



Abbottabad

State of the
Environment and
Development





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ABBREVIATIONS

ACS	Abbottabad Conservation Strategy
ADB	Asian Development Bank
ADP	Annual Development Programme
AMC	Ayub Medical College and Hospital Complex
ASSD	Abbottabad Strategy for Sustainable Development
BADP	Barani Area Development Project
CBO	Community-Based Organisation
CCS	Chitral Conservation Strategy
CNG	Compressed Natural Gas
EIA	Environmental Impact Assessment
EMW	Ever-Married Woman
EPB	Export Promotion Bureau
FEF	Frontier Education Foundation
GDA	Galliyat Development Authority
GoNWFP	Government of the North-West Frontier Province
GoP	Government of Pakistan
HHTIT	Hazara Hill Tract Improvement Trust
IIED	International Institute for Environment and Development
IUCN	The World Conservation Union
KfW	Kreditanstalt für Wiederaufbau
KPP	Khushhal Pakistan Programme
L&DD	Livestock and Dairy Development Department
LPG	Liquefied Petroleum Gas
MC	Municipal Committee
MSU	Multi-Donor Support Unit
NGO	Non-Governmental Organisation
NHA	National Highway Authority
NRCP	Natural Resource Conservation Project
NSSD	National Strategies for Sustainable Development
NWFP	North-West Frontier Province
OECD	Organisation for Economic Co-operation and Development
PCRET	Pakistan Council for Renewable Energy and Technology

PEP-ILE	Primary Education Programme-Improvement of the Learning Environment
PHED	Public Health Engineering Department
PHP	Project for Horticultural Promotion
PIDC	Pakistan Industrial Development Corporation
PPAF	Pakistan Poverty Alleviation Fund
PRC	Potato Research Centre
SDC	Swiss Agency for Development and Cooperation
SIE	Small Industries Estate
SoED	State of the Environment & Development
SPADE	Society for Public Awareness and Development Economics
SPCS	Sarhad Provincial Conservation Strategy
SRSP	Sarhad Rural Support Programme
SUNGI	SUNGI Development Foundation
TMA	Town Municipal Administration
UN	United Nations
UNDP	United Nations Development Programme
WB	World Bank
WSSD	World Summit on Sustainable Development
WTTC	World Travel and Tourism Council
WWF	World Wide Fund for Nature
ZTBL	Zarai Taraqiati Bank Limited

INTRODUCTION

The challenge of preparing a lower-tier development strategy must by necessity focus on issues particular to the district. In the case of Abbottabad, this effort was stymied right from the start by the glaring absence of reliable statistics for various sectors. No formal impact assessment studies were available and no independent critical analysis of development initiatives appeared to have been undertaken.

The lack of baseline indicators to serve as a foundation for remedial proposals required that such a study be conducted. The *State of the Environment and Development* (SoED) was developed in response to this need, so that the most recent available data on various sectors could be brought together in a single volume. The SoED examines the current status of key sectors that have a direct bearing on development in the district. It takes stock of initiatives completed or in the pipelines and critically examines lessons provided by these efforts. This document is based on the findings of individual sector papers that were commissioned and finalised after broad interaction with stakeholders. By compiling and condensing these studies, the SoED serves as a snapshot of the district.

The wealth of statistical information here is intended to provide a platform for informed decision making. It is our hope that this document serves as a benchmark study, to be updated at regular intervals, so that the process of systematic data gathering set in motion here can become an integral part of all future planning.

READER'S GUIDE

The structural framework for the SoED and its companion publication, the *Abbottabad Strategy for Sustainable Development* (ASSD), was developed simultaneously so that each document, while standing alone, would also reflect the content of the other. The SoED lays the groundwork for an integrated development vision for Abbottabad, examining in depth the current status of key sectors. This volume is designed for sector specialists and those seeking a deeper understanding of the on-ground realities underpinning the strategic development vision outlined in the ASSD.

The SoED begins with an overview of the district, covering physical geography, climate and land use patterns, as well as demographic and socio-economic indicators. Broader themes that impact human development, including poverty, unemployment, society and culture, are examined along with current institutional arrangements. The strategy formulation process is described, outlining the public consultation exercises held to identify issues that were relevant to the people of Abbottabad.

The heart of this document consists of a detailed analysis of 18 core areas, which are discussed in individual chapters. Besides compiling statistical data, these chapters aim to assess the contribution of major players and examine the lessons that have been learned from previous development initiatives.

The concluding chapter takes a step back from sectoral analyses to examine broader themes that have a wide-ranging impact on development efforts in all sectors. These cross-cutting themes are highlighted to ensure that they are kept in mind while planning remedial measures targeted at specific sectors.

EXECUTIVE SUMMARY

Abbottabad district is home to an estimated 928,000 individuals, with the vast majority living in rural areas. Although just 18.6% of the district's residents currently make their home in the cities, deepening poverty is leading to increasing urbanisation. Spread over 178,401 ha of predominantly mountainous terrain, population density in the district is high, at 466 persons per km².

Forests cover an area of 39,395 ha, or a little over 20% of the district, accounting for 5.4% of the total forest resources of the North-West Frontier Province (NWFP). The majority of Abbottabad's forested area is today so severely denuded that only 29% of forests support a density greater than 50%. Meanwhile, the gap between use and regenerative capacity continues to widen.

Overall, some 48% of land in the district is under agriculture and land use intensity is high. Agriculture is the mainstay of the district's economy but the sector operates at a subsistence level. Of the 63,000 ha under cultivation, only 11% is irrigated. The remaining 56,000 ha of farmland depends exclusively on rain. As a result, per-hectare yields are low, and local demand for cereal crops such as maize and wheat

is met through imports. Barring apples and potatoes, the district has few horticultural outputs.

Besides subsistence-level agriculture, modest additional income is generated through activities such as backyard poultry farming and livestock rearing. In their present state, the livestock and poultry sectors suffer as a result of poor extension services, inadequate marketing support, and substantial shortages of feed and fodder. Aggravating the scarcity of livestock feed is the fact that the development of rangelands, a major fodder source spread over an estimated 59% of the district, has largely escaped the attention of the concerned departments. Forest authorities have focused on policing while watershed projects have demonstrated a marked bias in favour of afforestation and agriculture. Fisheries have also been neglected, despite the existence of a large number of rivers and streams that are capable of supporting pisciculture.

Mining activity is limited, dominated by soapstone and limestone despite the fact that significant deposits of other minerals have been reported. Virtually no other industrial activity takes place in the district. As a result, unemployment is as high as 32% while just 20% of the total population is classified as economically active. The public and private sectors account for more than 50% of total employment, 44% of the workforce is categorised as self-employed and a mere 9% of the district's workers are professionals. Some 46% of the work force is employed in agriculture, fisheries and 'elementary' occupations.

With only limited employment opportunities available in the agriculture, forestry, mining and industrial sectors, it is surprising that microenterprise has not been developed as a means to mitigate poverty. It is only recently that banks, emulating non-governmental organisations (NGOs) in the field, have begun extending loans for income generation activities through community organisations.

The district depends entirely on the national grid for electricity, which is used primarily for lighting. Wood is the main source of cooking fuel in rural areas, putting increasing pressure on local forests. A significant proportion of the urban population has access to natural gas for use in cooking but supply to rural areas is limited.

A large number of primary, secondary and high schools operate in the district. Enrolment ratios at the primary level may be impressive but numbers decline at higher levels of education. The high drop-out rate and high repeat ratio in the district suggest that serious problems exist both in terms of the quality of education of offer and the motivation of parents and students.

Health coverage in urban areas is good, largely as a result of the Ayub Medical College and Hospital Complex (AMC). Rural coverage, however, is patchy and inadequate. Close to 90% of the public-sector health budget goes to pay salaries, with scant resources remaining for basic supplies and facilities, let alone for expansion in the sector.

Although official figures claim that drinking water schemes now serve 85% of rural areas and 90% of the urban population, the distribution system is outdated, inefficient and unreliable. In addition, water losses are high, owing to both leakage and illegal connections, while the user charges currently in place are obsolete, leaving the authorities with a budget deficit as high as 80%. Water quality is also suspect, with contamination reported in many areas. This comes as no surprise, considering that waste management in the district is abysmal.

Across the district, the management of waste water and solid waste is far from adequate, aggravating pollution, adversely impacting the natural beauty of the area and leading to serious public health hazards. This situation is exacerbated by the absence of legislation governing land use and urban development. Encroachments and unauthorised construction in urban

areas put additional pressure on already stretched municipal services.

Despite a roads network spanning some 464 km, access to remote rural areas is difficult. The district is traversed by a number of major roads, including the Karakoram highway and the Murree–Abbottabad road. As a result of its location at the crossroads of major highways, Abbottabad city is exposed to excessive pollution originating from transit traffic.

Of the 12 habitats identified in the NWFP (Roberts 1977), three are to be found in Abbottabad. The district is rich in biodiversity, supporting a wide variety of flora and fauna. Two protected areas, the Ayubia National Park and the Qalandarabad game reserve, have been designated. The natural beauty and breathtaking landscape of the district make it an attractive destination for tourists. Even with its rich biodiversity, and the network of roads facilitating access, tourism has witnessed a steady decline in recent years. Instead, Abbottabad serves primarily as a transit point for other destinations, attracting mostly day visitors.

Cultural norms in the area are beginning to change, with significant shifts away from traditional values already evident, particularly in urban areas. At the same time, tribal affiliations have not been abandoned altogether. In this state of flux, women continue to be marginalised.

DEVELOPMENT INITIATIVES

The district has been fortunate in that it has attracted significant support from donors, development projects and NGOs. The Barani Area Development Project (BADP) has undertaken small-scale infrastructure development in addition to income generation and human resource development schemes. The Project for Horticultural Promotion (PHP) and Potato Research Centre (PRC) have contributed to

horticultural and agricultural development. The Natural Resource Conservation Project (NRCP) has worked in the areas of horticulture, fodder development and kitchen gardening, and set up a network of community-based organisations (CBOs). The Tarbela-Mangla Watershed Management Project carries out afforestation, while the Pak-German Siran Project is involved in a variety of natural resource conservation efforts.

The Sarhad Rural Support Programme (SRSP) and SUNGI Development Foundation are significant players in natural resource management activities as well as microenterprise development, improving roads in rural areas, working for forest protection and establishing CBOs. Other NGOs are active in social mobilisation and enterprise development, although their impact is confined to small areas.

Education, particularly at the primary level, has received considerable support from the World Bank, Asian Development Bank and United States Agency for International Development, in addition to funding from the federal government's Social Action Programme. The AMC, currently in the third phase of implementation, is a major federal government initiative in the health sector. Several drinking water schemes have been undertaken in the public sector and through donor initiatives, while provisions for sanitation are being incorporated in all new water supply schemes.

An attempt was made to address tourism development through the now-defunct Hazara Hill Tract Improvement Trust (HHTIT). Its responsibilities have been taken over by the Galliyat Development Authority (GDA). Beyond the construction of a chair lift facility at Ayubia, however, little has been achieved in this sector.

Microenterprise development has been addressed by the BADP, SRSP and SUNGI. More recently, banks have also entered the

field, with the Bank of Khyber emerging as a major lender for small enterprise. The Export Promotion Bureau (EPB) and Small Industries Development Board are attempting to promote larger business ventures.

ACHIEVEMENTS AND SHORTFALLS

While many indicators for development in the district show progress over recent years, with higher literacy, improved infrastructure and increased drinking water supply, there is still room for improvement in many areas. No simple solution or single sector can be highlighted as critical to achieving such improvement. In fact, development issues confronting the district are broad-based, cutting across sectoral boundaries as well as functional divisions. Improving governance, access to resources, developing capacity and diversifying income generation are a few such areas, where only a multi-sectoral approach has any hope of yielding positive and sustainable results.

The district remains a significant importer of cereals and is capable of meeting barely 30% of its wheat needs locally. Although the economy is dominated by natural resource-based sectors and industries, coordination between green sector government departments is practically non-existent. Departmental performance is strait-jacketed by an outdated administrative outlook as well as myopia. The forest authorities focus almost exclusively on timber, while the agriculture department's activities are restricted to cursory extension activities. One immediate consequence of this narrow vision is the neglect of rangelands and fodder supply issues. Watershed programmes have displayed a similar tunnel vision, resulting in chronic feed and fodder shortages. The scarcity of animal feed in turn restricts expansion of the poultry and livestock sectors.

Expansion in the livestock, poultry and microenterprise sectors is particularly impor-

tant for a district such as Abbottabad, where only incremental gains are possible in agriculture. These sectors can serve to alleviate poverty by creating alternative avenues of income generation. Diversifying the scope of economic activity can help to mitigate the pressure on natural resources as well. Despite the many advantages involved, these sectors have not received sufficient attention.

By creating opportunities for employment, education also serves as a critical component of poverty alleviation programmes. In Abbottabad, literacy has increased in recent years but participation rates are dismal, declining steadily at higher levels of education, particularly among females and in rural areas. Repeat ratios and drop-out rates are also high, with quality, accessibility and gender equity emerging as recurring problems at all levels.

On paper, the district's health statistics seem impressive. Abbottabad's position compared to the province as a whole is ahead on major indicators but the figures belie issues of access for the vast majority of rural residents. High investment in tertiary health care, at the expense of preventive efforts, and poor coverage are dominant concerns in this sector. Problems with regard to basic health units and rural health centres are rarely addressed.

Drinking water supply is another area where statistics are misleading. Although coverage has expanded, this has not been matched by an improvement in the quality of water supplied. Widespread contamination, owing largely to poor waste management, is cause for serious concern. The obsolete supply system is difficult to upgrade, while irrational user charges make the current arrangement financially unviable.

High unemployment and a predominantly youthful population, coupled with population growth and increasing urbanisation, lead to intense competition for scarce resources. In

the absence of much-needed regulation and enforcement mechanisms, current activities in a number of sectors are undertaken with no regard whatsoever for the long-term consequences. The district's fragile ecosystem is subjected to further strain in the form of haphazard and illegal construction, and pollution from transit traffic. To curb these trends, land use and zoning laws are urgently needed along with strict enforcement of the environmental impact assessment regime for all new projects.

While environmental degradation is a serious concern in and of itself, pollution, congestion and unsanitary conditions also adversely impact a number of other sectors. Abbottabad's potential as a tourist destination, for instance, suffers as a result. The tourism sector has also been subject to official neglect. The poor track record of the HHTIT and the administrative limbo in which the GDA is currently mired have contributed to a drastic decline in tourist numbers.

PART



Background

Abbottabad

District Profile

District Abbottabad was once part of the Hazara division, which covered the present-day districts of Abbottabad, Battagram, Haripur, Kohistan and Mansehra. The district takes its name from the city of Abbottabad, named after Major James Abbot, the first deputy commissioner of Hazara, who served from 1849 to 1853 under the British colonial administration of India. The terrain of the area is both rugged and scenic, and its location at the base of the Himalayas lends it a temperate climate throughout most of the year. Situated between 33° 50' and 34° 23' North, and 73° 35' and 73° 31' East, Abbottabad is bordered by Mansehra district in the North, Muzaffarabad and Rawalpindi districts in the East, Haripur and Rawalpindi districts in the South and Haripur district in the West ([Annex 3](#)).

PHYSICAL FEATURES AND TOPOGRAPHY

Spread over an area of 1,967 km² (178,401 ha), Abbottabad district is located in predominantly mountainous terrain. The average elevation of peaks in the district ranges from 2,500 m to 2,700 m (the Miranjani peak at 3,313 m is the highest point). These mountains form part of the lesser Himalayas and dominate the landscape. The Dongagali range hugs the right banks of the Kunhar and Jhelum rivers, entering the district from the north. It has several offshoots that vary in elevation from 2,500 m to 2,700 m. A number of spurs project on either side of this range, with those towards the west varying in elevation from 600 m to 1,500 m.

The mountains gradually give way to a series of valleys. On the northern border of the district, a series of low-lying hills forms a barrier to the Mangal tract in Mansehra. To the south of these hills lies the Rash plain, covering an area of 6 km². Once a vast lake, the centre of this plain is marshy to this day, although most of this area is now drained and ideally suited to growing maize and potatoes. Another such area is the Dhan tract, an elevated basin enclosed by the Nara hills. Other small cultivable tracts lie along the valleys of rivers and streams, among them the plain tract of the Dor valley to the south, which merges with the Haripur plains, and the Lora tract which lies on the Dhund branch of upper Haro river.

The district is drained by perennial streams, dry streams and *nullahs*. The central region, a major surface area, is drained by the Daur river which originates at the northern end of the Nathiagali range and joins the Siran river near the town of Haripur. The elevation of this sub-watershed varies from less than 600 m near Shah Maqsood to 2,979 m at Miranjani. The upper reaches of the watershed are covered in mixed temperate coniferous forests, the middle reaches in *chir* pine and the lower part with scrub forests. Grasslands are interspersed with forests and cropland to form a unique mosaic of land use patterns.

The Haro river originates at the southern end of the Dongagali range and flows through the district as two separate streams. The northern or upper stream is known as the Karlal Haro while the southern or lower section is called the Dhund Haro. The Karlal Haro originates near Changlagali and flows south to Satara village, joining the second branch near the Jabri forest rest house. The Dhund Haro originates near Kuldana and flows down to the north of Lora village. Ultimately, both streams of the Haro river fall into the Khanpur lake. The highest point of the Dhund Haro watershed is 1,725 m near Lora. The upper reaches and left bank of the Karlal Haro are covered with *chir* pine forests, while the cooler areas around Dhund Haro are covered in natural and planted forests of *chir* pine, extending into the Satara and Makhnial forest ranges of Haripur Forest Division. The middle and lower parts consist of shrub forests, grasslands and cultivated fields. The Siran river enters the district from the north-west and flows south along Abbottabad's western border, exiting the district near Kachhi village.

These rivers sprout countless tributaries, some of which are permanent (known as a *katha*) while others experience seasonal flows (known as *kassi*). In addition to the main streams, the Kunhar river flows along the north-eastern boundary of the district, joining the Jhelum river in the east. The Jhelum river itself flows along the eastern boundary of the district for some 50 km.

GEOLOGY AND SOIL

Abbottabad's rocky ground is rich in minerals, containing deposits of biotite, granite, limestone, phyllite, schist, slate, soapstone and quartz. These mineral soils occur as residual deposits in the hills and alluvial deposits on valley floors. Most of the soil is grey in colour (under moist forests) and coarse in texture. The soil is formed by snow deposits as well as water and sedimentary rock and is mostly dry-farmed for subsistence cropping. Farm soil may be classified into four categories:

- i. loam and clay, mainly non-calcareous;

- ii. loam, steep and shallow soils (humid mountainous region);
- iii. loam and clay, partly non-calcareous with loess traces; and
- iv. loam with stones, and shallow (sub-humid mountain region).

The mountain ridges and terraces lying on the western and eastern boundaries of the district are severely eroded as a result of landslides, landslips, rock falls and debris flows. Inceptisols and chromudertic soils are the most common soil types found in the district. The inceptisols form level, productive basin plains, while the chromudertic soils form piedmonts and undulated, dissected gullied lands. The soils of Ayubia and Bagnotar range from humid to sub-humid tropical continental.

The climate and topography of the district is divided more or less naturally into three parts:

- i. the plains of Havelian and the Rash valley in Abbottabad, suitable for vegetable and fruit production;
- ii. the mild hills of the Tanawal–Sherwan belt, well suited for livestock and fodder; and
- iii. the high hills of the Galliyat, suitable for tourism, forestry and some off-season vegetable cultivation.

CLIMATE

A detailed picture of mean temperatures, precipitation and humidity recorded at the Kakul weather station during the period 1961–90 is shown in Table 1. The average maximum temperature recorded is 22.76°C while the minimum is 11.41°C. Total precipitation is 1,366.18 mm annually, with an average of 113.84 mm per month. Average relative humidity is 56%.

TEMPERATURE

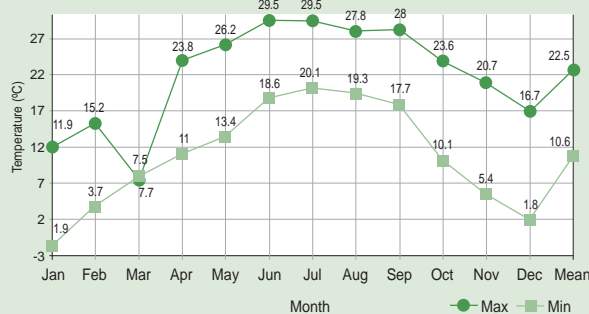
Owing to the area's mountainous terrain, Abbottabad's summer starts a little late and is relatively mild. Temperatures begin to rise in the month of May, and by June the mean maximum and minimum temperatures recorded are 32.41°C and 19.67°C respectively. Winters, meanwhile, are comparatively severe, with

TABLE 1 TEMPERATURE, PRECIPITATION AND HUMIDITY, KAKUL (1961–1990)

Month	Temperature (°C)		Precipitation (%)	Humidity (%)
	Maximum	Minimum		
January	12.56	1.77	64.79	59.07
February	13.38	2.87	113.63	60.97
March	17.76	6.94	142.31	57.03
April	23.30	11.36	111.81	51.45
May	28.25	15.46	81.62	41.98
June	32.41	19.67	85.28	41.21
July	29.58	20.10	258.26	66.73
August	28.16	19.34	261.27	74.75
September	27.78	16.78	96.91	62.28
October	24.88	11.96	56.90	51.26
November	20.09	7.21	31.91	49.36
December	14.98	3.45	61.49	55.95
Average	22.76	11.41	113.85	56.00
Total			1,366.18	

Source: Data Processing Centre, Pakistan Meteorological Department, Karachi.

FIGURE 1 MAXIMUM AND MINIMUM TEMPERATURES, KAKUL (1999)

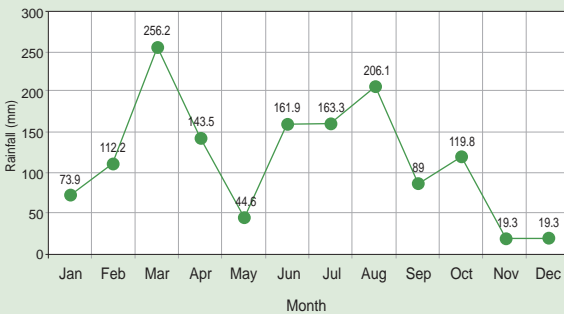


Source: GoNWFP 1999.

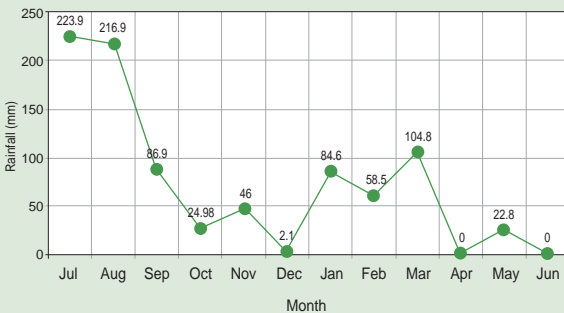
heavy snowfall in the higher elevations causing the snowline to drop to around 1,650 m. Temperatures are lowest during the months of December, January and February. In January, which is by far the coldest month, mean maximum and minimum temperatures stand at 12.56°C and 1.77°C respectively. In 1999, the minimum temperature recorded at Kakul dropped to -1.9°C (Figure 1).

RAINFALL

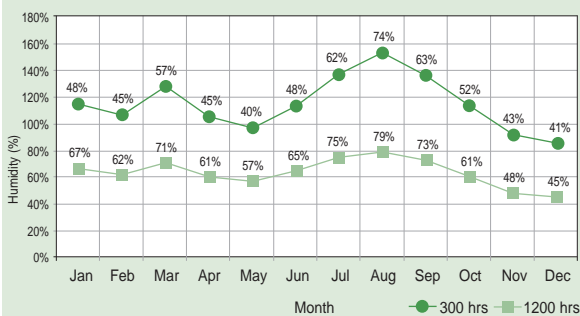
Abbottabad district lies within the active monsoon zone. Most of the land is rain-fed, with 60% of average precipitation received during the July–August period and the remaining 40% unevenly distributed between September and June. In 1999, a total of 1,409.1 mm of rain was recorded at Kakul (Figure 2) while during

FIGURE 2 RAINFALL, KAKUL (1999)

Source: GoNWFP 1999.

FIGURE 3 RAINFALL, ABBOTTABAD (1999–2000)

Source: GoNWFP 2001a.

FIGURE 4 HUMIDITY, KAKUL (1999)

Source: Meteorological Department, Lahore.

the dry spell from July 1999 to June 2000, a total of only 871.5 mm precipitation was recorded in Abbottabad (Figure 3). At an average of 72.6 mm a month, this figure is around 40% lower than the average recorded at Kakul during the period 1961–90. It is

expected that more recent rainfall figures from Kakul will further highlight the climate change that is taking place. The 1999–2000 dry spell and accompanying drought have cast a deep pall over future prospects for the development of agriculture in the district.

HUMIDITY

The district experiences relatively high humidity throughout the year with a 1999 average of 51.5% at 1200 hrs and 63.7% at 0300 hrs (Figure 4). During the period 1961–90 average humidity stood at 56%. Humidity is highest between July and September, coinciding with the peak precipitation period.

DEMOGRAPHIC PROFILE

According to the 1998 census, the official population of Abbottabad district stands at 928,000, with a sex ratio of 100.2 (GoP 1999a).

POPULATION: 1951–98

Between 1951 and 1988, Abbottabad's population grew from 319,000 to 881,666, amounting to a cumulative growth of 176.2% and an annual average growth rate of 3.75% (Figure 5). In comparison, the population of the province as a whole during the same period grew by a cumulative 285.2% with an annual growth rate of 6.1%, while the national growth rate stood at 6.1%.

