, average land holdings stand at 0.53 ha (GoP, 1999; Agricultural Statistics Wing, 2001). Close to 80% of all holdings are small, ranging in size from 0.2 to 2.0 ha, while 15% range from 2 to 4 ha and 4% from 4 to 6 ha. A mere 1% of holdings exceeds 6 ha. For the 220 households it sampled, the AKRSP estimates a reduction in the size of average holdings from 0.66 ha in 1991 to 0.46 ha in 1997, owing to the failure of new land development to keep pace with population growth (AKRSP, 1997). This may well be the case for the whole of Chitral.

2.7.1.2 Ecological Zones and Farming

In Chitral the following ecological zones have been identified:

- i. subhumid zone (1,150–3,900 m); includes low-lying parts of Chitral between Arandu and Madaklasht, as well as the Golain valley; annual rainfall 500–1,000 mm;
- ii. subarid zone (1,500–4,900 m); includes the area between the Kesu and Kuh valleys up to Barenis; 300–600 mm of rainfall;
- iii. dry zone (1,650–3,800 m); includes the whole of the Lotkuh–Ojor region as well as the lower areas of Upper Chitral; 250 mm to less than 500 mm of rain; and
- iv. arid high mountains (above 3,800 m); no settlements; summer pastures are

used for grazing; less than 125 mm of rain annually.

Each of the above zones may in turn be divided according to patterns of agricultural production and climatological characteristics:

- (a) areas dependent mainly on crops; may be further divided into single- and double-crop areas;
- (b) areas with a mixed economy; single-crop areas depending partly on crops and partly on livestock; and
- (c) areas dependent mainly on livestock.

2.7.1.3 Cereal Crops

Chitral's cereal production compares favourably with the rest of the North-West Frontier Province (NWFP). The maize yield (2,790 kg/ha) is the highest in the province, while rice production (2,399 kg/ha) ranks third and barley (1,513 kg/ha) ranks sixth. Chitral's wheat yield (1,956 kg/ha), however, ranks fourteenth for irrigated wheat (Agricultural Statistics Wing, 2001). Cereal crops grown during 1999–2000, the area under cultivation and crop yields are shown in Table 5.

2.7.1.4 Fodder Crops

Livestock rearing is an essential component of Chitral's subsistence economy. Milk and meat are a valuable food source, and animal dung helps to maintain the physical structure of the soil, while wool, hair and hides serve as raw materials for cottage industry. Despite its importance, the livestock husbandry sector is seriously constrained by a shortage of animal feed, especially during the late winter and early spring. This period of scarcity sets a ceiling on the

TABLE 5 Cereal production, 1999–2000

Crop	Area under cultivation (ha)	Yield (t)
Wheat	9,050	17,176
Maize	6,337	17,681
Barley	4,168	6,306
Rice	2,720	6,524

Source: Agricultural Statistics Wing, 2001.



AKRSP

2

Traditional harvesting

number of animals each household is able to rear, since livestock survival through the harsh winter depends on the amount of crop residues and fodder crops the household has been able to store. Compared to crop residues, fodder crops are more palatable, easier to digest and richer in protein.

For the year 1999–2000, fodder was planted over 5.5% of the cropped area, producing 17,300 t of *rabbi* (spring) and *kharif* (autumn) crops—about half the average per-hectare yield for the NWFP as a whole (Agricultural Statistics Wing, 2001). The AKRSP socio-economic study, however, indicates a dramatic shift in cropping patterns, from 7% of cropped area under fodder in 1991 to 23% in 1997 (AKRSP, 1997). This has taken place largely at the cost of wheat cultivation, which declined from 55% of cropped area in 1991 to 41% in 1997.

2.7.1.5 Fruits and Vegetables

The commercial fruit, nut and vegetable cultivation sector is in its infancy. Fruit is grown over 519 ha, yielding 4,541 t annually. Apples and apricots are the main fruit crops and yields compare favourably with average yields for the whole of the NWFP. Almond, grape, peach, persimmon and pomegranate is also grown in small areas,

and here Chitral's yields are far higher than average yields in the rest of the province. Potatoes are grown over 480 ha, onions and chillies over 52 ha, other vegetables over 1,702 ha and pulses over 430 ha. Except for potatoes, however, yields for other vegetables and pulses are considerably below the average for the NWFP.

Each of the 220 households sampled by the AKRSP grew an average of 78 fruit trees in 1991. By 1997, this figure fell to 63. Mulberry declined from 15 to 3 trees and apricot from 38 to 31, while the number of apple trees increased from 11 to 17. The number of other trees—almond, peach, pear, pomegranate and walnut—remained constant at 12. The increase in apple cultivation seen here may well be a reflection of the efforts made by the AKRSP, Chitral Area Development Project (CADP) and Project for Horticultural Promotion (PHP).

2.7.1.6 Gender Roles in Fruit and Vegetable Production

Vegetable cultivation and marketing is primarily the responsibility of women, who rarely interact with traders directly and are assisted by their male relatives. In fruit and grain production, work is divided. Men carry manure from livestock sheds to the fields



AKRSP

Carding wool

where the women spread it. Men plough and level the land, and harvest crops. Women make sheaves of the harvest, separate maize cobs from stover and clean grain. While the various tasks involved in fruit collection are shared between men and women, the latter are solely responsible for processing the harvest, including drying fruit, shelling nuts and removing kernels. Whether in cereal production or fruit and vegetable cultivation, weeding is carried out by women. This arduous work, taking up most of the day during the growing season, is essential to ensure adequate yields. Some weed varieties are also used as animal feed, while others are cooked and consumed by the people.

2.7.1.7 Horticultural Research and Development Work in Progress

The arid and semi-arid climate of Chitral is ideally suited to horticulture, since it inhibits the proliferation of crop diseases. In areas capable of sustaining plant growth, temper-

atures are conducive to fruit and vegetable cultivation. The three winter months provide the “chilling conditions [necessary] for all deciduous fruits, followed by warm spring and hot summer, which combined with high light intensities prevailing at these high altitudes with minimal cloud cover . . . produce near ideal conditions for the culture of deciduous fruit crops and summer vegetables” (Doolan, 1996).

Although the area currently under fruit and vegetable cultivation is small, the region’s comparative advantage in fruit and off-season vegetable production has been the focus of a number of research and development initiatives. The principal engine for this work has been the PHP, with cooperation from the AKRSP and the NWFP government’s now defunct Fruit and Vegetable Development Board. The PHP, however, has wound up its operations in Chitral.

To make a successful transition from subsistence-oriented cereal crops to the cultivation of high-value fruit and off-season vegetables will require that efficient transportation and marketing facilities are made available. Progress in this direction has been uneven. The construction of a road between Chitral and Booni that is navigable by truck, and lifting the ban on agricultural exports have been steps in the right direction. However, an all-weather year-round truckable road link to the rest of the country is required if the full potential of high-value agricultural production is to be tapped.

2.7.2 Livestock

The combined livestock population of Chitral in 1996 was estimated at 173,262 head of cattle, 188,822 sheep and 335,782 goats, while domestic poultry numbered 590,022. In addition, an unknown number of animals belonging to Afghan refugees is also found in the area. Households keep livestock in small herds of 4 to 10, depending on the household’s capacity to store crop residues, fodder and hay to feed animals during the winter and spring months. Chitrali cattle are not

robust, weighing only 150–200 kg, and generally frail owing to poor nutrition. Cows are kept for milk, calves for milk let-down and oxen for draught purposes. The peak milk yield is 5 litres a day, all of which is consumed by the household. This is partly because production is comparatively low but also because of the absence of village-level marketing facilities for the surplus. Goats are kept for meat, milk and hides. In Chitral, sheep's milk is thought to be injurious to the health. Sheep are kept primarily for wool, which is woven into a fabric known as *shu* (called *patti* in Urdu). Wool worth approximately Rs 47 is converted into fabric valued at Rs 325, with most of this value added by skilled women. Cash derived from the sale of *shu* during the late winter is a crucial part of household income. Ownership of the industry provides women with self-esteem as well as real economic benefits.

2.7.2.1 Major Constraints to Livestock Husbandry

Livestock productivity is constrained by a number of factors, including feed shortages, inadequate veterinary cover, poor genetic potential and poorly developed marketing facilities. Malnourished animals produce low yields and are more susceptible to parasites and disease. Besides the obvious financial losses resulting from fatal diseases, chronic disease induces debility and lowers productivity. Nutritional deficiency also prevents livestock from attaining its full genetic potential, while inadequate veterinary cover hampers disease control. The overall health and genetic potential of livestock may be enhanced by means of adequate nutrition, suitable shelter and the control of disease and parasites. Improved marketing facilities, meanwhile, will enhance profits which in turn could serve as an incentive to increase production.

2.7.2.2 Current Activities in Livestock Husbandry

Current activities in the husbandry sector under government and AKRSP initiatives

include vaccination and treatment programmes; artificial insemination facilities; and training for village veterinary workers, doctors and technicians in prevention, diagnosis and treatment of common livestock diseases. In addition, the AKRSP is attempting to introduce commercial poultry farming to the area.

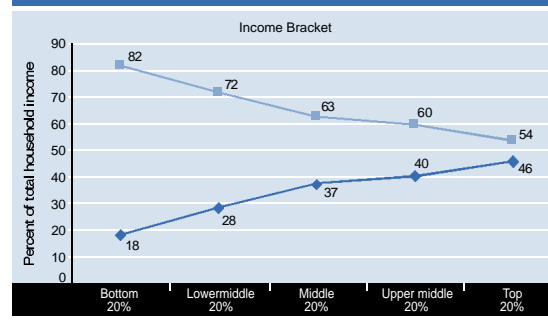
2.7.2.3 Gender Roles in Livestock Husbandry

Except for the Kalash, who entrust the care of their goats to men, livestock and poultry management is the domain of women. This includes feeding and health care as well as processing animal products.

2.7.3 Income From Agriculture

According to the AKRSP, an average household derives 58% of its income from on-farm sources and the remainder from off-farm activities (AKRSP, 1997). The proportion of a household's off-farm income is directly related to its income bracket, with poorer households earning a greater share of their total income from on-farm sources (Figure 8). On average, 45% of household farm income is derived from cereal, fruit and vegetable production, and 32% from livestock rearing. While households from all income brackets earn about the same proportion of their farm income from cereals, fruit and vegetables, richer households earn a greater share of their farm income from livestock (Figure 9).

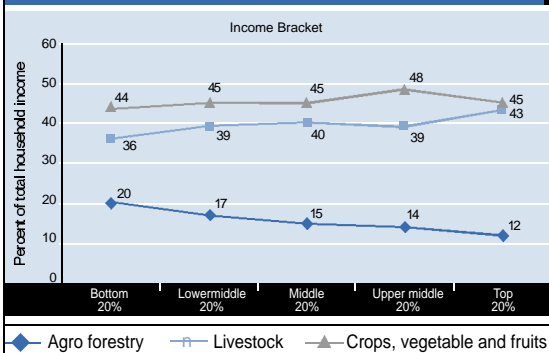
FIGURE 8 On-farm and off-farm income as a percentage of total household income



Source: AKRSP, 1997.



FIGURE 9 Household income from agroforestry, livestock and farming as a percentage of total farm income



Source: AKRSP, 1997.

2.7.4 Off-farm Employment

Few households can subsist entirely on their small land holdings. As a result, boys and men from many families work off-farm in Chitral town or down-country during the winter. They leave in October, after the grain harvest has been threshed, and firewood and fodder collected, returning in April or May in time for the sowing season. During their absence, traditional male responsibilities, such as clearing snow from roof tops and livestock sheds, managing land and attending to social obligations, are assumed by the women.

In several families, some members are permanently employed off-farm, working in Pakistan's urban centres or overseas. The trend towards increasing off-farm employment has caused the gender distribution of agricultural labour to shift dramatically.

More affluent households employ labour to perform tasks formerly carried out by the men. In less affluent families, women take on additional responsibilities.

2.8 Forests

2.8.1 Area and Tree Stocks

According to the land cover map of the district, Chitral's wooded area extends over 70,045 ha. Of this, oak (*Quercus baloot*) woodlands cover 24,300 ha (Mukhtar and Rehman, 1999). Meanwhile, the standing volume of round wood is estimated at 13 million m³ (Kreditanstalt für Wiederaufbau [KfW], 2000).

Coniferous forests extend from Lowari to Golain Gol, some 23 km north of Chitral town. The distribution of coniferous forests in the district and the standing volume of various species are shown in Tables 6 and 7. Oak forests grow in the same areas at lower elevations. Degraded broadleaved forests stand in parts of Upper Chitral, which is extremely denuded. Remnants of

TABLE 6 Distribution of coniferous forests (ha)

Range	Commercial	Non-commercial	Total
Chitral (Ayun)	3,688	8,592	12,280
Drosh (North)	4,964	5,723	10,687
Drosh (South)	16,809	22,298	39,107
Total	25,461	36,613	62,074

Source: Forest Department, 1997.

TABLE 7 Area and standing volume of coniferous forests

Species	Selection working circle			Protection working circle		
	Area (ha)	Volume (m3)	Volume/ha (m3)	Area (ha)	Volume (m3)	Volume/ha (m3)
Deodar (<i>Cedrus deodara</i>)	17,152	1,399,746	82	7,359	208,675	28
Kail (<i>Pinus wallichiana</i>)	1,698	114,630	68	247	17,089	69
Fir (<i>Abies pindrow</i>) Spruce (<i>Picea smithiana</i>)	4,368	715,936	164	1,637	106,732	65
Chilgoza (<i>Pinus gerardiana</i>)	1,193	54,866	46	1,674	8,179	5
Blanks	—	—	—	1,189	—	—
Total	24,411	2,285,178	94	12,106	340,675	28

Source: Grosenic, Phillips and Pleines, 1991.

juniper forests are scattered across Upper Chitral all the way to the Laspur valley. Protection from illegal felling is the responsibility of the Forest Department, which also regulates the removal of trees for local needs and commercial purposes.

2.8.2 Timber Harvesting

Some 25,000 ha of forest is sufficiently dense to sustain timber harvesting, containing 2.5 million trees with a standing timber volume of 3.1 million m³. Of this quantity, only 0.75% is harvested each year. The number of trees that may be cut annually is determined according to the following formula: estimate annual growth and deduct the volume of trees that will die or be stolen; after these deductions, keep back more trees from cutting so that the remaining crop may become denser, reaching the desired density in 100 years (Ayaz, 1964).

Commercial forest area is divided into equiproductive harvesting units. From each, within the prescribed timeframe and in accordance with an approved management plan, mature trees at breast height (1.37 m above ground level) and with a diameter of 71 cm or more are harvested up to the limit of prescribed yield, as per silvicultural requirements. If necessary, sub-mature trees are also removed along with dead, dying and diseased trees.

The forest management plan currently in force permits the removal of 15,576 m³ of timber annually. Of this, 4,248 m³ is issued each year on permits to area residents for the purpose of construction. Rightsholders are granted access to forests to collect firewood, lop oak branches for fodder, graze animals, and gather mushrooms and medicinal plants. Data are not available on the volume of timber removed by rightsholders. Until the ban on commercial harvesting, imposed in 1997 by the NWFP government and in force to this day, an estimated 11,328 m³ of timber was sold annually.

In theory, this forest management plan is thought to be sustainable. By limiting the annual cut, it is assumed that forest resources will not be exhausted but will

rather increase in density, eventually attaining an optimal level. Another assumption is that the space vacated by felled mature trees will be quickly filled by seedlings and saplings from natural seed fall. However, the cycle of natural regeneration is disrupted in areas where the forest floor is under heavy pressure from continuous grazing.

2.8.3 Distribution of Timber to Meet the Needs of Local Rightsholders

No formal timber markets operate in Chitral. Rightsholders meet their timber requirements by obtaining permits from the Forest Department and cutting trees free of charge, in accordance with the provisions of the NWFP Management of Protected Forests Rules 1975. It is up to the Range Forest Officer to verify the applicants' entitlement and need, and to recommend deserving cases to the Divisional Forest Officer (DFO). On receipt of the DFO's approval, permits are issued to individuals to cut a specific number of trees from the nearest forest, provided it contains a sufficient number of mature trees. Timber granted in this manner cannot be sold or gifted to a third party, or taken out of the village limits, and may only be used for construction. The recipient is also required to plant five new trees and tend to the saplings. The location where saplings are to be planted and the duration for which they must be tended are both determined by the Forest Officer. No data is available on the survival rate of saplings planted in this manner. Any breach of these rules is punishable with imprisonment for up to two years and/or a maximum fine of Rs 50,000.

2.8.4 Rightsholders' Share in the Sale Proceeds of Timber

Rightsholders in Chitral's commercial forests are entitled to 60% of the income derived from the sale of timber, with the remaining revenue going to the government. Between 1988 and 1997, the amount paid each year by the Forest Department to the Deputy Commissioner for onward disbursement is shown in Table 8. (Following the promulgation of the NWFP Local

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TABLE 8 Local people's share in the sale proceeds of timber

Year	Amount (million rupees)
1988	12.54
1989	23.44
1990	30.17
1991	32.36
1992	53.24
1993	30.61
1994	19.71
1995	93.71
1996	90.40
1997	46.33

Source: Khattak, G. M. 1998. Forest, Grazing Lands and Watersheds. CCS sector paper.

Government Ordinance 2001, under which the post of Deputy Commissioner has been abolished, this disbursement is now made through the District Officer Revenue and Estate, Chitral.) These figures are misleading, however, since most rightsholders have sold their rights to a handful of forest contractors. As a result, payments are passed on to contractors. Partly for this reason, and because mature trees are felled in any particular area only once every 20 years, it is difficult to estimate the economic benefits of timber harvesting for the local people. It is likely that the bulk of the profits accrues to forest contractors. An in-depth investigation is needed to determine the extent to which commercial timber harvesting benefits local communities.

2.8.5 Problems With the Equitable Distribution of the People's Share

Until 1969, the forests of Chitral were owned by Chitral state. The local people were only permitted to use the forests to graze animals, and collect firewood and fodder. After the merger of Chitral state with Pakistan, ownership of these forests passed to the provincial government. In 1976, the NWFP government allotted to rightsholders a 60% share in the proceeds from the sale of timber. Following this decision, a scramble ensued to establish titles to such shares. In the absence of land settlement and records of ownership rights,

numerous disputes arose. The people of Upper Chitral lodged claims to ownership of forest land. In Lower Chitral, disputes exist to this day between members of the former ruling family, notables and people residing around the forests. According to the views expressed during public consultations held for the preparation of the Chitral Conservation Strategy (CCS), influential segments of society receive the bulk of the benefits intended for the people. Partly for this reason, poorer residents living around the forests resort to illegal felling and sell this timber surreptitiously.

2.8.6 Income to the Government

From its share of the income derived from the sale of timber prior to 1976, the government spent 32% on forest protection, 9% on afforestation, and 5% on maintenance of buildings, roads and paths, saving 54%. In 1976, the NWFP Cabinet under the chairmanship of the then Prime Minister of Pakistan decided that the government's share of the proceeds would be spent on the maintenance and development of forests. From 1972–73 to 1997–98 the government earned Rs 319 million from the forests of Chitral, spent Rs 147 million on protection and held back Rs 172 million.

2.8.7 Forest Development Initiatives

From 1987 to 1997, the government's Forest Development Corporation spent a sum of Rs 29 million on forest nurseries, afforestation and soil conservation. An Integrated Afforestation Scheme for Watershed Planting has been under implementation since July 1994 at an expected cost of Rs 47.7 million until June 1999. Other projects aimed at forest development include Income Generating Projects for Refugees from Afghanistan II and III (funded by the United Nations High Commission for Refugees), the CADP (supported by the International Fund for Agricultural Development) and the government's Annual Development Programme (ADP). In addition to these initiatives, the AKRSP has taken a commendable step by making forest tree planting an essential component of all new irrigation projects

undertaken by rural communities under AKRSP physical infrastructure ventures.

The results of such efforts remain unclear, since no surveys have been carried out to determine the survival rate of planted trees. In the case of planting by organised local communities on irrigated land, survival is thought to be good. However, in the absence of community participation, survival on rain-fed land is likely to be poor.

2.8.8 Gender Roles in Forestry

Men collect firewood and timber from high pastures and remote forests, while women collect scraps of wood and thorny shrubs when they take livestock to graze in areas surrounding village lands.

2.8.9 Responsibility

Responsibility for the protection and management of forests in Chitral rests with the DFO Chitral, assisted by Range Forest Officers and ancillary forest protection personnel in each of the Chitral (Ayun), Drosh (North), and Drosh (South) forest ranges. The forestry sector has not been devolved under the new local government system, and remains under the jurisdiction of the provincial government. Although stationed in Chitral, the DFO reports to the provincial administrative hierarchy.

Responsibility for the agriculture sector, meanwhile, has been devolved to the district level. Under the new system, farm forestry personnel working under the Executive District Officer (EDO) Agriculture are to assist in tree planting on agricultural land. Their responsibilities also include the promotion of forest tree nurseries, soil conservation and watershed management.

2.9 Agroforestry

Households sampled by the AKRSP in 1997 owned an average of 772 farm forest trees each, down from 828 in 1991. In Upper Chitral, poplar and willow are preferred by about 56% of households, and Russian olive and robinia by 44%. In lower



CCS Support Unit

Livestock grazing in upper Chitral

Chitral, ailanthus is preferred by 44%, robinia by 25%, chinara and sea buckthorn by 20% and mulberry by 11% of households. According to the same survey, an average household earns roughly 16% of its farm income from farm forestry, with households in the lowest income bracket earning a greater proportion from farm forestry (20%) compared to those in the highest income bracket (12%).