Between the 1981 and 1998 census periods, the average annual growth rate for the district amounts to 1.82%, compared to the 2.81% average annual growth for the province. At this rate, Abbottabad's population is expected to double by 2047, compared to a similar increase by the year 2028 for the province as a whole (MSU 2000: 11). Figure 6 elaborates on census data using projections for the year 1999–2001. The 2001 population of Abbottabad is estimated at 935,000 with an average growth rate of 1.8%. Meanwhile, Figure 7 confirms that with annual growth estimated at 1.8–2.0% for the year 2001, the district lags behind the province (2.7–2.8%) in the post-1998 census period.

DENSITY

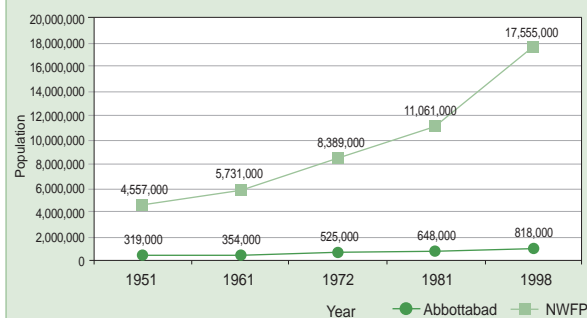
Even more alarming than growth trends are Abbottabad's population density figures, which highlight the demographic dilemma that confronts the district. For the period 1999–2000, population density in Abbottabad is estimated at 447 persons/km², compared to 250 persons/km² in the province (Figure 8). Although Abbottabad's population growth rate between 1951 and 1998 (3.75%) lags behind both provincial and national figures during the same period, population density in the district causes many of the same problems as population growth elsewhere. In an area of 1,967 km², the population density increased from 162 persons/km² in 1951 to 446 persons/km² in 1998, amounting to an average annual increase of 3.73%. In contrast, population density in the province as a whole increased from 61 persons/km² in 1951 to 236 persons/km² in 1998 (GoNWFP 2001b). Even though the average annual provincial increase in density stands at 5%, overall population density in the province is still only 52% of that of the district, indicating the extent to which population exerts pressure on the area and its already fragile resource base. Overall, Abbottabad district ranks fifth highest in terms of population density, behind the primarily urban districts of Bannu, Charsadda, Mardan and Peshawar.

Density, however, is only one of the constraining pressures exercised by demographic variables and should be viewed in the light of urbanisation trends as well as the relative age profile of the district.

RURAL AND URBAN COMPOSITION

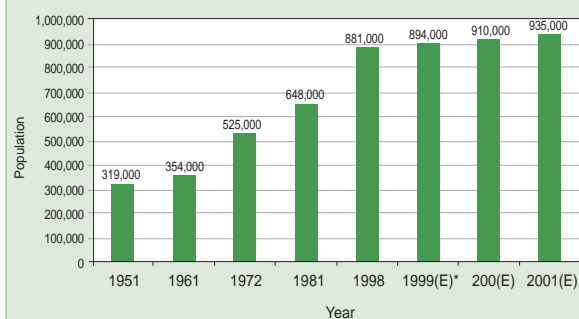
According to the 1998 census, Abbottabad's urban population stands at 157,699 (17.9% of the total population) while the rural population is 723,301 (82.1% of the total). Estimates for 2001 based on statistics from as far back as the 1972 census demonstrate a pattern of progressive urbanisation. In 1972, for instance, the urban population stood at 12.5% of the total population of the district. Projections for 2001 put this figure as high as 18.6%, amounting to an average annual urbanisation growth rate of 0.21% (Figure 9). The urban population of the province rose from 15% in 1972 to an estimated 17.3% in

FIGURE 5 POPULATION, ABBOTTABAD AND NWFP (1951–98)



Source: GoP 1999a.

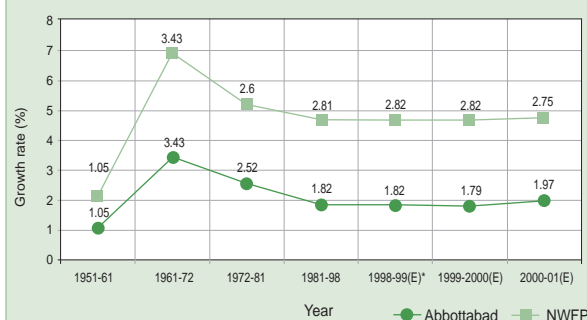
FIGURE 6 POPULATION, ABBOTTABAD 1951–2001



*E= estimated

Source: GoNWFP 1999; GoP 1999a; GoNWFP 2001b.

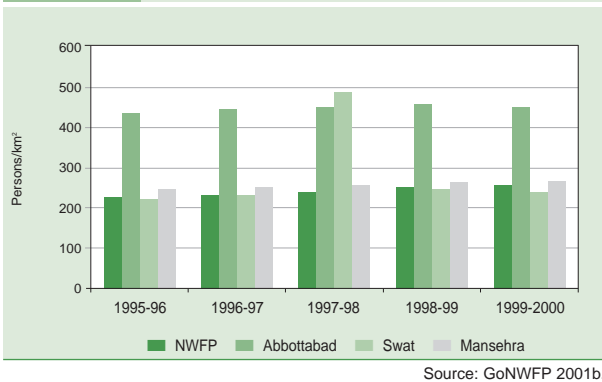
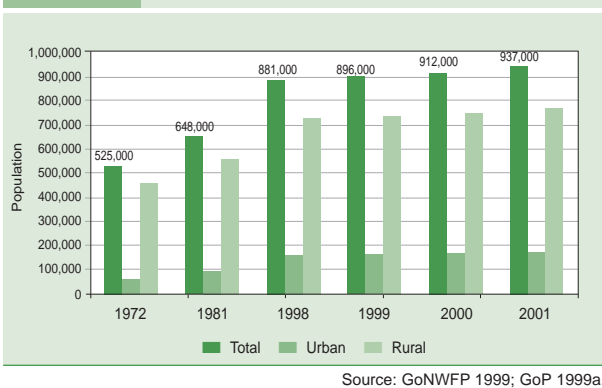
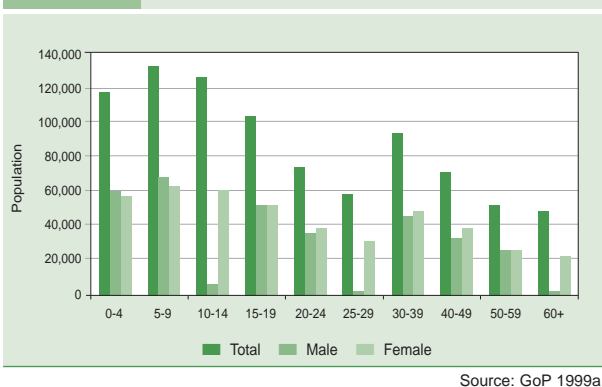
FIGURE 7 POPULATION GROWTH RATE, ABBOTTABAD AND NWFP (1951–98)



*E= estimated

Source: GoNWFP 1999; GoP 1999a; GoNWFP 2001b.

2001, amounting to an average annual urbanisation growth rate of only 0.08%. This points to a critical area of overlap between sustainable development and demographic trends, where burgeoning population exerts increasing pressure on an already fragile rural economy, leading to increased urban migration. This

FIGURE 8 POPULATION DENSITY, ABBOTTABAD, NWFP AND SAMPLE DISTRICTS (1995–2000)**FIGURE 9** URBAN/RURAL POPULATION, ABBOTTABAD (1972–2001)**FIGURE 10** POPULATION BY AGE, ABBOTTABAD (1998)

urbanisation will have an impact on key sectors. Construction, for instance, is often carried out haphazardly to meet skyrocketing demand. This in turn stretches the capacity of existing amenities and service delivery (health, waste management, drinking water supply, power supply) while at the same time adding to unemployment

in urban areas. Creating sustainable means to ensure economic viability for the huge rural component of the district's population remains one of the challenges confronting the ASSD.

AGE PROFILE

A district where more than 40% of the population is below the age of 15 years is considered to be a "youthful population district" (MSU 2000). Abbottabad exceeds this benchmark, with 43% of its population below the age of 15 and a massive 68% below 25 years of age (Figure 10). With a predominantly youthful population, more and more individuals will enter the job market in the coming years. Viewed in tandem with the increase in population density and household size, as well as urbanisation, this is cause for concern because it points to the intensifying pressure that will invariably be exerted on natural resources, public services and facilities. The fact that 43% of the population is below the age of 15 exacerbates the situation from the point of view of economic dependency and future demand. The high proportion of young people reflects the recent population growth that has taken place, mostly in rural areas.

Figures for the province as a whole show the population below the age of 25 to be slightly lower at 66%, but the population under 15 years is even higher, at 47%. For both the province and the district, these trends carry ominous implications for employment and service delivery in the near future. The relatively greater resources and reach of the province, combined with lower population density and relatively lower urbanisation, mean that the district is more vulnerable to the negative impact of such trends.

MIGRANT POPULATION

The 1998 census puts the migrant population of the district at 24,702, amounting to 2.8% of the total population. The influx of seasonal visitors adds to this number, increasing the pressure exerted on the environment as well as municipal services. Given the dearth of economic activity in the district, Abbottabad witnesses considerable out-migration as well. An estimated 14.52% of the district's residents

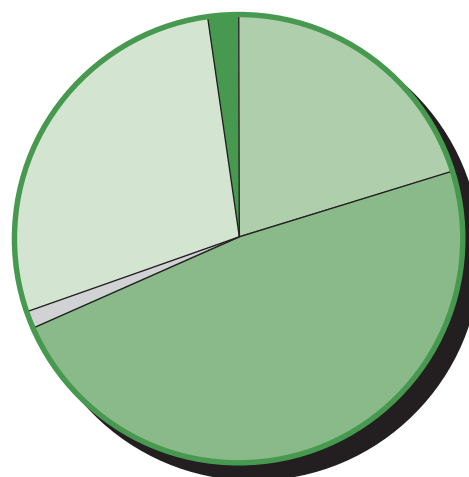
have migrated, with particularly high migration taking place during the period 1971–81 (Elahi, sector paper 'Enterprise Development'). The SUNGI baseline report for the year 1998 reveals that of the 3,613 households sampled in Abbottabad, as many as 86% had at least one family member who had migrated (SUNGI 2000). More than 70% of these migrants travelled to other parts of the country while 12% headed abroad. Of the total number of migrants, 20% were seasonal and only 3% categorised as daily. The report further shows that of the sample population of 25,511, 15% were migrants, of whom 71% were in-country migrants, 10% out-country migrants and 19% daily or seasonal migrants.

Compared to their more commercially savvy neighbours in Haripur and Mansehra, Abbottabad's residents are more likely to seek employment. This is partly the result of Abbottabad's former status as the headquarters of Hazara Division, which led to a heavy government and military presence in the area. The Division was abolished in 2001, following the launch of the devolution process. But even today, government service makes up a high proportion of overall employment in the district. Government jobs in turn often entail transfers. In light of the economic limitations of the district, this bias in favour of employment as opposed to trade indicates that out-migration must be high. Studies need to be carried out to determine the exact quantum of this movement of labour and the associated socio-cultural impacts. Given the high population density, migration out of the district is not thought to have a significant negative impact, while remittances may actually serve to boost the local economy.

LAND USE

According to the Kreditanstalt für Wiederaufbau (KfW) forest resource survey, the total reported area of the district is 179,653.5 ha, of which 20.3% is designated as forest and 48.2% as agricultural land (Figure 11). The remaining area consists of rangeland, shrub land and sparse vegetation. Official figures vary, putting the district's total area at 178,401 ha.

FIGURE 11 LAND USE, ABBOTTABAD



■ Agriculture (48.20%)
■ Forest (20.26%)
■ Other (1.93%)
■ Shrubland (0.98%)
■ Rangeland, sparse land (28.63%)

Source: KfW 2000.

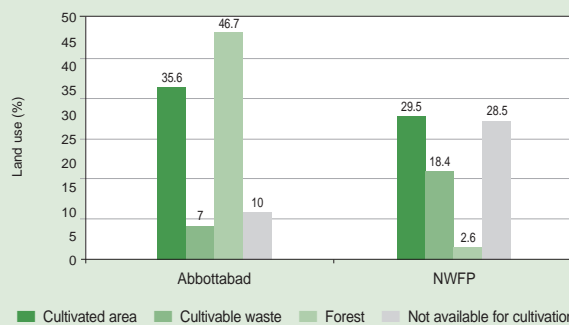
TABLE 2 LAND USE, ABBOTTABAD (1996–2000)*

Type of use	1996–97	1999–2000
Cultivated area	35.6	35.6
Cultivable wasteland	7.00	7.0
Forest	46.6	46.7
Not available for cultivation	10.8	10.7

* Figures as percentage of total land.

Source: GoNWFP 1999; GoNWFP 2001a.

FIGURE 12 LAND USE, ABBOTTABAD AND NWFP (1999–2000)



Source: GoNWFP 2001b.

Land use in the district based on official statistics (Table 2) employ a different system of technical demarcation. These figures show that a relatively high proportion of land in Abbottabad is classified as cultivated (35.6%), compared to the province as a whole (29.9%) (Figure 12). Forest land in the district (46.7%) also exceeds that in the province (23.6%). Meanwhile, most of the land that is suitable for agriculture is already being cultivated. The percentage of land not available for cultivation is relatively low (10.7%) in Abbottabad compared to the province (28.5%). In terms of land use trends during the period 1996–2000, there is no significant variation.

Despite technical and definitional variations, the figures indicate that land resources in Abbottabad are already under severe pressure and close to depletion. As such, only incremental increases in output can be expected and that too with cost-benefit trade-offs. This highlights the need to find alternate venues for investment and underscores the importance of optimising agricultural output in a sustainable manner.

The district is heavily rain dependent, with only 0.399% of the total area under irrigation, compared to 11.1% in the whole of the North-West Frontier Province (NWFP) and 14.7% for

settled districts in the province (GoNWFP 2001a). As a consequence, figures for Abbottabad show 14 persons per cultivated ha (compared to 11 for the province as a whole) and 126 persons per irrigated ha (compared to 23 for the province). In addition, the location of the district and the nature of the terrain make the pursuit of new irrigation infrastructure economically unviable.

Cropping intensity in the district is high, at 88.28% (compared to 111.51% for the province), partly owing to the shortage of water

which limits double-cropping (GoNWFP 2001a). Intensity of land use in the district is also high, at 81.7% (compared to 61.6% for the province).

The cumulative effect of these factors is that agriculture cannot realistically be viewed as a sector upon which future initiatives for sustainable development may be anchored. Crop rotation, the use of improved seed/cultivars, more efficient agricultural practices (the 'extension' aspect), and a small increase in water supply through economic use and harvesting, are a few

Despite technical and definitional variations, available figures indicate that land resources in Abbottabad are under severe pressure. As such, only incremental increases in agricultural output can be expected, and that too with cost-benefit trade-offs. This highlights the need to find alternate venues for investment and underscores the importance of optimising agricultural output in a sustainable manner.

For the purpose of our analysis, the KfW figures are retained only where absolutely necessary, while official figures have been used for most calculations. It is worth noting that, besides variations in available agriculture, forest and development statistics, considerable confusion also prevails in the use of terminology and interpretation. The glossary of technical terms and concepts attempts to clarify some of this confusion for the general reader (Annex 1).

of the options available to improve the functioning of the sector. But no major or dramatic increase in output is possible. As such, if sustainable development is to become a realistic goal, capable of addressing the environmental, social and economic targets intrinsic to the process, then the focus will need to shift away from agriculture and the district's economy will need to be diversified.

EMPLOYMENT

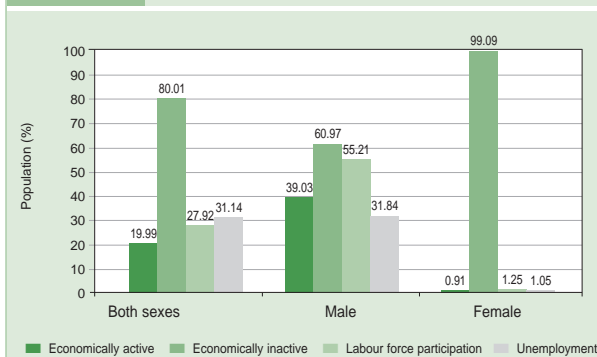
Current international indicators classify poverty on the basis of average daily income (less than \$1/day, based on purchasing power) or benchmarks such as a daily calorie intake (2,550 calories/day), determined by the United Nations. No such data are available for Abbottabad. In the absence of reliable and consensual indicators for the district, the ASSD relies on census data along with crude indicators for poverty culled from other sources.

According to the 1998 census, overall unemployment in the district is as high as 31.14% (Figure 13). Disaggregated by gender, 31.84% of the district's men and only 1.05% of women are unemployed. Rural unemployment stands at 30.4%, while 33.5% of city dwellers are looking for work. These figures compare unfavourably with the province as a whole, where an estimated 26.8% of the population (27.5% male and 2.6% female) is unemployed.

Overall, the labour force participation rate for the district is 27.9% with 55.21% participation among men and 1.25% for women. Participation is higher in urban centres (33.4%) compared to rural areas (26.2%), and also higher among men across the district. In the cities, male participation stands at 55.74%, compared to 3.4% among women, while in rural areas male participation is 55.1%, compared to a mere 0.84% among women (Figure 14 and Figure 15).

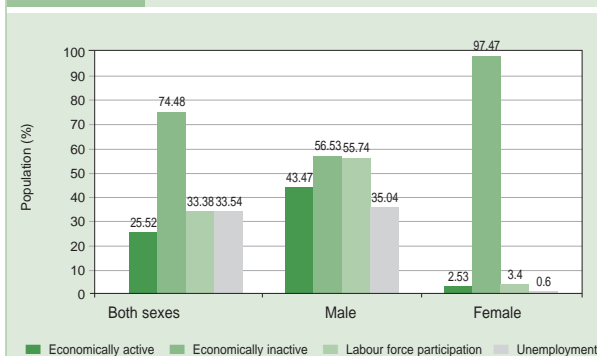
According to provincial figures for 1996–97, labour force participation stood at 24.04% (41.15% male and 5.93% female), and was more or less evenly distributed between urban

FIGURE 13 POPULATION BY ECONOMIC CATEGORY, ABBOTTABAD (1998)



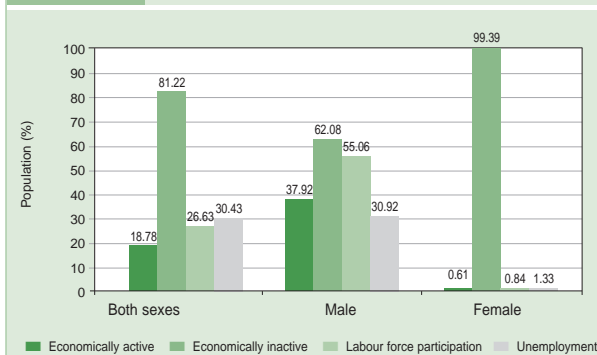
Source: GoP 1999a.

FIGURE 14 URBAN POPULATION BY ECONOMIC CATEGORY, ABBOTTABAD (1998)



Source: GoP 1999a.

FIGURE 15 RURAL POPULATION BY ECONOMIC CATEGORY, ABBOTTABAD (1998)



Source: GoP 1999a.

centres (24.26% total, 43.02% male and 3.70% female) and rural areas (24% total, 40.75% male and 6.38% female). More recent data were not available.

Unemployment in Abbottabad compared to similar districts in the province, as well as the province as a whole, is shown in Figure 16.

FIGURE 16 UNEMPLOYMENT, ABBOTTABAD, NWFP AND SAMPLE DISTRICTS (1998)

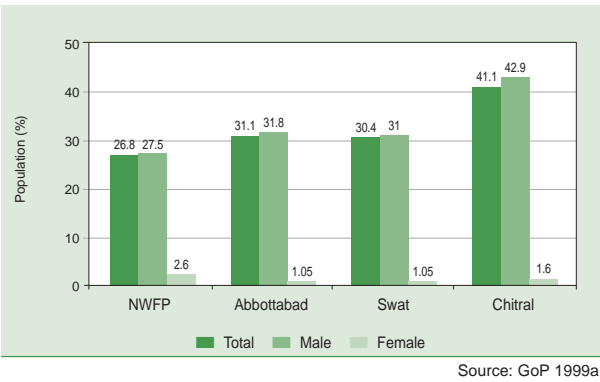


FIGURE 17 EMPLOYMENT STATUS, ABBOTTABAD (1998)

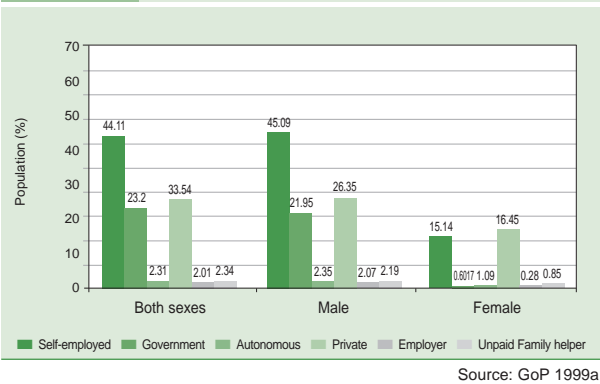
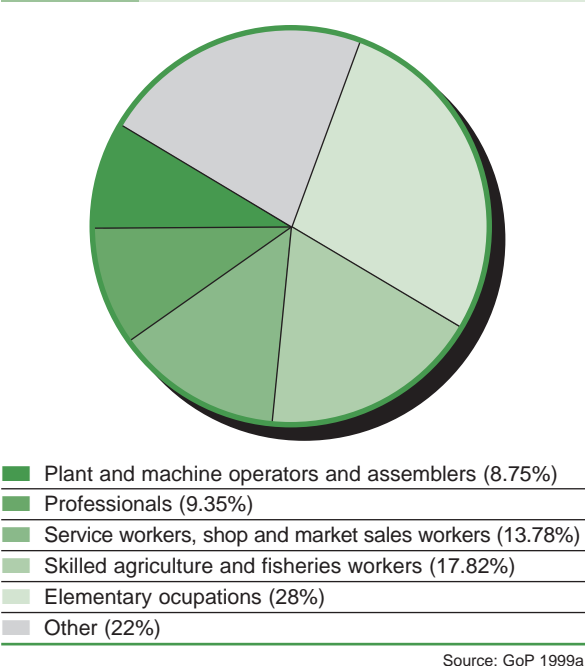


FIGURE 18 EMPLOYMENT BY OCCUPATION, ABBOTTABAD (1998)



According to the 1998 census, unemployment in Abbottabad is roughly the same as in Swat (30.4%) but 5% higher than the provincial average. Male unemployment in Abbottabad lies in the median range while female unemployment is lowest, probably owing to the high percentage of women included in the category of domestic worker. With regard to unemployment in other districts of the province, Abbottabad compares unfavourably with Peshawar (17.8%), but favourably with Battagram and Chitral (approximately 41%). Overall, Abbottabad ranks 17th among 24 settled districts of the province. Trends over the past five years (1995–2000) show little variation in the 31% unemployment rate for the district. The same holds true for the province as a whole, with 27% unemployment during the same period.

When analysed according to population, a little over 44% of Abbottabad’s workers are self-employed while almost 52% of the labour force works in the autonomous, government and private sectors (Figure 17). In addition to the government, which provides 23% of all jobs in the district, 28% of Abbottabad’s workers are involved in ‘elementary’ occupations, 17.8% perform skilled work in the agriculture and fisheries sectors, and only 9.35 % can be categorised as professionals (Figure 18). Employment by occupation in Abbottabad is compared to provincial statistics in Figure 19.

In terms of industries and sectors, 29% of Abbottabad’s working population is engaged in community, social or personal service; 19.14% in agriculture, forestry and fisheries; 17.29% in construction; 14.07% in the retail and wholesale trade, hotels and restaurants; and 9.9% in the transport, storage and communications sectors (Figure 20). The remaining 10.6% works in other industries. Compared to provincial figures for employment in the same sectors, Abbottabad has twice as many workers employed in various services industries (Figure 21). This is partly because of the large defence establishment presence in the district but the tourist trade also exerts its influence on the area’s employment profile. The high construction component, meanwhile, reflects

the pressure of the tourist trade as well as the forces of urbanisation, infrastructure development and population growth. Despite the area's overwhelming dependence on natural resources, less than half of Abbottabad's working population is employed in the agriculture, forestry, fishing and hunting sectors, compared to the province. This indicates the relatively limited potential of agriculture and points once again to the importance of diversifying the district's economy.

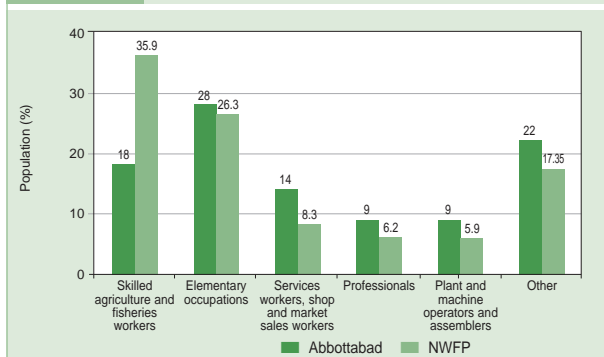
Another area of concern for Abbottabad is the high proportion of poorly skilled workers and the relatively greater number of service workers, probably owing to the seasonal push generated by the tourist transport sector as well as the population's propensity to favour jobs as opposed to trade and commerce.

■ CENSUS CLASSIFICATIONS

Certain discrepancies in the statistics arise as a result of the methodology used by the census (see glossary, particularly in relation to the terms 'unemployment' and 'economically active'). For instance, female unemployment is excessively low because, according to the census, domestic work (70% of which is performed by women) is classified as employment even though this category of work is not taken into account when the economically active population is calculated. Similarly, the labour force participation rate, calculated in the census as the percentage of the population aged 10 years and above that is economically active, ignores the International Labour Organization standard of 15 years and above as a more humane and acceptable cut-off point. Thus, figures for the economically active category and labour force participation rates used in the ASSD will differ from the data provided by the census. This fact needs to be underscored at the stage of planning for poverty alleviation and sustainable development interventions.

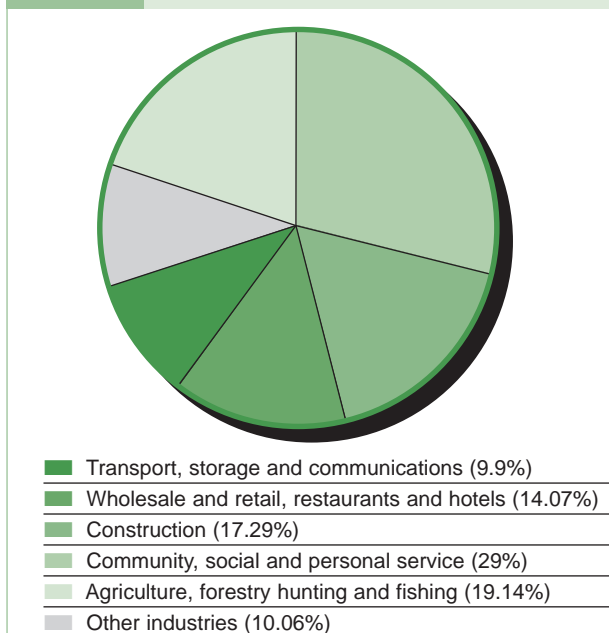
Despite the definitional limitations of terms used by the census bureau, the figures clearly show that unemployment in Abbottabad is high in terms of both total unemployment and male unemployment, and that the district fares only partially

FIGURE 19 EMPLOYMENT BY OCCUPATION, ABBOTTABAD (1998) AND NWFP (1997)



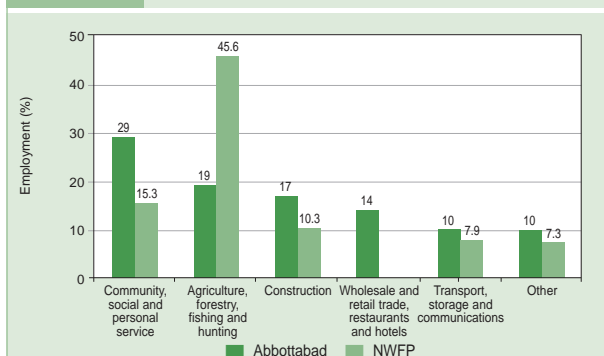
Source: GoP 1999a.

FIGURE 20 EMPLOYMENT BY INDUSTRY, ABBOTTABAD (1998)



Source: GoP 1999a.

FIGURE 21 EMPLOYMENT BY INDUSTRY, ABBOTTABAD (1998) AND NWFP (1997)



Source: GoP 1999a; GoNWFP 1999.

better in the female unemployment category. Other variables, such as underemployment, poverty and wage rates are impossible to assess since the economy of the area is largely undocumented. Nor are such statistics well reported on a national basis.

POVERTY

According to the Government of Pakistan's *Interim-Poverty Reduction Strategy Paper*, poverty is "relatively higher when the heads of the household are unskilled agricultural workers, engaged in services, transport, production and sales occupations" (GoP 2001b: 6). This statement closely mirrors the situation in Abbottabad, based on census data on employment patterns. In addition to census classifications such as these, human development is universally expressed through poverty indicators which are calculated in various ways. One local classification based on housing, called the proximate indicator of poverty, uses two parameters: (i) the proportion of the population living in one-room houses, also known as the congestion ratio; and (ii) the proportion of housing units with unbaked and earthen walls. In the absence of more refined statistics, these indicators are thought to be a reasonable means to assess poverty at the household level, particularly in rural areas (MSU 2000: 6). In districts with hilly or mountainous terrain, where congestion is not necessarily an issue, alternative indicators of poverty need to be used.

In Abbottabad, 27% of the population (29% rural and 20% urban) lives in one-room houses (Table 3). This compares favourably with the

province as a whole, at 28% (29% rural and 23% urban). Compared to other districts in the province, however, Abbottabad ranks 13th, trailing such areas as Karak (12%), Chitral (18%), Peshawar (24%) and Bannu (19%) but ahead of districts such as Kohistan (at 49%), Charsadda (31%) and Mardan (28%).

More than one third (31%) of Abbottabad's residents live in housing units built with unbaked brick or earth (35% rural and 12% urban), slightly lower than the provincial figure of 37% (40% rural and 24% urban). Here, the district ranks 12th, behind areas such as Kohistan (4%), Upper Dir (9%) and Swat (18%) but ahead of districts such as Lakki Marwat (75%), Charsadda (69%), Chitral (63%) and Mardan (48%).

Around 32% of the country's overall population lives below the poverty line (using the Bureau of Statistics average of 2,200 calories daily intake). This figure is higher in rural areas (36.3%) compared to urban centres (22.4%). Meanwhile, the *Interim-Poverty Reduction Strategy Paper* shows that poverty is highest in the NWFP, in both urban and rural areas (GoP 2001b: 6, 8). In other words, 297,000 individuals (34% of the population) in Abbottabad live in poverty. To derive a more detailed picture of the situation, the poverty indicators discussed here should be tied in with health and population indicators.

SOCIETY AND CULTURE

The overwhelming majority of Abbottabad's population (99%) is Muslim and religion exercises a significant influence on daily life.

TABLE 3 INDICES OF CONGESTION, ABBOTTABAD (1998) AND NWFP (1997)

Indicator	Total		Urban		Rural	
	Abbottabad	NWFP	Abbottabad	NWFP	Abbottabad	NWFP
Persons per housing unit	6.4	7.0	6.3	7.1	6.3	6.9
Rooms per housing unit	2.3	1.9	2.2	2.2	2.7	1.9
Persons per room	2.8	3.6	2.9	3.2	2.4	3.6
Housing units with one room	27.4%	49.8%*	28.9%	42.6%	19.8%	51.0%
Housing units with 2–4 rooms	66.4%	46.6%	66.5%	50.8%	67.7%	45.4%
Housing units with 5+ rooms	6.2%	3.6%	4.9%	6.6%	12.5%	3.6%

* The updated figure for the province, given in the 1998 census, is 28% (29% rural and 23% urban).

Source: GoP 1999a; GoNWFP 1999.

The primary language spoken here is Hindko (used by 94% of the rural population and 75% of urban residents) with Punjabi, Pashto and Urdu spoken and understood in urban areas.

Abbottabad's social structure is heavily influenced by tribal affiliations. Most of the district's residents belong to the Abbassi, Dhund, Gujjar, Jadoon, Karlal, Syed or Tanoli tribes.

The Abbassis are for the most part urbane and educated. The traditional leadership of the area, as well as political leaders in modern times, largely belonged to this tribe. The Abbassis' rural residences serve as a base for their political operations, while they maintain a second home in urban areas to manage their business interests. They depend for their income on significant landholdings as well as trade and business activities. With an important presence in the power structure, both at the national and local level, they have a practical orientation characterised by independent thinking, but are not particularly amenable to external influences.

The Awans, originally settlers from the Punjab province, are dispersed across the district. They constitute the poorer segments of Abbottabad's inhabitants.

The Gujjars, with their distinct culture and values, are a significant presence in the district. They play a key role in the economic life of the district, especially in the pockets they occupy around Abbottabad city.

The urbanised Jadoons are a socially and politically influential tribe with an important role in trading activities. The influence of tribal norms is prevalent among the Jadoons, who maintain a *hujra* (sitting place where residents of a locality may meet to discuss important matters) and continue to settle disputes through the *jirga* (traditional tribal council). Jadoons usually prefer to reside in their own *mohallahs* (residential localities).

The Karlals, originally Kashmiris, reside in the hilly parts of Haripur and most of the Galliyat

area. They account for around 30% of the district's population and are thought to be the original inhabitants of the area. Although less exposed to modern life, the Karlals are moderate and open to new ideas. Their overwhelming dependence on natural resources makes them key players in conservation.

The Swatis migrated to the area from the upper Swat valley. This Pashto-speaking tribe has a strong financial presence in the district.

The tribal and cultural practices of the Tanolis closely resemble those of the Pathans. Tanoli homes are distinct and the joint family system is prevalent. Essentially dependent on farming and livestock, they are similar to the Swatis who settled in the Hazara area centuries ago.

Interestingly, the natural division of the district into three agro-ecological zones coincides with tribal influences in the area:

- i. the Tanawal–Sherwan belt is dominated by the Tanolis;
- ii. the Galliyat areas are dominated by the Karlals and Abbassis; and
- iii. the plains are occupied by the Awans, Jadoons and Syeds. Political control is exercised by the plains, largely through the Jadoons and Abbassis.

It is important that these differences in cultural norms and traditions, as well as social roles, are kept in mind when planning interventions, since the cooperation and commitment of local communities is a prerequisite for meaningful and sustainable development to occur. The people's openness to new ideas will depend in large part on their tribal customs and affiliations.

ADMINISTRATIVE AND INSTITUTIONAL ARRANGEMENTS

The decentralisation of lower-tier governance, a process set in motion following the promulgation of the NWFP Local Government Ordinance 2001, has created new administrative struc-

tures in the province (Figure 22). At the district level, a three-tier local government system has been put in place, consisting of the following levels:

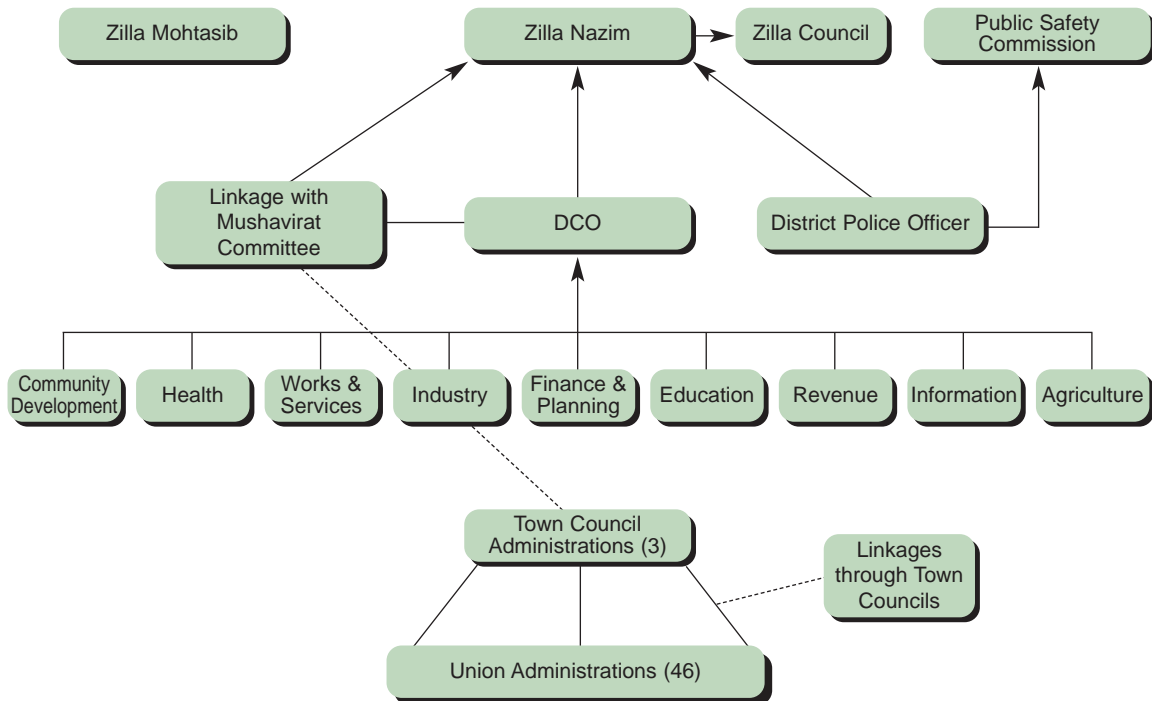
- i. district government,
- ii. town municipal administration (TMA), and
- iii. union administration.

The district government consists of an indirectly-elected nazim and the civil administration, the latter headed by a district coordination officer with charge over various groups of offices. Each group, led by an executive district officer, consists of several related offices, each of which is in turn headed by a district officer. These grouped offices are as follows:

- i. district coordination: coordination, human resource management and civil defence;
- ii. agriculture: agriculture (extension), livestock, on-farm water management, soil conservation, soil fertility, fisheries and forests;

- iii. community development: community organisation, labour, social welfare, sports and culture, cooperatives, and office for the registration of civil society organisations;
- iv. education: schools, technical education, colleges (other than professional colleges), sports education and special education;
- v. finance and planning: finance and budget, planning and development, accounts, enterprise, and investment promotion;
- vi. health: public health, basic and rural health, child and women’s health, population welfare, and district and tehsil headquarters hospitals;
- vii. literacy: literacy campaigns, continuing education and vocational education;
- viii. revenue: land revenue and estates, excise and taxation; and
- ix. works and services: spatial planning and development, district roads and buildings, energy, and transport.

FIGURE 22 STRUCTURE OF LOCAL GOVERNMENT IN ABBOTTABAD



Source: GoP 1999a.

The district government answers to an elected zilla council, which has budget approval and supervisory authority.

At the second tier of local government, the TMA is headed by an indirectly-elected town nazim, while a town municipal officer supervises each of the three town councils. The TMA includes the following functionaries:

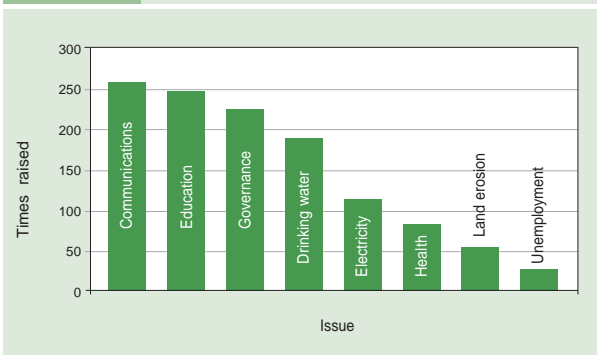
- i. tehsil officer (municipal regulations): responsible for business licenses; the management of municipal land, estates, property, facilities, business and commercial enterprise; and the enforcement of municipal laws, rules and by-laws;
- ii. tehsil officer (infrastructure and services): responsible for water, drainage, sewerage and sanitation; roads (other than provincial and district roads), streets and street lighting; fire-fighting; and park services;
- iii. tehsil officer (planning): responsible for spatial planning and land use control; building control; and the coordination of development plans and projects with union administrations, village councils and other local governments; and
- iv. tehsil officer (finance): responsible for budgeting, revenues and accounts.

Prioritising Issues

In developing district-level strategies, the operative principle is that decisions must be taken at the grassroots level in consultation with stakeholders. This is the only way to achieve the multi-faceted objectives of the new development paradigm where sustainable development and poverty alleviation are pursued in tandem with natural resource conservation and environmental protection. As part of this wider strategy, IUCN-The World Conservation Union established a Support Unit in Abbottabad to liaise with the district administration in setting the stage for the preparation of the ASSD.

STRATEGY FORMULATION PROCESS

The *Sarhad Provincial Conservation Strategy* (SPCS) views public consultations as an integral part of the strategy formulation process. Seeking local opinion regarding sustainable development issues at the district level is an important first step. While ensuring the participation of stakeholders at the grassroots level, this also promotes ownership and commitment among communities.

FIGURE 23 FREQUENCY OF ISSUES RAISED IN PUBLIC CONSULTATIONS

Source: IUCN-ACS Support Unit 2000.

The ASSD formulation process was launched in Abbottabad in September 1997. At that stage, meetings and discussions were held with civil society representatives and government partners to introduce and explain the concept of lower-tier strategy formulation, as envisaged in the SPCS. Following these exploratory and introductory contacts, members for a Roundtable and Steering Committee were identified with the support of the district administration. In early 1998, the 73-member Roundtable and 12-member Steering Committee were officially notified by the deputy commissioner's office. Cross-sectoral representation was ensured in both these bodies, which were expected to serve as forums that would provide a platform for local opinion, and act as a think tank to provide input and guidance.

The first two meetings of the Steering Committee in January and February 1998 identified a number of issues perceived as central to attaining sustainable development in the district. Broadly categorised, key issues identified in these early consultations are as follows:

Rural Areas

- Roads and communications networks,
- Drinking water and health,
- Deforestation and land erosion, and
- Education.

Urban Areas

- Sanitation and drainage,
- Solid waste disposal, and
- Air pollution.

These issues were put before the Roundtable in April–May 1998 to seek comprehensive input from a wider spectrum of civil society representatives and to set the stage for public consultations.

PUBLIC CONSULTATIONS

The ASSD consultation process, spearheaded by the Support Unit, covered all 57 pre-devolution union councils and included separate meetings for the two town committees as well as for Abbottabad city. In all, 60 meetings attended by 2,744 participants were held between June 1998 and June 1999. Neutral locations (mosques, government buildings) were selected for these consultations and Roundtable members played a key role in ensuring attendance. Issues were identified by means of a dialogue and prioritised through a show of hands, often preceded by animated discussion.

During public consultations, eight sectors were identified and prioritised according to the number of times an issue was raised (Figure 23). Following these consultations, the Support Unit prepared a public consultation report (IUCN-ACS Support Unit 2000) which in turn led to the synthesis of 17 priority areas. Subsequently, experts were commissioned to prepare individual sector papers for each area. These papers were peer reviewed and evaluated by stakeholders.

ADDITIONAL CONSULTATIONS: IMPERATIVES OF DEVOLUTION

The ASSD process was launched at a unique moment in the nation's history. As the document was being synthesised, new district governments were installed and began functioning across the country. In Abbottabad, lower-tier governance was reshaped under the NWFP Local Government Ordinance 2001. To ensure that the ASSD remained relevant to the needs and aspirations of new and emerging stakeholders, an additional round of meetings was held with the following officials and community representatives in Abbottabad:

- district nazim and naib nazim;

- district coordination officer and executive district officers for various areas including finance and planning, agriculture, education, health, community development, and works and services;
- key union council nazims; and
- key stakeholders, including personnel from the agricultural extension department, GDA, NRCP and SRSP; and representatives from the financial, commercial and non-governmental sectors.

Selected Roundtable members were also consulted to chalk out the future of the forum in the new set-up. Further synthesis, analysis and discussions with stakeholders brought to the fore the following sectors in order of priority:

- i. infrastructure, roads and communications;
- ii. education;
- iii. drinking water;
- iv. energy;
- v. health and population;
- vi. agriculture and horticulture;
- vii. livestock and poultry;
- viii. forests and watersheds;
- ix. biodiversity, parks and protected areas;
- x. grazing lands and fodder reserves;
- xi. waste water and solid waste management;
- xii. enterprise development;
- xiii. gender;
- xiv. ecotourism;
- xv. culture;
- xvi. mining; and
- xvii. fisheries.

PART



Green Sectors

Agriculture and Horticulture

Abbottabad's economy depends heavily on natural resources and subsistence agriculture is a predominant feature of this dependence. At the same time, only a relatively small percentage of land in the district is under cultivation. Despite the importance of agriculture and the scarcity of arable land, the public sector has made no arrangements for irrigation. Consequently, cultivable land is at a premium across the district, with land use intensity at 83.5% and cropping intensity at 61.6% (Table 4).

The cool, temperate climate is ideally suited to fruit production as well as floriculture. From an area of 674 ha allocated to horticulture, the district produces 5,537 t of fruit. Of this quantity, 4,575 t (nearly 83%) of the crop consists of apples which are grown on 560 ha. Other fruit and nut crops cultivated in Abbottabad include apricot, fig, pear, persimmon, plum and walnut. The district is also rich in medicinal herbs, with 43 varieties found in the area.

ON-GROUND STATUS

Of the district's total reported area of 178,000 ha, little more than 63,000 ha (35%) is under cultivation. The majority of this land (56,000 ha or 89%) is under dry farm cultivation, relying entirely on rain. Only 7,000 ha (11%) of farmland is irrigated, all of it through the efforts of non-government actors. As a result of the area's overwhelming dependence on rain and the relatively small size of average landholdings, the district's agriculture indicators are discouraging.

■ FOOD OUTPUT AND CONSUMPTION

Food output in recent years has been inconsistent. In 1999–2000, some 26,000 t of wheat was grown in the district while consumption stood at roughly 79,848 t, leading to a deficit of 53,848 t. Wheat output was even lower the previous year, at 24,113 t, though yields in 1997–98 were higher, at 31,943 t. Overall production fell 19% between 1997 and 2000. This decline may be attributed at least in part to the erratic allocation of land for wheat cultivation, which dropped from

22,575 ha in 1997–98 to 18,535 ha in 1999–2000. Variation in the area under cultivation as well as declining yields need to be investigated further.

Despite these fluctuations, per-hectare wheat yields in Abbottabad grew 12% in the period 1996–2000, down 1% in 2000 from the peak yield in 1997–98 (Figure 24). The provincial yield rose only 5% during the same period, down 11% in 2000 from the peak yield in 1997–98. Chitral's yield increased by 2.7% in the same period, while Swat registered a 0.7% fall.

Maize is a local staple and yields for 1999–2000 stood at 46,725 t. Consumption during the same period was significantly higher at 74,906 t, resulting in a deficit of 28,181 t. Output declined by 9% during 1998–99. Even so, yields have shown an overall increase while the area under maize remains more or less unchanged (falling slightly from 35,198 ha to 34,807 ha). Maize yields in Abbottabad rose 20% between 1996 and 2000, with the harvest for the last year setting a new record (Figure 25). The provincial average fell 22% during the same period, with peak yields seen in 1996–97. Chitral's yields increased by 2.7% in the same period, with Swat registering a 19.2% rise in production. As with wheat, trends in maize outputs in the district need to be examined further.

Rice yields in Abbottabad fell 27% between 1996 and 2000, down a significant 28% in 2000 from the peak yield of the previous year (Figure 26). Provincial figures also fell during the same period but only by 4%, although rice output in the province was down 6.4% in 2000 from the peak yield the previous year. Chitral's rice production grew by 11% in the same period, with Swat registering a 5% increase.

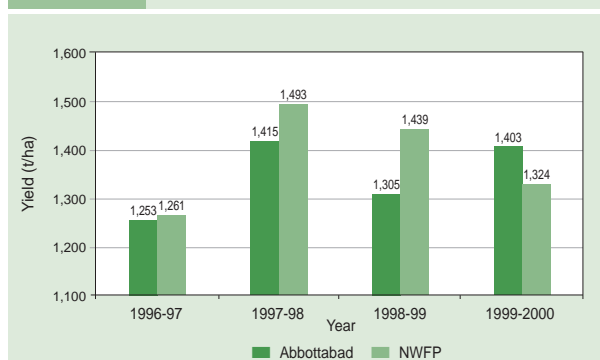
Considering that Abbottabad is a net importer of cereals, storage facilities in the district are far from satisfactory, with 1998–99 capacity at 21,000 t. This capacity has remained unchanged over the last three years, while more than 60,000 t of maize and wheat was imported during the same period.

TABLE 4 INTENSITY OF LAND USE, ABBOTTABAD AND NWFP (1999–2000)

Land use	Abbottabad (ha)	NWFP (ha)
Cultivated area	63,424	1,659,225
Cropped area	55,990	1,763,526
Culturable waste	12,534	1,033,742
Culturable area	75,958	2,692,967
Intensity of land use	83.5%	88.28%
Intensity of cropping	61.6%	106.44%

Source: GoNWFP 2001a.

FIGURE 24 WHEAT YIELDS, ABBOTTABAD AND NWFP (1996–2000)



Source: GoNWFP 2001b.

Besides apples and potatoes, few other fruit and vegetable varieties are grown in the district. In the case of potatoes, only relatively recent statistics are available for Abbottabad. These show that in 1999–2000, yields fell 9% below the provincial yield, which has grown 8.5% in the period 1996–2000. Cash crops such as sugar cane and tobacco are not cultivated in the district.

Despite the odds, the district has shown positive growth in maize and wheat production, enabling it to beat the provincial average. However, total output is marred by water shortages and erratic land allocation, and Abbottabad is expected to remain dependent on imports to meet its burgeoning needs for staple cereals in the near future.

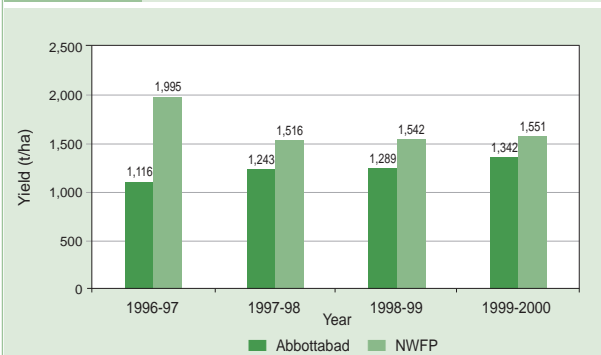
In this context, one area of strategic interest is the trade-off between food security and optimising returns from natural resources by diversifying agricultural production. A balance will need to be found between promoting staple crops and encouraging alternative activities such as off-season vegetable cultivation, horticulture, floriculture, rangeland development and dairy production. Trade-offs of this kind play a key role in planning for sustainable development. At the same time, innovative means will need to be devised to utilise the district's natural resources more efficiently.