2.10 Grazing land

According to the 2001 land cover map of the district developed by the IUCN-CCS Support Unit Chitral, rangelands with sparse vegetation cover 919,636 ha. However, the KfW categorises grazing land into three main classes. According to this inventory, grazing land covers some 373,600 ha, comprising 269,400 ha of alpine and subalpine scrub, 46,600 ha of alpine pastures, and 57,600 ha of low-yield subtropical and temperate grazing land. The entire area under forests (70,045 ha) is also grazed. Grazing lands in Chitral are the degradation stages of forest types shown in Table 9.

2.10.1 Grazing System

Farm animals spend the winter in sheds, feeding on wheat and millet straw, maize stover, dried alfalfa and clover, and grass hay. These supplies of stored fodder run out towards the early spring. Animals weaken or die during this period unless owners are able to buy feed either from within the village or from other villages. The only exception to this pattern are goats belonging to the Kalash, which graze outdoors throughout the year.

When the snow melts, animals are taken to graze on the vegetation that has begun to sprout on village land. Herds gradually work their way up to low-elevation grazing lands. By about mid-June, animals belonging to villages entitled to graze in subalpine and alpine grazing lands begin moving towards these areas.

In high-elevation grazing lands, goats and sheep are accompanied at all times, to pro-

vide protection from predators. They are milked, and dairy products are prepared. Bulls and cows not in milk are left unattended, and a male from the household journeys to the grazing lands at regular intervals to check on them and offer them salt.

Since livestock rearing forms only a part of the farm economy, entire families cannot leave with their animals to spend the summer in high-elevation grazing lands. Where the household is large, a few men along with their close female relatives may accompany livestock, leaving the rest of the family to tend to the crops. Households that are unable to spare any of their members for the entire summer entrust their livestock to others (Sections 2.10.1.1– 2.10.1.4 below).

2.10.1.1 Nomadic Herdsmen

The nomadic livestock owners, originally settled in Chitral at the invitation of its former rulers. During the summer entire Gujar households, and occasionally the men

TABLE 9 Types of grazing land

Type	Elevation	Main species	Comments
Moist alpine pastures	Above 3,500 m	<i>Astragalus</i> , <i>Corydalis</i> , <i>Oxytropis</i> , <i>Polygonum</i> , <i>Potentilla</i> , <i>Primula</i> , <i>Saxifraga</i>	Occurring on floors of U-shaped valleys with deep loamy soils receiving glacial melt water
Subalpine birch	3,500–3,800 m	Birch, willow, juniper	Scattered shrubs
Moist deciduous alpine scrub	2500 –3500 m	Birch, honeysuckle, juniper, wild rose <i>Berberis</i> , <i>Ephedra</i> , <i>Heracleum</i> , <i>Prunus</i> , <i>Rhamnus</i> , <i>Ribes</i>	
Dry temperate coniferous scrub	1,835–3,500 m	<i>Artemisia</i> , <i>Capparis</i> , <i>Delphinium</i> , stunted <i>Fraxinus xanthoxyloides</i> , <i>Haloxylon</i> , <i>Hyoscyamus niger</i> , <i>Rheum</i> , <i>Tamararix</i>	These grazing lands have replaced destroyed dry fir and dry deodar forests
Dry oak (<i>Quercus baloot</i>) scrub	1,200–1,800 m	Dry oak, wild almond, willow; scattered shrubs with ground vegetation comprising <i>Artemisia</i> , <i>Caragana</i> , <i>Cotoneaster</i> , <i>Cymbopogon</i> , <i>Daphne</i> , <i>Ephedra</i> , <i>Heteropogon</i> , <i>Lonicera</i> , <i>Periploca</i> , <i>Plectranthus</i> , <i>Rumex</i> , <i>Sophora</i> , <i>Spiraea</i>	Heavily lopped dry oak struggling for survival

Source: KfW, 2000.

alone, take to high-elevation grazing lands with their own livestock as well as animals belonging to others. Besides grazing the animals and providing protection from predators, they milk the goats and prepare butter, *ghee* (clarified butter), cheese and buttermilk. A portion of this produce is returned to the owners while the remainder is either consumed or sold. The herdsmen are paid for their services mostly in kind, with commodities such as flour, tea and sugar. Their main source of cash income is from the sale of the *ghee* they are allowed to retain.

2.10.1.2 Pazhals

Pazhals are local men or boys who work as shepherds in high-elevation grazing lands. They provide protection from predators, milk goats and prepare dairy products. If they are accompanied by a female member of their household, she takes over some of these tasks. They are paid in cash per head of livestock or in the form of commodities such as flour, wheat, salt, sugar, soap and shoes. In most cases, they are expected to surrender all the *ghee* they make to the owners.

2.10.1.3 Sothsiri System

This is an arrangement whereby several households pool their livestock. The animals are then grazed in rotation for specific periods of time by one or two men from each of the households.

2.10.1.4 Mestoo

Mestoos, or traditional housekeepers, are elderly women who spend the summer in high-elevation grazing lands with their own livestock as well as animals belonging to four or five other households. These women are accompanied by a male relative who grazes the livestock and protects the animals from predators. Mestoos generally receive flour, tea, sugar and soap in payment, and are allowed to retain part of the *ghee* they make.

2.10.2 Gender Division of Labour in Grazing Lands

The gender division of labour in grazing lands varies from village to village, and

often even from household to household. In village lands and low-elevation grazing lands, men are responsible for goats and sheep, and women for cattle. As a rule, young women do not travel alone to high-elevation grazing lands and are accompanied by either a close male relative or elderly women. Grazing is generally the responsibility of the men, although in some cases women carry out this task. When women are present, milking and dairy products are almost always their responsibility. The Kalash are the exception since, for religious reasons, their women are not permitted to milk goats. Women are also responsible for feeding livestock during the winter and treating sick animals.

2.10.3 Responsibility for Sustainable Management of Grazing Lands

The sustainable management of grazing lands is a challenge even under the most favourable of circumstances. Under Chitral's harsh climatic, ecological and socio-economic conditions, however, this task is all the more difficult. As such, it is perhaps not surprising that little by way of sustainable management has been accomplished so far.

Watershed and range management is the responsibility of the Forest Department, and is one of its functions at the provincial level. Meanwhile the EDO Agriculture's functions include soil conservation and watershed management. The EDO is also responsible for the livestock sector, which is of course a critical component of any meaningful attempt at grazing land management. As such, grazing land management may be treated as a function devolved by the Forest Department to the EDO Agriculture.

Large-scale, cost-effective grazing land management can only be carried out with the participation of local communities. For this reason, devolution of grazing land management to the district level is essential. Promoting community participation in management projects is the responsibility of the district government.

2

2.11 Biodiversity

Nestled between the Hindukush and Hindu Raj mountains, the Chitral valley provides ideal growing conditions for at least 64 endemic plant species. Chitral's flora is similar to that of Central Asia, and comprises forest types listed in Table 9. The fauna, meanwhile, resembles that of the Western Palearctic Faunal Region, with a slight oriental mix from the south. Wide variations in altitude, from 1,094 m at Arandu in the south to 7,726 m at Tirichmir in the north, compensate for the arid climate, making the area an ideal habitat for a variety of plants and animals. Chitral also serves as a corridor for the seasonal migration of birds.

2.11.1 Mammals

The number of mammal species recorded in Chitral to date is 45, which accounts for about half of all mammals recorded in the NWFP as a whole. Wild animals typically found in the region include the Himalayan ibex, markhor, Pallas' cat, Royle's pika, stoat and wolf, as well as two species of bat. Chitral is also home to a number of endangered species (Table 10).

2.11.2 Birds

So far, 195 species of resident and migratory birds have been recorded in Chitral, several of them endangered (Table 11). The chukar (rock partridge), Himalayan snowcock, lammergeier, monal pheasant and snow partridge are resident species. Birds of prey, particularly the peregrine falcon and saker falcon, inhabit the northern reaches of the valley and are vulnerable to trapping for trade, while the oriental turtle dove and Chinese dove are favoured game birds.

Several species of waterfowl, some of which are endangered, migrate along the Chitral river in the autumn and spring, providing hunting opportunities to local residents. A number of raptors and aquatic birds pass through the valley in the course of their migration between breeding grounds in Siberia and Central Asia, and wintering areas in southern Pakistan and India. The

TABLE 10 Endangered mammal species recorded in Chitral

Common Name	Scientific Name
Common Red Fox	<i>Vulpes vulpes</i>
Brown Bear	<i>Ursus arctos</i>
Asiatic or Himalayan Black Bear	<i>Ursus thibetanus</i>
Stone Marten	<i>Martes foina</i>
Yellow-throated Marten	<i>Martes flavigula</i>
Himalayan Palm Civet	<i>Paguma larvata</i>
Stoat or Ermine	<i>Mustela erminea</i>
Common Otter	<i>Lutra lutra</i>
Striped Hyaena	<i>Hyaena hyaena</i>
Pallas' Cat	<i>Felis manul</i>
Lynx	<i>Felis lynx</i>
Leopard Cat	<i>Prionailurus bengalensis</i>
Leopard or Panther	<i>Panthera pardus</i>
Snow Leopard	<i>Panthera uncia</i>
Musk Deer	<i>Moschus chrysogaster</i>
Urrial or Shapu	<i>Ovis vignei</i>
Woolly Flying Squirrel	<i>Eupetaurus cinereus</i>

Source: Malik, Mumtaz. 1998. Biodiversity, Parks and Protected Areas. CCS sector paper.

TABLE 11 Endangered bird species recorded in Chitral

Common Name	Scientific Name
Egyptian or Scavenger Vulture	<i>Neophron percnopterus</i>
Eurasian Woodcock	<i>Scolopax rusticola</i>
Himalayan Griffon Vulture	<i>Gyps himalayensis</i>
Himalayan Monal	<i>Lophophorus impejanus</i>
Koklass Pheasant	<i>Pucrasia macrolopha biddulphi</i>
Lammergeier or Bearded Vulture	<i>Gypaetus barbatus</i>
Ruddy Shelduck	<i>Tadorna ferruginea</i>
Saker Falcon	<i>Falco cherrug</i>
Snow Pigeon	<i>Columba leuconota</i>
Bar-headed Goose	<i>Anser indicus</i>
Greylag Goose	<i>Anser anser</i>
Marbled Teal	<i>Marmaronetta angustirostris</i>
Tufted Duck	<i>Aythya fuligula</i>
Long-legged Buzzard	<i>Buteo rufinus</i>
Pallid Harrier	<i>Circus macrourus</i>
Red-capped Falcon	<i>Falco pelegrinoides</i>
Barbary Falcon	<i>Falco peregrinus babylonicus</i>

Source: Malik, Mumtaz. 1998. Biodiversity, Parks and Protected Areas. CCS sector paper.

golden oriole, which visits the orchards of Chitral in the autumn and spring, is traditionally considered to be a good omen.

2.11.3 Reptiles

Of the 42 reptile species recorded by the Zoological Survey Department throughout the NWFP, 28 are found in Chitral. This includes two turtle species, 12 types of lizard and 14 snake varieties. The Himalayan pit viper, Indian krait, Indian monitor, Indian softshell turtle, Oxus cobra and saw scaled viper and are also found in Chitral.

2.11.4 Fish

Owing to the frequent occurrence of mud-laden flash floods, the variety of fish found in the valley is comparatively sparse. High altitude lakes and streams which do not become flooded may support a greater abundance of fish species but the resources in these areas remain to be documented systematically. Surveys in lower Chitral waters have found 11 species, two exotic and nine indigenous. The exotics (brown trout and rainbow trout), introduced for sport in the cold water streams of Bumburet, Golain, Lotkuh and Shishi, are stocked annually with hatchery-reared fingerlings. Most of the indigenous species belong to the genus *Schizothorax*.

Under the NWFP Local Government Ordinance 2001, the Fisheries Department has been devolved and merged with the Agriculture Department at the district level. A District Officer Fisheries, reporting to the EDO Agriculture, oversees the protection and propagation of fish resources. At the provincial level, the Director Fisheries is responsible for policies and regulatory measures to develop, conserve and manage fisheries, as well as for research and training in this sector.

2.11.5 Parks and Protected Areas

Chitral's protected areas consist of one national park and seven game reserves, covering 1,804 km². Of these, only the Chitral Gol National Park, spread over 77.5 km², is protected from consumptive use,



Material collected for fuel purposes

including grazing, firewood collection and timber harvesting.

2.12 Energy

The cooking and heating requirements of Chitral's households are for the most part met by biomass energy in the form of wood, with close to 97% of households using wood stoves. Of the remainder, 2% use kerosene and a mere 0.07% have access to natural gas (GoP, 1999).

2.12.1 Biomass

The annual consumption of firewood in Chitral district is estimated to be 299,000 m³ (KfW, 2000). A little over one third of the district's fuel wood needs is met by the annual increment in wooded growth on farmland (15%) and grazing land (22%). But the bulk of the firewood used, amounting to 63% (182,000 m³), is taken from the forest, accounting for nearly 60% of the annual growth of all forests in Chitral.

The removal of large quantities of firewood is the dominant cause of rapid denudation

in southern Chitral, which would otherwise support a fair cover of wooded vegetation. To counter this drain, the AKRSP, CADP, Environmental Rehabilitation Project, Forest Department and Forest Development Corporation have all launched ambitious forest tree plantation programmes. Since 1991, the AKRSP alone has overseen the plantation of some 6.5 million trees through village organisations. During the currency of the CADP, community based organisations (CBOs) received 2 million saplings from the Forest Department.

2.12.2 Electricity

The power supply currently available to Chitral is shown in Table 12. For hydel power generation in the future, the Water and Power Development Authority has identified a potential of 100 MW, while the Sarhad Hydel Development Organization (SHYDO) has identified a further potential of 190 MW. SHYDO has indicated 10 feasible sites in Upper Chitral where a generating capacity of 100,000 kW can be created at costs ranging from \$ 1,400 to 3,000 per kW, and another 12 sites in Lower Chitral where 84,000 kW can be generated at costs ranging from \$ 1,100 to 2,000 per kW.

2.12.3 Other Forms of Energy

During 1997, 11.8 million l of diesel and 1.2 million l of petrol were supplied to Chitral

for use in some 1,500 vehicles. In addition, 3 million l of kerosene was provided for domestic use and 4,550 cylinders of liquefied petroleum gas were circulated among hotels and affluent households. Natural gas has not been supplied to the district, partly because the area's rugged terrain makes it difficult and expensive to build pipelines to reach the area's widely scattered population. Solar energy is utilised in the traditional way to dehydrate fruits and vegetables, and for heating. Hot water springs at Garum Chashma and Shah Salim are used for bathing and laundry.

From 1980 to 1984, the government constructed several biogas plants in various parts of Chitral. These failed to take off for a number of reasons, including the scarcity of cow dung, sharp temperature variations, and the labour intensive processes involved in making these plants operational.

2.13 Roads

Hemmed in by towering mountains, Chitral is accessible from Dir district via the Lowari Pass, from Gilgit via the Shandur Pass and from Mohmand Agency via the Nawa Pass. The Lowari and Shandur passes remain closed for several months during the winter owing to heavy snowfall. Although the Nawa Pass is open throughout the year, the road to Arandu traverses war-torn Afghanistan and has not been used since the latest Afghan imbroglio. The Chitral

TABLE 12 Electricity supplied to Chitral

Agency	Diesel (kVA)	Hydel (kVA)	Total (kVA)	Population served (%)
WAPDA (locally generated)	1,592	1,000	2,592	12.9
WAPDA (national grid)	4,500	–	4,500	9.9
CADP (microhydel)	–	1,334	1,334	2.1
SHYDO	300	3,200	3,500	17.5
AKRSP(microhydel)	–	3,800	3,800	24.6
Total	6,392	9,334	15,726	67.0

AKRSP Aga Khan Rural Support Programme
 CADP Chitral Area Development Project
 kVA kilovolt-ampere
 SHYDO Sarhad Hydel Development Organization
 WAPDA Water and Power Development Authority

Source: District Government Chitral and IUCN, 2001.



AKRSP

2

An irrigation channel under construction

valley is therefore isolated for several months each year. Travel within Chitral itself is made difficult by the poor quality and limited reach of the roads network.

The 366 km Peshawar–Dir–Chitral road is the shortest land route between Chitral and the rest of Pakistan. It is blacktopped throughout, except for a 24 km shingle stretch in the Lowari Pass. The main road in Ziarat is connected to Arandu by a 32 km shingle road, linking Chitral to the border of Afghanistan's Kunar province. A 146 km road via the Shandur pass, connecting Chitral with Gilgit, is blacktopped for 75 km and shingled the rest of the way. These roads were constructed by the former Communication and Works Department, which also built the 40 km Chitral–Garum Chashma road (19 km of which is blacktopped) and, with CADP funding, widened and blacktopped the 76 km Chitral–Booni road.

Prior to the devolution of local government, major roads and bridges were the responsibility of the provincial government's Communication and Works Department using funds provided through the ADP as well as occasional donor assistance, as in the case of the Chitral–Booni road. Under the NWFP Local Government Ordinance

2001, this department has been devolved to the district level and renamed the Works and Services Department. Meanwhile, building and maintaining link roads and suspension bridges connecting small settlements with the main road to Chitral town was the responsibility of the former Chitral District Council, which constructed 390 km of link roads and blacktopped 2 km of shingle roads annually with funds from the Community Uplift Programme. Under the new local government system, the District Council has also been abolished and its responsibilities now fall on the Chitral and Mastuj Tehsil Municipal Administrations (TMAs).

In the non-government sector, the CADP constructed 222 km of farm-to-market roads, besides providing funds to widen and blacktop the 76 km Chitral–Booni road. For its part, the AKRSP has built 165 km of farm-to-market roads through village organisations.

According to recent statistics, Chitral's internal roads network now consists of 177 km of blacktop and 503 km of unmetalled roads (District Government Chitral and IUCN, 2001). The recently completed Mir Khani bridge connects Drosh with Arandu and serves as an alternate road through Afghanistan in the winter.

2.14 Irrigation

Even in the dry season, water flows through the Chitral river and its tributaries at the rate of 100 m³/sec, swelling to 500 m³/sec in the summer. Direct use of this water is limited to a few areas because most of Chitral's cultivated land is located at higher elevations than the river beds. For the majority of habitations, glacier and snow melt from nearby mountains is the main source of water for drinking as well as irrigation, meeting 90% of current needs. Small-scale hydroelectric power plants, including the Reshun project, also rely on snow melt.

Almost every village in Chitral is served by a catchment area from where water is carried to the village through a network of small irrigation channels, most of which have been constructed by local communities. In some places, water from glacier and snow melt exceeds current needs, whereas other villages experience a shortfall. Water flows fluctuate with the seasons, as well as with annual variations in snowfall.

For centuries, local farmers have irrigated their land with the help of winding channels built along steep mountain slopes. Besides the gruelling labour involved, the task of constructing channels also requires that labour and resources be pooled. Traditionally, this was accomplished through voluntary social organisation. As powerful rulers emerged in the area, they provided administrative, legal and financial support to many such cooperative endeavours. At the same time, Chitral's former rulers used forced labour to irrigate land which was then distributed to their henchmen. The system of irrigation in place prior to the 1960s was built by local community networks as well as the state, the latter employing forced labour.

Since the abolition of Chitral state in 1969, three organisations have played a prominent role in developing irrigation in the area: the provincial government's Irrigation Department, AKRSP and CADP. The Irrigation Department has brought 1,900 ha under irrigation through 13 separate

schemes and is working on two more schemes expected to irrigate another 1,500 ha by 1999. Since 1983, the AKRSP and CADP have spent Rs 139 million on irrigation schemes expected to cover 8,700 ha for agriculture, forestry and fodder production. The AKRSP in particular has invested heavily in irrigation, with projects to improve 115 existing water channels and build 138 new channels, 20 storage reservoirs and one sedimentation tank. The AKRSP is also executing four lift irrigation, six pipe irrigation and nine siphon irrigation schemes. The CADP, meanwhile, wound up operations in December 1997.

The construction of water channels has always been the exclusive domain of men, because of the physical labour involved. Men are also solely responsible for watering fields in the summer, since the quantity of water needed at this time of year requires that irrigation be carried out at night-time as well as during the day. In the autumn, when night irrigation is not necessary, women are known to water fields.

2.15 Drinking Water

Close to 90% of Chitral's population lives in rural settlements and only 41% of this population has access to piped drinking water (GoP, 1999). Such communities depend on other sources of water, such as springs, streams, lakes, rivers, melting snow and glaciers. In the towns, 88% of the urban population is supplied with drinking water.

Harsh climactic conditions and rugged terrain make fetching water for domestic use a punishing task. In many villages, women and children cover long distances daily, travelling on foot over mountain tracks in rain and snow. Arduous even at the best of times, the chore becomes hazardous when tracks and bridges spanning raging torrents are washed away—a frequent occurrence in Chitral.

Recognising the critical role of potable water in safeguarding public health, the NWFP government and donor agencies have attempted to improve the efficiency of

Chitral's water supply. Typically, setting up a drinking water supply scheme involves locating a source on high ground and conveying the water to habitations at lower elevations. The distribution network operates on the principle of gravity, and consists of underground or overground pipelines and storage tanks constructed at various elevations to ensure smooth flow.