■ PER-HECTARE YIELDS

The district fares poorly in terms of per-hectare yields as well as overall production (Figure 27). At 1,342 kg/ha, Abbottabad's maize output lags behind both the provincial average of 1,551 kg/ha, and average yields in areas such as Chitral (2,790 kg/ha) and Swat (1,548 kg/ha). In fact, Abbottabad's maize yield ranks 17th among the 24 settled districts of the province.

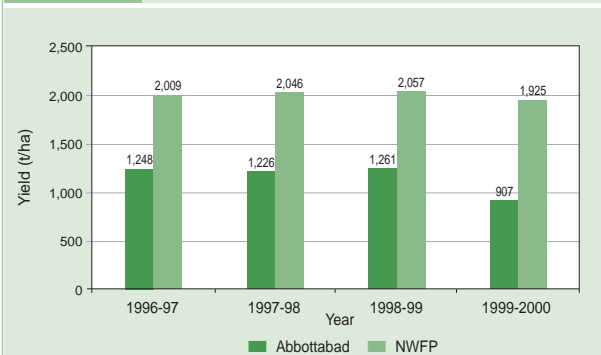
For wheat, Abbottabad's 1,304 kg/ha exceeds both the provincial average (1,304 kg/ha) and yields in Swat (1,161 kg/ha), but lags behind Chitral (1,898 kg/ha). Overall, Abbottabad ranks 10th out of 24 settled districts for wheat. Here, however, the output-to-consumption ratio is the more pressing concern, particularly if food security is to be ensured.

FIGURE 25 MAIZE YIELDS, ABBOTTABAD AND NWFP (1996–2000)



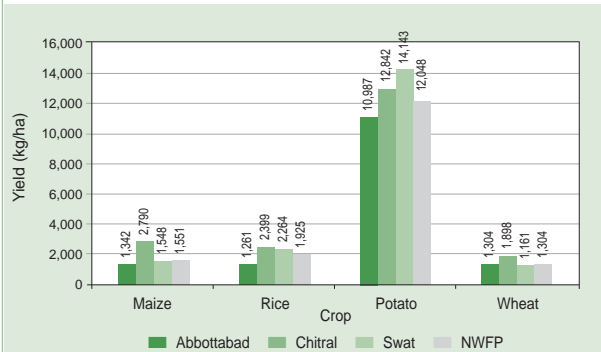
Source: GoNWFP 2001b.

FIGURE 26 RICE YIELDS, ABBOTTABAD AND NWFP (1996–2000)



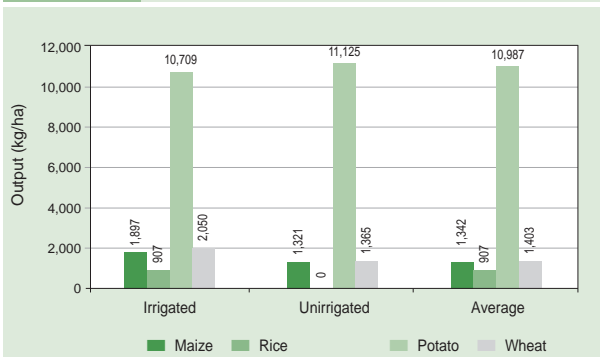
Source: GoNWFP 2001b.

FIGURE 27 MAJOR CROPS, ABBOTTABAD, NWFP AND SAMPLE DISTRICTS (1999–2000)



Source: GoNWFP 2001a.

Rice yields at 1,261 kg/ha are lower than the provincial average (1,925 kg/ha) and also trail districts such as Chitral (2,399 kg/ha) and Swat (2,264 kg/ha), ranking last among the 23 settled districts where rice is grown. The heavy water requirement for rice production is a critical factor that restricts output and yields for this crop in Abbottabad.

FIGURE 28 IRRIGATED AND UNIRRIGATED LAND, ABBOTTABAD (1999–2000)

Source: GoNWFP 2001a.

TABLE 5 MAJOR AGRICULTURAL OUTPUT, ABBOTTABAD (1999–2000)

Crop	Area (ha)	Output (t)
Maize	35,198	46,728
Potato (all seasons)	743	26,000
Wheat	18,487	24,113
Barley	124	109
Rice	43	39
Rape and mustard	47	33
Soybean	19	19

Source: GoNWFP 2001a.

Even with its major vegetable crop, potato, the district's yield of 10,987 kg/ha lags behind the province (12,048 kg/ha) as well as Swat (14,143 kg/ha) and Chitral (12,842 kg/ha). Overall, Abbottabad ranks 9th out of 17 settled districts growing potatoes in the province.

■ IMPACT OF RAIN DEPENDENCE

A significant factor contributing to low yields in the district is the absence of a widespread network of irrigation. Except for the anomalous situation in the case of potatoes, the per-hectare yield for irrigated land is significantly higher than that for un-irrigated land (Figure 28). Water inevitably emerges as a key issue in the context of future development of the agriculture sector.

■ AREA AND OUTPUT

Approximately 84% of the district's cultivated area is used to grow wheat and maize (Table 5). Land under wheat cultivation declined by 18% in the period 1997–2000. Although the area under maize fell slightly, yields nevertheless showed an increase of 5%.

MAJOR INITIATIVES AND LESSONS LEARNT

■ AGRICULTURAL EXTENSION DEPARTMENT

Originally mandated to provide services to all components of the green sector, the agricultural extension department's work is now confined to educating the farming community. In this connection, it has established demonstration plots and organised training programmes for growers. It arranges field days, where demonstrations are conducted for the benefit of various communities, and monitors the quality of pesticides and fertilisers. With the recent transfer of horticulture and vegetable-related responsibilities from the now-defunct Fruit and Vegetable Development Board, the department's role has been enhanced.

In the past, the department has not focused on agricultural production. As a result, fundamental inputs such as seed and fertiliser have been handled by non-technical, commercial players motivated by profit alone. It goes without saying that this has gone against the interests of local farmers. The department's integrated presence remains the critical need of the hour.

Failing to adopt a participatory approach involving local communities, the department's demonstration and seed multiplication exercises have been marred by nepotism, with the result that its efforts were for the most part confined to doling out favours to influential members of society and their relatives. There is urgent need for transparency in the functioning of the department. Objective criteria for pursuing interventions need to be developed and community involvement must be fostered.

Low literacy within the farming community has hindered the adoption of new technologies. The department needs to address this problem, designing interventions based on what beneficiaries are able to understand, afford, appreciate and eventually adopt.

Between 1970 and 1990, various offshoots of agricultural extension were established. Promi-

ment among these were the now-defunct Fruit and Vegetable Development Board, Agriculture Development Authority and agriculture engineering department, as well as the BADP, soil conservation department and on-farm water management department. The soil conservation and on-farm water management departments continue to operate at the district level. No mechanism has been developed to coordinate their operations, with the result that these entities often work at cross-purposes. As such, it is no surprise that their cumulative impact on the development of the sector has been minimal.

Meanwhile, controlling the adulteration of fertilisers and pesticides is difficult in the face of

Bank (ADB) and implemented by the provincial government's planning and development department. BADP initiatives fall into two categories: (i) agricultural extension and (ii) horticultural extension.

Under agriculture extension programmes, the BADP has set up demonstration plots to instruct farmers in the use of quality cereal and oil seed cultivars. Similarly, seed multiplication plots for maize and wheat have been planted to demonstrate seed production techniques. Between 1993 and 2000, some 5,198 such plots were sown for various crops. In addition to demonstration plots, farmers have received training in grain storage and organic waste management, with agricultural extension workers providing crop management training. Field days and refresher courses have been held as well. In all, 115 days were allocated to these activities in the period 1993–2000. The BADP has constructed sheds for farm machinery, purchased tractors and assisted farmers in hiring farm implements at subsidised rates.

One area of strategic interest is the trade-off between ensuring food security and optimising returns by diversifying agricultural production. A balance will need to be found between promoting staple crops and encouraging alternative activities such as off-season vegetable cultivation.

resource constraints, the lack of proper laboratories to analyse samples, delays in reporting and a cumbersome prosecution process. Legislation is also an issue, and it is imperative that fertiliser and pesticide laws are amended.

Poor penetration in rural areas, the shortage of financial and technical resources, and the low level of expertise and motivation of personnel suggest that major capacity-building efforts will be required to improve the effectiveness of the department.

■ **BARANI AREA DEVELOPMENT PROJECT**

Launched in 1993 to help improve the economic, social and nutritional status of the people in *barani* areas of the district, the BADP is funded by the Asian Development

In the case of horticulture extension, the BADP has established a deciduous fruit nursery farm in the village of Mangal and laid out 40 small demonstration orchards in farmers' fields. Under its vegetable demonstration programme, the Galliyat area was selected for growing off-season vegetables and seven field assistants were hired to provide additional support to the agriculture department. Fruit and vegetable processing also receives attention. Women have been involved in kitchen gardening while village agricultural extension workers are trained in fruit orchard planting and maintenance, nursery management, and vegetable production.

The BADP's long-term success has been marred by the absence of village-level

integrated planning and implementation by line agencies. In addition, patchy and ad hoc attempts to achieve targets resulted in scattered and thinly-spread activities leading to few tangible benefits. The stress has been on process and attaining quantitative targets rather than pursuing fundamental improvements.

Poor participatory practices and the lack of follow-up have meant that no meaningful changes have been achieved. Most demonstration orchards, for instance, have withered away. Without concerted efforts to ensure community involvement, farmers' motivation has waned.

Consisting of a significant subsidy component for growers, including the provision of fertiliser and seeds, the delivery of BADP packages has been subject to political pressures and nepotism. Benefits have been transferred on the basis of influence rather than development priorities or the needs of a particular area or community.

Centrally determined targets have proved to be unrealistic, focusing on numbers rather than long-term development considerations. Thus, while data reveals 100% target achievement, the real impact on the lives of local communities does not bear this out, undermining community trust and commitment to the effort.

Characterised by the absence of both monitoring and evaluation mechanisms, the project has been stymied by the absence of follow-up and feedback—processes which, if implemented, could have ensured a more lasting contribution to improving the lives of target communities.

■ NATURAL RESOURCE CONSERVATION PROJECT

One of three sub-projects of the Environmental Rehabilitation in NWFP and Punjab project, the NRCP is a tripartite arrangement funded by the European Union and implemented by the forest department and IUCN Pakistan. The NRCP employs a participatory, integrated and multi-sectoral approach, working through CBOs. In the agriculture sector, the NRCP

operates through agriculture extension workers and has been active in the following areas: (i) trials for fruits and green fodder varieties, (ii) demonstration plots for cereals and vegetables, (iii) model fruit orchards, (iv) access to improved seeds and plants, (v) kitchen gardening, and (vi) nurseries.

Initiated in 1997 and concluded in December 2003, the NRCP successfully formed some 200 community organisations, provided training and extension inputs to 1,032 community members and 130 staff, and arranged field visits for them all. This approach, combined with participatory planning at the village level, is a source of optimism regarding the continuity and long-term impact of the project's activities.

While its integrated approach and participatory orientation are laudable, the NRCP needs to address more specific matters such as fodder needs, evaluating block plantation and mitigating damage to young fruit plantation caused by summer grasses. Similarly, chronic water shortages in the Galliyat area have undermined the NRCP's efforts to promote fruit cultivation. A key lesson learned from the NRCP experience is the importance of a broader perspective, with the flexibility to address localised problems quickly, and the need for greater integration across sectors.

■ POTATO RESEARCH CENTRE

Established by the provincial government in 1991 with assistance from the Federal Republic of Germany, the PRC is mandated to produce quality potato seeds, improve production technology and introduce suitable varieties to develop a cropping system based on potatoes. The PRC operates a five-acre farm in Abbottabad, equipped with facilities such as tissue culture laboratories and greenhouses. It also carries out germplasm screening and runs a 32 ha potato seed multiplication plant at Batakundi (Mansehra district), where quality potato seeds raised at the PRC are propagated. In the period 1996–2000, the PRC distributed 367 t of potato seed to the farming community.

The absence of a regulated market system inhibits the PRC's potential contribution. The relatively high price of the Batakhundi seed variety introduced by the PRC has restricted its wholesale adoption. In light of the limited economic capacity of the target community, a cost-benefit analysis might help in determining the need for subsidies, and should have been built into the institution's original framework.

The PRC has failed to coordinate its efforts with other players in the sector, inhibiting its own growth as well as overall development in the sector. Another constraint to expansion is its failure to persuade potato growers to adopt

its present tunnel vision and utilise existing expertise optimally.

■ PROJECT FOR HORTICULTURAL PROMOTION

Supported by the Swiss Agency for Development and Cooperation (SDC) and implemented by the provincial agriculture department, the activities of the PHP fall into three major categories: (i) training in orchard management, (ii) integrated marketing services and (iii) integrated crop management. Phase 7 of the programme was launched in Abbottabad in July 2000 and concluded in June 2003.



Techniques such as crop rotation and mixed plantation can help ensure disease-free agricultural production.

scientific crop rotation techniques. This is a major hurdle in the evolution of a disease-free production system and negates the very purpose of setting up the institution.

The PRC's mandate should be evaluated for extension to other horticultural crops, to remedy

Under the PHP, a dedicated fund has been set up to support local-level research and development initiatives in the horticulture sector, with cross-functional, broad-based representation of stakeholders. Project finance decisions are taken at the district level, with effective monitoring through the Regional Management Group

(eastern zone). The transparency of this system is encouraging and could serve as a model for other initiatives launched in the future.

The PHP needs to broaden its focus, tapping the potential of apple and vegetable seed cultivation, utilising available water resources, and helping to create a regulated marketing system. Its integrated marketing services and integrated crop management activities need to be devolved to the district level to allow for more realistic planning.

■ SARHAD RURAL SUPPORT PROGRAMME

The SRSP started work in the district in 1997 following the award of a BADP social mobilisation contract. The SRSP identifies activities, priorities, opportunities and needs by undertaking feasibility studies; facilitates, coordinates and funds community uplift programmes; and

establishes linkages. With a presence in 38 of the district's 46 union councils, and fully covering 14 union councils, the SRSP's activities in agriculture and horticulture include: (i) using officers of the agricultural extension department as the focal point to ensure sectoral and cross-sectoral linkages between various actors and entities; (ii) coordinating with the PHP on a district-wide basis in orchard management, vegetable propagation (especially off-season vegetables) and the establishment of farmers' field schools in various localities through community participation, as part of a PHP integrated crop management initiative in partnership with the SDC-funded Cabi Bioscience Centre, Rawalpindi, providing solutions related to biological pest control; and (iii) coordinating with the PHP in Sajikot to rehabilitate existing orchards and establish new plantations.

The SRSP needs to improve coordination with the agricultural extension department,



Agricultural land is at a premium across Abbottabad, where only a small fraction of farmland is under irrigation.

particularly in order to disseminate relevant technologies. Seeking increased involvement of women in kitchen gardening practices will help make a positive contribution to the SRSP's major area of interest, which is poverty alleviation. Credit extension for agricultural and horticultural activities remains a weak area.

■ SUNGI DEVELOPMENT FOUNDATION

The agriculture-related initiatives of SUNGI's natural resource management programme concentrate on building the capacity of local farmers by investing in improved agricultural practices as well as by promoting innovative income-generating activities. SUNGI is involved in seed distribution, establishing demonstration plots and training farmers. It has formed the Kissan Awami Council (farmers people's council), an institutional forum for small farmers, and conducts seminars and workshops aimed at promoting the sustainable development of agriculture.

SUNGI's agriculture-based initiatives form a relatively small component of its natural resource management activities in the district. While it has been relatively successful in mobilising and galvanising local communities, it is equally important for SUNGI to pursue the establishment of improved coordination mechanisms in which key decisions are made in a participatory manner, with the involvement of stakeholders as well as governmental functionaries.

■ ZARAI TARAQIATI BANK LIMITED

Formerly known as the Agriculture Development Bank of Pakistan and renamed in 2003, the Zarai Taraqati Bank Limited (ZTBL) is the primary source of credit for agricultural and horticultural activities in the district. Its performance in the field, however, is dismal. In the period 2000–01, the ZTBL's target for lending in the sector was Rs 24.4 million, of which only Rs 2.621 million (11%) was actually achieved.

For the year 2000–01, the loan disbursement achievement of the ZTBL stood at 63%. It is thought that procedural hindrances, the cumbersome passbook system and a basic absence of interaction with end users (farming communities and credit facilitators) are responsible for the ZTBL's dismal performance.

Certain key areas need to be addressed, not just by the ZTBL but other lending agencies as well. General inter-sectoral data and impact assessment information should be made available to improve credit extension. Isolated interventions to pursue individual targets need to be replaced by a more business-like approach. Credit extension procedures must be simplified and resources should be directed towards viable income-generating activities as well as the expansion of water resources.

F

orests and Watersheds

Abbottabad district covers just 1.8% of the total land area of the NWFP but accounts for 5.4% of the province's forest resources (KfW 2000). Official statistics for forest cover in the district are at variance with estimates provided by other agencies. According to an inventory carried out by KfW, Abbottabad's forests cover 36,394.6 ha, amounting to 21.4% of the district's total area, while official figures show the district's forested area to be slightly higher, at 36,441 ha. The analysis below relies on official estimates.

ON-GROUND STATUS

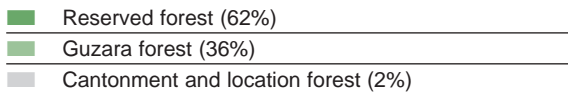
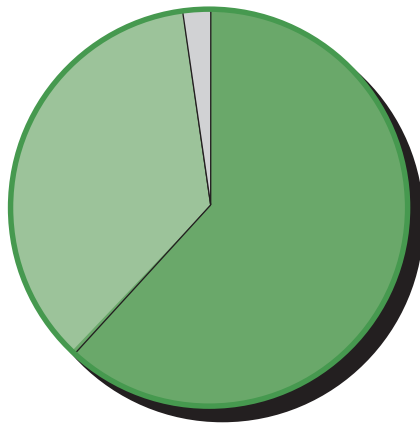
■ FOREST MANAGEMENT AND OWNERSHIP: HISTORICAL CONTEXT

The history of forest management in the Hazara area dates back to 1851, when Lord Dalhousie, Governor General of colonial India from 1848 to 1856, created a new category of 'reserved' forest, marking the first time that any special type of forest area was designated in the region. *Guzara* forests were demarcated in 1873 while cantonment and

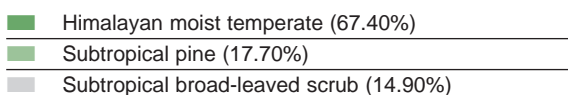
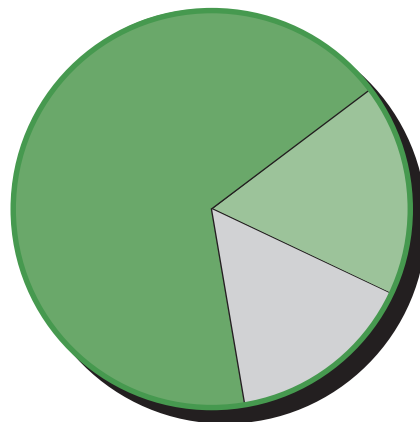
TABLE 6 FOREST AREA, ABBOTTABAD

Category	Net Forest Area (ha)	Blank (ha)	Total (ha)
Gallies Reserved Forests	12,598	2,960	15,558
Haripur Reserved Forests	3,821	31	3,852
Gallies Guzara Forests	6,038	2,187	8,225
Haripur Guzara Forests	2,577	383	2,960
Cantonment and Location Forests	670	138	808
Total	25,704	5,699	31,403

Source: Hussain, sector paper, 'Forests and Watersheds'.

FIGURE 29 FOREST TYPE BY ADMINISTRATIVE CATEGORY, ABBOTTABAD

Source: Hussain, sector paper, 'Forests and Watersheds'.

FIGURE 30 FOREST TYPE, ABBOTTABAD

Source: Hussain, sector paper, 'Forests and Watersheds'.

location forests were first carved out of *guzara* forests towards the end of the nineteenth century. Thereafter, working plans were used to make alterations to the management of various forest types.

Although responsibility for many other sectors has been devolved to the district level, forest management continues to lie within the jurisdiction of the provincial government. Currently, 15,558 ha of reserved forest, 8,225 ha of *guzara* forest and 808 ha of cantonment and location forest are managed by the Gallies Forest Division through five ranges: Abbottabad, Bagnetar, Birangali, Dongagali and Thandiani (Table 6). In addition to these areas, the divisional forest officer of Haripur manages 3,852 ha of reserved forest and 2,960 ha of *guzara* forests through the Makhnial and Satara ranges.

Besides 25,704 ha of forest land spread over 31,403 ha of designated forest, another 10,737 ha of forest covers the district, including non-designated private forests (*mazrooa*) and established watershed plantations. Figure 29 shows the division of forests into major administrative types. Reserved forests cover the greatest area (62%), followed by *guzara* forests (36%), and cantonment and location forests (2%).

■ FOREST TYPES

Forests in the district consist of three major forest types (Figure 30):

- i. Himalayan moist temperate forest. This category accounts for the majority (67.4%) of Abbottabad's forests and consists of the following sub-types:
 - a. Pure blue pine (*Pinus wallichiana*), known locally as *kail*, occupies by far the largest area in this category, covering 12,000 ha (38.8% of designated forest). It accounts for over 50% of reserved forests and 30% of *guzara* forests in the district.
 - b. Pure silver fir (*Abies pindrow*, also known as *Abies wabiana*) occupies 2,500 ha, comprising 8.6% of the district's total forest cover, mostly occurring at around 2,600 m. While pure blue pine forests are fairly well stocked and regenerating ade-

quately, silver fir regeneration is deficient, particularly in pure patches.

c. Mixed coniferous forests containing blue pine and fir as well as deodar (*Cedrus deodara*) and spruce (*Picea smithiana*).

d. Mixed broad-leaved forests occur in greater proportion in the Gallies reserved forests, serving as a source of firewood for both Abbottabad and Murree. Excessive lopping and cutting for fuel has drastically reduced its size.

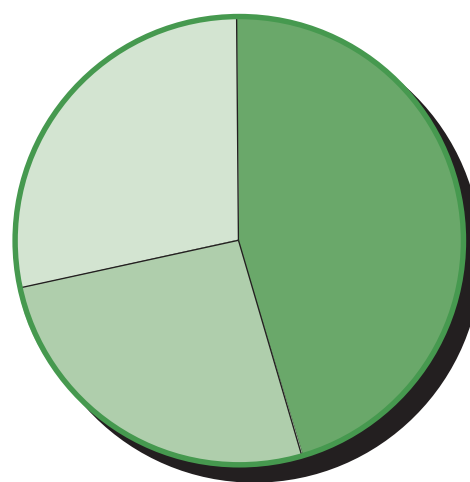
- ii. Subtropical pine forest. Pine is spread over 5,540 ha (17.7% of total forest cover) and occurs at 1,060–1,670 m. The main bulk of *chir* pine (*Pinus roxburghii*) forests are reported in Lower Tanawal, Makhnial and Satura. The crop is stunted, open and patchy, with no sizeable continuous block reported. The Tarbela-Mangla Watershed Management Project has provided a boost to plantation.
- iii. Subtropical broad-leaved scrub forest. Scrub covers an area of 4,690 ha (constituting 14.9% of the district's forests) and mainly occurs at elevations below 1,060 m. This forest type is extremely degraded, open, patchy and exposed to heavy pressure from fodder and firewood collection as well as browsing. Wood from these forests is also taken to make agricultural implements.

STOCKING AND COMPOSITION

Overall forest density in the district is shown in Figure 31, while forest stocks in various density classes are shown in Table 7. Average forest stocks in Abbottabad stand at 223m³/ha. An increment of 192,905 m³ is reported, 83% in the shape of round wood and 17% as branch wood (KfW 2000).

Forest composition by species is shown in Table 8, based on a study of 30 plots. *Kail* is the dominant species (at 71%), followed by fir (19%) and *chir* (10%). Fir is the second most common species (41%), followed by other broad-leaved varieties.

FIGURE 31 FOREST DENSITY, ABBOTTABAD



10–26% density	(45%)
26–50% density	(26%)
>50% density	(29%)

Source: KfW 2000.

TABLE 7 FOREST STOCKS BY DENSITY CLASS, ABBOTTABAD

Type	Density (m ³)			Total
	10–25 %	26–50%	51–100%	
Below 2,000 m	1,030,957	1,203,730	1,012,902	3,247,589
Above 2,000 m	376,751	1,222,477	3,599,333	5,198,561
Total	1,407,708	2,426,207	4,612,235	8,446,150

Source: KfW 2000.

TABLE 8 FOREST COMPOSITION BY SPECIES, ABBOTTABAD

Species	Most dominant	Second-most dominant
<i>Chir</i>	10%	–
<i>Deodar</i>	–	4%
Fir	19%	41%
<i>Kail</i>	71%	19%
Oak	–	5%
Other broad leaved	–	31%

Source: KfW 2000.

TABLE 9 TIMBER HARVESTING, ABBOTTABAD

Type	Period	Volume (m ³)	Annual average (m ³)
Gallies reserved forest	1995–99	6,644	1,328
Haripur reserved forest	1985–92	1,713	245
Gallies <i>guzara</i> forest	1995–99	5,598	1,400
Haripur <i>guzara</i> forest	1984–98	6,027	431
Cantonment and location forest	1980–88	2,973	372

Source: Hussain, sector paper, 'Forests and Watersheds'.