Before devolution, the Public Health Engineering Department (PHED) was the principal government agency responsible for supplying potable water to the area. By 2001, the PHED had completed 160 schemes costing Rs 194 million. Under the CADP, the PHED completed 70 more drinking water schemes with the participation of village organisations. Of these, 20 were handed over to village communities for operation and maintenance. In the case of schemes that are currently in a state of disrepair, funding needs to be secured for their rehabilitation before local communities will be willing to take over operation.

Until 1988, all of Chitral district was treated as a rural area, with the now-defunct District Council responsible for supplying drinking water. The Council completed 500 small village-level schemes with financial and technical assistance from the United Nations Children's Fund (UNICEF) and the participation of village organisations created by the AKRSP and CADP. On completion, these schemes were handed over to village organisations for operation and maintenance. Since the dissolution of elected councils, UNICEF assistance has come to a halt.

In 1988, when Chitral town was declared an urban area, a Municipal Committee was established. With financial assistance from the KfW and technical help from the PHED, in 1994 the Municipal Committee completed the Chitral Town Drinking Water Supply Project at a cost of Rs 10.6 million, conveying water from the Angarghoon spring through a 32 km pipeline. This scheme supplies 1.5 million gal of water daily to 60% of the population of Chitral town along with nine surrounding villages. Supply metres have been installed in households receiving water through this network. Under the new

local government system, the Municipal Committee has been dissolved and replaced by two TMAs: Chitral and Mastuj. Operation and maintenance of the system is now the responsibility of an autonomous unit within the TMAs.

Since 1993, 11 drinking water schemes have been completed under the first phase of the Social Action Programme (SAP). Under the five-year SAP Phase 2, launched in July 1998, supply will be further extended, with CBOs participating in project identification, planning, design and implementation.

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Harsh climactic conditions and rugged terrain make fetching water for domestic use a punishing task. In many villages, women and children cover long distances daily, travelling on foot over mountain tracks in rain and snow.

2.16 Sanitation and Solid Waste Disposal

Sanitation and solid waste disposal facilities in Chitral are deplorable. Rural area residents defecate in the countryside, or in a corner of their homes from where the excreta is removed by women and dumped on rubbish heaps. The situation in the towns is as bad if not worse, because vacant spaces that may be used as latrines are not available around the houses. The Chitral TMA offers a semblance of solid waste removal services, collecting 2 of the 9 t of waste generated daily. In the absence of incinerators, landfill sites or other means of disposal, the TMA simply burns the refuse in the open air along river banks. Individual households burn or bury their waste, or throw garbage into rivers or side streets. While 75–85% of the homes in Chitral town are equipped with soakage pits, some households discharge their sewage into drains which carry the untreated effluent

directly into the Chitral river. In 1990, the PHED constructed a shallow sewerage system in Rehan Kot, but this has ceased to function owing to poor maintenance.

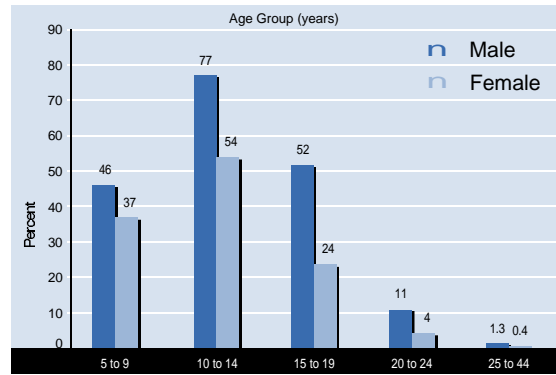
The problem of sanitation and solid waste disposal in Chitral stems from the topography of the area and the haphazard manner in which habitations have sprung up. Because of the mountainous terrain, settlements are widely scattered. Since level land with soil cover is pre-empted for agriculture, habitations are squeezed into narrow valleys. As a result, towns in the area have developed as warrens with cramped streets which hamper waste removal. At the same time, the rocky ground on which houses are built precludes the construction of an underground sewerage system. As long as the population of the valley was sparse, such conditions were tolerable. But population growth has exacerbated the scale of the problem, rendering the current situation unacceptable.

Under the new local government system, the PHED has been merged with the district government's Works and Services Department. Responsibility for sanitation and waste removal now falls on the Water Supply and Sanitation Unit of this department, headed by a Deputy District Officer who oversees the activities of one Assistant District Officer and three sub-engineers each in Chitral and Mastuj. Sewerage, sewage treatment and disposal is also the responsibility of the TMAs.

2.17 Education and Training

Close to 51% of males and 31% of females from 5 to 24 years of age are enrolled in some form of education (Figure 10). The district government's Education Department runs 608 primary, 54 middle and 49 high schools. Aga Khan Education Services (AKES), the leading non-government agency involved in this sector, has established 34 primary, 14 middle and three high schools for girls with a combined enrolment of more than 6,000. Also operating in the area are 36 private schools, four of which are high schools.

FIGURE 10 Percentage of population enrolled in education



Source: Government of Pakistan, 1999.

Higher education is provided by a degree college in Chitral and an intermediate college in Booni, both of which are for men. A degree college for women began functioning in Chitral town in 1996 with an initial enrolment of 31 students. The Chitral Commerce College, established in 1986, has so far granted more than 100 Bachelor's degrees. The Elementary Education College of Chitral has seen 835 students completing courses at various levels since its inception in 1988. By 1997, the College had awarded certificates to 159 secondary teachers, 649 primary teachers and 27 drawing instructors. Through the electronic media, meanwhile, the Allama Iqbal Open University offers courses in general and technical education, as well as teacher training.

2.17.1 Village-level Training

Capacity building is an essential component of the work of the AKRSP and CADP. The AKRSP has provided natural resource management and vocational training to 844 village and women's organisations and managers, as well as 9,343 village specialists and village accountants (AKRSP, 2001). The CADP has trained 2,300 villagers in various aspects of agriculture, horticulture, livestock rearing, forestry and poultry farming, in addition to training women in sewing and embroidery. The Aga Khan Planning and Building Services has trained 1,619 individuals in basic engineering, carpentry, plumbing and electrical work, while the AKES has trained 200 villagers in school management and organisation.

2.17.2 Skills Training

The Chitral Wood Working Centre, established in 1989 by the provincial government's Small Industries Development Board, has trained 16 local men, none of whom has managed to set up a business. Instead, carpentry is dominated by artisans from outside Chitral, who provide on-the-job training to local residents. In other sectors, two privately-owned computer centres impart basic computer literacy skills; some 37 vehicle maintenance and repair shops, employing 46 skilled and 49 semi-skilled workers, provide apprenticeships to local youth; and over 1,500 vehicle drivers employ trainees as cleaners.

2.18 Health

2.18.1 Public Sector

Three hospitals, three rural health centres, 22 basic health units, 22 dispensaries and three maternity care health centres operate in the public sector. These facilities are staffed by 33 male doctors, four female doctors, 23 female health visitors, three female and 180 male technicians, three nurses and 290 trained birth attendants. Health services are also provided by six family planning centres with a combined staff of seven women (one doctor and six health visitors). In 1988, two hospitals, 30 dispensaries, four rural health centres and 13 basic health units were operating in the area.

2.18.2 Private Sector

The Aga Khan Health Services (AKHS) provides medical treatment at 29 health centres, staffed by 17 male and four female doctors, as well as 383 community health workers. In addition, the AKHS has trained 366 women as birth attendants.

2.19 Telecommunications

The British colonial administration first installed telephone and telegraph facilities in Chitral in 1904. In 1978, Chitral was con-

nected to the nationwide dialling network through a microwave satellite station. Over the last three decades, Chitral has been linked via digital exchanges to the worldwide dialling system.

The main digital exchange in Chitral with a capacity of 1,800 lines is connected to a network of digital exchanges at Ayun (9,300 lines), Booni (300 lines), Drosh (900 lines), Garum Chashma (102 lines), Mastuj (500 lines) and Reshun (200 lines). Two Mega Tag exchanges with a capacity of 100 lines each at Gahiret and Oveer are also linked to this network. Similar facilities will be extended to Mulkhov and Torkhov in the near future.

2.20 Environment

Environmental protection is the responsibility of the TMAs. Their functions in this regard, as detailed in the NWFP Local Government Ordinance 2001, include: (i) controlling land use, land subdivision, land development and zoning in both the public and private sector; and (ii) providing, managing, operating, maintaining and improving water supply, sewerage, sanitation and solid waste disposal; traffic planning; parks, playgrounds, open spaces and arboriculture (GoNWFP, 2001).

In addition, the provincial government has set up a District Environmental Protection Committee in Chitral with the following members: EDOs of the concerned devolved departments; the DFO Chitral; the Executive Engineer Irrigation Chitral; and representatives of the AKRSP, CCS Unit and CBOs working at the grassroots level.

2.21 Social Organisation

Historically, Chitral's tradition of voluntary social organisation was provided legal cover and administrative support by the area's princely rulers. With the end of their rule, the system they fostered fell into disarray. Today, the non-government sector has taken up the task of creating grassroots organisations. From December 1982 to

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December 2000, the AKRSP set up 758 village organisations with a total membership of 29,116 as well as 382 women's organisations with a combined membership of 10,590. During its involvement in Chitral from 1989 to 1997, the CADP worked to establish grassroots organisations as well. As a result, community organisation appears once again to be thriving across Chitral, with the exception of a few uncooperative areas or households.

2.22 Employment

According to the 1998 census, 33,778 males and 2,550 females aged 10 years and above are employed (GoP, 1999). Of this group, 160 boys and 33 girls are aged between 10 and 14 years. The majority of men are engaged in public or private service (41%) and agriculture (28%), with fewer individuals employed in trade (9%), transport (6%) and construction (5%). Women are for the most part employed in public and private service (50%), cottage industries (44%) and agriculture (3%) (Table 13). The census also shows that 24,846 males aged 10 to 64 (23,986 aged 15 to 64) are facing unemployment (looking for work and/or laid off). Only 42 females (aged 15 to 24 years) are looking for work and two girls between 10 and 14 years of age have been laid off. Although a substantial 97,982 women are engaged in domestic labour in their own homes, they are not taken into account in the census.

Seasonal migration is a unique feature of Chitral's employment landscape. During the winter, young men without a local source of off-farm income migrate to the cities in search of work. Most are hired as unskilled labour in the construction industry. Similarly, students forced to terminate their education owing to financial hardship accompany their relatives to the cities in search of employment in factories and households. Most such migrants return to their villages in the summer to participate in agricultural activities. Relatively fewer men work in the Middle East, mostly as unskilled labour.

2.22.1 Formal Sector

The government is the major formal-sector employer in Chitral, with 14,000 individuals working in various organisations and departments. Among non-governmental organisations (NGOs), Aga Khan Development Network institutions are the largest employers in the area, with a combined staff of close to 700. Until recently, women in Chitral, as in other rural areas of the country, worked primarily in the education or health sectors. NGOs have expanded employment opportunities in recent years, creating jobs for women in a variety of fields, including social organisation, forestry, agriculture and animal husbandry. In the health care sector, the AKHS staff of 179 already includes 51 women. Employment prospects for women have further improved with the establishment of private schools.

TABLE 13 Employment in Chitral district, 1998 (%)

Employment Status	All areas			Rural Areas			Urban Areas		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Self-employment	45.85	45.95	44.60	48.58	48.55	48.85	29.47	30.67	8.13
Employee (government)	38.98	38.73	42.17	35.81	35.68	37.41	58.08	56.68	83.04
Employee (auto)	2.17	2.17	2.21	2.17	2.18	2.10	2.15	2.09	3.18
Employee (private)	9.94	10.44	3.54	10.18	10.74	3.33	8.53	8.71	5.30
Employer	0.38	0.38	0.37	0.24	0.23	0.41	1.19	1.25	–
Unpaid family helper	2.68	2.33	7.11	3.02	2.62	7.90	0.58	0.60	0.35
Total	100	100	100	100	100	100	100	100	100

Source: Government of Pakistan, 1999.

2.22.2 Informal Sector

The informal sector provides jobs in small businesses, village shops, grocery stores, cloth retail shops, food stores, flour shops, transport operations and repair, and fruit and vegetable vending. Meanwhile, the operation of hotels, *tandoors* (bread ovens) and butcher shops is dominated by Afghan refugees.

2.23 Microenterprise

Before its merger with Pakistan in 1969, Chitral state was by and large a self-sufficient, isolated mountain valley. Its artisans manufactured a variety of handicrafts that were sold locally or presented as souvenirs to visitors who ventured into the region. Traditional craftwork is still practised in certain areas: woollen *shu* (or *patti*) in Mogh; carpets in Booni; *pelask* (goat-hair rugs) in Bumburet; wood carving in Jughore; traditional women's dresses and capes in the Kalash valley; woollen gowns in Khorkashandeh and Torkhow; and embroidered belts, caps, cushion covers, tea cosies, tea mats and waistcoats in Yurjogh. Besides traditional cottage industry, the AKRSP, CADP and PHP have initiated a number of ventures in new sectors involving the production, packaging and marketing of dried apricots, apricot kernels and kernel oil; fruits, vegetables and potatoes; and commercial poultry farming.

Entrepreneurial training, investment and aggressive marketing at both the national and international level will be required to make such ventures viable and profitable in the long term. Improving communications with the outside world, particularly during the winter months when the snowbound Lowari and Shandur passes cut off road transport, is also crucial to ensure the sustainable growth of the microenterprise sector.

Of all the agencies working in Chitral, the AKRSP and PHP alone have taken a serious interest in developing microenterprise, albeit on a small scale. Building on its initial success in promoting apricot production and marketing, the AKRSP in 1998 created an Enterprise Development Division which aims to provide vocational and entrepre-

neurial training, facilitate the acquisition of credit, supply market information, create market linkages and encourage the formation of marketing associations. Although the Division has a long way to go in launching an effective microenterprise programme, it has managed to raise the farmgate price of apples, pears and potatoes. Another noteworthy AKRSP initiative has been the recent establishment of North-South Seeds, which operates mainly in Gilgit and runs a production office in Hunza as well as a production unit in Chitral.

Although its own mandate was confined to horticulture, the PHP recognised the importance of an integrated approach to microenterprise development. During its currency, it provided assistance to farmers at each step of the production cycle from pre-production to post-marketing.

2.24 Cultural Heritage

Chitral's unique culture has developed over many millennia, with more than a dozen ethnic groups speaking as many languages scattered across isolated mountain valleys. Many of the ancestors of Chitral's present-day inhabitants fled to these valleys to escape the turmoil of surrounding countries. As a result, the culture of the people of Chitral is more closely linked to the cultures of Central Asia and China, rather than the rest of South Asia.

2.24.1 Architecture

The royal palace in Chitral and the forts in Birmoghasht, Chitral, Drasun, Drosh, Mastuj, Naghar, Shagram and Shoghore are now privately owned and in varying stages of decay. In addition to the ruins of forts dating back to the fourth and fifth centuries BC, Chitral is home to several preserved forts, fortresses and towers from a more recent era. Also of interest are single- and double- storied houses built in typical Khow and Kalash style. The Khow house, or *baipash*, is an integral part of a fort complex, providing several facilities under one roof (bedroom, drawing room and kitchen). Traditional Chitrali buildings are embellished with wood carvings.

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2.24.2 Arts and Crafts

Chitral's artisans manufacture a wide range of elegant and delicately crafted products, including pottery, weaponry and jewellery; woodwork; and embroidered, woven and knitted textiles. Clay, wood, stone, bone, animal skin and copper are the materials most commonly used. Chitral's woollen fabric, *shu* (or *patti*), embroidered cloth and walnut-wood furniture are popular in handicraft markets throughout the country.

2.24.3 Traditional Costumes and Dresses

Traditional Khow and Kalash clothing is made from wool and silk, decorated with beads and shells. The traditional cap (*pakol*) and gown (*chugha*) are popular items in major cities throughout the country, as are typical Chitrali shoes (*khone*) which resemble long riding boots.

2.24.4 Local Food and Beverages

The area's vast culinary repertoire of foods and beverages is unique in terms of both flavour and presentation. Chitrali cuisine is still prepared and served in a traditional fashion.

2.24.5 Local Games and Sports

Polo and falconry are the most popular recreational pursuits in Chitral, while prototypes of cricket, football and hockey are also played. The people hunt for sport as well as to supplement their diet.

2.24.6 Music and Dance

Music and dance are at the heart of Chitrali culture. The performance of music is not considered to be a profession confined to a few families, as is the case in the rest of the sub-continent. Rather, Chitral's rich and varied musical tradition is part of the fabric of everyday life. Every occasion calls for a different rhythm, while certain beats are served for particular individuals. The Chitrali sitar is famous throughout the world and traditional dances, such as the *dani*

and *souz*, are part of the folk heritage of Central Asia.

2.24.7 Folk Songs

Folk songs serve as a repository of regional history. The folk poets of Chitral sing war songs as well as love ballads. Epics are popular among the Kalash, while Khowar poets prefer romantic verse. Elements of nature and the environment are also depicted in song.

2.24.8 Folklore

The folklore of Dameli, Kalash, Khowar, Wakhi and other languages of Chitral is vast and varied. A vibrant tradition of folk stories, some as long as novels, has been passed down from generation to generation. These narratives are richly populated with superhuman characters participating in metaphysical events. Chitral's storytellers employ a unique style where every tale begins and ends in the same way. The storyteller starts with the incantation: "Day and night lie to each other; you and I lie to each other; a curse be on the one who first told a lie. I know not if it was thus, I know not if it was so, but it is said there was a king. . ." Every story closes with the words: "It was an interesting event; I was awarded a lame horse which could not reach my destination."

2.24.9 Legendary Sites

Among the many locations immortalised in legend and folklore are Braro-khongor (near Shandur), Khongor-diru-bokht (Barenis), Khow-bokht (Mulchow), Khudayo-rash (Rizhun), Qalandar-botiru-bokht (Rayeen) and Rakhun, a mountain visible from Garum Chashma.

2.24.10 Historic Military Sites

Chitral is home to a number of heritage sites where important battles were fought in the past. Chokul Waht, Darband, Gasht, Jutilasht, Khandan, Khorkashandeh, Nisur Gole and Rabat are among the dozens of such areas of historical interest. The ruins of ancient forts dating as far back as the



A view of Chitral Town

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third century BC are located in Ashret, Brep, Muzhgol and Uchusht (Ghufran, 1962; Stein, 1921).

2.24.11 Indigenous Tribes—the Kalash

With its origins lost in the mists of antiquity, this ancient tribe is a unique cultural resource. Four festivals mark the highlights of the Kalash calendar. *Joshi*, the spring festival, when girls pick the first flowers of the year, is held on May 14–15. It is celebrated with dancing, social visits and the exchange of milk and dairy products. *Utchal* is observed for two days in mid-July to mark the wheat and barley harvest, and involves song, dance and feasting. *Pul*, on December 20–21, marks the grape and walnut harvest, while *Chowmass*, from December 18 to 21, welcomes the new year with feasting, drinking, dancing and the sacrifice of goats (GoP, 1999).

2.25 Tourism

The area that is now Chitral has been exposed to foreign influences since ancient

times, when trade caravans traversed the region from Kashgar and Bukhara to Kabul and Peshawar. Kalash and Khow culture was first introduced to anthropologists, ethnologists, linguists and mountaineers through the writings of British colonial officers and explorers. Tourism was developed as an industry after Chitral state merged with Pakistan in 1969. Until only recently, close to 16,000 tourists visited Chitral annually, 2,000 of whom were foreign nationals (AKRSP, 2000b).

Chitral's main tourist attractions are mountaineering, a pleasant summer climate and the unique culture of the Kalash people. With its rugged landscape and rich biodiversity, the area is also an ideal destination for ecotourism. However, picnic spots, trekking routes and other areas of cultural significance are yet to be identified and opened to visitors. At present, the absence of an all-weather road link with the rest of the country is the single most important constraint to the development of tourism. Meanwhile, local communities lack interest in developing this sector perhaps because its potential importance is not widely recognised.

Rather than destroying natural habitat or diluting the unique culture of the area, sustainable and environment-friendly tourism can help preserve the cultural heritage of Chitral and protect the ecosystem. Carefully planned and monitored initiatives will serve to promote indigenous cultures and traditions, while ensuring that a balance is maintained between the interests of various groups and the conservation of nature. At the same time, income from tourism can be channelled to fund environmental protection as well as development in other sectors.

2.26 Mineral Resources

The area's rugged topography and inaccessibility make mineral exploration a labour- and resource-intensive task. As a result, Chitral's mineral reserves have not been systematically explored. Known deposits based on fragmentary surveys are shown in Table 14. Since mining activities are notorious for the environmental damage they cause, proposals for large-scale mining in Chitral must be examined with extreme caution.

2.27 Governance Structure

Good governance is critical to the promotion of sustainable development. Following the promulgation of the NWFP Local Government Ordinance 2001, implementation of a devolved system of local government is underway. With planning, development and monitoring transferred to the local level, it is expected that an environment conducive to sustainable development will be created. In order for the system to attain its full potential, it will be necessary to build the capacity of each individual in the system.

Local government in Chitral district now comprises a District Government and Zilla Council, as well as TMAs, Tehsil Councils, Union Administrations, and Union and Village Councils. The organisation of the new system and progress made so far in implementation are discussed in Sections 2.27.1–2.27.11 below.

2.27.1 District Government

Heading Chitral's district government is the Zilla Nazim, who provides leadership and

TABLE 14 Mineral resources

Location	Mineral Deposit
Awiret Gol	Fine grained lead-antimony sulphide ore, also containing gold, silver, tin and vanadium (estimated at 290 t)
Krinj, Partsan	Antimony ore mined on a small scale (estimated at 8,617 t)
Damel Nisar	Good quality magnetite ore (estimated at 7.3 million t)
Reshun	Marble and dolomite, inter-bedded with limestone and shale
Gahiret, Kalash valleys, Shoghore	Large quantities of fine quality marble
Gahiret, Koghuzi	Large quantities of granite
Lonkuh, Mirghash	Arsenic minerals such as orpiment and realgar occur in large deposits some 4,000 m above sea level in Terich valley
Kaldam Gol (Drosh)	Galena, pyrite and copper minerals such as chalkopyrite reported
Pakhtori (Oveer)	Quartz veins containing lead-zinc ore and copper
Melp gol (Rayeen)	Antimony
Kushum	Antimony in large quantity
Koghuzi, Reshun, Shoghore	Granite, marble and dolomite
Golain	Soapstone
Tar (Shishikuh)	Talc
Munoorgol (Garum Chashma)	Gemstones such as aquamarine and topaz
Madashil	Dolomite, galene and pyrite

Source: Geological Survey of Pakistan, 2000; Aslam and Khan, 2002.

vision for development initiatives, and is responsible for ensuring effective and efficient administration. The Nazim's specific functions are detailed in the NWFP Local Government Ordinance 2001.

The District Administration consists of district offices, including the sub-offices of those departments now devolved to the district level, as well as other offices set up and grouped under the EDOs. The work of these departments is coordinated by the District Coordination Officer (DCO), appointed by the provincial government.

The DCO Chitral is the Coordinating Head of the District Administration, which includes the magistracy, finance and planning, education and literacy, health, community development, agriculture, revenue, and works and services. Since responsibility for forests, wildlife, electricity and irrigation has not been devolved to the district level, these sectors continue to operate under provincial hierarchies.

The district government performs its functions in accordance with the provisions of the NWFP Local Government Ordinance 2001 and the rules made pursuant to this law.

2.27.2 Zilla Council

The Zilla Council comprises all Union Nazims, except for women, peasant, worker and minority community representatives elected on reserved seats. The Council considers for approval by-laws, tax and budget proposals as well as development plans. Besides other functions specified in the Local Government Ordinance, it also elects committees to administer a range of matters from justice and code of conduct to sports and culture.

2.27.3 Tehsil Municipal Administration

The TMA is headed by the Tehsil Nazim, who oversees development at the tehsil level and is responsible for municipal services. A Tehsil Municipal Officer appointed by the provincial government coordinates the

work of Tehsil Officers responsible for municipal regulations, infrastructure, services, finance and planning.

The TMA performs the following functions:

- n preparing plans for land use and zoning in collaboration with Union Councils; obtaining Tehsil Council approval for plans; and implementation;
- n controlling land use, subdivision, development and zoning in the public and private sector;
- n enforcing municipal laws, rules and by-laws; and
- n operating, maintaining and improving the municipal infrastructure, providing services in a number of sectors, including water supply, waste disposal and communications.

2.27.4 Tehsil Council

Members of the Tehsil Council include the Naib Nazims of all Union Councils, as well as representatives of women, peasants, workers and minority communities elected on reserved seats. The Tehsil Council considers for approval the Municipal Administration's proposals on taxes, by-laws, annual budgets, land use zoning, and development master plans. The Council also elects tehsil-level monitoring, justice and accounts committees.

2.27.5 Union Administration

The Union Administration is headed by a Union Nazim, and comprises a Naib Union Nazim and up to three secretaries. The Union Nazim provides leadership for union-level development, oversees preparation of the budget and annual development plans, organises management of inter-village infrastructure and constitutes the Musalihati Jarga (reconciliation council). The Union Administration's functions include:

- n collecting and updating socio-economic data;
- n consolidating and prioritising village development needs, formulating proposals, securing Union Council approval, and recommending these schemes to the district government or TMA;

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- n providing and maintaining drinking water supply;
- n regulating grazing areas; and
- n executing union-level ADP projects through contractors in the private sector.

2.27.6 Village Council

The Village Council may consist of anything from 5 to 11 members, and is headed by the individual securing the highest number of votes from village residents. Its responsibilities include developing and improving water supply sources, making arrangements for sanitation and waste disposal, organising watch and ward, mobilising voluntary resources for municipal work, facilitating the formation of cooperatives, and fostering community involvement in irrigation and tree plantation initiatives.

- n forming stakeholders' associations to secure community involvement in the maintenance of specific facilities; and
- n catalysing bottom-up planning and ownership incentives.

A CCB is a non-profit organisation registered with the provincial Social Welfare Department. In carrying out its purposes, it may interact with voluntary community welfare organisations and raise funds through voluntary contributions, gifts, donations, grants and endowments. In accordance with the provisions of the NWFP Local Government Ordinance 2001, CCBs may also receive project-based cost-sharing support from any local government, including matching grants of up to 80% of the budgeted amount of an approved development scheme. These grants are to be disbursed from the district government's development budget, half of which is reserved for this purpose.

2.27.8 Musalihati Jarga

Within 30 days of its election, the Insaf (justice) Committee of each Union is to select for the duration of its tenure three conciliators from amongst the local residents. The individuals selected must command respect in the community for their integrity and good judgement, and are to serve on the Musalihati Jarga (reconciliation council). The Union Nazim, members of the Insaf Committee and the Conciliators are to use their good offices to achieve an amicable settlement of disputes amongst Union residents through mediation, conciliation and arbitration. Settlements are to be attempted if all parties agree to this process, and the service is to be provided free of charge. Any court of competent jurisdiction may refer a matter to the Musalihati Jarga for settlement.

2.27.9 Provincial Local Government Commission

The provincial government is to appoint a Provincial Local Government Commission comprising two members from civil society (one each nominated by the

Good governance, decentralised planning, and the empowerment of marginalised groups and local communities with a bottom-up approach to service delivery are priority issues for natural resource management and sustainable development under the CCS.

2.27.7 Citizen Community Board

A group of non-elected citizens may set up a Citizen Community Board (CCB) in a local area for the purpose of undertaking the following voluntary self-help initiatives:

- n improving the delivery of services by a public facility;
- n developing and managing a new public facility;
- n welfare of handicapped or destitute individuals, widows and impoverished families;
- n establishing farming, marketing and consumer cooperatives;

Leader of the House and the Leader of the Opposition in the provincial assembly), two qualified and experienced technocrats selected by the government, and the Secretary Local Government and Rural Development. The Commission performs the following functions:

- n conducting annual and special inspections of local governments, and submitting reports on their performance to the provincial chief executive;
- n undertaking special audits;
- n resolving disputes between district governments; and
- n inquiring into matters brought up by the DCO where the DCO considers the orders of the Zilla Nazim unlawful, or the Zilla Nazim complains against the DCO.

The Commission is appointed for a four-year term and reports to the chief executive of the province.

2.27.10 Zilla Mohtasib

The government is to appoint a Zilla Mohtasib (ombudsman) for the district to redress citizen's complaints against district government officials.

2.27.11 Progress Made in Implementation

The local government system has begun functioning in Chitral. The following departments have been devolved from the provincial level and merged with the district government:

- n finance, planning and development;
- n education (primary, secondary and literacy);
- n health (civil hospitals, dispensaries, rural health clinics, basic health units, maternity and child health care, malaria and tuberculosis control, vaccination and drug control);
- n industries (commerce colleges, vocational institutes, skill development centres);

- n agriculture (agriculture extension, livestock, fisheries, farm forestry, sericulture, agriculture engineering, soil conservation, watershed management and cooperatives);
- n works and services (district roads and bridges, water supply and sanitation);
- n community development (social welfare, rural community development, centre for handicapped children); and
- n revenue and estates.

The following sectors remain under the control of the provincial government:

- n higher education,
- n district headquarters hospital,
- n irrigation,
- n forests and wildlife,
- n district accounts office,
- n police, and
- n judiciary.

2.28 Nexus Between Devolution and the Chitral Conservation Strategy

Good governance, decentralised planning, and the empowerment of marginalised groups and local communities with a bottom-up approach to service delivery are priority issues for natural resource management and sustainable development under the CCS. For its part, the new local government system emphasises the need for decentralised planning and participatory development. The CCS and the new local government share common concerns regarding poverty alleviation and environmental conservation.

The nexus between the CCS and the new local government system is embodied in Section 140(4)(a) of the Local Government Ordinance, which provides for a crystallised vision for integrated development of the district, to be formulated and presented by the Zilla Mushavirat (consultation) Committee on behalf of the district government.

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For development initiatives to be successful as well as sustainable, coordinated efforts are required in a number of sectors with the full involvement of the government. Chitral is no exception to this rule. In addition to the work of non-governmental organisations, support will be necessary from the judiciary, executive and police, as well as government departments responsible for health, education, water and other amenities, to ensure long-term sustainable development.

Chapter

3

Major Past and Present Development Initiatives



3.1 Government Departments

The Public Health Engineering Department has played a role in stemming water-borne diseases by providing potable water to 63% of the population. The Water and Power Development Authority (WAPDA) supplies 25% of the area's electricity. The Irrigation Department serves the needs of 15% of Chitral's irrigated area. The Agriculture Department's research and extension unit seeks to apply new knowledge to local conditions. The Forest and Wildlife Department is responsible for the protection of biodiversity. The former Communication and Works Department created arteries for trade and commerce by building and maintaining main roads, while the now-defunct District Council expanded the network with link roads and bridges.

Public perception about the effectiveness of public-sector development remains negative, largely because such initiatives lack vigour and continuity.

From 1997–98 to 1999–2000, education, health, public health engineering, social welfare, transport, communications, irrigation and regional development have received major funding from the government. Public perception about the effectiveness of public-sector development remains negative, largely because such initiatives lack vigour and continuity.

3.2 Aga Khan Rural Support Programme

Launched in 1984, the Aga Khan Rural Support Programme (AKRSP) experimental project in Chitral was regularised in January 1986. Its aim is to enhance the quality of life of the people of Chitral through social organisation, self-reliance, skills training, improved agricultural prac-

TABLE 15 Human resource development

Type of training	Number
Village organisation managers	690
Women's organisation managers	156
Village organisation managers (conferences/workshops)	1,709
Women's organisation managers (conferences/workshops)	577
Valley specialists/master trainers	140
Village accountants	47
Individual specialists (natural resource management/other technical sectors)	8,461
Male villagers (vocational skills)	46
Female villagers (vocational skills)	119

Source: AKRSP2000a.

tice and the development of physical infrastructure.

3.2.1 Social Organisation

The major thrust of the AKRSP's development policy has been to improve agriculture, livestock husbandry and forestry by providing inputs and training village workers in improved technologies. By December 2000, the AKRSP had formed 758 village organisations and 382 women's organisations, with 29,116 and 13,590 members, respectively, and combined savings of Rs 95 million. The AKRSP has also created 79 cluster organisations. Its achievements in human resource development until December 2000 are summarised in Table 15.

3.2.2 Physical Infrastructure

The AKRSP's most important achievements in the development of physical infrastructure have been to extend irrigation to 8,837 ha of previously unirrigated land and improve the existing irrigation system over 12,933 ha. Its outstanding contribution, however, has been to pioneer siphon irrigation, which allows water to be conveyed to land that cannot be irrigated by open channels. This system has been successfully replicated by the Chitral Area Development Project (CADP).

Microhydels established by the AKRSP generate 3,800 kVA of electricity, the second-



Tapping the water for community needs

largest single contribution to Chitral's power supply after WAPDA. To facilitate operation and maintenance, the AKRSP has trained 254 plant operators. This initiative is doubly important because microhydel are likely to be the main source of electricity for a large number of small scattered habitations that cannot cost-effectively be connected to the national grid or other local projects. In the communications sector, the AKRSP has constructed farm-to-market roads.

3.2.3 Enterprise Development

The AKRSP's entry into the field of enterprise development is driven by a recognition of the fact that increasing agricultural production alone will not serve to materially enhance the quality of life of the population. Since only a small area is under agriculture and most land holdings are small, simply increasing crop yields will not make the desired impact on agricultural income. Rather, it is essential to teach farmers to improve the processing and marketing of their produce in order to increase earnings. Methods employed in this connection include cooperative marketing ventures and skills training to enable value addition.

Today, 575 village organisations are engaged in cooperative marketing, assisted by loans and training. So far 1,087 male and 841 female entrepreneurs have been trained in enterprise development, improved woollen cloth making (women), post-harvest management, fresh fruit marketing, fruit processing and drying, potato and vegetable marketing, poultry farming, operation and management of retail business, and business plan preparation.

3.2.4 Shubinak House

Guilds of spinners and weavers brought together under the AKRSP's Shubinak House Project have played a significant role in promoting *shu* (also known as *patti*), the traditional woollen fabric of the area. These guilds produce woollen products and supply value-added clothing to the market. Funded by the Swiss Agency for Development and Cooperation (SDC), Shubinak House has been able to introduce high-grade woollen *patti* to various outlets in the urban centres of Pakistan as well as abroad. Over the past five years (1997–2002), Shubinak House has proved itself to be a self-reliant and profitable entity.



AKRSP

Spinning of wool – the traditional way

3.2.5 North-South Seeds

North-South Seeds is the AKRSP's latest initiative, aimed at generating employment opportunities in areas with scarce natural resources. Managed as a seed company and earning a profit, the project aims to produce and market high-quality local varieties of vegetable seeds which are in great demand among vegetable growers in the area who are expanding operations at an annual rate of 4%. The enterprise employs the services of contract growers to produce raw seeds in accordance with stringent quality standards, a process which requires continuous training and supervision by AKRSP seed technologists. At the other end of the production chain are farmers, who are averse to taking risks. Frequently duped by dubious seed merchants, farmers need to develop confidence in North-South Seeds sales personnel. Once this has been accomplished, farmers are able to benefit from the company's improved seed production technology which ensures uniform germination, high germination percentages and increased disease resistance.

The most exciting aspect of this enterprise is that it is much more than an agricultural project. It fulfils a whole array of AKRSP objectives and does so in a sustainable—and, ultimately, financially profitable—manner.

More than half of the company's contract seed growers are women. Nearly all growers, and especially the women, belong to either poor or poverty-stricken households with an annual per capita income of less than Rs 12,000. On average, these growers are able to earn more per unit area from their North-South Seeds crop than any other crop currently under cultivation in Chitral and the Northern Areas.

Although North-South Seeds operates a production unit in Chitral, its main physical plant, including a greenhouse and seed processing and packaging plant, as well as most of its staff and vehicles, are located in Gilgit. This is perhaps its only drawback. Similar small enterprises need to be developed in Chitral to make a major impact in the field of poverty reduction.

3.2.6 Credit and Banking

Providing agricultural credit is the cornerstone of the AKRSP's programme to invigorate the economy of Chitral. The AKRSP has so far disbursed 5,391 loans totalling Rs 199 million to 118,800 households. The First MicroFinance Bank (FMB), an extension of the microcredit facilities already provided by the AKRSP, has been established to promote enterprise and alleviate poverty by facilitating small loans to individuals. The FMB's total capital investment amounts to Rs 600 million, of which 60% comes from the AKRSP, and the remainder from the Aga Khan Fund for Economic Development (20%) and International Finance Corporation (20%).

3.3 Aga Khan Health Services

Established in Chitral in 1964, the Aga Khan Health Services (AKHS) plays a crucial role in providing medical treatment to women and children in remote areas. The AKHS operates one main office with three field units and runs 29 health centres, including a full-fledged hospital (Aga Khan Medical Centre) and a tertiary service (Aga Khan Extended Family Health Centre). The AKHS has also established family health centres, three dispensaries, and 19 mother and child health centres. Extension health workers of the AKHS provide immunisation coverage and family planning services to the rural population.

3.4 Aga Khan Planning and Building Services

The Aga Khan Planning and Building Services (AKPBS) was established in 1987, then known as the Aga Khan Housing Board. This institution provides training as well as architectural and engineering services for the construction of schools, hospitals, houses and hostels. The AKPBS has designed model houses and building materials for use in the highly seismic zone of the Hindukush range.



A rural medical facility

3.5 Aga Khan Education Services

Established in Chitral in 1980, the Aga Khan Education Services (AKES) focuses on two areas: (i) formal education through fully-funded Aga Khan schools and self-financed community-based schools; and (ii) support for higher and professional education through counselling, career development, grants and stipends. The AKES supports female education, emphasising quality rather than quantity, and operates 51 funded and 27 community-based schools in the district.

3.6 Chitral Area Development Project

Funded by the Asian Development Bank and the International Fund for Agricultural

3

Development (IFAD), the CADP ran from 1989 to 1997 and covered Chitral, Drosh and Lotkuh tehsils as well as Upper Chitral. The CADP aimed to increase household income mainly through the farming and live-stock sectors. It also provided essential ancillary services such as widening and blacktopping the Chitral–Booni road, extending the potable water supply, constructing microhydel power plants and fostering social organisation. Project implementation was the responsibility of the Planning and Development Department, with the support of the following agencies and line departments: agriculture, Agricultural Development Authority, animal husbandry, communication and works, forestry, Fruit and Vegetable Development Board, North-West Frontier Province (NWFP) Agricultural University, and public health engineering.

The CADP completion report estimates its achievements up to the end of 1997 as follows:

3.6.1 Farm Sector

- n cropping intensity increased by 7%;
- n crop yields increased: wheat (61%), maize (13%), barley (37%), rice (78%), vegetables (37%), pulses (83%), fodder (40%), fruit (11%);
- n land allocated to high-paying crops such as vegetables, fruits, pulses and fodder, as well as forest trees, increased by 25%; and
- n gross value of crop production increased by 63% (to Rs 11,960/ha).

3.6.2 Livestock Sector

- n general improvements in livestock health, as well as milk and meat productivity;
- n good progress in the poultry sector;
- n goat rearing in disfavour, being gradually replaced by cows of better quality in areas where the fodder situation is favourable; and
- n farm household income from the sale of livestock and animal products comprises 21% of the gross value of crops.

3.6.3 Chitral–Booni Road

According to the CADP completion report, the “76 km Chitral–Booni road is one of the major claimants of CADP’s total outlays. It is at the same time the most visible, the most widely known, and the most applauded achievement of CADP as perceived by the people and as also ascertained empirically” (IFAD, 1997). The impact of the Chitral–Booni road is estimated as follows:

- n passenger fares and freight charges have been cut by 50%, while a 52% reduction in vehicle operating costs has been achieved, totalling Rs 109 million for 1997;
- n fruit from the Booni area is now marketed in Chitral and down-country;
- n convenient and economical transportation of heavy equipment on the road has raised the tempo of public and private sector development in Upper Chitral;
- n habitations connected to the road have gained access to improved medical facilities in Chitral; and
- n tourism has increased, benefiting the apple growers of Booni.

3.6.4 Potable Water Supply Schemes

In addition to improving Chitral town’s potable water supply, the CADP also constructed and assisted in the completion of 81 rural water supply schemes.

3.6.5 Microhydel Power Plants

The CADP established 37 microhydel power plants which generate 1.33 MW of electricity—about 12% of the hydel power that will be generated by the Reshun and Shishi-II projects once they are completed. The CADP’s microhydel plants benefit some 3% of households in the district. According to the completion report, all the plants are running satisfactorily under the management of village organisations and consumers pay their bills regularly.

3.6.6 Village Organisations

The CADP established 681 male community-based organisations (CBOs), 508 with productive physical infrastructure. Their per-



A cantilever bridge

3

formance has been satisfactory, with combined savings of Rs 19 million. The CADP also set up 229 women's organisations with savings of Rs 2 million.

3.7 Project for Horticultural Promotion

This initiative, assisted by the SDC, was launched in 1988. Its first phase (1988–1990) was devoted to the preparation of a master plan for horticulture in the NWFP. The PHP was implemented with the active collaboration of the Agriculture Department's research and extension unit as well as farmers' interest groups. In Chitral, the project was facilitated by the AKRSP. Following its final phase (2000–2003), the PHP has wound up operations but its work is to be taken forward by partner organisations.

3.8 Maintaining Biodiversity in Pakistan With Rural Community Development

The most important recent initiative in biodiversity conservation has been the United

Nations Development Programme and Global Environment Facility-assisted pilot project, Maintaining Biodiversity in Pakistan with Rural Community Development, which was implemented during the period 1995–1998 in the Arkari, Begusht, Golain, Madaklasht and Manur valleys of Chitral. Following the success of this pilot project, the full-scale Mountain Areas Conservancy Project has been initiated. In addition, the Protected Areas Management Project, which includes improving management of the Chitral Gol National Park, commenced in October 2002 with the signing of an agreement between the World Bank and the Government of Pakistan.

Meanwhile, the Gahiret Conservation Area and Tooshi–Shasha Conservancy, together covering 46,500 ha, are community initiatives facilitated by the Wildlife Department and managed as community game reserves. Local residents develop and implement plans for the sustainable management of biological resources in their areas. They are empowered to enforce wildlife laws and permitted to retain 75% of the income derived from



A Hindu Kush Markhor

wildlife management. As an additional incentive, the project provides funds for minor productive physical infrastructure development, where projects are identified by the communities themselves.