■ TIMBER HARVESTING

Historical records reveal the following felling from reserved, *guzara*, cantonment and location forests:

Gallies Reserved Forests

Based on information gathered from forest plans dating back to 1887, a total standing volume of 487,737 m³ has been exploited commercially until the year 2001, at an average rate of 4,278.4 m³ annually.

Haripur Reserved Forests

In the absence of formal records, it is estimated that between 1904 and 1992, 21,019 m³ has been exploited at an average of 239 m³ per year.

Gallies *Guzara* Forests

Estimates based on working plan prescriptions show that an average of 521 m³ has been removed annually over the last 51 years.

Cantonment and Location Forests

A total standing volume of 648,652 m³ has been harvested over the last 114 years, at an average of 56,901 m³ per annum.

More recent statistics for felling are shown in [Table 9](#). Actual harvesting is estimated to be significantly higher than these figures, largely as a result of illegal felling. Meanwhile, regenerative capacity has been estimated at 192,904 m³. Annual increments reported in management plans work out to an average of 61,049 m³ per year for all forest types.

■ RIGHTS AND CONCESSIONS Timber

Guzara owners are granted permits to collect timber free of cost for domestic use. On average, some 1,500 m³ of timber has been provided annually under this arrangement in the last 51 years, while an additional average of 1,200 m³ is reported as illicit damage each year.

Fuel Wood Collection

The right to collect dry and fallen wood, restricted to owners and rightsholders, is exercised indiscriminately by local residents. It is estimated that heating alone consumes 549,507 m³ of wood annually, far beyond the regeneration capacity of local forests.



Working plans for forest management are no longer considered a credible means to promote conservation or curtail illicit felling.

Grazing and Grass Cutting

Owners enjoy grazing rights free of charge in *guzara* forests, while rightsholders may graze their animals in specified reserved forests. No restrictions govern grass cutting in any category of forest.

■ BENEFITS ACCRUING TO LOCAL COMMUNITIES

Income from Commercial Sales

Owners of *guzaras* are entitled to receive 80% of the net proceeds from commercial harvesting in such forests. Between 1955 and 1998, the total share of owners stood at Rs 3,050,112 for all categories of forest.

Free Grant of Timber

The cash value of timber granted free of charge to owners in the period 1950–98 is Rs 2,635,476.

Seigniorage Fee

Guzara owners are entitled to receive seigniorage fees from the sale of adjacent forests. Between 1880 and 1964, this amount stood at a total of Rs 317,769. These payments are no longer made.

■ WATERSHEDS

The main Murree–Thandiani mountain ridge divides the district into two distinct watersheds: the Indus (covering 78.7% of the area) and the Jhelum (covering 21.3% of the area). According to the Forestry Sector Master Plan, total soil loss is estimated to be 2.8 million t annually (75.4% attributed to the Indus and 24.6% to the Jhelum). Various spurs of the main ridge divide the district into seven sub-watersheds, as follows:

- i. Haro: 42,137 ha;
- ii. Siran: 35,419 ha;
- iii. Jhelum: 22,880 ha;
- iv. Daur: 19,564 ha;
- v. Kunhar: 15,272 ha;
- vi. Sokah Nullah: 12,627 ha; and
- vii. Indus: 1,964 ha (Hussain et al, 2001).

The topography of each of these watersheds is distinct, as are cultivation practices, forest types and soil erosion issues.

MAJOR INITIATIVES AND LESSONS LEARNT

Forests are a major component of the district's economy, and figure prominently in natural resource management initiatives. Such projects cover a wide range of activities from legal protection to work aimed at preventing forest degradation.

■ ADMINISTRATIVE AND POLICY INITIATIVES

Cooperative Societies

In pursuance of the policy provisions of the 1975 Agriculture Enquiry Committee, and as a means to appease disgruntled owners of *guzara* forests, the NWFP government in 1980 launched an experimental programme in which management of *guzaras* was handed over to owners' cooperatives. In Abbottabad, two such cooperatives (the Bandi Pahar Forests Cooperative and the Simli Dheri Cooperative) were given management rights over 2,263 acres of *guzara* forest in the Galliyat area. After the government detected heavy damage in both areas, these cooperatives were disbanded.

The plan, undertaken without pilot testing, awareness raising or capacity building, was doomed from the start. Implementation was characterised by the absence of a participatory orientation and marred by political interference, providing a valuable lesson in how not to introduce conservation measures. Without a comprehensive understanding of such partnerships and the related dynamics, radical departures in managerial orientation are impossible.

Demarcation of Forests

Reserved forests were demarcated in the wake of a forest department survey carried out in 1904–05 while *guzaras* were demarcated as late as 1950 with the promulgation of the Hazara Management of Wasteland (*Guzara*) Rules 1950. This delay in demarcation resulted in the loss of sizeable chunks of forest to agriculture and grazing. Under the aegis of the forest department, management through proper

plans commenced in Haripur in 1965 and in the Gallies in 1966.

Exploitation of Non-Timber Forest Products

Records indicate that until the early 1930s, in addition to timber and fuel wood, considerable revenue was earned from the sale of charcoal, *kuth* (a medicinal herb, *Saussurea lappa*) and resin, as well as by charging fees for grazing and grass cutting. Thereafter, the focus shifted solely to timber management.

Firewood Depots

In the absence of alternative sources of fuel, wood is widely used for heating purposes, particularly in rural areas. The British colonial administration established firewood depots in Abbottabad and Murree to discourage illegal felling. The policy was later thought to be counterproductive and discontinued in 1921.

Mazrooa Policy

In addition to demarcated *guzara* forests, un-demarcated, un-planned, privately owned sections of forest are called *mazrooa*. A working policy was devised for their management in 1975, giving owners certain rights. Implemented in an ad hoc manner and lacking a system of checks and balances, the policy actually served to promote illegal felling. Abuses arising from this system paved the way for the encroachment of adjacent *guzaras*, and the policy was discontinued in 1978.

Sale of Standing Trees and Departmental Working

Until 1974, marked trees were sold standing to contractors. In the absence of supervision, abuse of this system led to widespread illegal felling. Eventually, the forest department stepped in to fell, convert and transport trees. In an arrangement that came to be known as 'departmental working', the earlier contract system was abolished in 1974, and a forest harvesting division was created to oversee felling, conversion and transportation.

These arrangements have proved to be a failure in the long run. To begin with, the sale of stand-

ing trees on contract was conducted without sufficient oversight and the process was rife with corruption. But the move to departmental working through the forest harvesting division has also proven to be futile. The commercial viability of this plan has been undermined by a host of factors, including rigid rules, disbursement delays as a result of centralised control of funds by the finance department, the government's own culture of avoiding risk and maintaining the status quo, frequent misuse of authority, and procedural delays.

Seigniorage Fees

Until 1961, *guzara* owners were entitled to receive a seigniorage fee from the sale of timber taken from reserved forests. In that year, payments were discontinued, following a change in government policy. Prior to that date, the last time these rates were revised was 1904. Before it was abolished, the fee amounted to a paltry Rs 5 per tree. As such, it is no surprise that forest owners became alienated and local communities came to view broader government-sponsored conservation measures with scepticism.

Under the NWFP Forest Ordinance 2002, the rates have at long last been revised. Measures related to actual disbursement are yet to be put in place.

Windfall Policy

Implemented twice, in 1998 and 2001, this policy allowed the sporadic sanitary felling of dry and diseased trees as well as the conversion of wind-felled trees into timber for commercial use. Since wind-felled trees are traditionally collected by local communities for domestic use, this policy deprived rightsholders of access to timber and fuel, exacerbating pressure on green trees. The system lacked monitoring and supervision mechanisms and was economically unsound.

Working Plans

Reserved forests in Haripur and the Gallies have been managed under regular working plans since 1878 and 1906 respectively. Similar plans for the *guzara* forests of Haripur and the Gallies were introduced in 1965 and 1966

respectively. The adoption of working plans has not always served to benefit forest resources, particularly since working plans have been subject to frequent, arbitrary revisions and extensions.

Until 1878, the forest department operated without working plans, much to the detriment of forest resource conservation. Even after working plans were made operational, their efficacy was hindered by the failure to accommodate the needs of local communities. Working plans have also been marred by the department's timber orientation, as opposed to an integrated natural resource management approach. Partial implementation, the absence of monitoring and coordinating mechanisms, and repeated revisions and extensions spurred by vested interests, have all served to defeat their original purpose. As a result, working plans are no longer considered a credible means to promote conservation or curtail illicit felling.

Government-sponsored activities in the forest sector are characterised by a series of absences: continuity, timeliness, rational policy evaluation, community participation and interactive management have all been missing. Instead, ad hoc decision making, administrative inefficiency and myopia have been prominent features of many such initiatives.

The forest department, originally created to manage state forests, has not succeeded in taking owners on board in matters of forest management. Mere policing is a recipe for disaster. Indeed, it has become painfully clear that the forest department cannot conserve forests through policing alone. Community involvement, based on trust and an understanding of mutual long-term interests, is the only way that the department can improve its performance.

Local communities should be involved in private forest nursery raising, which would increase overall forest cover, boost the income of the rural poor and increase their stake in conservation.

■ FOREST DEVELOPMENT CORPORATION

The Forest Development Corporation was established in 1976 for the scientific exploitation of forests and the promotion of forest-based industries. Despite significant autonomy, it has failed to make any visible impact. Rather, its working has been marred by inflated overheads, delays, a bureaucratic orientation, poor financial structuring and a general lack of understanding of the unique role of this organisation. Its operations have in some cases actually facilitated the depletion of forest resources.

Until 1974, marked trees were sold standing to timber contractors. In the absence of supervision, abuse of this system led to widespread illegal felling. Eventually, the forest department stepped in to fell, convert and transport trees. In an arrangement that came to be known as 'departmental working', the contract system was abolished and a forest harvesting division was created.

■ FORESTRY SECTOR PROJECT

The NWFP Forestry Sector Project, implemented by the forest department, is co-financed by an ADB loan and a grant-in-aid from the Netherlands government. Launched in 1996, the project is expected to conclude in December 2004.

The project aims to promote a participatory orientation within the forest department for the purpose of improving natural resource management. Under a four-tier participatory planning

process—provincial (policy), district (strategic), sub-divisional (operational) and village level (implementation)—its work covers village Sarai Niamat Khan, for which an operational plan has been developed. Abbottabad will be targeted for a similar intervention in the near future.

■ NATURAL RESOURCE CONSERVATION PROJECT

Aiming to promote environmental rehabilitation in the Galliyat area, this European Union-funded project, implemented by the forest department, ran from 1997 to 2003. The NRCP focused on community participation, carried out capacity building and formed community organisations to address issues in the green sector. The forestry component of the NRCP did substantial work in nurseries, plantation and soil conservation.

■ WATERSHED MANAGEMENT AND FOREST EXTENSION PROJECT

The main Murree–Thandiani mountain ridge divides the district into two distinct watersheds: the Indus (141,058 ha) and the Jhelum (38,152 ha). The World Food Programme-assisted Watershed Management and Forest Extension Project in the NWFP ran from 1976–77 to 1981–82 and covered the Dour and Kaghan

valley watersheds. The Tarbela-Mangla Watershed Management Project (Phase I) was launched in 1983–84 and ran until 1992–93. Phase II, which focused on afforestation, social forestry, soil conservation, re-sowing and project management, ran from 1993–94 to 2001. Phase III, targeting 3,885 km² of the Dour watershed, has been supplanted by a new project, titled ‘Poverty reduction through participatory watershed management in Tarbela reservoir catchment area’, with a financial outlay of Rs 198.609 million.

For the purpose of watershed management, the project area has been divided into seven watershed divisions. Of these, the Dour division falls within the limits of Abbottabad district and is further divided into three ranges: Abbottabad, Havelian and Sherwan. Activities undertaken include afforestation, mainly on rangelands (covering 12,141 ha), rangeland soil conservation (over 6,637 ha), raising nursery plants, and soil and water conservation.

Watershed programmes initiated so far have focused on planting *chir* pine from a genetically inferior source on degraded soil.

This has inhibited the process of rehabilitating watersheds and failed to deliver long-term benefits. By converting rangelands into plantations, the fodder and grazing needs of poorer segments of the population have been sidelined. The tendency to ignore pasture and fodder issues is one reason why the forest department has been unable to meaningfully address local needs in an integrated manner. This tunnel vision is the blight of most work in green sector government departments and needs to be explicitly addressed in future strategic planning.



Watershed programmes have focused largely on plantation in degraded land, using *chir* pine from a genetically inferior source.

Of the seven sub-watersheds in the area, the Indus, Haro, Siran and Soka continue to operate without a formal watershed programme. Even in areas where such programmes are operational, micro-catchments are not included in management plans with the result that little long-term impact has been achieved.

Finally, by failing to actively seek the involvement of local communities, watershed projects have created resentment among local residents whose land has come under forest department control and who are deprived of much-needed fuel because of the department's excessive concentration on *chir* pine.

■ WORLD WIDE FUND FOR NATURE-PAKISTAN

In the Galliyat area, the World Wide Fund for Nature (WWF)-Pakistan is implementing a conservation and training project in applied ethnobotany. Called 'People and Plants', this project receives technical support from the United Nations Educational and Scientific Organisation, WWF (International) and the Royal Botanical Gardens, UK. Its research has provided valuable insights which may be used in planning larger strategic initiatives in the future.

■ OTHER INITIATIVES

The forest conservation activities of the SRSP and SUNGI include participatory interventions, capacity building and awareness raising. The SRSP, awarded a social mobilisation contract in 1997 under the BADP, is working with local communities to conserve and expand the natural resource base in the district. The NRCP, SRSP and forest department as well as local CBOs in Nagri Bala union council (Galliyat) have established a model Joint Forest Management Committee. With its active stakeholder involvement, this Committee may well prove to be a breakthrough in terms of future forest management approaches.

The long-term impact of development projects and non-government interventions is difficult to assess, and their sustainability is open to debate. Even so, the players involved in the

implementation of such projects possess the capacity to be active partners in implementing the vision outlined in the ASSD. Their experience on the ground has equipped them with expertise and local knowledge, and their work has in many cases led to the development of mutual goodwill between their staff and local communities. These strengths alone make them ideal potential partners in ASSD implementation.

Specific problems and lessons learnt from the working of the forest department, discussed above, provide certain generic insights that should be kept in mind while evolving strategic initiatives for the sector in future. To begin with, the forest department's timber orientation needs to be replaced by an integrated view that accommodates other sectors and activities that affect the economic life of the district. Similarly, the forest department cannot successfully manage and conserve forest resources simply by stepping up policing or by introducing measures that undermine the interests of local communities. As such, it is necessary that stakeholders are brought into the process as partners in the management of natural resources in their own areas.

Access, equity and the exercise of rights by genuine rightsholders are all areas that will need to be given attention in the future. The joint forest management system has been tested on a pilot basis under the Siran Development Project. Adjustments now need to be made so that this approach can be adopted on a wider basis to promote local support for forest conservation.

Another key issue that will need to be addressed is the acute scarcity of land in the district. To bridge the gap between demand and supply of forest resources, and to ease the pressure on forests, farm forestry will need to be encouraged. Conservation initiatives also need to examine one final, crucial factor: population growth puts enormous pressure on natural resources, leading to unsustainable use. No conservation effort can be successful in the long term if it does not simultaneously address this issue.

Livestock and Poultry

Most farm households in the district practise small-scale mixed farming, where by-products of the livestock sector serve as important household inputs: manure and urine are the primary source of fertiliser, dung cakes are used as fuel, and animals are employed for draught purposes. Besides being a source of cash income, milk, dairy products, meat and eggs also meet some of the protein requirements of the household.

ON-GROUND STATUS

■ LIVESTOCK PROFILE

In 1996, 115,805 head of cattle, 133,463 buffaloes and 222,472 goats were kept in the district, along with 32,217 sheep (Table 10). In comparison with districts such as Kohat, Mardan, Peshawar and Swat, Abbottabad's total livestock population in 1996 (562,011) was second only to Kohat (617,975). The potential for dairy development is evident from these numbers, particularly in the case of cattle and goats.

TABLE 10 LIVESTOCK AND POULTRY POPULATION, ABBOTTABAD (1996)

Type of animal	Population
Poultry	622,649
Goat	222,472
Buffalo	133,463
Cattle	115,805
Ass	37,378
Sheep	32,217
Mule	11,991
Horse	8,661
Camel	24

Source: GoNWFP 1999.

TABLE 11 FEED SUPPLY AND CONSUMPTION, ABBOTTABAD

Feed type	Quantity used (t)
Cereal crop residue	182,987
Fodder crops	9,552
Total	192,539
Dry matter available	165,643*
Dry matter required	638,847
Net Deficit	469,204

* This figure takes wastage into account.

Source: Khan, sector paper, 'Livestock and Poultry'.

■ LIVESTOCK SERVICES

By 1998–99, a total of 43 animal health service units (three veterinary hospitals, 13 dispensaries and 27 basic treatment centres) were operating in the district, up 13% from the previous year. In addition, the district is served by four slaughterhouses and three insemination sub-centres.

■ PRODUCTION AND FARMING SYSTEMS

Based on geophysical conditions, livestock farming in the district is divided into two distinct systems:

- i. Livestock farming in mountainous regions. Here, seasonal crop production is patchy, and households keep five or six goats, one or two buffaloes and a few cattle. Naturally occurring grass and dry maize stalk constitute the only source of locally produced feed, while fodder crop production is negligible. From October to March, moreover, dry grass and maize stalks are the only source of animal feed available. Concentrate foodstuffs are imported from the Punjab.
- ii. Livestock farming in semi-hilly areas and plains. In these areas, households keep a

larger number of animals. A small amount of feed is grown locally, including shaftal (Persian clover; *Trifolium resupinatum*), barley and sorghum, while wheat straw and concentrate foodstuffs are purchased from the market. The animals graze on waste and fallow land but their diet is supplemented with stall feeding.

■ LIVESTOCK FEED

Farm animals in the district feed on crop residues, grass, herbs, shrubs, fodder trees, weeds, cultivated fodder and agro-industrial by-products. Despite the variety of food sources available, feed shortages persist (Table 11). Even without taking wastage into account, specially grown fodder crops and by-products from agriculture geared towards human consumption meet the needs of only 25% of the district's livestock population. Feed shortages are particularly detrimental to commercial livestock operations where more than maintenance-level feeding is required.

Over the past 15 years, stall feeding has increased by 20% for cattle, 15% for buffaloes, and 19% for sheep and goats, while grazing for sheep and goats has declined by 10%. According to statistics for the year 2001, 71% of buffaloes, 34% of cattle, and 15% of sheep and goats are fed this way (GoNWFP 2001a). Although stall feeding is gaining favour, animals continue to be malnourished, suffering from stunted growth and increased susceptibility to disease. Naturally, outputs from such animals are also far below their potential. Meanwhile, the increasing density (207 livestock units/km²) of the livestock population is intensifying pressure on grazing land and forest resources.

■ MILK PRODUCTION

Milk production from buffaloes is divided into two categories: (i) small-scale milk production which serves the family's own subsistence needs and (ii) commercial milk production in the peri-urban areas of Abbottabad and Havelian, which has developed rapidly in response to the burgeoning urban demand for milk.

■ POULTRY

Backyard poultry production has been a prominent feature of the district's rural economy for some time. In 1996, the poultry population of the district stood at 622,649, comprising 3.8% of the population for the province as a whole (GoNWFP 2001a). In the public sector, a single poultry farm provides productive breeds, chicks and breeding eggs to farmers. Besides this facility, poultry development has benefited from interventions by the BADP, NRCP and SRSP which have provided scientific training and helped control disease. Spurred by favourable climatic conditions and efforts in the private sector, Abbottabad and neighbouring Mansehra district have evolved into something of a nucleus for the Pakistan poultry industry. Between the two districts, 60 breeder farms, 200 broiler farms, one layer breeder farm, six layer farms, two hatcheries and a feed mill are in operation, with a combined capacity in excess of 0.8 million birds.

The sector is nevertheless dogged by poor marketing and production systems, and falling prices for eggs and broilers. These factors impede sustained growth of the industry, dampening the investment climate. In the absence of siting rules, meanwhile, a large number of poultry farms are located in the middle of populated areas, posing serious risks to both human health and environmental safety.

MAJOR INITIATIVES AND LESSONS LEARNT

Crops grown specifically as animal feed and by-products from agriculture intended for human consumption together fulfil the nutritional needs of just one fourth of the district's livestock population, while a mere 10% of poultry feed requirements are met locally. This severe shortage of animal feed serves as an indictment of interventions undertaken so far in the poultry and livestock sector.

Authorities responsible for developing forests and agriculture have generally paid little or no

attention to fodder production and the development of grazing land. The agriculture department focuses on cereal crops, and that too on varieties yielding minimal crop residues, while the forest department with its timber orientation manages rangelands without a programme component geared towards supporting livestock feed requirements. This absence of coordination between green-sector government departments is a recurring problem which must be addressed in all future development planning.

The broader involvement of stakeholders and local communities is also absent. Development projects and NGOs have attempted to fill this gap, but the forest department often comes into conflict with area residents over their fuel and forage requirements. In this connection, the forest department needs to work with local communities to arrive at amicable solutions by agreeing to mutually beneficial trade-offs.

Even though women are principal actors in the sector, their involvement in livestock and poultry management is unsatisfactory. They are further marginalised by the fact that no female extension workers operate in the district.

■ ANIMAL HUSBANDRY IN-SERVICE TRAINING INSTITUTE

Almost all the staff of the livestock and dairy development (L&DD) department, along with 123 male and female farmers from Abbottabad and Haripur districts, have been provided training in livestock management and production extension by the Animal Husbandry In-Service Training Institute. This initiative aside, livestock and poultry extension services are in general patchy and erratic, characterised by a top-down approach that sees farmers as passive recipients. Extension is also marred by a narrow veterinary perspective, and unsatisfactory breeding and health services, at least in part because of the limited outreach capabilities of the concerned departments. These problems will need to be tackled if small-scale interventions through projects and the private sector are to have any realistic chance of success.

■ BARANI AREA DEVELOPMENT PROJECT

The BADP's work in the livestock and poultry sector began in 1994–95 in coordination with the L&DD department. Between 1995 and 2000, the BADP's activities included:

- i. distributing 492 units of Beetal goat and 2,373 units of poultry;
- ii. breeding over 13,500 buffaloes and cows through artificial insemination;
- iii. vaccinating 36,000 large animals and 333,000 poultry;
- iv. establishing 152 demonstration fodder plots; and
- v. training 125 male and female farmers in animal health, dairy husbandry, and poultry vaccination and management.

■ COMMERCIAL POULTRY FARMERS

Some 60 broiler breeder farms, 200 broiler farms, one layer breeder farm, six layer breeder farms and two hatcheries operate in the district, along with a feed mill. The absence of investment limits feed output, however, and only 10% of feed requirements are met through indigenous production. Despite the importance of the poultry sector to the district economy, no rational production and marketing inputs have been provided

on a district-wide basis to enable more effective planning. Meanwhile, traditional channels of marketing are exploitative and discourage entry.

■ CREDIT AGENCIES

The ZTBL, the First Women Bank and most nationalised commercial banks as well as milk dealers extend some form of credit to dairy and poultry farmers, mostly on a short-term basis. The Bank of Khyber is the latest entrant to the field with 20% of its microcredit portfolio earmarked for livestock-related activities.

Despite the willingness of government institutions in recent years to provide credit for the

livestock sector, few farmers have the necessary training and expertise to utilise loans on a scale that is commercially viable. This is largely because of the absence of successful model enterprises, and inadequate monitoring and evaluation procedures. At present, terms and conditions attached to loans are not based on crop production, limiting their appeal among farmers.

■ LIVESTOCK AND DAIRY DEVELOPMENT DEPARTMENT

Focusing on animal health and breed improvement through artificial insemination, the L&DD department is the principal provider of services to livestock owners. Services are organised around three veterinary hospitals, 11 dispensaries and 24 basic health centres, staffed for the most part by veterinarians. It is estimated that the department's animal health care services cover only 14% of ruminant

Despite the willingness of government institutions to provide credit for the livestock sector, few farmers have the necessary training and expertise to utilise loans on a scale that is commercially viable.

animals in the district. In breed improvement programmes, coverage of buffalo and cattle is a dismal 2%.

Since the department is staffed primarily by veterinarians, it is not surprising that its focus is on animal health issues, often at the expense of livestock production extension. As a result, little advice is available to farmers on improving production techniques. The department's capacity to provide much-needed animal health and breeding services is also severely limited. Here, private-sector input or public-private partnerships are worth considering.

■ NATURAL RESOURCE CONSERVATION PROJECT

The NRCP's 2000–01 work plan for the livestock sector targets 70 villages in the Berote, Boi and Thai areas. Its activities cover 34 villages in 15 union councils, where some 138 male and female community organisations have been established with close to 9,000 members. NRCP initiatives include work in the following areas:

- i. breed improvement;
- ii. animal husbandry, including treatment, vaccination and deworming;
- iii. supplying animal medicines at a 50% subsidy;
- iv. fodder propagation;
- v. defining the role of livestock extension workers;
- vi. training livestock farmers, distributing information and organising field days; and
- vii. establishing linkages between community organisations, livestock extension workers and the NRCP.