3.9 Environmental Rehabilitation Project

The short-lived Dutch-assisted Environmental Rehabilitation Project was a challenging initiative which sought to address the problem of sustainable development of grazing lands. Groaning under the pressure of local, nomadic and Afghan-owned livestock, such areas are being rapidly depleted. The duration of the project was too brief to allow any appreciable headway to be made.

3.10 World Wide Fund for Nature

Every year, an estimated 1 million migratory birds fly across Chitral district.

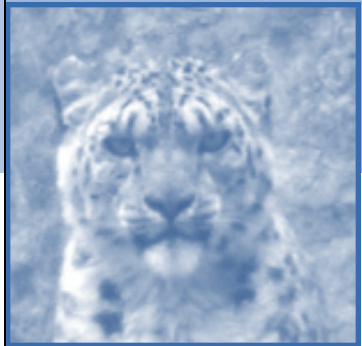
To ensure their safe passage through the valley, the World Wide Fund for Nature (WWF)–Pakistan launched the Migratory Birds Conservation Project, which ran in Chitral from 1993 to 1999. The project focused on education, awareness raising and capacity building among local communities in order to check the trend of seasonal hunting. Links between CBOs and village organisations were established to create bird refuge parks, and environmental clubs were set up to ensure the continuity and sustainability of the intervention.

The natural resources of Chitral are on the verge of extinction. In an attempt to slow the pace of resource degradation, WWF–Pakistan in 2001 launched another intervention, Capacity Building for Conservation of Natural Resources. This ongoing project establishes networks of village organisations in select localities and involves training, workshops, seminars and pilot projects for the conservation of flora and fauna.

Large predators such as the snow leopard are an important indicator of the health of an ecosystem. In Chitral, the survival of the snow leopard is threatened by human population growth and the resulting expansion of settlements to the uplands. In 2001, WWF–Pakistan launched the Snow

Leopard Conservation Project to create awareness among model communities. Along with capacity development and environmental education, the project provides incentives to agro-pastoral communities and herders to protect this endangered species.

3



Part 2

Strategy



The challenge for the Chitral Conservation Strategy (CCS) is to sustainably improve the livelihood of local communities, while protecting the environment and enabling improvements to be made in physical and social capital. The strategy envisions federal and provincial government support will be provided in sectors that are the state's responsibility, such as economic growth, poverty eradication and infrastructure.

Chapter

4

Governance



To date, government spending on development in Chitral district amounts to more than Rs 1 billion, yet this investment is not reflected in the standard of living of the people. Nor has it altered negative public perception regarding the work of government departments. The reasons for this are myriad and include the pressure of a burgeoning population, the vagaries of nature and significant cutbacks in development outlays in recent years. Dissatisfaction with the government also results from the centralised planning and implementation of development programmes carried out without public participation. With the introduction of the new local government system, locally monitored participatory development is expected to become the norm rather than the exception. An important function of the Zilla Nazim under the new system is to provide vision for development in the district.

The North-West Frontier Province Local Government Ordinance 2001 lays the groundwork for more effective, locally accountable administration. However, a number of issues remain to be addressed before the system can be considered a good model for people-centred governance. To begin with, the new system is representative for the most part rather than fully participatory, even though avenues have been provided for public involvement in local government through provisions allowing for the creation of Citizen Community Boards. While the system is still evolving, it is necessary to create a mechanism to draw community-based organisations more closely into the process of planning, implementation and monitoring.

As far as resources are concerned, current public sector outlays for development include a small Annual Development Programme (ADP) allocation and a larger grant from the Khushhal Pakistan Programme. ADP funds for 2001–02 are assigned mainly for communications and education (the latter under the Social Action Programme), while Khushhal Pakistan Programme outlays are earmarked for farm-to-market roads (40%), drinking water supply schemes, sanitation,

electricity and women's development, with only 10% set aside for other purposes. Sectors such as forestry, grazing land management and biodiversity are not provided for in either of these government initiatives.

In the face of limited public-sector resources, implementing CCS proposals is not necessarily an expensive undertaking. In fact, more than 60% of the CCS objectives can be attained simply by introducing self-reliance, community participation and good governance while utilising existing development allocations. Additional resources will however be needed for large-scale projects advocated in the CCS, such as construction of the Lowari tunnel and a road to Tajikistan, as well as for medium-sized schemes such as those aimed at harnessing Chitral's hydroelectric potential. These funds will have to be sought from the provincial and federal governments, and their assistance will be required to obtain additional support from donors.

The new local government system aims to develop mechanisms to ensure fair and locally responsible governance. However, effective functioning of the councils and committees set up at various levels will require vigilance and commitment from all those involved in the process of planning, implementation and monitoring.

Strategy

The CCS proposes the following measures to improve governance:

- awarding the highest priority to building the technical capacity of district government functionaries as well as elected members of various councils and committees;
- making transparency and accountability an integral feature of all development interventions;
- generating internal as well as external funding;
- ensuring that natural resources are used wisely by improving management practices; and
- seeking the involvement of organised local communities in the identification, planning, implementation and monitoring of development initiatives.

Subsistence agriculture has been practised in Chitral for many generations. Today, traditional farming activities alone are no longer able to sustain the population. One way to address this problem is to diversify economic activity in the area. For this purpose, human resources will need to be developed.

Chapter

5

Human Resource Development and Economic Uplift



5.1 Education

Widening the availability of education and improving standards are key to upgrading human capital. Currently, the standard of basic education on offer is unsatisfactory, while flaws exist in the focus of higher education. Growth that has taken place in the education sector to date does not adequately reflect the needs of the people. In addition to factors specific to each locality, the quality of education suffers because schools are ill-equipped, teachers are not motivated and supervision is ineffective.

Low enrolment figures, meanwhile, may be attributed in part to a lack of awareness about the importance of education but this is not the only reason why few individuals pursue academics. In the case of young men, poverty forces even those already enrolled in school or college to drop out and instead seek employment. Without the benefit of vocational skills or technical training, men are forced to take up low-paying unskilled work which only serves to trap them deeper in a cycle of poverty. Among women, the most serious constraint to expanding education is the insufficient number of middle and high schools for girls.

Strategy

The Chitral Conservation Strategy (CCS) proposes the following measures to improve both the quality and reach of education:

- adopting a two-track approach to focus on mass education as well as professional training;
- seeking policy, administrative, moral and material support from stakeholders to improve educational institutions; stakeholder participation will also help overcome site-specific obstacles;
- establishing a quality facility for technical education with a curriculum geared towards employment opportunities available in Pakistan and abroad;
- obtaining policy support at the national level to enable students from Chitral to gain admission to professional institutions elsewhere in the country; and
- instituting a student scholarship programme.

5.2 Health

Access to health care is an important measure of development. Only four female and 33 male doctors work in Chitral's public health system, rendering the state of medical facilities abysmal. With a single district headquarters hospital, two tehsil hospitals, three rural health centres and 22 basic health units serving 463 rural habitations, access to medical treatment is restricted even at the best of times. When roads and bridges are washed away by floods or blocked with heavy snow, however, some communities are left with no access whatsoever to health care.

Chitral's widely scattered population and difficulties of access hinder the timely delivery of health services. Inadequate waste management, improper hygiene practices and contaminated water contribute to poor health, putting additional pressure on medical facilities which are already short-staffed and ill-equipped. Public health is also undermined by the fact that local communities lack basic health education.

Strategy

The strategy to improve public health will focus on the following areas:

- emphasising primary and preventive health care;
- expanding the supply of potable water;
- providing for the safe disposal of sewage and solid waste;
- adopting innovative methods to improve health care; learning from the efforts of organisations such as the Aga Khan Health Services, which employs trained community health workers in conjunction with qualified medical practitioners;
- creating a mobile extension unit within the Health Department to motivate and educate both ordinary citizens as well as local government functionaries in primary and preventive health care practices; and
- extending district government support to health care initiatives taken up by non-governmental organisations (NGOs) and the private sector.



CCS Support Unit

A government school

5

Several other CCS initiatives will synergistically impact the health sector. These include:

- n improving governance,
- n upgrading roads and bridges,
- n alleviating poverty,
- n encouraging social organisation,
- n focusing on gender concerns, and
- n increasing agricultural productivity.

5.3 Gender Mainstreaming

Until recently, development planning has focused on households rather than individuals. The underlying assumption has been that all members of a family share similar needs, perform the same functions and enjoy equal access to opportunities and resources. In reality, however, significant disparities exist within a household between its male and female members, with the latter in a disadvantaged position. Moreover, men and women perform different functions in various spheres of activity.

Most government research and extension programmes target men in the hope that knowledge will trickle down to the women of

their households. Besides being ineffective, this indirect approach is also inequitable. Knowledge is power and transferring it selectively through men is likely to further increase their dominance over women.

Development projects also assume that income earned by male members of the household will automatically be spent on the needs of all members of the family. This seldom happens. Rather, men consider it their prerogative to spend their earnings as they wish, generally favouring social activities and luxury expenses. The priorities of women within the household, and basic needs such as education and child nutrition, are often considered secondary. The major gender concern in development is to provide men and women with equal access to nutrition, health and education, and to create earning opportunities for women in socially acceptable occupations.

Strategy

The CCS gender strategy will focus on the following initiatives:

- n persuading line departments, Citizen Community Boards and community-



AKRSP

Chitrali rugs at display

- based organisations to work towards levelling the field for development;
- n providing men and women with equal access to nutrition, health care and education;
- n enhancing women's skills in income generating activities by establishing training programmes; and
- n providing incentives and creating employment opportunities for women.

5.4 Cultural Heritage

Chitral's architectural and archaeological heritage has suffered from the neglect of public-sector agencies as well as local communities. Preserving ancient architecture and protecting sites of archaeological importance is a capital-intensive undertaking which neither the government nor ordinary citizens have been able to fund. Market forces, meanwhile, have compelled traditional artisans to abandon handicraft manufacture, which brings in only limited earnings, and switch to more lucrative forms of income generation. In the case of traditional foods and beverages, commercial outlets aim to increase profits by serv-

ing popular rather than traditional cuisine. Similarly, young people are losing interest in traditional local games and sports. As a result, the cultural heritage of Chitral is in danger of being lost forever.

Strategy

The strategy to preserve and promote the cultural heritage of Chitral calls for the district government to focus on the following areas:

- n liaising with national agencies to promote Chitral's traditional arts and crafts in order to establish a market for these products and provide incentives to craftsmen and women;
- n facilitating the efforts of local NGOs to promote traditional arts, crafts and sports; and
- n seeking assistance from the provincial and federal governments to prepare projects for the preservation of architecture and archaeological remains.

5.5 Enterprise

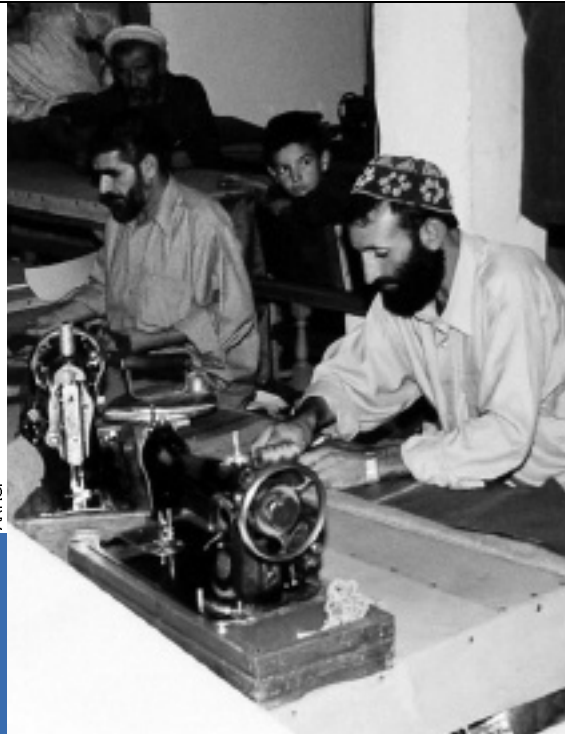
Chitral is a semi-arid region with a small area of land under cultivation and some

24,000 males between the ages of 15 and 64 facing unemployment. The people are poor, with average per capita income about half that of Pakistan as a whole. Traditionally, local communities have managed to subsist on agricultural activities involving cereal production and livestock rearing. This precarious balance has been grossly disturbed in recent years by an increasing population and rising aspirations. What is needed today is to diversify the economy by accelerating the installation of hydel plants and promoting local resource-based microenterprise initiatives in sectors such as horticulture, husbandry and tourism.

Chitral's enterprise sector covers both farm and non-farm activities. On-farm enterprises include retail and wholesale activities in horticultural and livestock products. Off-farm enterprises include retail and wholesale businesses, hotels and restaurants, bread making ovens, fruit dehydration, *shu* weaving, embroidery and carpentry. These enterprises operate for the most part in a suboptimal business and infrastructure environment.

Significant recent initiatives that will serve to boost microenterprise in the area include the construction of the Chitral–Booni road, the withdrawal of the ban on exports of farm products and the establishment of the Aga Khan Rural Support Programme's Enterprise Development Division. However, a number of major obstacles continue to hamper the development of enterprise in Chitral. These include:

- n small, scattered farm and non-farm production;
- n inadequate physical and institutional infrastructure;
- n insufficient social development;
- n inaccessibility to modern inputs and technology;
- n inadequate training facilities;
- n high transportation costs;
- n inefficient backward and forward linkages with markets;
- n isolated economy;
- n historical and geographical isolation,



AKRSP Making value added woolen products

- n making local entrepreneurs reluctant to risk marketing their products outside Chitral; and
- n food insecurity in winter, impeding the transition from cereal production to horticulture, and requiring restrictions on the export of agricultural products.

A number of these issues are already the focus of government and NGO initiatives, and more areas will receive attention once the CCS is implemented.

Strategy

The strategy for enterprise development will involve:

- n making sustainable use of the region's comparative advantages;
- n providing intensive training in production techniques, marketing and entrepreneurial skills;
- n supplying guidance and inputs, such as technical expertise, packaging materials and storage facilities;
- n providing marketing support; and
- n ensuring that enterprise development interventions are made on a scale that will enable a breakthrough in this largely static sector.

5



A local blacksmith in Chitral bazaar

5.6 Poverty Reduction

Along with a sense of powerlessness, poverty generates apathy among the people, leaving individuals fatalistic about their own lives and indifferent to environmental concerns. It goes without saying that poverty also hinders access to nutrition, education, health care, potable water and other basic human needs. Poverty in Chitral is the result of a number of factors specific to the area, including the shortage of irrigated cultivable land, difficulties of external and internal communications, the scarcity of institutions offering high quality education and marketable skills training, and undeveloped potential in sectors such as tourism and mining.

Difficulties of access make Chitral less attractive to private-sector investment, particularly in enterprise, cottage industry and small-scale trade development. As a result, employment opportunities are limited. A small percentage of the population is employed in the formal sector, while the majority of the workforce seeks seasonal employment either within the

district itself or in other parts of the country. Chitral's remote location and isolation also restrict access to information about employment opportunities abroad.

The Khushhal Pakistan Programme, formerly known as the Integrated Urban and Rural Development Programme for Poverty Alleviation, offers a ray of hope for local communities. Some progress is expected to be made in the area of poverty alleviation, since the programme aims to develop infrastructure facilities which should in turn create employment.

Strategy

The strategy for poverty alleviation will require the district government to focus on the following:

- ensuring that funds from the Khushhal Pakistan Programme are spent judiciously, and monitoring the impact of the programme on poverty as well as the environment;
- reviewing allocations to various sectors in the light of past experience in order to maximise the impact on poverty alleviation;
- working closely with the federal government to provide up-to-date information about overseas employment opportunities; and
- facilitating private sector investment in mining, tourism, enterprise development and cottage industry.

5.7 Tourism

The aim of promoting tourism in Chitral is to increase the income of local communities and provide funds for environmental rehabilitation. Developing the area's considerable potential as a destination for tourism will also provide incentives to the local government to undertake initiatives in other sectors, such as reducing air pollution, providing sewage and solid waste disposal facilities, improving communications, conserving biodiversity and diversifying agriculture.

The current law and order situation in the country has not only brought international

tourism to a grinding halt but also discouraged domestic travel. A quantum improvement in security must occur to encourage tourism in Pakistan in general and Chitral in particular. Besides security concerns, difficulties of external and internal access serve as serious deterrents to the expansion of the sector. Construction of the proposed Lowari tunnel, increasing the frequency of air services, and improving and extending the internal roads network will encourage tourism.

To protect the cultural heritage and environment of Chitral, it is essential that the expansion of tourism be guided by ecological and environmental concerns, and that the process be carefully monitored. The undesirable impact of uncontrolled tourism is evident in the Kalash valleys. Tourism in Chitral must be culturally sensitive as well as ecologically sustainable. Individual communities must be allowed to decide which type of tourist activities they wish to encourage—if at all—and in which areas.

Tourism should be organised in a manner that ensures its primary beneficiaries are the local people. Towards this end, it is essential to train tourist guides for trekking, mountaineering and wildlife observation. Other necessary measures include developing and maintaining fully equipped campsites; providing potable water and sanitation facilities; and ensuring that visitors have access to hygienically prepared food. Tehsil Municipal Administrations in the new local government have a major role to play in this regard, since it is their responsibility to ensure a clean environment, arrange for the disposal of sewage and solid waste, and devise ways to reduce air pollution.

Implementation of other sector strategies will have a synergistic impact on the promotion of tourism. Improvements in communications, education, health, sanitation, potable water supply, electricity and agriculture will complement each other to create an environment conducive to tourist activity. Measures to preserve the area's cultural heritage will also serve to attract visitors. In addition, trophy hunting can be encouraged, as long as measures are taken to protect biodiversity.

Strategy

Planning for tourism development envisages the following:

- n mapping and documenting cultural resources, strengthening the resource where necessary, and marketing the resource to ensure that local communities are the prime beneficiaries;
- n providing control mechanisms to protect both cultural heritage and the environment;
- n developing infrastructure facilities, including an all-weather road to Chitral across the Lowari Pass;
- n constructing metalled roads to sites of cultural interest, side valleys and picnic spots;
- n opening up areas hitherto closed to tourists, such as Baroghil, Begusht, Madaklasht and Urtsun;
- n imposing an environmental levy on tourists to generate resources for conservation;

Tourism in Chitral must be culturally sensitive as well as ecologically sustainable. Individual communities must be allowed to decide which type of tourist activities they wish to encourage—if at all—and in which areas.

- n motivating local communities to develop sustainable tourism in areas of cultural or ecological interest;
- n initiating a training programme for tourist guides;
- n developing a code of conduct for tourists; and
- n evolving financial procedures for sharing the income from tourism among individuals and local communities.

5.8 Mineral Resources

If properly exploited, Chitral's mineral deposits could open up an additional sector of economic activity in the area. However, development in this sector is at present constrained by a number of factors. The most important of these is the

5



Polo at Shandur

lack of a properly developed infrastructure. Existing shingle roads leading to mineral deposit sites are only navigable by jeep, making access inconvenient. Chitral's distance from the urban centres of the country raises transportation costs, with the result that the area's minerals become uncompetitive in the market. With the limited availability of electricity, meanwhile, no value adding process can be carried out on site, requiring raw minerals to be transported to other parts of the province for processing.

Mining projects involve considerable risk and long gestation periods, and exploration requires substantial investment outlays. The absence of incentives for private-sector investment and the limited capacity of public-sector organisations responsible for minerals and mines further restrict the development of mining in Chitral. In addition, financial institutions do not offer sector-specific loans for private investment in the mining sector.

Strategy

To bring mining activities into the mainstream of Chitral's economy, the district

government will be required to take the following measures:

- approaching the provincial government to conduct geophysical surveys, geo-chemical investigations and large-scale mapping of reported and unreported mineral deposits;
- prioritising the supply of electricity, and improving roads and tracks leading to mine sites;
- seeking the support of lending institutions and donor agencies to provide financial incentives for private-sector investment;
- taking measures to ensure that the environment is protected in areas where mining and mineral development activities are carried out; such measures will include the use of safe explosives and the safe disposal of waste and effluent;
- encouraging and facilitating private-sector investment in mining and mineral development; and
- providing support for the development of a partnership mechanism between private-sector investors and local communities to avoid conflicts involving rights and royalties.

The efficient delivery of municipal services is an important indicator of social development and plays a crucial role in safeguarding public health. In Chitral, the municipal service delivery system functions far below desirable levels.

Chapter

6

Development of Municipal Services and Infrastructure





Eroded land – a disturbingly common feature

6.1 Potable Water

Since more than 80% of diseases afflicting the local population are water-borne, the state of public health depends on the supply of clean water. Expansion of supply alone is not sufficient; the water must also be fit for human consumption.

Chitral's traditional system of securing drinking water for use in the winter involved storing summer run-off in household or community wells. For this purpose, seasonal watercourses in the vicinity of habitations were kept clear and their flow was diverted to wells during the rainy season. With the introduction of piped water, local communities have neglected to keep natural watercourses free of dirt and debris. As a result, they are no longer able to utilise well water when pipes burst in the winter.

Although considerable work has been carried out over the past two decades, mainly by the former Public Health Engineering Department, to expand water supply, access to clean drinking water remains one of the most urgent needs of

the people. At all tehsil and village consultations held during the preparation of this strategy, the topic of water invariably came up for discussion. Judging by the participants' views, current data on supply are based on the assessment of the concerned government departments and are at odds with the reality on the ground. Participants also identified the shortcomings of water supply schemes implemented so far.