■ SARHAD RURAL SUPPORT PROGRAMME

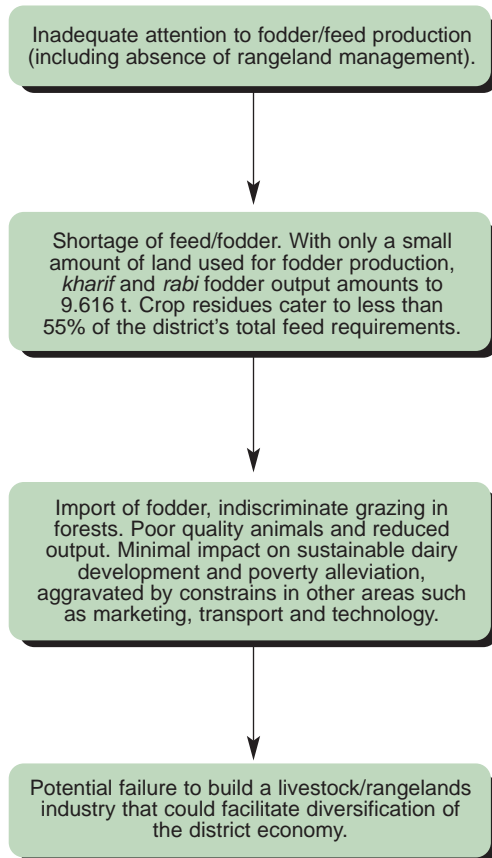
The SRSP's activities in the livestock and dairy sector focus on establishing a platform of CBOs through which the L&DD department can channel appropriate assistance to livestock farmers. The SRSP has distributed goats and poultry amongst livestock farmers, and extends credit for such activities to residents of rural areas.

In terms of community involvement, the SRSP has experienced operational difficulties in maintaining three-way coordination between itself, voluntary organisations and the L&DD department. This is at least partly a result of the lack of clarity about the respective roles of these actors. Particularly since the SRSP is fundamentally a participatory entity, its experience provides an important lesson in developing a participatory orientation for initiatives elsewhere in the sector.

Grazing Land and Fodder Reserves

Rangelands are broadly defined as uncultivated lands that provide fodder for grazing animals. Considerable confusion exists regarding both the formal definition of such areas, as well as their quantum. According to some studies, Abbottabad's rangelands cover 89,852 ha (Hatim et al 2001). This calculation is based on the assumption that 56% of forest land is under grazing, with culturable waste added to that figure. For the purpose of our discussion, all forest areas (coniferous, scrub and shrub lands), grasslands (grazing or hay-making areas) and other uncultivated lands that support herbaceous or shrubby growth are counted as rangelands. Based on this wider definition, the total area of rangelands in Abbottabad district stands at 105,356 ha, amounting to 59% of the district's reported area.

FIGURE 32 CURRENT STATUS OF RANGELANDS



Source: Hatim et al. 2001.

TABLE 12 FODDER PRODUCTION, ABBOTTABAD (1999–2000)

Crop	Area (ha)	Output (t)
<i>Kharif</i> (barley, cherry, maize, sorghum, soybean)	79	3,391
<i>Rabi</i> (barley, mustard, shaftal)	380	6,225
Total	459	9,616

Source: GoNWFP 2001a.

In the absence of formal range vegetation analysis, fodder and grass production on existing rangelands, the condition and quality of such areas, and their capacity to sustain grazing remain unclear. It is fair to estimate that production will be lower than the potential, conditions will be fair to poor and carrying capacity will be low. The existing state of rangelands is shown in Figure 32.

ON-GROUND STATUS

Based on a total livestock population of 365,192 animal units and daily feed requirements calculated at 10.9 kg of dry matter per animal unit, the annual feed requirement of Abbottabad's livestock population stands at a minimum of 1,452,916 t, not counting the nutritional needs of livestock belonging to nomadic populations.

Nationally, the country's rangelands meet 60% of the feed requirements of goats and sheep; 40% for camels, mules and donkeys; and 5% for cattle and buffaloes. The remaining feed comes from cultivated fields in the form of crop residues, and winter (*rabi*) and summer (*kharif*) cultivated fodder. In the absence of specific data for Abbottabad, the national trend is generally taken as a reliable estimate for the district.

These estimates belie the fact that Abbottabad continues to face an overall feed shortage. In 1999–2000, the total area under fodder crops was 459 ha, yielding 9,616 t (Table 12). According to some estimates, a total of 1,404 farms (1%) covering 1,286 ha were under fodder cultivation during this period (717 ha in the *kharif* and 569 ha in the *rabi* season, of which 379 ha were irrigated and 907 ha rain-fed). In some areas, shaftal and maize were grown during the summer for use as fodder. Crop residues, estimated at 328,000 t, met less than 55% of total feed requirements. This shortfall in feed requirements impacts the health of the livestock population and increases pressure on natural resources.

MAJOR INITIATIVES AND LESSONS LEARNT

Already discussed in the context of livestock feed shortages in the district, rangelands and grazing land, including forests and wasteland, account for 59% of land use in the district. As such, it is disheartening to note that no independent authority or agency is responsible or accountable for managing range resources in a sustainable manner.

The need for integrated work on rangelands cannot be emphasised enough. Livestock is a key component of the district's economy and will play an even more important role as efforts get under way to expand the sector as part of a broader strategy aimed at poverty alleviation. Given the chronic and severe shortage of locally available feed, as well as the current policy on rangelands which favours forest plantation and the development of agriculture, the future of the sector does not look bright.

With numerous players in the sector, efficiency has been hampered by poor coordination and the duplication of activities. In the absence of a focal coordinating entity, various line departments and NGOs continue to undertake natural resource management activities in isolation. The fact that none of the initiatives implemented so far has emphasised rangeland and pasture rehabilitation or improvement does not help matters. In this context, it is worth mentioning that part of the problem may well be addressed



Although rangelands and grazing land account for nearly two thirds of land use in the district, no independent authority has been established to manage and conserve range resources.

through the joint forest management concept recently introduced in the NWFP.

■ GOVERNMENT DEPARTMENTS

Although the forest department is responsible for wasteland management, it has not provided technical or financial input to improve herbageous production in state forests to rehabilitate wasteland for the purpose of forage production. Instead, its major emphasis has been on the protection and improvement of wood, the so-called timber orientation.

In the early period of watershed project implementation, livestock feed was supplied to landowners rather than land users, creating a clash of interests which led users to resist activities such as planting on grasslands or common lands. This failure to identify the real stakeholders indicates acute myopia on the part of planners. The needs and priorities of communities were not evaluated, illustrating the conceptual misdirection that has dogged initiatives in this sector.

The agriculture department, responsible for farmland, has made little progress in the development of rangeland. Only relatively recently (1994–95), under the BADP, were outlays made available by the agricultural extension department to (i) increase fodder production by introducing a demonstration programme, (ii) promote forage and fodder tree production, and (iii) improve fodder preservation and utilisation techniques. Interestingly, according to the evaluation report of BADP Phase I, no actual progress has been made in any of these areas (ADB 2001).

■ NATURAL RESOURCE CONSERVATION PROJECT

For the period 1996–2003, sector-specific initiatives of the NRCP envisage rangeland improvement on 2,000 ha, improved fodder production on 1,000 ha and livestock management in 70 villages. So far, trials on the use of fertiliser to enhance grass production have been carried out. Mott grass (*Pennisetum purpureum*), a fast-growing fodder which enhances milk production, is being introduced on the boundaries of cultivated fields and new fodder varieties are being introduced in small demonstration plots.

■ WATERSHED PROJECTS

With a focus on afforestation in wasteland, which covers some 12,141 ha in the district, the first of these projects was implemented in 1971–72. Over the years, this focus has remained unchanged, as seen in the work of the Tarbela-Mangla Watershed Management Project (Phase I, 1983–84 to 1992–93) which also concentrated on afforestation. Rangeland rehabilitation and management have been addressed only sporadically, with

measures such as digging ponds and providing community support training in pasture raising. In terms of pasture improvement, a mere 4 ha of fodder crops were cultivated and three ponds constructed.

Phase II of the Tarbela-Mangla Watershed Management Project (1993–94 to 2000–01) continued to stress afforestation. Of the total outlay of Rs 753 million, only Rs 9.5 million (a mere 1.3%) was used to build 82 irrigation ponds and extend support to 55 communities for fodder-related initiatives.

Phase III (2001–06) proposes an outlay of Rs 616 million and is expected to provide relatively greater support to the sector. Grass cutting (hay making), demonstration plots and the construction of 100 ponds is planned, and vegetative cover is to be improved by controlling grazing, using techniques developed by the Malakand Social Forestry Project.

In the early period of watershed project implementation, livestock feed was supplied to landowners rather than land users, creating a clash of interests which led land users to resist activities such as planting on grasslands or common lands. This failure to identify the real stakeholders indicates acute myopia on the part of planners and has damaged long-term prospects for developing a participatory orientation. Planning was based on biased land use concepts, with priority wrongly placed on the

conversion of grassland and grazing land to forest plantation. The needs and priorities of the concerned communities were not evaluated, illustrating once again the conceptual misdirection that has dogged initiatives in the sector.

In terms of implementation, poor planting techniques and the selection of inappropriate species resulted in the failure of such plans, magnified by droughts and heavy downpours that occur regularly in the area. The selection of inappropriate techniques points to serious shortfalls in technical capacity.

■ OTHER INITIATIVES

SUNGI's work in this sector includes establishing fodder demonstration plots as part of an integrated effort to enhance natural resource related activities. The SRSP has also contributed to this sector.

Biodiversity, Parks and Protected Areas

Abbottabad's mountainous landscape is characterised by vertical vegetational variations which occur along sloping terrain. With its unique bio-ecology and a diverse ecosystem, the district offers a rich natural environment to support a variety of wild flora and fauna. Of the 12 habitat types in the NWFP identified by Roberts (1977), three are found in Abbottabad. Plant researchers have reported 80 endemic species in the Hazara area (Nasir and Ali 1982). Of these species, more than 50% are said to occur in Abbottabad. The district supports approximately 1,300 plant varieties, 18 wild mammal species, 149 resident and migratory bird types, and 19 different reptiles.

ON-GROUND STATUS

■ HABITAT TYPES

Three major habitat types have been identified in Abbottabad district: (i) the subtropical broad-leaved zone, confined to sheltered ravines, which carries 40 species of trees, shrubs and woody climbers; (ii) the

subtropical *chir* pine zone, where *chir* is the dominant vegetation but a sprinkling of other associated plant species is also found; and (iii) the moist temperate zone, covering 26% of the district, which is an important biotope for wildlife and supports coniferous forests with patches of broad-leaved species. The moist temperate zone, which covers the entire Galliyat tract, is home to the common leopard, common red fox, Murree vole and woolly flying squirrel, as well as the kalij and koklass pheasants.

■ SPECIES DIVERSITY

An estimated 1,300 plant varieties are found in Abbottabad district. In addition, the area is home to 18 mammal species, seven of which are endangered: the common leopard, common red fox, Himalayan palm civet, jungle cat, Murree vole, musk deer and woolly flying squirrel. Of the 149 types of resident and migratory birds found in the district, 109 species have been recorded in Ayubia National Park alone. Two of the NWFP's four pheasant species are found in the district, which is home to some 33% of all bird species found in the province. Of these species, 14 are endangered, including the Eurasian woodcock, forest eagle owl, kalij pheasant (*Lophura leucomelanos*), koklass pheasant (*Pucrasia macrolopha*) and warbler (Roberts 1991).

According to the zoological survey department, 19 reptile varieties (nine snakes and 10 lizards), nine indigenous fish species and three exotic fish species are found in Abbottabad. Agricultural varieties include six key species of agro-crops and seven key fruit varieties.

■ PARKS AND PROTECTED AREAS

The NWFP Wildlife (Protection, Preservation, Conservation and Management) Act 1975 provides for the creation of various categories of protected areas: national parks, game reserves and wildlife sanctuaries. In Abbottabad district, two such protected areas have been designated: (i) the Ayubia National Park, spread over 3,312 ha, which was established in 1984 with the aim of preserving nature and natural processes in a viable representative area of the Gallies forests; and (ii) the Qalandarabad game reserve, covering 8,940 ha, established in 1980

to protect the biodiversity of the area and promote the sustainable use of game species by issuing shooting permits. Designated protected areas cover only 6% of the landed area of the district.

■ BIODIVERSITY LOSS: THE CASE OF THE POTATO

The fate of various potato varieties grown in Abbottabad illustrates the general state of biodiversity priorities in relation to economic concerns. The potato is a major horticultural crop in Abbottabad and plays an important role in the rural economy, where it is a cash crop of sorts due to the immediate economic returns that it brings. Common varieties grown in the past originated from the white potato or Irish potato (*Solanum tuberosum*), including the cultivars Amalia, Aula, Christa, Cosima, Famosa, Franzi, Granola, Judika, Kondor, Lutina, Marion, Monalisa, Monza, Multa, Patrones (Dutch), Pinki, Ronea, Roxy, Sinduhri, Univita and Wilja, as well as the local varieties, Kalsi and Lal-e-Faisal. Most of these varieties are either no longer grown in the district or cultivated only sporadically.

These varieties fell into disuse for a number of reasons. Compared to the improved cultivars introduced over the years, older varieties produce lower yields. In some cases, quality seeds were not widely available. Other varieties became prone to pest infestation and disease, or degenerated because rejuvenation techniques were not applied. Meanwhile, lighter-skinned varieties also began to lose their popularity with the province's consumers, who started to opt for red-skinned potatoes.

An indigenous variety under cultivation until the early 1980s was the dark-skinned Kalsi. Although this variety produces low yields, it possesses high tolerance to freezing temperatures and is resistant to blight. Despite these obvious advantages, farmers in the area have long since abandoned cultivation of Kalsi, especially once new high-yielding cultivars became available.

The varieties now most commonly sown in Abbottabad include the Cardinal, Desiree, Diamant and Ultimius. These and other cultivars,

introduced into the area from other regions, have adapted well to the district's agro-climatic conditions and are also favoured by consumers. The cultivar Desiree is high yielding, early maturing, shallow eyed, oval shaped and red skinned. The cultivar Cardinal, on the other hand, is also high yielding, shallow eyed, oval and red skinned, but matures later than Desiree, although it has better

while crop rotation helps combats pest infestation. The PRC also chalked out a marketing system for peas and French beans, to be sold as off-season vegetables in the cities of Islamabad and Lahore.

The PRC uses tissue culture techniques to maintain high-yield cultivated varieties through rejuvenation and virus elimination. In the absence of a germplasm unit at the PRC, however, most indigenous varieties have not been preserved locally. Some farmers in the area continue to grow indigenous varieties but reliable data is not available for this type of cultivation. The absence of capacity for the conservation of potato biodiversity among PRC staff as well as the farming community has further led to the loss of many indigenous varieties. Although sustainable development recognises the necessity of trade-offs, the extinction of local species is too high a price to pay for material benefits.



An estimated 1,300 plant varieties are found in Abbottabad district, along with 18 mammals, and 149 resident and migratory bird species.

drought tolerance compared to Desiree. Ultimus is high yielding and highly resistant to cold temperatures, water stress and late blight. It is preferred in areas where stress conditions prevail or where farmers are unable to devote much time and effort to their crops. The major drawback of Ultimus is that it has sunken eyes and an irregular shape, so that much of its edible portion is wasted during peeling. As such, it is not favoured for processing. The Diamant, meanwhile, is white skinned but produces high yields and is disease resistant. It is preferred for processing purposes and is generally grown for export to Sindh and Balochistan, where light-skinned potatoes are readily consumed.

The PRC introduced these high-yielding cultivars to the area and transferred production technology to farmers. The PRC also introduced sustainable farming, encouraging growers to diversify cultivation. As a result, valuable crops such as peas and French beans were successfully introduced. These legumes restore the fertility of the soil,

MAJOR INITIATIVES AND LESSONS LEARNT

In the many environmental and conservation initiatives undertaken by the government as well as NGOs and projects, the issue of biodiversity has for the most part been addressed only indirectly. As a result, no cohesive effort appears to have been made to specifically protect and conserve biodiversity. Species protection, the designation of protected areas, public and private land management, and pollution control may at best be viewed as partial and limited measures.

■ ADMINISTRATIVE AND POLICY INITIATIVES

The maintenance and preservation of biological diversity is a long-term process that requires policy continuity, institutional support at all levels and a partnership with users whose commitment can be ensured only through equitable compensation. Local communities must also be legally

empowered to manage natural resources in their own areas, and to share in the income derived from the sustainable use of biological resources. Doing so will increase their stake in participation and strengthen their commitment to biodiversity conservation.

Given the long history of management characterised by policing and the exclusion of stakeholders, attempts to build relationships between conservation managers and local communities have achieved mixed results so far. Government officials continue to demonstrate an aversion to participatory practices, the so-called turf orientation.

Legislation

The declaration and management of reserved forests carried out by the British colonial administration was the first real initiative of its kind. Two colonial laws governing the management of forests, the Forest Act 1927 and the Hazara Forest Act 1936, were in force until as recently as 2002, when they were repealed by the NWFP Forest Ordinance 2002. Incidentally, the 1927 Act, which is a federal law, remains in force throughout the rest of the country.

Today, a number of laws provide legal cover to protection and management initiatives for forests and wildlife in the NWFP. These include the West Pakistan Goat Restriction Ordinance 1959, West Pakistan Wildlife Protection Ordinance 1959, West Pakistan Fisheries Ordinance 1961, NWFP Wildlife (Protection, Preservation, Conservation and Management) Act 1975 and NWFP Forest Ordinance 2002.

Protected Areas

The 1975 Wildlife Act provides for the creation and management of various categories of protected areas: national parks, wildlife sanctuaries

and game reserves. Consumptive use, including hunting, trapping, grazing and fuel wood or timber collection, are restricted within the perimeters of a national park. In game reserves, however, harvesting is authorised and practised.

The protected areas system covers just 6% of the land area of Abbottabad. This includes the Qalandarabad game reserve, covering 8,490 ha, which was established in 1980 to protect the biodiversity of the area and promote the sustainable use of game species through the issuing of permits. Meanwhile, Ayubia National Park over 3,312 ha was established in 1984 by the provincial gov-



Communities living in the vicinity of protected areas often depend heavily on natural resources and are unlikely to welcome any change in the use regime unless they are compensated for transformation costs.

ernment to preserve nature and natural processes in a viable representative area of the Galliyat forests. The European Union has helped to prepare a management plan for Ayubia. Apart from these notified areas, forests spread over 127,449 acres (26% of district's land area) are under the protection and management of the Galliyat Forest Division.

Communities living in the vicinity of protected areas depend heavily on natural resources for timber, fuel wood and fodder. Without being com-

compensated for transformation costs, they are not likely to welcome any change in the use regime. The resentment bred among communities in the Ayubia National Park area is a case in point. Centralised control over management and distribution of the benefits from the use of natural resources has frustrated local attempts to plan land use around Ayubia. In addition, the construction of a large number of houses and hotels around the park threatens the very purpose for which it was demarcated as a protected area.

Policy and Implementation Milieu

As part of the larger fabric of insights regarding work in this sector, the lessons learnt from the SDC experience are equally valid for future biodiversity management interventions in Abbottabad. A case study based on the SDC's work shows that the management of natural resources and biodiversity in a dysfunctional policy and implementation milieu can only achieve limited success. When conservation issues come into conflict with the basic needs of the people, conservation is invariably relegated to the backburner. In such a scenario, the macro framework needs to be reformed and institutional transformation is required.

The introduction of change must be in tune with existing political and decision-making processes. At the same time, political and decision-making processes themselves will have to change. Community-based systems for the management of natural resources and biodiversity must be developed, and local ownership for such initiatives has to be translated into binding covenants, bolstered by political will and institutional support. In this connection, the Institutional Transformation Cell, created by the NWFP government in 1998 but disbanded four years later, was a step in the right direction.

The issues of governance, management and development are intricately intertwined. Sectoral policies that bypass the macro policy environment can only yield limited results. Changing management and development practices requires sustained, long-term commitment. While the district administration and civil society should be allied in this effort, donors also need to act in areas where they possess a relative

advantage. Strategies that are not backed by commitment and resources are nothing but futile exercises. Public opinion looks for concrete evidence of action, and the eventual success of conservation efforts derives from realistic action.

The provincial government has to date taken steps to address some of the issues related to biodiversity conservation. The provincial government's people-oriented forest policy approved in 1999, the creation in 1999 of a provincial forestry commission and the forestry roundtable set up in 1998, are cumulatively expected to foster a better understanding of biodiversity concerns.

■ FORESTRY SECTOR PROJECT

The NWFP Forestry Sector Project (1996–2002) was implemented by the provincial forest department with the financial assistance of the ADB and the government of the Netherlands. This project sought both institutional reform and public-private partnerships to protect natural resources and maintain biological diversity. It is hoped that this dual approach will be replicated elsewhere in the district.

■ NATURAL RESOURCE CONSERVATION PROJECT

The European Community-funded NRCP (1996–2004) focuses on environmental rehabilitation in the Gallies tract to create an ecological balance that can support optimum and sustainable living standards for the people. Implemented by the forest department in conjunction with IUCN, this project seeks the cooperation of local communities through social organisations. The most important output of the NRCP has been the preparation of a socially desirable, economically viable and ecologically sustainable management plan for the Ayubia National Park, developed in conjunction with the European Union.

■ WORLD WIDE FUND FOR NATURE-PAKISTAN

From 1997 to 2000, WWF-Pakistan implemented a conservation project in the Galliyat area. Known as 'People and Plants: Conservation and Training in Applied Ethno-Botany', the project's aim was to promote an understanding of biodiversity preservation.

Fisheries

An estimated 117 km of rivers and streams run through the district, in addition to countless springs. The fisheries potential of these resources is yet to be systematically analysed. In 1998–99, the district produced 0.74 t of fish, marking a 56% decline from the previous year (1.66 t) and a massive 89% fall since 1996–97 (GoNWFP 1999). The cash value of Abbottabad's fisheries output for the period 1998–99 is said to be Rs 50,050 but this figure needs to be re-examined since the total provincial fisheries output during the same period is valued at Rs 40.397 million.

ON-GROUND STATUS

Only two water bodies in the district have been the subject of limnological analysis. The first of these is the Thandiani stream at Kalapani, which is rich in nutrients and offers an environment that is favourable for pisciculture, especially trout farming. This stream ranks high on the habitat quality index

for the NWFP (Stockwell 1995). Indigenous fish species such as the *masheer* are also worth developing, although care must be taken to stock the stream in accordance with its carrying capacity.

The other water body that has been analysed is the Daur river, which favours carp culture, particularly for species already found in the river (Khan 1988). The remaining water bodies in the district need to be limnologically studied before measures can be taken for enrichment. In general, fish biodiversity increases from the upper to lower reaches of a catchment area.

MAJOR INITIATIVES AND LESSONS LEARNT

At some point in the late 1950s, the then West Pakistan fisheries department conducted a survey of fisheries resources in the country. Its findings are reproduced in research studies carried out in the 1960s (Sadiq 1961; Ahmed 1968). The survey revealed the existence of 30 ponds used for fish culture in the Hazara and Mardan areas, including a seven-tank fish farm at the army medical centre, rearing goldfish along with *masheer* (*Tor putitora*), *mori* (*Cirrinus mrigala*), *rahu* (*Labeo rohita*) and tilapia (*Tilapia nilotica*, *Tilapia mozambica*, *Tilapia zilli.*, of which the first is most adaptable to local conditions).

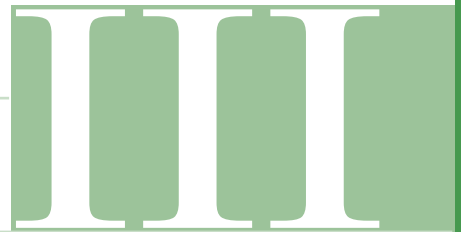
In 1977–78, the fisheries department set up a small carp hatchery at Lehrian. In the private sector, an attempt was made to establish a trout farm and hatchery at Kalapani, which was in operation from 1990 to 1993 but was subsequently abandoned. Today, under the administrative control of the district, a trout hatchery operates at Allai (Battagram).

Although Abbottabad provides good conditions for pisciculture development, no sustained efforts have been made to tap this potential. The lack of attention to fisheries development is all the more myopic considering that local demand for fish is high. Despite the market potential, few income generating opportunities in this sector are available to the residents of the district. The fisheries department suffers from technical weaknesses as well as a shortage of staff, labouring under a legal and institutional framework that does not permit participatory management or community involvement. Limited to policing and fish farming, the department has paid scant attention to habitat construction, ecosystem studies and protection measures. At the same time, poor awareness of current issues in the sector has led to indiscriminate fishing, and the widespread use of inhumane and destructive methods.

Apart from two studies, limnological analyses have not been undertaken on the rivers and streams that flow through the district to understand how fisheries resources may be enriched. Meanwhile, the impact of waste and pollution, the diversion of water for agricultural purposes and improper planning have undermined the health of the sector.

The key lesson learned from past experience is that aquatic resources need to be explored and developed as part of an integrated strategy to address poverty alleviation and curtail undue pressure on natural resources. The public-private fish farming initiative launched in Madyan (Swat) needs to be studied for possible replication in Abbottabad. At the same time, adequate legislative cover must be made available and participatory interventions developed for the sector, backed by resources and capacity building.

PART



Brown Sectors

Mining

The mining sector in Abbottabad is characterised by considerable variations in output over relatively short periods of time. Both underground and open-pit methods are used, with scant regard to the environmental and public health impact of these operations. Oversight is practically non-existent and safety measures are ignored. Operations in this sector are undertaken without adequate information or training, and with blatant disregard for the law. Environmental impact assessments (EIAs) are rarely conducted for new projects, while the licensing system is heavily biased in favour of commercial considerations.

ON-GROUND STATUS

Between 1996 and 2000, total output grew by almost 55%, falling 16% between 1996 and 1998 before increasing substantially in the following year ([Table 13](#)).

TABLE 13 MINERAL PRODUCTION, ABBOTTABAD (1996–2000)

Mineral	1996–97 (t)	1997–98 (t)	1998–99 (t)	1999–2000 (t)
Barite	2,873	315	2,096	505
Dolomite	—	569	4,542	7,589
Granite	—	1,718	—	—
Gypsum	—	—	70	20
Limestone	15,342	11,212	30,967	55,866
Magnesite	5,499	3,072	3,405	3,833
Marble	610	80	180	—
Phosphate	—	309	4,034	5,108
Red Ochre	520	1,920	3	—
Red Oxide	142	106	3	35
Soapstone	43,908	38,777	37,784	33,745
Total	68,894	58,078	83,084	106,701

Source: GoNWFP 1999.

■ MINERAL PROFILE

In 1999–2000, the district produced 106,701 t of various minerals, including soapstone (32%), limestone (52%), dolomite, magnesite and phosphate. After initial erratic production, limestone, the mineral most commonly found in the area, has shown an upward trend, with output increasing 398% between 1997 and 2000. Phosphate has also displayed positive trends, with production increasing more than 1,500% in the 1997–2000 period, after nil production in 1996–97. Dolomite mining increased by a significant 1,200% in the period 1997–2000, after nil production in 1996–97. Overall trends for other minerals have not been encouraging, showing wild fluctuations in output from year to year, coupled with declining production over the past several years.

Output for soapstone, the second major mineral of the area, has been continuously declining and production contracted 23% between 1996 and 2000. During the same period, magnesite also declined 30% despite periodic upward variations. Barite production fell 89% between 1996 and 1998, with output rising an impressive 565% during the year 1998–99 before falling 76% over the next year, registering an overall decline of 82% over the four-year period 1996–2000.

Figures for other minerals show similar trends. Gypsum production fell 71% in 1999–2000, while red ochre declined drastically between 1996 and 1999 with production plummeting to

nil in 1999–2000. Granite was only mined in 1997–98, while marble production dropped to nil in 1999–2000 after substantial variations during the 1996–99 period. Similarly, red oxide fell 97% between 1997 and 1999, followed by a massive 1,166% rise between 1999 and 2000.

Both growth and contraction trends in mining are unnatural, pointing to ad hoc extraction policies and haphazard inputs, rather than systematic planning which would normally result in a degree of continuity and stability, with smaller variations in output over short periods. The fluctuations in Abbottabad's mining output need to be examined and the problems of the sector rectified, if mining is to become part of the diversified economy envisaged for the district.

■ MINING SYSTEM

Both underground and open-pit mining practices are employed in the district, but the techniques in use are crude and indiscriminate. Modern safety procedures, both for labour and the environment, are not followed. As a result, mining activities constitute a significant threat to the environment as well as to the health and safety of workers. Environmental impact studies on mining operations are not conducted and laws governing mining practices are neither enforced nor followed. The effect on vegetation, flora and fauna, the landscape, surface and ground water, and the air, as well as workers' health and safety, represent the darker side of current mining practices in the district, and need to be redressed as much as the large variations in output.

MAJOR INITIATIVES AND LESSONS LEARNT

Scientific exploration and mining, particularly through public-private partnerships, can serve as an important alternative source of employment and income generation. If such work is carried out in compliance with international health and safety standards, and with due regard to environmental concerns, there is no reason why mining cannot become a valuable component of the district's economy.

■ LIMESTONE

Between 15 and 20 private companies and lease holders operate in the vicinity of Abbotabad and Havelian cities, extracting limestone from the surrounding hills for the production of crush used as building material. This accounts for 52% of the mining output of the district.

■ MAGNESITE (KUMHAR)

In 1972–73, the Pakistan Industrial Development Corporation (PIDC) was granted a 30-year lease for magnesite on 144,628 acres near the village of Kumhar. Since then, no real effort has been exerted to develop these mines. Exploratory work, carried out with the assistance of Japanese experts, reported 2.98 million t of magnesite in the area. There are reportedly plans to set up a factory in the Hattar Industrial Estate to manufacture magnesite bricks as a joint venture between PIDC and a private concern.

■ PHOSPHATE (KAKUL)

Under the control of the Sarhad Development Authority, the Kakul mine yielded 250,000 t to the Hazara Phosphate Fertiliser Company during the period 1985–96. Despite estimated reserves of 0.57 million t, the mines have been closed since 1996.

■ PHOSPHATE (LAGARBAND –TARNWAI)

The Sarhad Development Authority completed exploratory work here in 1993. Detailed mineral exploration using prospect evaluation techniques estimates reserves of 10 million t, but no further progress has been achieved.

■ SOAPSTONE (SHERWAN)

Twenty-six private concessionaires are currently working in the Bagla Kumhar, Bandi, Chetether and Khandakhu mines situated at Sherwan, some 45 km west of Abbottabad city. Soapstone constitutes 32% of the total mining output of the district.



Mining methods in use today are crude and indiscriminate, constituting a significant threat to the environment as well as the health and safety of workers.

E nergy

With no local power generation capacity to speak of, the district depends on a variety of external sources to meet its energy requirements. These include electricity from the national grid and natural gas supplied through pipelines. In rural areas, meanwhile, residents rely heavily on wood, some of which comes from Abbottabad's forests while the remainder is imported.

ON-GROUND STATUS

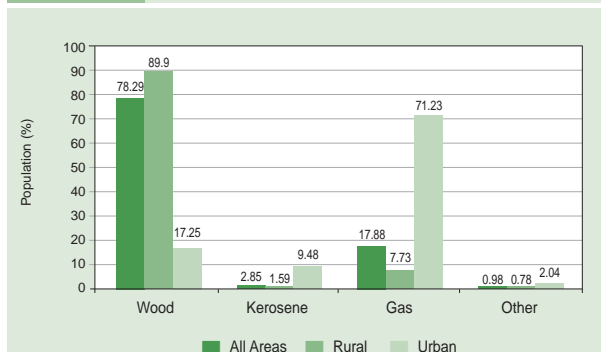
■ ELECTRICITY

Much of the electricity supplied to the district is used for lighting, serving the needs of nearly 75% of households (Table 14). Abbottabad is linked to the national grid, a network of high-voltage transmission lines spread across the country, with some 163,547 power connections provided by the year 2000. Of these, over 88% are domestic customers with the remainder divided between commercial, industrial and agricultural users. During 1999–2000, the Abbottabad office of the Peshawar Electric Supply Company sold 177.386 million units of electricity, while consumption during that period stood at 228.381 million units. The discrepancy is accounted for by line losses to the tune of 50.995 million units or 22%. Areas that lie on the district's borders with neighbouring Murree and Mansehra are supplied electricity by those districts.

TABLE 14 HOUSEHOLDS BY SOURCE OF LIGHTING, ABBOTTABAD (1998)

Source	Total	Rural	Urban
Electricity	74.98	70.99	95.97
Kerosene	24.43	28.46	3.23
Other	0.59	0.55	0.80

Source: GoP 1999a.

FIGURE 33 SOURCES OF COOKING FUEL, ABBOTTABAD (1998)

Source: GoP 1999a.

TABLE 15 PROCESSED FUEL USE, ABBOTTABAD (1996–2000)

Type	1995–96 (kL)	1999–2000 (kL)	Increase / Decrease (%)
Petrol	11,550	10,241	-1.3
High speed diesel	53,950	60,668	+6.7
Lubricants	547	284	-263

Source: Gul, sector paper, 'Energy'.

No thermal plants or large hydroelectric power plants operate in the district, and only six micro-hydels generate a combined output of 45 kW. With little generating capacity of its own, Abbottabad depends heavily on the national grid for its supply of electricity. Updated statistics on electricity use in the district are required for a realistic assessment of future needs in the sector.

■ NATURAL GAS

Natural gas is the major source of cooking fuel in the cities, used in more than 71% of urban households, while use in rural areas is low at barely 8% (Figure 33). Supplying gas to the vast rural component of the district is critical to reduce the dependency on firewood and ease the pressure on forests.

Sui Northern Gas Pipelines Limited began laying pipes in Abbottabad in the late 1980s and

has to date provided 30,648 connections to the area. Of these, 77% are domestic customers and the rest are bulk or commercial connections. In 2000, the district's annual consumption of gas stood at 4 million ft³ (113,280 m³), amounting to a per-capita consumption of 4.3 m³, far below the provincial average of 20m³.

While liquefied petroleum gas (LPG) is available in the district, it is expensive and used sparingly. Even so, LPG and Sui gas use in rural areas has increased over the last several years. The steady demand for LPG in rural areas speaks of a positive trend and bodes well for the future, particularly with respect to the district's forest resources. Data concerning the specific impact of this trend are not available.

The use of alternative fuels such compressed natural gas (CNG) is an area which requires attention. Of the 120 CNG filling stations operating across the country in 2002, seven were located in Abbottabad. In recent years, conversion to CNG, particularly for small cars and public transport vehicles, has risen dramatically. This trend needs to be analysed so that substitution can be planned more effectively.

■ WOOD

In rural areas, where natural gas is not freely available, nearly 90% of households depend on firewood for cooking (Figure 33). From September to March each year, an estimated 30 kg of wood is used daily in each household, amounting to a monthly consumption of 3.3 million kg. Between April and August, households use some 5 kg of wood daily, totalling 550,620 kg per month (Gul, sector paper, 'Energy'). Based on this estimate, the total annual firewood requirement in rural areas stands at 25.85 million kg. With a growing population and inadequate availability of gas, this demand is likely to exert excessive pressure on natural resources in coming years, leading to large-scale forest depletion. Moreover, without access to adequate fuel sources during the winter, many locals migrate to the city at this time of year, creating further pressure on service delivery in urban areas and adding to pollution and sanitation problems.

Besides cooking, wood is also commonly used for heating, particularly in rural areas. The pollution impact of this use is another concern, as is the health of users who burn wood in unsafe ways, with scant care for ventilation.

■ PROCESSED FUEL AND OIL

Although only 21,031 vehicles were registered in the district as of 2000, the number of vehicles passing through the area is significantly higher. This is largely the result of transit traffic from the Karakoram highway and, in the summers, from tourism. Heavy traffic on the Abbottabad–Mansehra road, which passes through the heart of Abbottabad city, adds to pollution as well as congestion, as does the presence of military vehicles. Besides environmental concerns, increasing traffic and congestion also make the area less inviting for tourists.

Of primary concern in the context of traffic is the increasing use of diesel, which is comparatively cheap but highly polluting. Local authorities will need to determine pollution levels in the city and take remedial measures. One step in the right direction would be to introduce surcharges based on the 'polluter pays' principle. Another equally important measure would be to make cleaner fuels, such as CNG, more widely available. Current trends in processed fuel use are shown in Table 15.

MAJOR INITIATIVES AND LESSONS LEARNT

As a capital-intensive undertaking, energy supply is likely to be dominated by the public sector in the foreseeable future. This does not automatically



In rural areas, most households depend on firewood for cooking.

preclude community involvement, particularly in areas such as conservation and rational use.

■ AFFORESTATION AND SOIL CONSERVATION, GALLIYAT PROJECT

In operation from 1988 to 1994, this project carried out afforestation and built check dams in the Galliyat area. Similar work was undertaken by the Hazara Social Forestry Project (1991–96), Sokah Nulla Project (1983–96) and Environmental Rehabilitation Project (1993–98) to improve fuel wood supply by planting nurseries. Timber exports grew substantially as a result of these initiatives, generating a substantial quantity of waste to be used as fuel.

Besides afforestation projects, SUNGI is working to promote sustainable forest resource use through its 'Pakistan Network of Rivers, Dams and People' initiative.

■ PAK-GERMAN SIRAN FOREST DEVELOPMENT PROJECT

In operation from 1992 to 1996, this project had multiple goals which included introducing modern techniques to curb the destruction of trees, relieving pressure on the ecosystem, promoting irrigation-based agriculture and establishing hydropower systems. These basic components were combined with social forestry and intensive forest management. The major achievement of this venture was to involve women in natural resource management. Multipurpose trees were planted in various villages and a number of check dams were constructed.

■ OTHER INITIATIVES

In the early 1980s, the NWFP government in collaboration with the Pakistan Council for Renewable Energy and Technology (PCRET) set up 20 biogas plants outside the homes of cattle keepers. Some 15 such units were installed on an experimental basis through the federal government's now-defunct Energy Resource Cell. Between 1987 and 1996, PCRET built six micro hydropower plants in the district, with a combined capacity of 45 kW, sufficient to meet the energy requirements of approximately 560 households.

Although most of the district is now connected to the national grid through the Peshawar Electric Supply Company Abbottabad office, distribution remains biased in favour of urban consumers. Line losses, mostly as a result of illegal connections, are estimated to be as high as 22%. Waste occurs at the level of consumers as well, because most buildings are not constructed to be energy efficient.

Some parts of the district are linked to the Sui natural gas pipeline, while the government has increased the supply of LPG to areas not covered by the pipeline, thus mitigating the pressure on forests to some extent. The supply of kerosene has also improved.

Situated at the crossroads of major highways, Abbottabad experiences considerable transit traffic, most of which uses diesel. Conversion to CNG should be encouraged and efforts here need to be supported by mass awareness campaigns, widespread availability and institutional support. The use of bracket coal and furnace oil by the army needs to be discouraged, in view of the harmful impact of these fuels on the environment.

Supplying LPG and natural gas to rural areas, where wood remains the major source of cooking fuel, is another way in which the supply of energy can be increased, while at the same time easing the pressure on natural resources. Even though much of the fuel wood in use today is imported from outside the district, the dependence of local communities on firewood must be checked to ensure the long-term survival of forests in the district. In light of increasing poverty in rural areas, this dependence inevitably results in illegal felling.

As a parallel effort to reduce dependency on wood, the use of fuel-efficient cooking and heating devices needs to be introduced. Alternative technologies, such as solar energy, water mills, biogas and windmills, are other avenues that should be explored through private-public partnerships, donor assistance and local community efforts. Centralised decision making should be replaced by

increased local inputs, and greater coordination needs to be ensured between government agencies and stakeholders.

The involvement of local communities and women in particular, who are significant energy users, will facilitate end user cooperation. Civil society needs to be familiarised with current issues related to the sector through advocacy campaigns to generate grassroots involvement and commitment.

In terms of future supply, the Sarhad Hydel Development Organisation, established in 1986 to exploit the potential of hydel power generation in the province, has identified one site in Abbottabad with a generating capacity of 150 kW at Haro Nullah but has not undertaken further work. A number of additional sources exist to expand the supply of electricity. Micro-hydel power plants with a capacity of up to 100 kW can be installed on the banks of the many

perennial streams and rivers that flow through in the district. In view of the comparatively low capital investment required, community involvement and participation in installation and maintenance can be a viable option.

In the medium term, the plantation of wood for use as fuel needs to be pursued more aggressively, emulating the integrative approach adopted by the Pak-German Siran project. The involvement of green sector departments, as well as donor projects working in the forest, watersheds and agriculture sectors, are equally necessary for long-term solutions to be developed. Local authorities need to seriously consider the establishment of wood depots, with built-in monitoring and evaluation mechanisms, to curb the illegal trade in wood and counter the influence of the timber mafia. At the same time, credit facilities for energy-related projects need to be made available on favourable terms to boost private-sector participation.

Waste Water and Solid Waste Management

Given the low level of industrial activity in the district, most of the waste water and solid waste generated in Abbottabad comes from homes and institutions.

ON-GROUND STATUS

■ WASTE WATER

In rural areas, toilets and septic tanks are used wherever piped water is available. The resulting effluent, along with other domestic waste water, is fed into the street *nullah* (drain). In densely populated villages situated in flat areas, this effluent tends to stagnate. Pools of waste water serve as breeding grounds for mosquitoes, exposing nearby communities to the risk of diseases such as dengue, filariasis and malaria.

In urban areas, where piped water is widely available, the problem of waste water disposal is even more serious. Here, most waste water is discharged either directly as sullage or indirectly as settled sewage into *nullahs* passing through residential areas. In Abbottabad and Havelian, where

settlements are built on flat ground, sewage frequently collects in stagnant pools out in the open.

In Abbottabad and Havelian, hospitals, markets, restaurants and small industries add to the problem. The AMC alone discharges 18,000 gal/hr of waste which bypasses the hospital's own treatment plant and is discharged directly into the Banda Ali Khan stream. Alarming, this stream is used by area residents for irrigation as well as drinking. Even in Nathiagali, where the GDA is responsible for overall environmental management, waste water disposal is left up to individual households and hotel owners, with the result that untreated sewage and sullage is allowed to flow down hillsides, posing a threat to the health of the population and seriously undermining the tourist appeal of the area.

Only nominal quantities of industrial waste are generated in the district. One area of concern is the vehicle battery cleaning and repair industry operating in Abbottabad city. Approximately 30 such units cause lead contamination in the surrounding streams and rivers.

■ SOLID WASTE

In both Abbottabad and Havelian, solid waste from households is invariably dumped out in the open, often in close proximity to the houses themselves. Conservative estimates put the annual quantity of municipal waste generated at 20,000 t, although a more exhaustive study needs to be undertaken.

No statistical information is available specifically for Abbottabad. On a country-wide basis, an average of 50,000 t of waste is generated daily, of which just 60% is collected by the municipal authorities. In addition, 50% of the 8,000 tons of human excrement generated each day across the country is deposited by the roadside or incorporated into solid waste. The picture for Abbottabad is in all likelihood similar, if not worse.

Municipal authorities have placed skips for garbage collection in most areas but this measure has proved to be ineffective. The location of

skips is inconvenient, discouraging widespread use. Even where they are used, garbage collection is patchy and haphazard. In addition, many *mohallahs* (neighbourhoods) cannot be accessed by municipal waste collection vehicles because unauthorised construction has resulted in streets that are too narrow for such vehicles to enter. The net result is that garbage is left to collect in piles, clogging *nullahs* and creating ideal conditions for the proliferation of disease vectors. Even in Nathiagali, where rubbish bins are available, area residents rarely deposit garbage in these containers.

Medical waste and toxic waste from business are not treated separately during collection and disposal. Residual waste such as torn plastic bags, tires and cloth which scavengers are unable to sell is used as fuel and ends up producing harmful emissions. Burning, a common method of waste disposal, also produces toxic gas emissions and seriously affects the health of communities living in proximity to garbage dumps.

■ MEDICAL WASTE

Hospital waste management has long been an issue of critical concern both for the health sector and civic authorities. In fact, proper disposal of medical waste was specifically highlighted as an area of concern in the SPCS, which emphasised the indigenous production of incinerators. The AMC with 1,000 beds, nine other civil hospitals with a combined 728 beds, and clinics in the public and private sector, are invariably located in the middle of populated areas, attracting hundreds of patients daily. This situation has no doubt been exacerbated following the policy introduced in 2001 under which all government doctors were asked to shift their private practices to hospital premises. None of these establishments possesses the facilities or expertise to ensure the safe disposal of medical waste. As a result, medical and municipal waste are frequently mixed. More often than not, pathogenic and radioactive waste is deposited along with ordinary municipal waste at public dumps.

An estimated 18,000 kg/day of biomedical waste is generated in the province, of which

Abbottabad and Mansehra account for 2,860 kg/day. This is not surprising, considering that the waste generated by the AMC alone is estimated at 800 kg/day. Estimates for other hospitals and health centres operating in the area are not available.

For its part, the provincial government has taken some measures to remedy the problem. An incinerator was installed at the AMC in 2002, with a capacity of 150 kg per cycle and capable

of running four cycles a day, thereby able to handle 600 kg of waste daily, or 75% of the total waste generated by the institution. The capacity of this incinerator needs to be improved, particularly since 40% of the hospital's waste is removed illegally and sold to recyclers.

■ WASTE DISPOSAL

The current system of solid waste disposal is highly unsatisfactory. Abbottabad town's solid waste is deposited at a municipal dump site at



At the municipal dump site at Salhad, some waste is burned out in the open while the remainder is left to rot.

Salhad, some 3 km from the city in a ravine close to the Karakoram highway. Some of this waste is burned while the remainder is left to rot. There are no landfills in the area, nor have attempts been made to redistribute waste. Havelian's disposal site is located near the Daur riverbed, some 2 km downstream from the town.

■ WASTE MANAGEMENT

Waste management in Abbottabad city is the responsibility of the TMA, which employs a staff of 129, equipped with two multi-loading trucks, 12 skips, three tractor-trolleys and 70 wheelbarrows, to handle solid waste disposal. The Abbottabad cantonment board performs similar functions for areas under its jurisdiction.

In Havelian, the TMA has overall responsibility for waste collection, with a staff of 32 equipped with one tractor, one trolley and 29 wheelbarrows. It is estimated that 8 t of waste is collected

each week from Havelian. In addition, the cantonment authorities employ 45 sweepers for waste collection. Nevertheless, waste water and solid waste management is far from satisfactory. The open garbage dump on the highway outside Abbottabad city cannot create a particularly good impression on visitors to the area.

MAJOR INITIATIVES AND LESSONS LEARNT

Responsibility for waste management lies in the public sector, and is to be executed through city and town authorities. A few initiatives have also been undertaken by the non-government sector. The system of handling waste water and solid waste poses serious threats to the environment as well as human health, not to mention the aesthetic appeal of the district. A recent attempt



More often than not, pathogenic waste from medical facilities is deposited along with ordinary refuse at public dumps where animals are allowed to forage.

by the district administration to relocate the existing garbage dump near the Karakoram highway has been stymied by conflicts over the choice of a new site.

It is impossible to address solid waste and waste water management issues without the involvement of communities that generate the waste. Whether it is urban households, rural communities or commercial enterprises, a cooperative effort is needed to arrive at a common approach that can be used to develop new initiatives.

The efficiency of existing players needs to be improved through monitoring and evaluation. To begin with, the treatment plant at the AMC, currently out of operation, needs to be brought back online. The GDA must intervene more actively in waste management in the Galliyat area and the municipal dump next to the Karakoram highway should be moved to a more acceptable location. At the same time, more efficient waste disposal methods, such as landfills and redistribution, need to be investigated. The Joughni waste water treatment plant in Kakul should be reactivated.

Indiscriminate land use, ineffective oversight of construction projects, and the lack of land use

planning, zoning and building codes, mean that haphazard growth will continue occur with little or no attention paid to critical issues such as adequate facilities for waste disposal. The problem cannot be addressed in isolation or by a single agency. The long-term effect of inappropriate waste disposal on public health, the environment and tourism cannot be ignored.

Between 80 and 90% of the local waste management budget goes to pay the salaries of staff whose service delivery is erratic, patchy and unreliable. This in itself is a deplorable failure of governance. In addition to improving the performance of municipal bodies, some of the cost and effort will have to be shared by NGOs and local communities in order to address the problem realistically. The devolution plan offers considerable opportunity for oversight at the *mohallah* (neighbourhood) level, besides allowing for advocacy to take place at the level of community representatives and leaders.

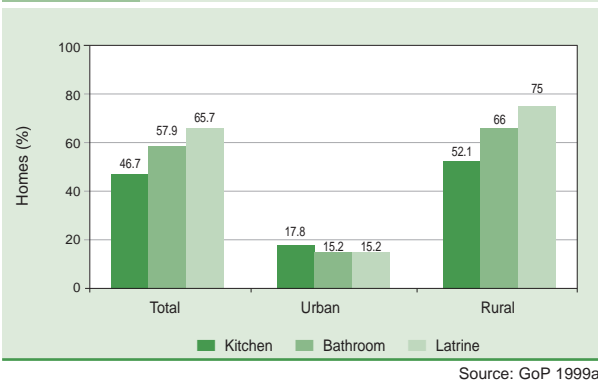
Finally, legal cover and oversight mechanisms are needed to check the pollution of rivers and streams used for irrigation and drinking. Legislation will also be required to stop the indiscriminate dumping of waste which clogs drainage channels.

Land Use Planning and Zoning

An important consideration in planning for sustainable development for the district is the problem posed by increasing urbanisation, which results in haphazard residential and commercial construction. In the absence of area-specific land use planning and zoning laws, ignorance regarding the environmental impact of unregulated growth is widespread while public attitudes are characterised by apathy. With the implementation of devolution, an attempt has been made to address this problem by assigning responsibility for land use to the TMAs. Legal mechanisms, political will and capacity for implementation are yet to be developed.

ON-GROUND STATUS

The population of the district is growing at an alarming rate. This has increased the pressure on already stretched resources and services, nearly exhausting their capacity and

FIGURE 34 FACILITIES NOT AVAILABLE IN HOMES, ABBOTTABAD (1998)

designed capabilities. Efforts to protect and conserve natural resources, too, are undermined by population growth which threatens the fragile ecological balance. Infrastructure projects, such as the two major highways that pass through the district, add to the problem, particularly since the EIA regime is not enforced.

Population growth and urbanisation create demand for both housing and natural resources. Without oversight or planning, the immediate impact of a burgeoning population is the mushrooming of illegal townships and settlements around Abbottabad city, Nathiagali and Havelian as well as protected areas such as the Ayub National Park. There are no planned inputs here and arbitrary land use seems to prevail.

Congestion indicators provide a clearer picture of the scale of the problem. Recent statistics for the province are not available, except for the percentage of the population living in one room (28% in 1998). As such, a realistic comparison cannot be made between provincial congestion indicators and the situation in Abbottabad. Nevertheless, it is evident that with an average of around three persons per room, congestion in the district is high. This overcrowding, coupled with population growth and increased density as well as rapid urbanisation, will pose serious problems for sustainable development from a variety of perspectives, particularly in terms of service delivery in the public sector.