A number of technical problems need to be addressed in order to improve the effectiveness of the system. These include the bursting of water pipes in winter and the inadequacy of the water sources selected, particularly in years of subnormal precipitation. The problem of water source selection can be remedied by employing hydrogeologists as well as by drawing on local knowledge. To arrive at cost-effective solutions to the problem of bursting pipelines, methods used in other countries with a similar climate and terrain will need to be studied.

Logistical difficulties are the principal cause of another problem identified by local communities: the tendency of contractors

to abandon water supply schemes before completion. One solution would be to entrust the task to organised rural communities, with technical support provided by the Water Supply and Sanitation Unit of the Works and Services Department.

Besides technical difficulties, the system of administration also needs to be examined. With a widely scattered population residing in so rugged a terrain that barely 30% of habitations are linked even by unmetalled roads, the centralised system of monitoring water supply has proved to be ineffective. Infrequent inspections, difficulties in reporting faults and delays in taking remedial action render the system far from efficient. Centralised control is likely to hinder any large-scale effort to expand water supply in the area.

Two important lessons have been learned from water supply schemes completed in the past. First, the participation of local communities in planning and implementation must be ensured. Second, the operation of completed projects should be handed over to them for operation and maintenance under the technical guidance of the Water Supply and Sanitation Wing of the district Works and Services Department.

Strategy

The strategy to expand the supply of potable water will involve:

- n securing the participation of organised communities in the planning, implementation, monitoring and operation of water supply schemes;
- n seeking technical guidance from the Water Supply and Sanitation Wing of the district Works and Services Department;
- n motivating area residents to maintain and improve the traditional system of collecting water for use in the winter, making this system both reliable and hygienic; training village activists to serve as facilitators;
- n requiring the Works and Services Department to take stock of technical difficulties and evolve solutions; and
- n ensuring that the water supplied is safe for human consumption by preventing contamination at source as well as during transit.

6.2 Sewage and Solid Waste Disposal

Improving sanitation is one of the most effective ways to safeguard public health. At present, nowhere in Chitral have adequate arrangements been made to dispose of sewage and solid waste. Consequently, night soil and animal excreta pollute food and drinking water, creating ideal conditions for the proliferation of disease vectors.

Critical problems in the sanitation sector include congested construction and the rocky ground on which most habitations are built, coupled with a lack of awareness about proper hygiene among local communities. In the villages, most residents defecate in the fields or a corner of the home, from where the excrement is removed and dumped in the open. Drying in the sun is thought to be sufficient to render this waste harmless. Although the urban population is increasingly becoming aware of the importance of sanitation, current efforts are confined to the construction of latrines from where sewage is allowed to collect in open spaces. Part of this waste is then removed and burned in the open. Clearly, this method of waste disposal cannot by any means be considered sanitary.

Nowhere in Chitral have adequate arrangements been made to dispose of sewage and solid waste. Consequently, night soil and animal excreta pollute food and drinking water, creating ideal conditions for the proliferation of disease vectors.

Under the devolved local government system, the newly-established Tehsil Municipal Administrations (TMAs) are now responsible for the disposal of solid, liquid, industrial and hospital waste.

Strategy

The strategy to improve the disposal of sewage and solid waste will involve:

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Unplanned growth, Chitral Town

- n sensitising local communities to the importance of proper sanitation;
- n seeking cost-effective alternative methods of waste disposal that are appropriate to the specific circumstances of Chitral; and
- n generating resources to execute new waste disposal schemes with the help of the local government, Citizen Community Boards and community-based organisations.

6.3 Roads and Bridges

Year-round access within the district, as well between Chitral and the rest of the country, is essential if employment, trade and tourism are to be promoted. Attempts to introduce high-value fruit and off-season vegetable cultivation, and to promote local handicrafts, will only yield satisfactory dividends if goods can be transported to markets with ease. It is not just in economic terms, however, that properly maintained roads and bridges are crucial. By providing access to information and outside expertise, they are also essential for the optimal functioning of other sectors, such as education, health and family planning.

Reliable, year-round access to the rest of the country is high on the list of priorities of the intelligentsia and business community, as well as those who seek employment outside Chitral. The problem of access is exacerbated at the moment because the road to Arandu via Mohmand Agency and the Kunar province of Afghanistan, the only route that remains passable during the winter, is closed owing to the current geopolitical situation.

The matter engages the attention of the government about once every decade, when the question of excavating a tunnel below the Lowari Pass comes up for discussion and is invariably dropped because of the high costs involved. Frustrated by the repeated abandonment of the Lowari tunnel proposal, in 1998 local communities themselves began building an all-weather road from Damel to Panakot (Dir) over Zakhani Kandao. Eventually, they were forced to abandon construction because the highest stretch turned out to be at an elevation of 4,260 m compared to 3,200 m for the Lowari Pass.

For its part, the government has studied several other options, including clearing snow from the Lowari Pass, constructing

snow galleries at various stretches to protect roads from snow slides, exploring alternative routes less susceptible to snow build-up and acquiring aircraft to overfly the Lowari Pass in the winter. However, the Lowari tunnel has now been identified as the best solution to Chitral's land access problems and the National Highway Authority is examining the proposal. Another means of access to the outside world which merits consideration is a road to Tajikistan.

The Aga Khan Rural Support Programme (AKRSP) and Chitral Area Development Project (CADP), as well as the former District Council, have done commendable work to expand the network of roads and bridges in the area. It is essential to evaluate these efforts in order to draw lessons for the future.

The steep mountain terrain of Chitral poses an environmental hazard, with torrential floods in the summer and avalanches in the winter, which must be countered in the design, implementation and monitoring of projects. Requirements for the proper maintenance of roads must be strictly enforced and it must be ensured that all new projects meet modern environmental standards.

Funds to improve internal communications will always fall short of actual needs. The challenge for the local government is to streamline governance in order to utilise available resources effectively. All new communications projects must be sustainable, and local communities must be invited to participate in planning, construction and maintenance.

Strategy

The strategy to improve physical communications between Chitral and the rest of the country involves:

- n pursuing the Lowari tunnel proposal with the federal government (the newly elected Zilla Nazim has already taken up the issue);
- n preparing a proposal for the construction of a road to Tajikistan;
- n developing a network of environmentally sustainable roads with available resources;
- n preparing convincing projects and

advocating them forcefully through political and administrative channels, in order to acquire additional funding from the provincial and federal governments; and

- n seeking the active participation and economic contribution of local communities.

6.4 Physical Planning and Housing

The scarcity of flat land in this mountainous region has forced settlements to develop haphazardly. Unregulated land development in Chitral, Booni and Drosh, as well as rural areas of the district, has created a narrow winding circulation pattern and dispersed housing. Unplanned construction has also led to incompatible land uses and unhygienic living conditions.

Uncontrolled land development in the towns is partly a result of the apathy of public-sector organisations and local municipal bodies which have failed to prepare a land use master plan. To make matters worse, many government departments and organisations have themselves occupied pockets of flat land for their offices, facilities and employee housing. Developed in a horizontal pattern, such construction has further limited the availability of flat land for the local population. Building has also been carried out without recourse to technical expertise, such as town and urban planning services. As a result, area residents are forced to build wherever land is available, using whatever materials they are able to afford. The situation in the towns is further aggravated by private-sector investment in commercial buildings.

Today, whatever unoccupied flat land remains in Chitral town, Booni and Drosh is under immense pressure for development from both the public and private sector. Land development needs to be regulated and all future construction must be brought under a planning framework.

Strategy

In order to rationalise land use, the following steps will be necessary:

- n ensuring that all new construction in the district follows a strict scrutiny and

6



AKRSP

A typical Kalash house

- approval process with the involvement of the TMAs;
- n developing available wasteland to build housing colonies in fast-growing towns such as Chitral, Booni and Drosh;
- n seeking provincial government assistance to prepare land use and building regulations for Chitral, and zoning plans for Chitral, Booni and Drosh;
- n implementing a capacity development plan to train TMA staff in the formulation and design of a physical planning framework; and
- n enlisting the assistance of the provincial Environment Protection Agency to initiate a campaign forcing owners of commercial entities to adopt proper environmental and waste disposal practices.

6.5 Electricity

Chitral's potential for hydroelectric power generation has never been properly exploited. As a result, electricity is available only to a section of the population, mainly

for domestic use. In areas like Chitral, Booni, Drosh and Lotkuh, electricity is supplied to small industries, such as saw mills, marble factories, weaving looms and automobile engineering works.

At present, 15,726 kVA of electricity is available for Chitral, meeting the needs of 67% of the district's population. Some 27% of this supply comes from microhydels facilitated by the AKRSP and CADP, 23% from the Water and Power Development Authority (WAPDA) and 17% from the Sarhad Hydel Development Organization (SHYDO), while work is in progress on the Reshun and Shishi hydel schemes. In addition, SHYDO has identified 22 feasible sites in Chitral for the generation of 184,000 KW of electricity, and it is essential to vigorously pursue this option.

Local communities are keenly aware of the benefits of increasing electricity supply to the area. Particularly at tehsil meetings, participants were of the view that increasing supply would promote microenterprise and allow more land to be brought under irrigation. It is also recognised that access to electricity will help conserve forest resources, once villagers are not forced to depend as heavily on firewood as they do at the moment. Meanwhile, an incidental but key benefit of introducing microhydel power plants has been that irrigation channels, which are also used to generate electricity, are being diligently maintained.

Even though power from WAPDA's national grid will eventually be supplied to all parts of Chitral where distribution is cost-effective, this will still leave large segments of the population without electricity. Such communities will need to set up microhydels with assistance from the AKRSP and other support organisations.

Despite their many benefits, microhydel plants have several serious shortcomings: initial set-up costs are high, requiring subsidies; they break down frequently and components must be taken to Peshawar for repair, while the plant remains at a standstill; and trained technicians capable of operation and maintenance are in short



A potential resource for generating electricity

supply. These drawbacks need to be addressed before microhydels can be considered a viable option to provide electricity to outlying settlements.

Strategy

The strategy for the sustainable supply of electricity will include:

- n completing the Reshun and Shishi schemes and distribution systems;

- n providing assistance to rural communities through the AKRSP and other organisations to establish and operate microhydels;
- n training microhydel plant operators and establishing a repair workshop in Chitral; and
- n advocating to the federal government the need to harness the district's full hydroelectricity generating potential.



Besides its obvious value in terms of food production, agricultural activity also creates employment and provides households with disposable income.

Chapter

7

Natural Resource Management





Cropland in Chitral

7.1 Agriculture

Recent initiatives to vitalise the agricultural sector include projects to improve *shu* making, introduce more efficient apricot dehydration, increase production of fruits and off-season vegetables, and promote marketing. The government's agriculture research and extension unit, in conjunction with the Aga Khan Rural Support Programme (AKRSP), is attempting to increase the productivity of agricultural crops grown in the region. It is also working to reduce disease-induced mortality in livestock and poultry.

At tehsil and village consultations held during the preparation of this strategy, participants assigned the highest priority to extending the area under irrigation. This was followed closely by the need to protect agricultural land from flood and river erosion, and to improve land levelling. Issues such as agricultural inputs, marketing facilities and veterinary care for livestock were mentioned occasionally, while women in particular appreciated the training provided by the AKRSP in poultry

vaccination, apricot drying, and fruit and vegetable preservation.

Given the scarcity of high quality agricultural land and the exorbitant cost of extending irrigation to new areas, it is of crucial importance to conserve land already under cultivation and maintain existing irrigation channels. Yet such measures have been neglected by the concerned government departments. Agricultural land is often pre-empted for other uses, such as construction and even graveyards, while farmers have no access to technical assistance for soil conservation. The renovation of water channels and precision land levelling initiatives carried out by the provincial government with World Bank funding from 1992–93 to 1996–97 under the On-Farm Water Management Programme have since been abandoned.

Considering the many difficulties that farmers face, the quality of Chitral's agricultural produce is surprisingly good. Where irrigation is possible, Chitral's semi-arid climate is ideal for growing fruits and off-season vegetables. Cereal yields are on the whole satisfactory, except for wheat. Considerable improvements in wheat,

vegetable and fodder yields will become possible with the cultivation of suitable seed varieties, the application of balanced nutrients and improved management.

In the mean time, income from existing irrigated land can be optimised by transforming input supply, research and extension. The focus of current agronomic research in Chitral revolves around improved crop varieties and the use of fertilisers. Compared to indigenous varieties, the so-called improved varieties of wheat currently available in the North-West Frontier Province (NWFP) are more susceptible to disease. At the same time, they yield less fodder and are less palatable to local livestock—important drawbacks in the context of Chitral's mixed farming/livestock subsistence economy, where animal fodder crops are as important as grain for human consumption. Although farmers place a high value on fertiliser, it is expensive and not easily available. Agronomists also tend to favour the demonstration plot type of research, where the concern is generally to show a statistically significant increase in yields. What is perhaps more relevant to the farmer, however, is the value of the additional yield, both in monetary terms as well as in terms of the effort involved and risks entailed.

In addition to increasing farm household income, improving horticulture and expanding marketing will generate considerable employment in the sales and transportation sectors. Several initiatives have already been undertaken in this regard by the AKRSP, Chitral Area Development Project (CADP) and Project for Horticultural Promotion (PHP). These include widening and blacktopping the Chitral–Booni road, advocating the withdrawal of the ban on fruit and vegetable exports, and establishing North-South Seeds to promote potato and vegetable seed production. An all-weather road link to the rest of the country is now needed to help increase the profitability of Chitral's horticulture sector.

In the livestock sector, scarcity of livestock feed is the single most important constraint to expansion. Fodder shortages not only limit the productivity of existing stock, but also

prevent upgrading to higher-yielding but more nutritionally demanding genotypes. Livestock extension and research must address this problem, and find cost-effective ways to improve livestock and poultry housing. In terms of veterinary care, disease prevention programmes sponsored by government agencies, donors, the AKRSP and the CADP, have been well-received by local communities. A daunting challenge in this regard is to prevent disease transmission from Afghan-owned livestock. With the ongoing repatriation of Afghan refugees and the introduction of a quarantine system for livestock entering the area from adjacent countries, the incidence of disease can be reduced considerably.



It is of crucial importance to conserve land already under cultivation and maintain existing irrigation channels. Yet such measures have been neglected by the concerned government departments.

Strategy

The sustainable development of the agriculture sector will require that a number of measures are taken:

- n extending the area under irrigation;
- n designing a comprehensive, cost-effective and responsive agricultural system for Chitral, incorporating soil conservation techniques, improved irrigation, and adaptive research and extension;
- n providing agricultural inputs, credit facilities and marketing support; the system will operate through organised local communities with guidance from experts and the support of local councils;
- n ensuring sustainability by framing and enforcing laws for land use planning and zoning;
- n encouraging the use of soil conservation techniques to prevent the loss of agricultural land through soil erosion;
- n curtailing the diversion of prime agricultural land to non-agricultural uses by enforcing existing legislation and framing new laws where necessary;



AKRSP

An under construction irrigation channel

- n advocating the extension for another five years of the work undertaken by the PHP, to be taken up by the AKRSP and other organisations;
- n balancing food security concerns with the need to increase agricultural income by promoting cereal and fodder production as well as fruit and vegetable cultivation;
- n strengthening quarantine measures to control the influx of livestock diseases from neighbouring countries; and
- n stepping up the pace of livestock disease prevention programmes.

7.2 Irrigation and Flood Control

Agriculture is currently the single most important economic activity in Chitral. As the sector expands, it is likely to become a major source of cash income for a significant percentage of the population. Since farming in Chitral is not viable without irrigation, the overwhelming desire of local communities to increase the area under irrigation is understandable. Although considerable attention has been given to the subject, an optimum and sustainable system of irrigation has yet to be developed.

Chitral's traditional system of irrigation is gravity based. Before engineers came on the scene, water channels were aligned by trial and error. Today, levelling instruments are widely used for this purpose, and drilling and blasting have considerably facilitated the work.

Historically, local communities built thousands of water channels along steep unstable hill slopes and maintained them collectively. More recently, the AKRSP and CADP have relied on voluntary social organisation to extend and maintain irrigation works. In many such cases, irrigation projects are identified by the communities themselves. The AKRSP provides grants to cover material costs and a portion of labour costs, while maintenance is the responsibility of the communities. In the future, too, community organisation will be the cornerstone of sustainable irrigation initiatives. This endeavour will benefit considerably from the bottom-up planning envisaged under the NWFP Local Government Ordinance 2001.

At present, local communities manage irrigation over some 19,000 ha. Since 1973, the provincial Irrigation Department has



A pasture in upper Chitral

completed 13 irrigation schemes covering 1,916 ha. It is currently working on two more schemes which are expected to irrigate an additional 1,498 ha. This work has been executed through contractors and, upon completion, the schemes are maintained by the Zilla Council/TMAs at an annual cost of Rs 25 million.

At tehsil and village consultations held during the preparation of this strategy, the need to expand and improve irrigation came up for discussion most frequently. Participants were unanimous in their view that, in addition to increasing food supply and income, extending irrigation would also allow them to grow more forest trees and fodder. In the village of Harchin (Mastuj), Mir Niat summed up the general consensus on irrigation eloquently: "I don't know how to make a speech. We want a canal from Sorlaspur to Bedi Dok, and nothing short of this from the AKRSP, CADP and IUCN. If you rain gold coins on our houses instead, we will not accept them. This canal is the total solution to all our problems." Similarly, Muhammad Zia Shah of Broz said at the Mori Lasht Tehsil meeting: "Arrange siphon irrigation for Broz and Ghoch, and even the insects of the area will bless you."

This acute awareness of the need to increase the area under irrigation is accompanied by a widely held perception that large tracts of barren land exist which, once irrigated, are capable of sustaining cultivation. At almost all meetings, participants listed the names of such *lashts* and the water sources that could be tapped to irrigate them. International agencies have also found that a significant amount of land in the area is fit for irrigation. The 1984 International Fund for Agricultural Development mission to Chitral compiled a list of cultivable wasteland totalling at least 30,000 ha, while Kreditanstalt für Wiederaufbau lists 26,000 ha which may be developed for agriculture.

Bringing new land under irrigation in Chitral is time consuming and exorbitantly expensive. Irrigation projects cost millions of rupees and take years to complete, during which time costs escalate while community interest begins to wane. Unstable geological formations and the rugged terrain also entail high running costs. The per-hectare operation and maintenance cost of the system set up by the provincial government's Irrigation Department varies from Rs 570 (Green

Lasht Scheme) to Rs 5,357 (Batrik Scheme)—much higher than in other mountainous areas of the NWFP.

Expanding the irrigation network is made all the more difficult by the fact that no land settlement has been carried out in the Chitral area, rendering current data on irrigated land unreliable. The absence of clear titles to land causes difficulties in the assessment of revenue as well as the implementation of technically feasible projects. To create an optimum and sustainable irrigation system, land settlement is therefore a prerequisite. No new irrigation scheme should be executed until titles to land proposed for irrigation, water sources and land traversed by water channels, have been clearly established and all potential for future disputes eliminated.

uses simple structures to divert water from channels on to hill slopes, will increase the availability of firewood and fodder, improve watershed protection and conserve biodiversity in planted areas.

In determining the course of future expansion in the sector, it is imperative to evaluate the work done so far. In particular, it is important to determine how much of the current irrigated area is under grain cultivation and horticultural crops, and what percentage supports forest trees and pasture. The vulnerability of newly-irrigated areas and water channels to flood damage will also need to be evaluated. At the same time, soil surveys must be carried out to establish areas fit for grain, horticultural crops, forests and pasture, and to assess the technical feasibility of bringing them under irrigation.

In the mean time, it is far more cost-effective to protect existing agricultural land from being lost to construction and erosion, than it is to bring under irrigation new land with poor potential for crop production. In this connection, soil conservation and flood protection are essential, along with strictly enforced legislation to prevent prime agricultural land from being diverted to other uses. It is also of critical importance to improve management, introducing a decentralised, participatory system involving all stakeholders in the planning, implementation and maintenance of irrigation schemes.

Strategy

The sustainable development of irrigation in Chitral will require the following initiatives:

- n improving management of the system to include stakeholders;
- n ensuring the conservation and productive agricultural use of irrigated land;
- n carrying out land settlement;
- n conducting detailed surveys of areas being considered for irrigation to ensure that they are suitable for agriculture, that no land ownership disputes exist and that cost-effective and sustainable technology is employed; and
- n encouraging the use of water harvesting to grow forests and pasture as a means to increase the supply of firewood and

Expanding the irrigation network is made all the more difficult by the fact that no land settlement has been carried out in the Chitral area, rendering current data on irrigated land unreliable. The absence of clear titles to land causes difficulties in the assessment of revenue as well as the implementation of technically feasible projects.

Given the high cost of bringing new land under irrigation, it is necessary to find more efficient systems of water conveyance. The most important technological innovation in this regard has been siphon irrigation, introduced by the AKRSP in Parwak in the mid-1980s. The system, allowing water to be carried from river beds to considerably higher elevations, has been successfully replicated by the CADP in Barghuzi, Koghuzi and Mori. Increasing the availability of hydro-electricity will facilitate the task of pumping water to cultivable land situated at higher elevations than water sources.

Another alternative worth exploring is water harvesting, particularly to raise forests and pastures. Employing this technique, which



AKRSP

A forest nursery

fodder, protect watersheds and conserve the biodiversity of the area.

7.3 Forestry

Besides serving as a source of timber and firewood to meet local subsistence needs, Chitral's forests carry the potential to fulfil important economic and ecological functions. Sanitary commercial felling, for instance, can generate resources to prime development, while the area's rich variety of flora and fauna can provide a basis for ecotourism.

Particularly for the more remote habitations of Chitral, oak woodlands serve an extremely important function as a source of fuel and fodder reserves. Under heavy pressure from grazing, winter fodder requirements and the need for firewood, oak woodlands and scattered wooded growth are on the verge of extinction. Meanwhile, the protection, management and use of coniferous forests, which is the responsibility of the Forest Department, needs urgent improvement.

At meetings held with women's organisations in Booni, Bumburet, Drosh, Mastuj,

Mogh and Thengshen (Chitral Tehsil), forestry issues were raised on two occasions. The women of Booni complained of flood damage caused by excessive run-off from mountains, which they correctly attributed to denudation. They also complained of the high price of firewood which was selling for Rs 100 per maund (40 kg). The women of Drosh, meanwhile, asked why technical assistance and resources had not been provided for the wide-scale application of biogas technology in Chitral.

Forestry was the most frequently discussed topic at the Lotkuh tehsil consultation, second in the Chitral and Mastuj meetings, third in Drosh and Mulkhow, and fourth in Torkhow. In the Kalash valley, forestry overshadowed all other concerns. Although the topic was discussed in two thirds of all village consultations, participants awarded higher priority to other concerns such as irrigation, potable water, electricity, flood protection, roads, health, education, sanitation, female embroidery centres, veterinary hospitals, children's playgrounds, telephones, agricultural markets and purchase points for inputs.



Fuel wood in the local market

Whenever the issue came up for discussion, participants pointed out the need for more forest trees to increase the supply of firewood and fodder, and to serve as a means of flood protection. In areas with abundant forest cover, the emphasis was on improved protection, although participants agreed that protection from felling and grazing would depend on the availability of alternative sources of fuel and fodder. Several speakers also emphasised the futility of trying to grow forest trees without the aid of irrigation.

Regeneration is an essential prerequisite for sustainable forestry. Harvested trees must be replaced by new growth. Restricting the removal of trees alone will not serve to perpetuate forests. In fact, the entire annual growth of a forest can safely be removed in the form of defective, diseased, mature and overmature trees, provided regeneration is ensured. Far from being depleted, the forest would improve in quality and value with each cut.

Although a ban on commercial timber harvesting in Chitral has been in place since 1992, trees continue to be removed illegally

in order to meet local needs for timber and firewood. At the same time, forests are not regenerating under heavy pressure from uncontrolled grazing. As a result, forest cover continues to decline despite the ban on commercial timber harvesting.

Local communities do not gain from the exploitation of Chitral's forest resources. Forest contractors, most of whom do not belong to the area, have purchased from local rightsholders their share in the sale proceeds of timber. These purchases, made in advance and at heavy discount, allow contractors to secure a windfall by illegally cutting more trees than permissible. Consequently, a few contractors receive the majority of the benefits from timber harvesting, both by legal means and through illegal practices.

Strategy

The strategy to conserve coniferous forests will entail the following measures:

- n focusing management on meeting local needs for forest produce, as well as protecting landscapes and biodiversity in order to promote tourism;
- n carrying out sanitary timber harvesting where appropriate;

- n enlisting the participation of local communities in sustainable management initiatives;
- n ensuring natural regeneration takes place in areas from which mature and over-mature trees are removed;
- n marking trees for felling with the participation of community-based organisations;
- n implementing effective grazing control, as demonstrated in Kaghan in the 1980s by the Kaghan Intensive Forest Management Project;
- n evaluating the success rate of artificial regeneration without the aid of irrigation, and discontinuing all such programmes until the success of past efforts has been established;
- n initiating research under the guidance of the Divisional Forest Officer to determine appropriate, cost-effective methods for natural regeneration and replantation;
- n creating opportunities for local communities to benefit from forest resources by exploring new sectors in agroforestry and making distribution of the benefits more equitable; and
- n paying particular attention to non-consumptive forest uses, including promoting ecotourism and harvesting non-wood forest products such as *chilghozas* (pine nuts).

The conservation of oak woodlands will require adaptive research with the participation of organised rural communities to develop methods for sustainable management and regeneration.

7.4 Agroforestry

Promoting agroforestry is essential to ease the pressure of firewood removal from forests and the countryside. Since the poorest farm households derive 20% of their income from agroforestry, improvements in this sector will also serve to reduce poverty.

The major concern with regard to the expansion of agroforestry is the competition between agricultural crops and forest trees planted on farmland. Confining forest trees to uncultivable land or areas being developed for agriculture will ease some of



Photo credit

Planting saplings

this pressure. Trees can be also be grown in combination with fodder crops, using water spreading, or planted along with farm crops by selecting the appropriate species and employing suitable farming methods.

Strategy

The strategy to promote agroforestry will involve favouring those poverty reduction, agriculture and integrated rural development projects which include agroforestry initiatives.

7.5 Grazing land management

In the cereals/livestock economy of Chitral, animals are essential for human survival. Cattle, goats and sheep derive 80% of their sustenance from grazing, yet little work has been done to improve the condition of grazing land. Chitral's subtropical and temperate grazing lands appear to be in a highly depleted state. While herds return well fed from high-elevation grazing lands, no detailed studies have been carried out to classify the vegetation and assess ecological trends in these areas.

Although animal husbandry is practised on a subsistence level, it is nevertheless a crucial component of Chitral's agricultural economy. Farm animals are well fed for only four months during the summer, when herds graze in the alpine and subalpine zones where 85% of Chitral's grazing lands are located. For another four months (autumn and early spring), they graze in the remaining 15% of temperate and subtropical grazing areas. The four winter months, however, are a time of extreme scarcity, when farm animals subsist on meagre supplies of stored hay and crop residues, as well as reserves of body fat. It is generally during this time that they weaken, falling prey to parasites and disease.

- as well as professionals from the forestry, livestock husbandry, agricultural economics and marketing sectors;
- n conducting adaptive research encompassing all stages of the production process, including grazing systems, livestock health and nutrition, and the hygienic manufacture, packaging and marketing of high-value dairy products such as cheese; and
- n including approximately 57,600 ha of smaller, low-yield subtropical dry temperate grazing lands in the management of village lands, with the participation of rural communities.

7.6 Biological Diversity

Biological diversity is not simply an indicator of the health of an ecosystem. In Chitral, more immediate benefits also accrue from protecting biological resources, which serve as a source of food and medicine as well as a number of industrial products. Of particular importance are the wild relatives of domesticated plants and animals, which will enable the breeding of species capable of withstanding the vastly different climatic regimes that will be ushered in by global climate change in the decades to come. Wild plant and animal species serve as a form of insurance for the human species and their extinction diminishes our own chances of survival.

Chitral is home to one national park (Chitral Gol) and seven game reserves. While measures are in place to prevent poaching in these areas, Chitral Gol alone offers protection against the consumptive use of biodiversity.

Faced as they are with severe economic hardship, the people of Chitral are not overly concerned with biodiversity conservation. In fact, the topic was only raised in two of 36 village meetings, those held in Brep and Nichagh–Oveer. The issue came up for discussion at five out of seven tehsil meetings, ranking seventh in priority, after irrigation, forests, roads, drinking water, electricity and floods. The people of Arandu and Lotkuh tehsils had more urgent concerns, however, and did not mention

Once rural communities come to understand the importance of biodiversity conservation, they are still left to face the stark reality of survival in an inhospitable environment. For conservation efforts to be successful and sustainable in the long term, they must squarely address this problem.

The major hurdle in the expansion of animal husbandry is winter feed scarcity, which forces households to limit the size of their herds according to the quantity of fodder they are able to store for use in the winter. Growing more fodder or buying additional supplies are options available only to more affluent households. As a result, such households derive a higher proportion (43%) of their farm income from livestock compared to poorer households (36%).

Strategy

The sustainable development of some 316,000 ha of alpine and subalpine grazing land will require launching an integrated programme to upgrade the entire system of livestock and dairy production. Patterned on the PHP, the programme will involve:

- n seeking the participation of stakeholders

biodiversity on a single occasion. Wherever the subject was discussed, participants were generally supportive of conservation, with occasional concern raised about protecting livestock from leopards.

Until the Chitral Conservation Strategy process got underway, the local people were unaware of the importance of wildlife. Creating awareness about the uniqueness of Chitral's biodiversity and the need for conservation is the first step in any sustainable management programme. Once rural communities come to understand the importance of biodiversity conservation, they are still left to face the stark reality of survival in an inhospitable environment. For conservation efforts to be successful and sustainable in the long term, they must squarely address this problem. The basic needs of local communities must be met, and they must be provided with alternative avenues of income generation.

Awareness alone cannot ensure that rural communities take sustained action to conserve biodiversity. Organisation and funding are also required. Even where communities have been organised by the AKRSP and CADP, conservation efforts have suffered owing to a lack of adequate funding. Mobilisation of community-based conservation efforts will require donor assistance as well as government support. Unfortunately, government departments charged with conservation have only implemented half-hearted measures. Forest officials are concerned mainly with trees of commercial value and wildlife authorities are largely interested in protecting game species. Flora and fauna of little or no commercial value are overlooked in government-sponsored initiatives.

Until recently, attempts at biodiversity conservation have relied on the coercive power of the government, with cases being registered against offenders, but this approach is not cost-effective. If conservation efforts are to succeed, local communities must become involved in the process. The Mountain Area Conservancy Project is a step in the right direction, with its work in the field of capacity building for conservation. Creating a dedicated corps of biodiversity professionals adept



Haider Ali Stath

The majestic snow leopard

in the participatory approach is a prerequisite for the success of such endeavours.

As successor to the former Chitral state, the NWFP government in 1975 declared all grazing lands, hunting grounds and forests to be government property. No land settlement has been conducted to determine the rights of individuals and communities in such areas. Settlement is essential, but the process is likely to be rife with conflict. As such, the government will be required to take the people's representatives into confidence.

Strategy

The strategy for the sustainable development of biodiversity will focus on:

- motivating, enabling and empowering organised rural communities to manage biological resources sustainably through effective implementation of the Mountain Areas Conservancy Project and the Protected Areas Management Project;
- demonstrating the viability of sustainable use as an incentive for communities to scale up biodiversity conservation;
- establishing and capitalising trust funds to sustainably support village conservation initiatives; and
- preparing new projects for funding, gradually extending conservation initiatives to other areas of Chitral.

7



Part 3

Implementation



There are always lessons to be learned from the past. In the case of Chitral, these lessons have not been particularly gratifying. A number of development schemes for the area have been planned and then suddenly scrapped, at great cost in terms of both resources and the prosperity of the people. Meanwhile, the Lowari tunnel project stands as an example of how decisions are made and reversed arbitrarily, without a word of apology to those who are likely to be most affected. Resentment over the abandonment of this particular scheme is still fresh in the minds of local communities.

Chapter

8

Implementing the Strategy



Photo credit



Cropland and orchards

The most important lesson learned from development planning undertaken since the mid-1950s is that sustainable development does not result from the execution of individual schemes unless they have been conceived as part of an integrated long-term plan, and are monitored and evaluated rigorously. Another lesson is that such efforts are often most successful when they are undertaken in collaboration with local communities. Rather than imposing a plan from above, the Chitral Conservation Strategy (CCS) aims to reflect the people's own aspirations for the development of their area. The challenge now is to translate this vision into action.

8.1 Current Scenario

A potent criticism voiced by local communities during the CCS consultation process was that development initiatives undertaken so far have lacked focus and continuity, and have failed to reflect their needs. Not only must meaningful development occur, it must be widely perceived to have occurred. Otherwise, a sense of deprivation will continue to prevail.

The establishment of a devolved system of government in Chitral augers well for the future. Under the new system, schemes are to be planned, implemented, monitored and evaluated by the people's elected representatives at the local level. The Zilla Nazim and District Coordination Officer (DCO) are to play a key role in formulating development policy for the district, assisted by the Finance and Planning Office. The results achieved will depend on the level of skills that the personnel of these offices bring to their assignments. Since staff will be transferred from existing government departments, their capacity will be limited until they are provided with the appropriate training. The local government will also need provincial government assistance in formulating by-laws and compiling procedural manuals.

8.2 Resource Constraints

In addition to the resources of the local government and Tehsil Municipal Administrations (TMAs), funds available for the district include transfers from the province for development, establishment charges (as replacement for zilla tax and octroi), and operation and maintenance.

However, the last two will not be available for development. TMAs will instead utilise zilla tax and octroi, but these funds are not likely to be significant.

Of the 2001–02 Annual Development Programme (ADP) allocation of Rs 55 million, 11.8 million was released for four sectors: communications (5 million), education (4.8 million, under the Social Action Programme), health (1.7 million), and building and housing (0.3 million). In addition, a sum of Rs 67 million was disbursed for implementation of the Khushhal Pakistan Programme (13 million revived, and 54 million for 2001–02). The Chitral TMA shows a gap of Rs 3.8 million between resources and expenditure for 2001–02.

The challenge for the district government is to utilise available funds effectively and efficiently. In addition, the local administration must ensure that infrastructure development does not cause further damage to the fragile ecology of the area. A portfolio of well-conceived projects must be prepared and advocated, so that additional resources from the provincial and federal governments may be secured, particularly for large-scale schemes such as the proposed Lowari tunnel.

8.2.1 Overcoming Constraints

Developing the capacity of district and provincial government functionaries is the key to overcoming the constraints to development. A proactive Finance and Planning Office, and vigilant Executive District Officers (EDOs) should be able to determine what federal and provincial sources of funding are available and how to access them. Training will also allow government functionaries to prepare convincing briefs and advocate development proposals effectively.

The new local government system is still in the implementation stage and its current limitations must be assessed in order to ensure long-term success. The district government and TMAs are under continuous pressure to respond to local choices for infrastructure projects that fulfil the

immediate needs of the people at the cost of long-term programmes for the conservation and development of renewable natural resources.

The first and most important step in the implementation of the CCS is to take stock of all ongoing development and capacity building projects, and to make sure that allocated resources are being used efficiently. Additional sources of funding are likely to become available as implementation of the CCS gets underway.

To assist the district government in implementation of the CCS, it is essential to establish a technical assistance team comprising professionals in various critical disciplines. Implementation of the strategy's proposals will begin in collaboration with the CCS Unit of IUCN–The World Conservation Union, but eventually the district government will take over sole responsibility. The CCS Unit's foremost task will be to analyse policy choices presented to the local government, with a view to ensuring environmental integrity and sustainability. The CCS Unit will facilitate reviews of policy decisions, programming and projects; work on the creation of a fund for sustainable development and assist the local government in making it operational; and train selected local government functionaries in sustainable development.

8.2.2 Resources

Compared to the needs of Chitral, available resources are likely to be meagre. During 2001–02, a sum of Rs 11.7 million was released through the ADP for education, health and transport/communications. An additional Rs 120.5 million was provided in Phases I, II, and III of the Khushhal Pakistan Programme up to 2001–02 for farm-to-market roads, water supply, women's development, electricity and miscellaneous schemes. Of this amount, barely Rs 47 million could be utilised up to 28 March 2002.

Among donor-funded projects, two of the four conservancy areas of the ongoing Mountain Areas Conservancy Project are



located in Chitral, while upgrading management of Chitral Gol National Park is part of the Protected Areas Management Project. Another opportunity is the launching of Sarhad Rural Support Programme in Chitral.

In terms of human resources, Chitral's most important potential assets are good governance and high-calibre capacity in the Finance and Planning Office to advocate policy, select projects, and streamline approval, implementation and monitoring. The Finance and Planning Office must aim to ensure that along with poverty alleviation, expenditures incurred serve to improve the environment as well as physical and social infrastructure. To multiply the impact of resources made available by the government, local communities must be persuaded to contribute physically and financially. Participation will also increase their stake in implementation and serve as an incentive to maintain the assets created. Funding for large-scale projects such as the proposed Lowari tunnel and road to Tajikistan, as well as medium-scale initiatives to increase hydroelectricity generation, will require the advocacy of the district government. Securing donor assistance entails constant vigilance regarding available opportunities, meticulous project preparation and vigorous advocacy. Financial support will be required from the international community for technical assistance projects identified in the CCS.

8.2.3 Environmental Regulation

Maintaining the integrity of the environment in Chitral is the responsibility of the TMAs. Their functions in this regard include: (i) controlling land use, subdivision, development and zoning by the public and private sector; and (ii) providing, managing, operating, maintaining and improving water supply, sewerage, sanitation and solid waste disposal; traffic planning; parks, playgrounds and open spaces; and arboriculture.

In addition, a District Environmental Committee has been constituted with the following members: EDOs of the concerned devolved departments, the

Divisional Forest Officer Chitral, Executive Engineer Irrigation Chitral, and representatives of the Aga Khan Rural Support Programme, the CCS Unit and community-based organisations. However, this Committee has not been active.

As a first step towards regulation, the local informal system of natural resource management must be documented and improved. At the same time, modern regulatory measures should be developed and institutionalised. Where possible, formal regulation should evolve on the basis of traditional practices. A regulatory code can be drawn up under Sections 191(2) and 192(2) of the North-West Frontier Province Local Government Ordinance 2001, read with the second part of the Fifth Schedule to the Ordinance.

8.2.4 Coalitions for Advocacy

A massive campaign must be launched to educate the people about the importance of maintaining the integrity of the environment. For its part, the district government will need to maintain a balance between meeting the immediate needs of the people and ensuring long-term sustainable development. By creating ownership for schemes, the district government can foster coalitions for environmental and sustainable development advocacy within civil society. This will require building capacity for analysis of issues, policy choices and development initiatives, in addition to effective communication skills.

8.2.5 A New Roundtable With a New Mandate

The CCS Roundtable has served as an important institutional resource during the formulation phase of this strategy, providing a forum for people to voice their concerns and interact with government functionaries. Following the implementation of the devolved local government system, Union Administrations, Tehsil Councils and the Zilla Council have begun to provide avenues for participation to citizens. Policy formulation and decision making regarding development is already beginning to take place through these bodies.

The new system, however, has not reduced the need for the Roundtable. As a multi-stakeholder advisory body comprising individuals of repute, integrity and expertise, the Roundtable can assist the government in making informed decisions based on collective wisdom. It can also help to fend off undue political pressure in development planning. Allowed the necessary space and freedom, the Roundtable will be able to provide the district government with invaluable input. Its role in policy making at the district level is shown in Figure 11.

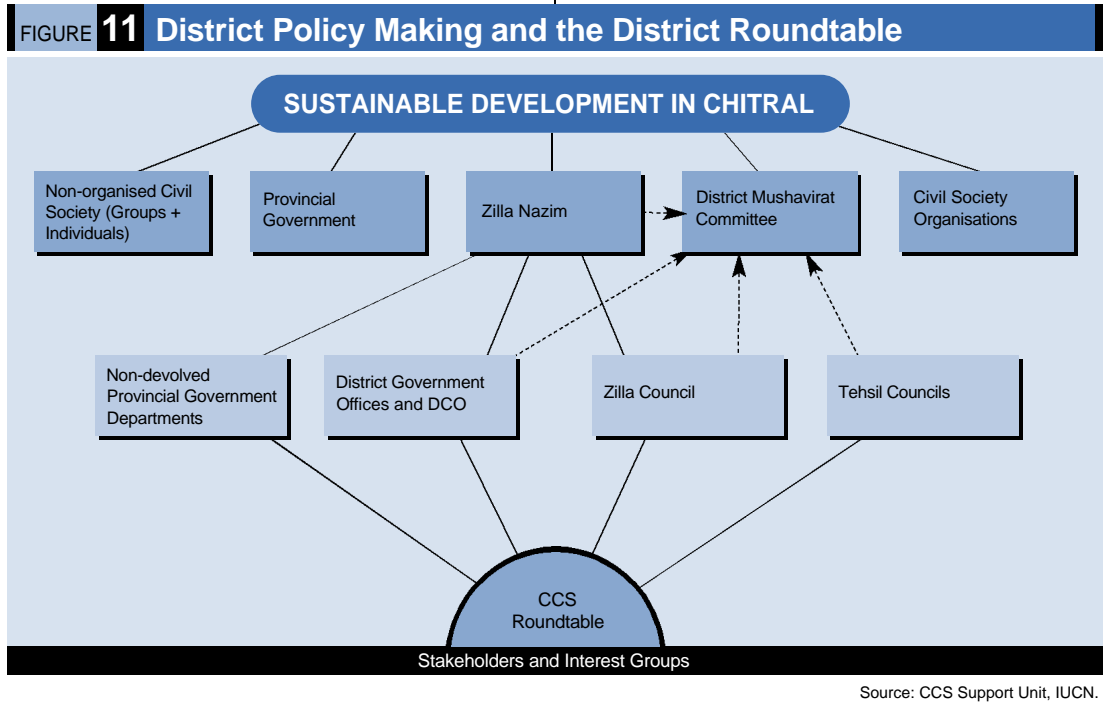
To enable it to perform its new role effectively, the Roundtable should include members from the government and TMAs (not more than one third of the total members), all parties or groups in the district and tehsil councils, major non-governmental organisations, professional associations (traders, academia), and communities with environmental credentials.

8.2.6 Launching the Chitral Fund For Sustainable Development

Inspired by similar funds created and operating in other parts of the world, the Chitral Fund for Sustainable Development

(CFSD) is a concept aimed at creating a financial mechanism to fund sustainable development activities. It is envisaged that the CFSD, set up at the district level, will be capitalised by diverting provincial budget allocations for the district and managed by a Board comprising members from both within and outside the government. To ensure credibility as well as support from donor agencies, the majority of Board members will be drawn from the non-government sector. The Board will be mandated to take decisions regarding grants from the CFSD.

In establishing the CFSD, certain factors cannot be ignored except at the peril of utter failure. These include social and economic realities, the institutional regime as it exists today and as it seems to be evolving, the political development of the district and the capacity of various partners. Chitrali society is patriarchal in nature, and organised in increasingly loose but important social structures based on tribal affiliations and socio-economic status, the latter determined primarily by land ownership. Decision making is carried out through the informal institution of *jirga*, a council of elders which nearly always excludes women and which, in some cases, enjoys legal sanction.



CCS Support Unit



Participatory approach to governance

Although many of the area's inhabitants have moved to the cities, the people of the region are nonetheless strongly rooted to their ancestral villages. Those who have remained in Chitral continue to reside in the place of their birth. Chitral's economy is mainly agrarian, with a majority of the population employed in agriculture. Outside the agriculture sector, the public sector is the largest employer. Population has been

and therefore access to information—remains limited.

Development is a priority issue for elected representatives, whether at the provincial or district level. The political capital to be gained by the delivery of ostensible development means that the district government is not likely to abdicate its power to take funding decisions. The size of the district budget is for the most part determined by provincial transfers, and such funds are likely to be spent according to the development priorities of the political executive of the district. In this scenario, sustainable development initiatives will only receive attention if they are part of mainstream policy.

The need to ensure electoral success plays a major role in development planning, with scarce resources directed towards short-term priorities.

growing at an annual rate of 2.75%, resulting in fierce competition over development resources, and leaving infrastructure and facilities struggling to cope. Agricultural and industrial activity, as well as employment opportunities in other sectors, are distributed unevenly among various parts of the district. Resource generation capacity also varies dramatically from area to area, and competition for resources between localities is played out through local elites. Meanwhile literacy among the population—

The CCS aims to do just that, requiring that all planning and development in the district focuses on sustainable development. At the same time, the CCS aims to influence local policy and tap internal sources for revenue generation, both of which are essential to create self-reliance and a climate conducive to sustainable development. Achieving fiscal autonomy will require that the CCS be made a public policy statement, while impetus for sustainable development will come from local

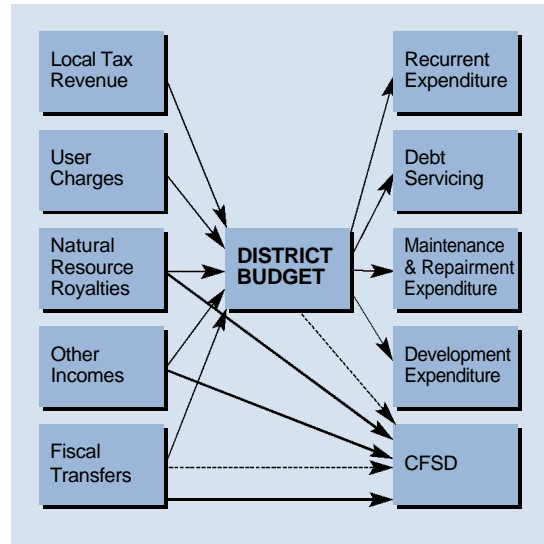
ownership of conservation themes and sustainable development norms.

Ideally, development should follow a trajectory that conforms to sustainable norms. But in reality, the need to ensure electoral success plays a major role in development planning, with scarce resources directed towards short-term priorities. For instance, the district may decide to build roads and improve agriculture, but neglects to allocate resources for the regeneration of forests or reclamation of polluted water-courses. The definition of priorities in such a case may be short-term, owing to their compatibility with political objectives of the executive. As a result, long-term decisions favouring conservation may not receive due attention, distorting the pattern of sustainable development in the district. An adequately capitalised CFSD can address such distortions, providing resources for ecological and conservation priorities. In cases where the district executive chooses to ignore sustainable development altogether, the CFSD would play an even more important role, serving as a window through which funding may be channelled directly to sectors that have been ignored by district initiatives.

It goes without saying that the creation of the CFSD requires that resources are made available for its capitalisation. In this regard, the experience with the provincial sustainable development fund has not been sanguine. In response to fiscal pressures, the development budget is often cut dramatically. As such, a wider variety of funding sources will need to be tapped. Diverting provincial transfers is one possibility, but the district budget relies heavily on such allocations to fund routine service delivery, with the remainder earmarked for other sectors. This means that provincial transfers are not likely to serve as a major source of funding for the CFSD.

Local environmental taxes can be levied to capitalise the CFSD, and income from similar provincial taxes could be earmarked for the CFSD. Legal stipulations can be written into the district budget, allocating a fixed percentage of resources for the CFSD. Such measures would require consensus building, followed by local legislation.

FIGURE 12 Chitral Fund for Sustainable Development (CFSD) in the local fiscal arrangement



Source: CCS Support Unit, IUCN.

While the CFSD can serve as a useful instrument to facilitate funding for sustainable development initiatives, it will carry only limited utility unless coupled with comprehensive fiscal reform at the district level, aimed at correcting the imbalance in resource allocation. More funds will need to be designated for green issues and to improve environmental practices in the brown sector. In addition to the introduction of environmental fees and taxes, royalties on the use of natural resources and accounting of externalities could help remove distortions in the incentive regime, encouraging and supporting environmentally responsible behaviour.

The CFSD is by no means an impractical idea. In fact, it can serve as a useful extra-fiscal instrument to promote sustainable development and conservation. The major share of the CFSD's resources are expected to come from the provincial government, but it may also serve to attract additional financing from the provincial and national sustainable development funds (the latter has been announced by the federal government as a policy commitment). As such, it can serve as an instrument to mobilise additional resource allocations for the district. The CFSD's role in the local fiscal arrangement is illustrated in Figure 12.



The Chitral Conservation Strategy (CCS) aims to formulate a crystallised vision for the integrated development of the area. The district government is the prime sponsor of the proposed initiatives and interventions, while the vision itself is shared by the people of Chitral, civil society organisations and all stakeholders, including the *ulema*, members of academia, the media and private sector organisations.

Chapter

9

Action Plan



The table below maps out an action plan for implementation of the CCS. For practical reasons, only 38 separate initiatives have been proposed. These interventions are divided into the short-, medium- and long-term categories and listed sector by sector, along with the organisations and agencies that are expected to play a role in implementation.

Sector	Short-term Initiatives	Proposed Role
Governance	1. Explore avenues of provincial, federal and donor assistance to build capacity at the district level; put into place a monitoring system for effective implementation.	Zilla Nazim Office / District Coordination Office
	2. Develop project proposals for innovative and sustainable development schemes at the district level; explore avenues of financial assistance.	Finance and Planning Office / Tehsil Municipal Administration (TMA)
	3. Enact legislation to check environmental pollution in urban areas, particularly to regulate the operations of slaughterhouses, automobile service stations, hotels, restaurants and poultry shops.	Zilla Nazim Office / Zilla Assembly / District Police / TMA
	4. Enforce land use planning and zoning laws; enact new legislation to ensure the sustainability of agriculture.	Zilla Nazim Office / District Coordination Office/ TMA
Water Supply and Sanitation	5. Rehabilitate non-functioning water supply schemes executed by the Public Health Engineering Department; transfer operation and maintenance of such schemes to community-based organisations (CBOs) and village organisations.	Works and Services Office/ TMA / CBOs
	6. Develop project proposals for waste disposal, sanitation and sewerage in Chitral town; explore funding opportunities.	TMA / CBOs / media / private sector/ non-governmental organisations (NGOs)
Agriculture	7. Build the capacity of local communities for on-farm water management; provide technical support.	Executive District Office, Agriculture / CBOs / NGOs
	8. Develop project proposals for water harvesting to encourage farm forestry and fodder production.	Executive District Office, Agriculture
	9. Create a regulatory framework for land use through legislation to curb the conversion of agriculturally productive land to non-agricultural uses.	Zilla Nazim Office / Zilla Assembly
	10. Prepare a plan to relaunch and operate the agriculture research stations set up by the Chitral Area Development Project (CADP) in Chitral and Booni.	Zilla Nazim Office / District Coordination Office
Cultural Heritage and Tourism	11. Organise special events and seasonal festivals; promote traditional festivals; prepare a calendar of events to enable tourists to plan their visit to Chitral.	Zilla Nazim Office / District Coordination Office / TMA / NGOs / CBOs / media / private sector
	12. Develop a code of conduct for tourists and tour operators to ensure the ecological and cultural sustainability of tourism.	Zilla Nazim Office / District Coordination Office / Zilla Council
Medium-term Initiatives		
Governance	13. Procure financial assistance to provide incentives, such as food aid to poor families, in order to increase enrolment and lower the dropout rate at school level.	Zilla Nazim Office / District Coordination Office / Executive District Office, Education / NGOs

	14. Seek financial assistance to introduce rural support mechanisms, such as the Sarhad Rural Support Programme and National Rural Support Programme, to ensure the perpetuation of social organisations created by the CADP; initiate the process of establishing rural support mechanisms in areas not covered so far.	Zilla Nazim Office / District Coordination Office / NGOs
Education	15. Promote female education through extended facilities at secondary and higher level.	Executive District Office, Education / NGOs / CBOs / private sector
Cultural Heritage and Tourism	16. Establish an ethnological museum.	District Coordination Office / provincial Museums Department
	17. Map cultural sites.	District Coordination Office / NGOs / provincial Tourism Department / media
	18. Evolve financial procedures to share revenues from tourism with local communities.	Zilla Nazim Office / District Coordination Office / provincial Tourism Department / NGOs
Water Supply and Sanitation	19. Develop innovative water supply schemes to be maintained by community organisations.	Works and Services Office / NGOs / CBOs
	20. Prepare plans for solid waste management, sanitation and sewerage for all major towns in the district.	TMA / Union Councils / NGOs / CBOs
Irrigation	21. Explore opportunities and funding sources to irrigate more land through siphon and lift irrigation systems.	Irrigation Division / District Coordination Office / NGOs / CBOs
Energy	22. Advocate the construction of the 43 MW Golain Hydel Project, currently in the pipelines.	Zilla Nazim Office / District Coordination Office / Water and Power Development Authority (WAPDA)
	23. Explore alternate energy sources, such as wind and solar power; liaise with the relevant quarters in the federal Ministry of Petroleum and Energy to garner financial support for this purpose.	Zilla Nazim Office / District Coordination Office / NGOs / private sector
Agriculture	24. Provide capacity building support to farm service centres, enabling them to make maximum use of marketing possibilities after the enforcement of the World Trade Organisation regime.	Zilla Nazim Office / District Coordination Office / Executive District Office, Agriculture / NGOs / CBOs
Forestry	25. Prepare an inventory of all forests in Chitral through the Forest Management Centre; draw up a participatory management plan.	Divisional Forest Office / NGOs / CBOs

	26. Ensure the regeneration of harvested areas by skilful selection of trees for felling and effective grazing control.	Divisional Forest Office / NGOs / CBOs
	27. Motivate, train and assist communities in the sustainable harvesting and marketing of <i>chilghozas</i> (pine nuts) and other non-wood forest products.	Divisional Forest Office / NGOs / CBOs
Health	28. Establish specialised health facilities at the district level.	Zilla Nazim Office / District Coordination Office / provincial Health Department
Mineral Development	29. Conduct geophysical and geochemical surveys of mineral deposits in Chitral to develop mineral-based enterprise.	Provincial Industries and Minerals Department / District Coordination Office
Long-term Initiatives		
Infrastructure	30. Advocate improving access to down-country markets through the construction of the Lowari tunnel and a road to Tajikistan.	Zilla Nazim Office / District Coordination Office
	31. Blacktop farm-to-market roads linking 32 valleys in the district in order to control dust pollution and its effects on the ecology of the area.	Works and Services Office
Education	32. Seek the assistance of the provincial and federal governments as well as donors to expand technical education.	District Coordination Office / Executive District Office, Education / NGOs
	33. Secure fellowships for promising students to pursue higher education abroad.	Executive District Office, Education
Water Supply and Sanitation	34. Develop project proposals for water supply to meet the growing requirements of the main towns of the district; secure donor funding.	Works and Services Office / TMA
	35. Prepare project proposals for the treatment of effluent and liquid waste discharged into the Chitral river.	TMA / Union Councils
Agriculture	36. Explore sites for the construction of large-scale hydel power generation projects; secure funding.	Zilla Nazim Office / District Coordination Office / WAPDA / NGOs
	37. Amend rules and procedures to enable the induction of livestock husbandry and agricultural economics professionals into the provincial Agriculture Department, offering them employment prospects at par with forestry officials.	Provincial Environment Department
Forestry	38. Prepare and process for technical assistance a participatory, integrated, multidisciplinary project for the sustainable development of alpine and subalpine grazing lands.	Provincial Environment Department

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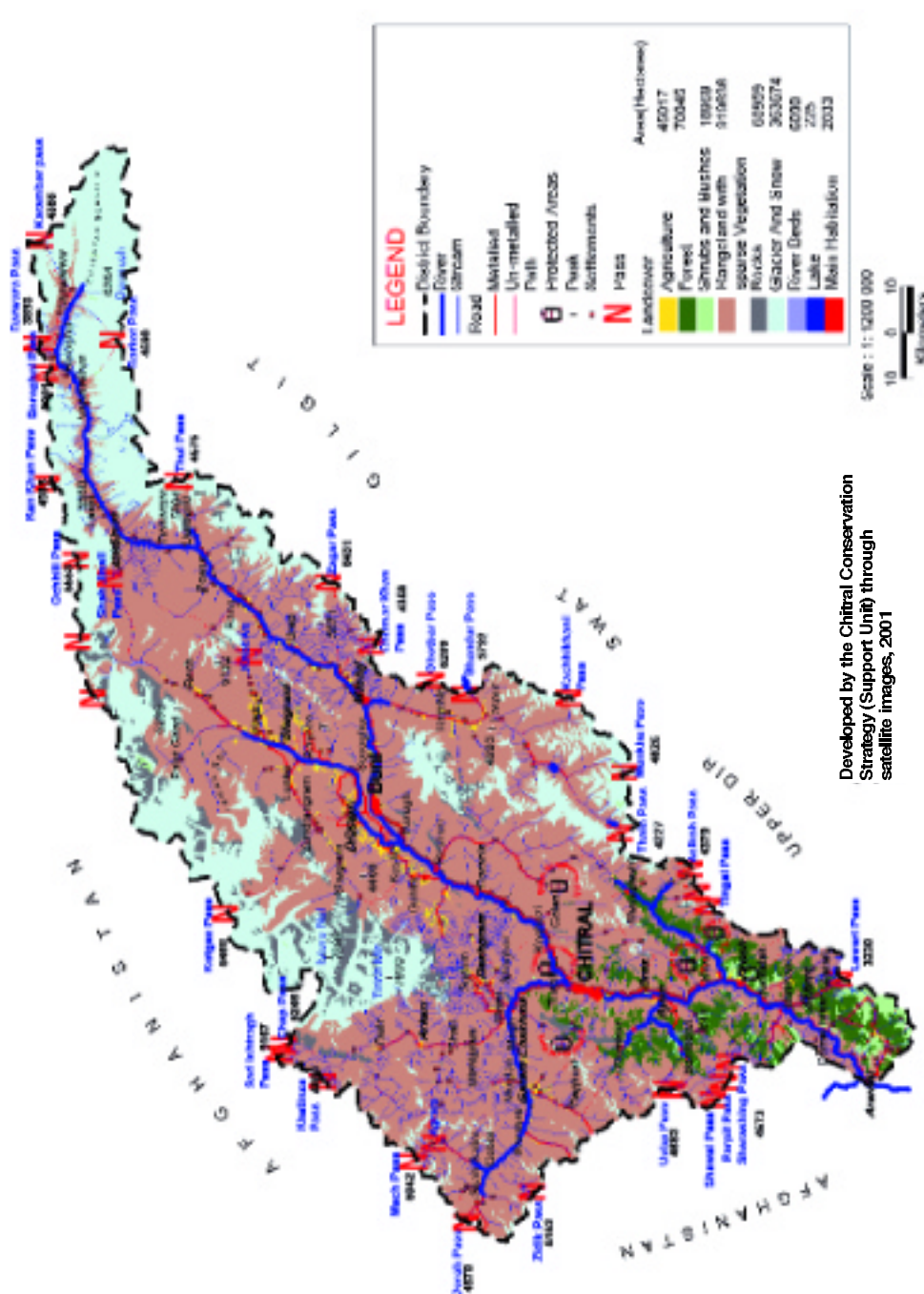
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CCS Sector Papers

Title	Author
Agriculture	G. M. Khattak
Biodiversity, Parks and Protected Areas	Mumtaz Malik
Culture Heritage and Ecotourism	Inayatullah Faizi
Drinking Water	Javed Hassan
Energy	Habib Gul
Forest, Grazing Lands and Watersheds	G. M. Khattak
Human Resource Development	Noor Shahidin
Infrastructure	Javed Hassan
Irrigation	Masood-ul-Mulk
Micro Enterprise Development	Mujib-ur-Rehman
Solid Waste Management	Javed Hassan

Appendix A

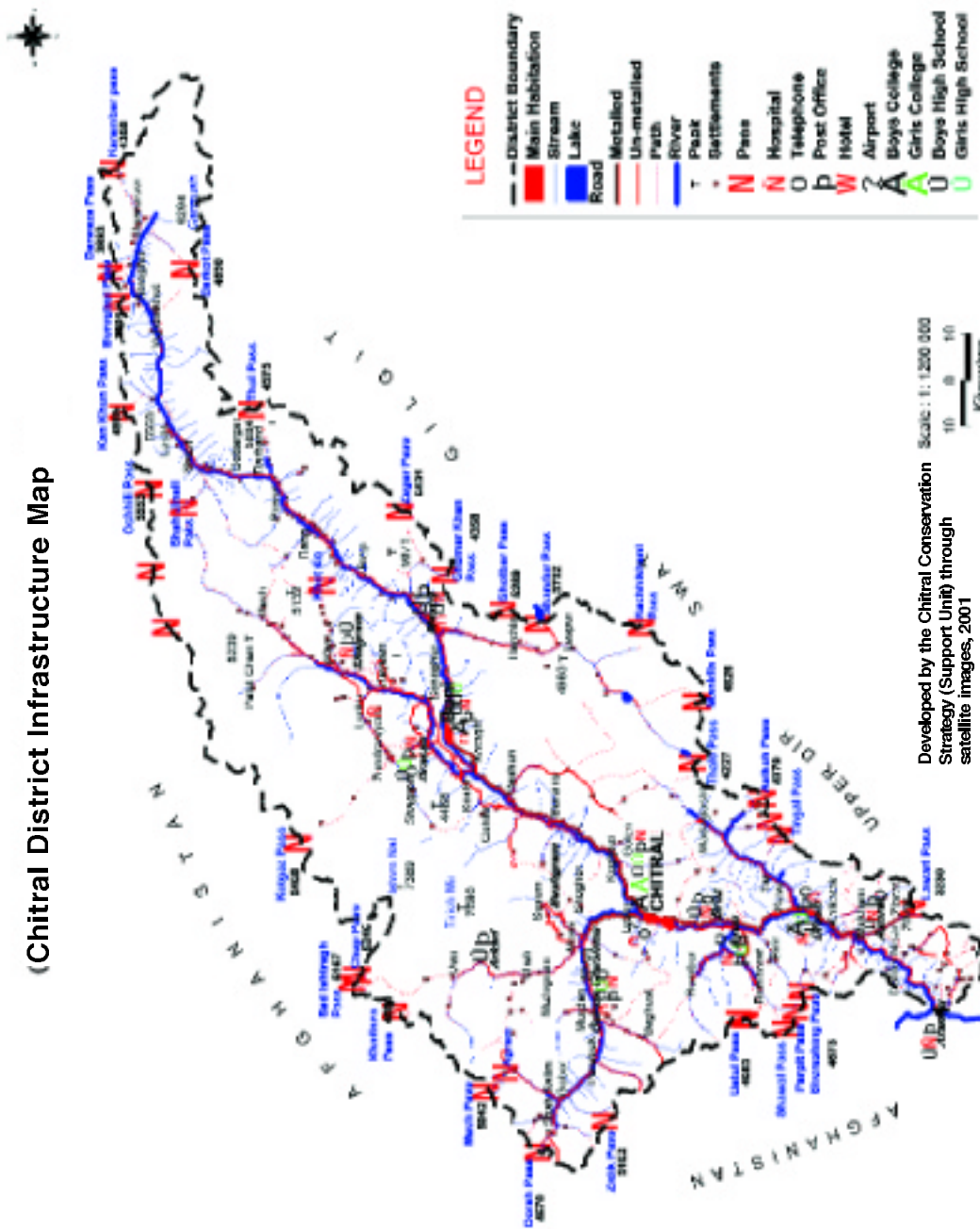
Land Cover Map of Chital District



Developed by the Chitral Conservation Strategy (Support Unit) through satellite images, 2001

Appendix B

(Chitral District Infrastructure Map



Developed by the Chitral Conservation Strategy (Support Unit) through satellite images, 2001