Add to this the fact that the vast majority of urban housing lacks even basic facilities such as kitchens, bathrooms and latrines, and the situation in Abbottabad appears dismal. Around half the population does not have access to basic facilities in the home (Figure 34). From the perspective of waste management, service delivery, public health and the environment, the situation is alarming.

The effects of increasing urbanisation and the resultant pressure on housing may be seen as well by examining the nature of tenure. In census terms, 'tenure' refers to the type of home ownership, assessed in the categories of 'owned', 'rented' and 'rent-free' accommodation. Between 1980 and 1998, the proportion of owned housing declined nominally from 87.68% to 87.65%, with the entire difference going to rented accommodation which grew from 4.72% to 6.89%. While home ownership in rural areas rose from 87.65% to 92.7%, rented housing in urban areas increased from 28.6% to 34.13%, indirectly supporting other indicators of growing urbanisation. This exodus towards urban areas is also demonstrated in the demographic profile of the district.

Internal migration is seen as a variable that implicitly influences the quality of life. Migration relates to sustainable development issues in a number of ways. Increasing urbanisation and the resultant growth in construction leads to greater demand for wood and other natural resources. The threat this poses to the natural resources of the district cannot be downplayed.

In a district where waste management is dismal, the indiscriminate growth of unplanned townships without provisions for sanitation, water or basic facilities will cripple the municipal services' capacity to cope. Such a failure will also impact sectors such as education, health, drinking water supply and employment. Even in protected areas and places of tourist interest, illegal construction continues unchecked, with blatant disregard of the very purpose for which such areas have been designated.

MAJOR INITIATIVES AND LESSONS LEARNT

To date, little has been done to tackle the problem of increasing urbanisation and unplanned construction. All future initiatives need to incorporate a land use planning component, and efforts are also required to undo some of the damage that has already been inflicted on the urban environment.

The absence of regulatory cover for land use has serious implications on air, water and noise pollution. Water quality in the city is already dubious, while transit traffic has increased air and noise pollution. These impacts will need to be measured and monitored.

In the final analysis, stakeholders themselves need to address the implementation of stringent legal and punitive measures to enforce land use laws, remove encroachments and demolish illegal construction.



In the absence of land use zoning and planning, the rising demand for housing has resulted in urban congestion and led to the mushrooming of illegal townships on the outskirts of Abbottabad city.

PART IV

Socio-Economic
Sectors

E ducation

E ducation enhances both the quality and productivity of labour, and serves as a key indicator of socio-economic development. It is instrumental in enabling economic growth by fostering attitudes and behaviours that are compatible with modern societal requirements.

ON-GROUND STATUS

In the year 1999–2000, some 1,549 primary schools (67% for boys, 33% for girls), 107 middle schools (63% for boys, 27% for girls), 87 high schools (74% for boys, 26% for girls) and 11 higher secondary schools (64% for boys, 26% for girls) were operating in Abbottabad, along with one intermediate college, three degree colleges and two post-graduate colleges, all of them run by the government (Figure 35). The formal sector is supplemented by 14 *maktabs* or religious schools, 347 mosque schools and a substantial number of educational institutions in the private sector. Three vocational schools, six community schools and two Japan International Cooperation Agency schools are also operating in the district. A 1999 research study carried out by the Frontier Education Foundation (FEF) showed that the private sector's contribution to raising the enrolment ratio stood at 13% (FEF 1999). This figure is expected to have risen over

subsequent years, particularly at higher and tertiary levels. Private-sector enrolment for 1998–99 at the primary level alone stood at 17,707 in 120 schools.

■ PRIMARY SCHOOL

During the period 1996–2000, the number of government primary schools in the district increased from 998 to 1,549, recording a 55.2% growth rate compared to a 38% rise for the province as a whole. The relative growth rate for boys' schools, at 76.4% (compared to the provincial 43%), was higher than for girls' schools which increased by 24.7% (compared to 17.3% for the province). Interestingly, male enrolment at the primary level grew only 5.5% in the same period, while female enrolment was down 22.8%. This leads to the conclusion that the construction of additional buildings—attractive 'solutions' politically and departmentally—is no answer to the endemic problems plaguing the sector. More wide-ranging issues such as access and quality, as well as spatial and gender balance, need to be addressed.

■ MIDDLE SCHOOL

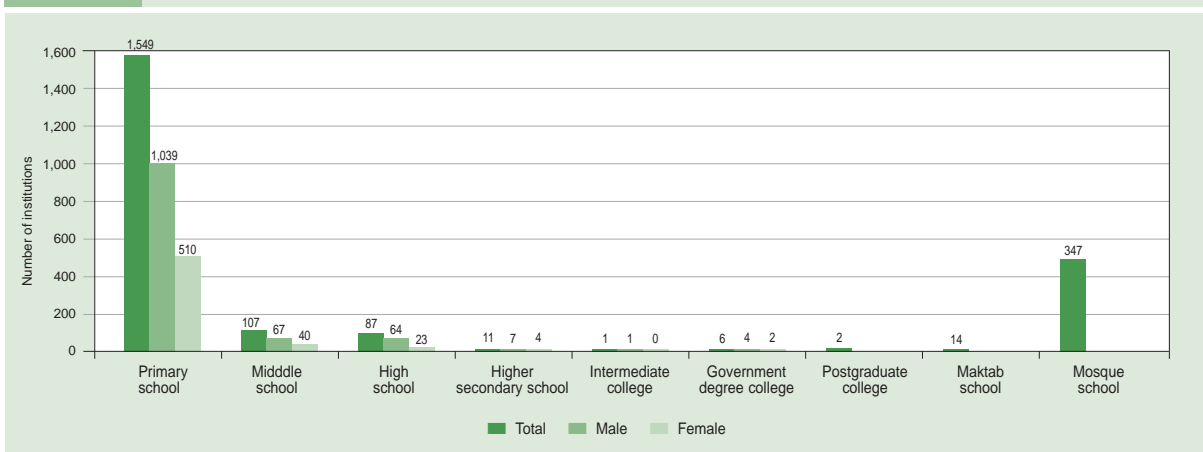
During 1996–99, the number of middle schools in the district went from 97 to 107, recording a cumulative growth of 10.3%, compared to 15.9% for the province. This number remained unchanged during 1999–2000. The relative growth rate for girls' schools, at 29% (compared

to the provincial 28.5%) was far higher than the nominal 1.5% increase recorded for boys' schools (compared to 10.5% for the province). In terms of impact, it is important to note that female enrolment between 1996 and 1999 increased by almost 20% (compared to the provincial 22%). In contrast, enrolment for males fell 10% (compared to a 4% decline at the provincial level), complicating the issue of building additional infrastructure at this level. These trends also highlight the need for more female middle schools and for improving access to existing schools.

■ HIGH SCHOOL

The number of high schools in the district grew from 80 to 87 during the period 1996–99, recording growth of 8.8% (compared to a decline of 10.5% for the province). Once again, the period 1999–2000 saw no increase in numbers. Relative growth for girls' schools, at 21.1% (compared to the provincial 15%), was far higher than the 4.4% growth seen in the case of boys' schools (3.1% for the province). In terms of impact, it is important to note that in Abbottabad, female enrolment at this level rose 40% (compared to 25.8% for the province), while male enrolment increased by only 14.8% (4.9% for the province). This points to the relatively greater impact of infrastructure development at this level of education, and highlights the need to evaluate progress in the

FIGURE 35 EDUCATIONAL INSTITUTIONS, ABBOTTABAD (1999–2000)



Source: GoNWFP 1999.

sector from the point of view of levels of education, as opposed to looking at the sector as a whole. The need to increase the number of girls' schools is an evident corollary of the preceding analysis, and is supported by the statistics for female participation rates below.

■ HIGHER SECONDARY SCHOOL

The number of higher secondary schools in the period 1996–99 grew by 38%, with three new schools added in 1998–99 (two for boys and one for girls). Male enrolment at this level fell 10.4%, however, while female enrolment increased just 1%, even with the addition of more schools. No new higher secondary schools were built during 1999–2000.

■ INTERMEDIATE COLLEGE

Only one intermediate college for men exists in the district. Overall enrolment at this level fell by 26% (23% male and 30% female) in the period 1996–99, compared to a more modest decline of 13.5% for the province (14% male and 1% female). In the context of higher education, retention remains a central concern.

■ DEGREE COLLEGE

In the period 1997–2000, the number of government degree colleges in the district grew by 50% (compared to 8% for the province), with the addition of two new colleges for men. Enrolment in the period 1996–99 nevertheless fell 15% (male 15% and female 15%). As in the case of higher secondary and intermediate schools, this explicitly identifies post-middle level education, particularly for women and in rural areas, as a problematic issue that needs to be addressed through a multi-pronged approach involving key stake-

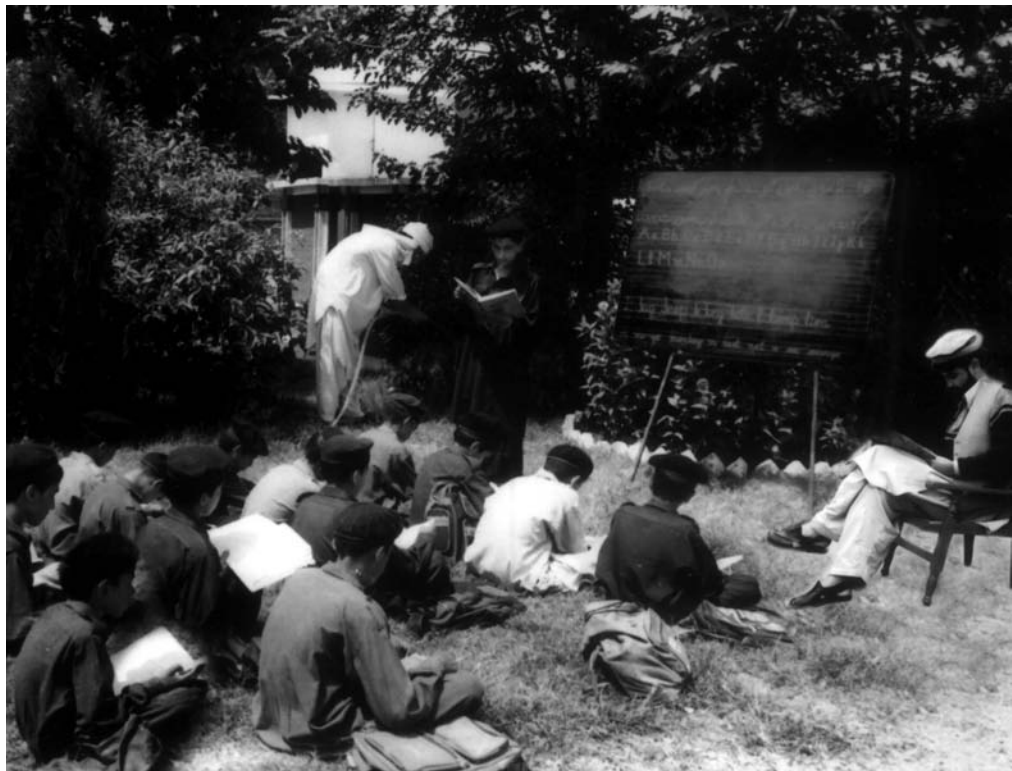
holders, particularly parents. Long-term solutions are required that are not dependent solely on service delivery through the public sector.

■ POSTGRADUATE STUDIES

Two colleges in the district offer postgraduate courses, with a combined enrolment of 3,372 students.

■ PRIVATE SECTOR

In addition to the public sector, an estimated 120 privately-run primary schools were operating in 1999, with a total enrolment of 17,707



Responsibility for education can no longer be borne entirely by the public sector, nor can improvements be brought about solely by means of resource allocation.

(roughly 17% of overall enrolment at the primary level), consisting of 63% male and 27% female students.

Besides government and private institutions, *maktabs* and mosque schools also operate in the district. Their numbers fell from 532 to 378 between 1996 and 1999, with most of the decline accounted for by a 30% fall in the number of mosque schools. As a consequence, enrolment

in *maktabs* and mosque schools declined by almost 19%.

ENROLMENT

During 1998–99, primary school enrolment stood at 105,709 students (61% male, 39% female), while 33,542 pupils were enrolled in middle school (66% male, 34% female), 16,076 in high school and 893 in higher secondary school (Figure 36). Students at the intermediate level numbered 2,991 while enrolment in government degree colleges stood at 1,651, with 503 scholars working at the postgraduate level. During the same period, some 16,032 pupils were enrolled in *maktabs* and mosque schools. The enrolment ratio for 1998 is shown in Figure 37.

Given the higher population of the district's rural areas, rural enrolment is proportionately higher at the primary, middle and high school level (Figure 38). This trend undergoes a dramatic reversal at the higher secondary and tertiary level, where enrolment in urban areas exceeds rural areas for both males and females.

Primary School

At the primary level, overall enrolment during the period 1996–99 fell 13.3% (compared to a 6.5% decline for the province as a whole). This decline was higher among females (26.7%, compared to 12.3% for the province) than in

males (1.8%, compared to the provincial 3.4%). Between 1997 and 1999, however, male enrolment fell a massive 23%, compared to a 13% decline for the whole province. Especially considering that the number of primary schools actually grew 9.3% in the same period (11% for boys and 6.8% for girls), this trend seems anomalous. It is for this very reason that factors such as drop-out rates and the standard of education, as well as access and location, must be incorporated into planning for education, rather than merely building new schools or pursuing additional infrastructural inputs.

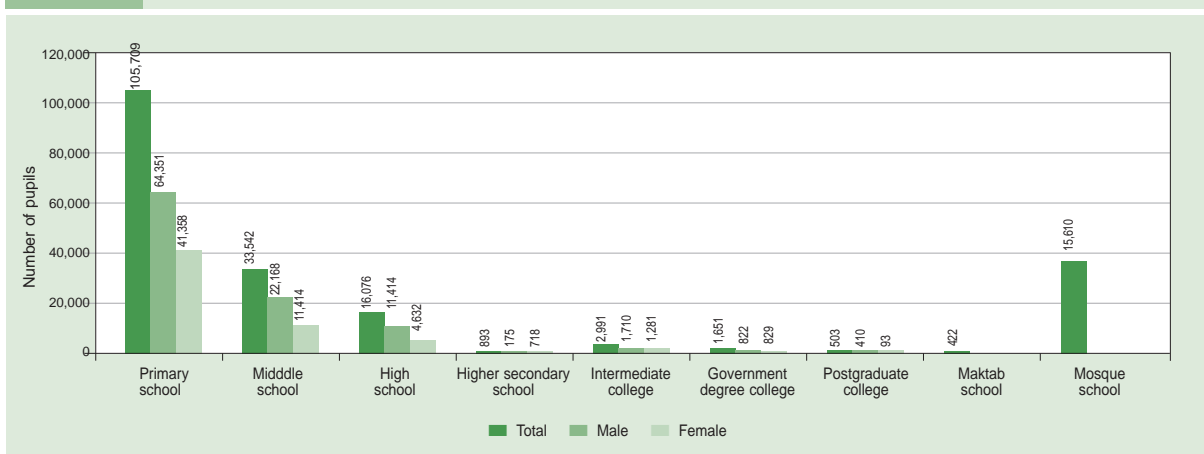
Middle School

At the middle school level, overall enrolment in 1996–99 fell 1.95%, compared to a 1.9% increase at the provincial level. While male enrolment contracted 10% (compared to a 4% drop in the province), female enrolment grew 19% (compared to a 23% increase at the provincial level). In this case, the 29% increase in female institutions (compared to 28.9% for the province), and the 1.5% growth in the number of male institutions (compared to 10.5% for the province) may provide part of the answer, pointing to the increasing importance of additional infrastructure at higher levels of education.

High School

Overall enrolment in high school increased 21.4% in 1996–99 (compared to 13.9% for the

FIGURE 36 ENROLMENT BY TYPE OF EDUCATION AND GENDER, ABBOTTABAD (1998–1999)



Source: GoNWFP 1999.

province as a whole), with male enrolment up 14.8% (compared to 9% for the province) and female enrolment showing a massive rise of 40.2% (compared to a respectable 26% for the province). Part of the explanation for this trend lies in the fact that the number of female high schools increased 21% (compared to 15% for the province), while the number of male institutions grew a nominal 4.4% (compared to 3.10% at the provincial level). These statistics may well confirm the relative importance of additional infrastructure, primarily to widen access, at this level of education.

Higher Secondary and Intermediate School

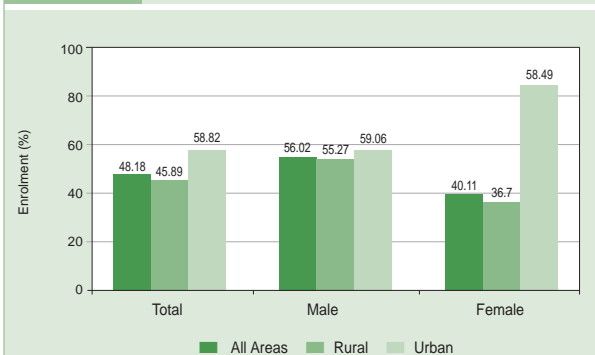
Between 1996 and 1999, movement at the higher secondary level was nominal, characterised by greater female participation. However, enrolment at the intermediate level dropped 26% (compared to a 13.5% decline for the province) with female enrolment suffering more heavily, falling 30% (compared to a mere 1.1% decrease at the provincial level). Enrolment among men was also down, falling 23% compared to a 14% decline in the province. The existence of a single male intermediate school points to the gap at this level, where issues of access and equity are of crucial importance.

College

The problems facing higher education in the district are further illustrated by enrolment trends in government degree colleges. Overall enrolment declined 15.1% during the period 1996–99, compared to a fall of only 3.3% in the province as a whole. At this level, numbers fell more or less the same among men and women, with female enrolment down 15.3% (compared to only 0.9% in the province) and male enrolment falling by 15% (compared to 4.3% at the provincial level).

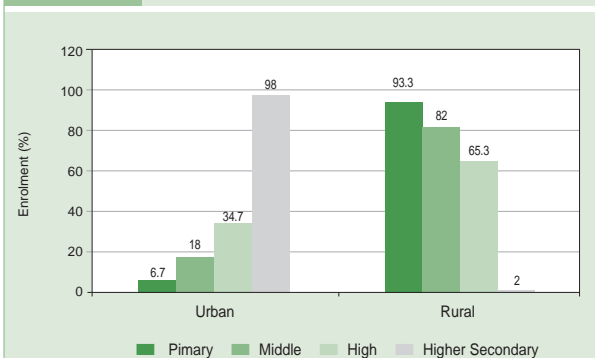
Overall figures for the district reveal that enrolment between 1996 and 1999 has fallen at all levels except for high schools, and that the situation is only partly mitigated by the improved gender balance witnessed at the middle, high and higher secondary levels. While figures for the district are not significantly poorer than

FIGURE 37 ENROLMENT BY AREA AND GENDER, ABBOTTABAD (1998)



Source: GoNWFP 1999.

FIGURE 38 ENROLMENT BY LEVEL OF EDUCATION AND AREA, ABBOTTABAD (1998–1999)

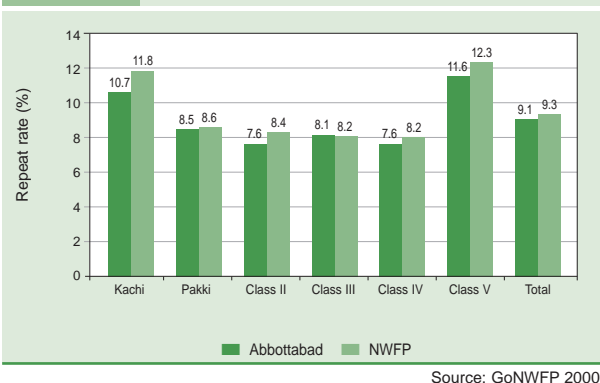
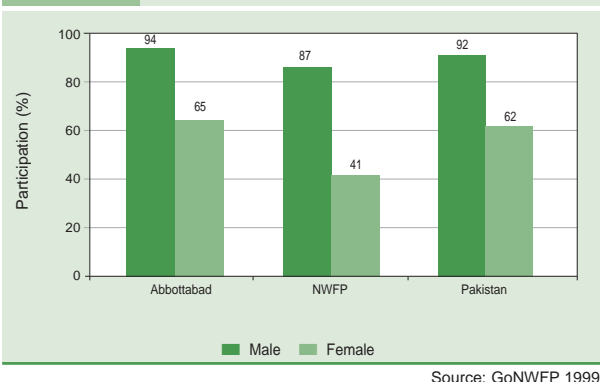


Source: GoNWFP 1999.

statistics for the province as a whole, the problem of access at higher levels, in rural areas and for women needs to be addressed. The relevance of the curriculum with regard to the job market also needs to be assessed.

■ PARTICIPATION

During 1999–2000, overall participation rates at various levels are as follows: 79% at the primary level (93% male and 66% female), 40% at the middle level (50% male and 29% female), 31% at high school level (41% male and 20% female), and a mere 3.7% at the higher secondary level (Figure 39). Clearly, participation rates fall as the level of education rises. For this reason, administrative measures aimed at improving higher-level education need to start by examining the reality on the ground. It is only for participation at the primary and middle level that Abbottabad outperforms the province, and

FIGURE 39 PARTICIPATION BY LEVEL OF EDUCATION AND GENDER, ABBOTTABAD (1999–2000)**FIGURE 40** REPEAT RATES AT PRIMARY LEVEL, ABBOTTABAD AND NWFP (1998–99)**FIGURE 41** RELATIVE PARTICIPATION RATES, ABBOTTABAD, NWFP AND PAKISTAN (1998–99)

only at the primary level that participation in the district exceeds national figures. At all other levels, Abbottabad's falling participation rates point to shortfalls in the sector.

At the primary level, Abbottabad leads both the province and the country in terms of

overall participation as well as separately, for male and female pupils. On paper, this is commendable, all the more so because the district's repeat rates are lower than those in the province as a whole (Figure 40). Indeed, for participation at the primary level in 1998–99, the district fares better than both the province and the country as a whole (Figure 41). Abbottabad also outperforms the provincial average at the middle level (Figure 42) for the same period. However, other indicators are far from encouraging. At the higher level, Abbottabad trails both national and provincial participation rates (Figure 43).

In the medium term, trends in overall participation during the period 1995–2000 show Abbottabad leading the province at all levels (Figure 44 and Figure 45). Beneath these seemingly positive statistics lie certain serious areas of concern. For instance, female participation at the primary level fell from 94% in 1995–96 to 66% in 1999–2000, whereas provincial figures remained unchanged at 40%. Similarly, male participation at the middle level fell from 62% in 1995–96 to 50% in 1999–2000, while the provincial figure fell from 47% to 41% during the same period.

Crude drop-out rates are another cause for concern. In 1999–2000, the rate of students abandoning their studies between primary and middle school stood at 53% (54% in 1995–96), while the drop-out rate between middle and high school was 9% (14% in 1995–96). Based on these figures, the contraction in student numbers between primary and high school is as much as 62% (68% in 1995–96), demonstrating the difficulty of keeping children in school. Here, females fare slightly better with a 46% contraction in enrolment between primary education and high school, but this belies the fact that participation for girls at the primary level is low to begin with (88% in 1995–96). Across the province, the contraction rate among females is lower, at 40%, but once again this is largely because participation at the primary level is in any case low.

The statistics show that participation falls as the level of education rises. This is where remedial

measures need to be focused, especially with regard to young women.

These figures need to be studied with caution, however, since scant data are available for private sector institutions which operate at virtually all levels. The impact of these institutions on participation rates is undeniable, particularly in urban areas where 120 private schools are operating at the primary level alone, with a 1998–99 enrolment of 17,700 (approximately 17% of the total government primary school enrolment). This impact remains to be systematically assessed, particularly from the point of view of fostering public-private partnerships.

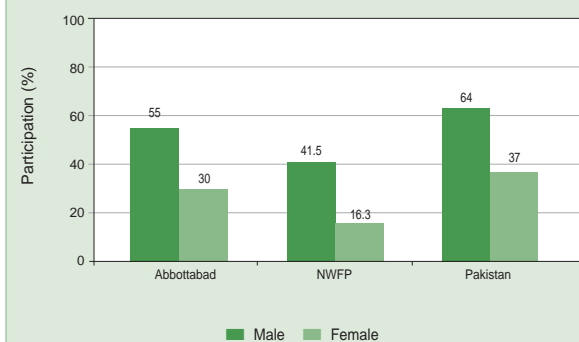
LITERACY

The combined literacy ratio in the district jumped from 28% in 1981 to nearly 64% in 2000, with significant separate increases in both male and female literacy (Figure 46). Literacy across the province stood at nearly 41% in 2000, trailing the district by more than 20% (Figure 47). Abbottabad also exceeded the national average, which stood at 51% in 2000. Compared to the district's nearly 36% increase in literacy, the provincial rate grew only 28%, while at the national level literacy rose about 25% in the same period.

Examined separately by gender, Abbottabad again appears to have made progress. Between 1981 and 2000, male literacy in the district grew almost 38%, surpassing both the province (nearly 31%) and the country as a whole (28%) during the same period (Figure 48). The district's gains in female literacy are also impressive. Between 1981 and 2000, female literacy in Abbottabad increased from just over 11% to an astonishing rate of nearly 51% (Figure 49). This increase amounts to a 350% overall growth in female literacy during the period. The key concern here is that despite the great improvement, gender disparities persist in education.

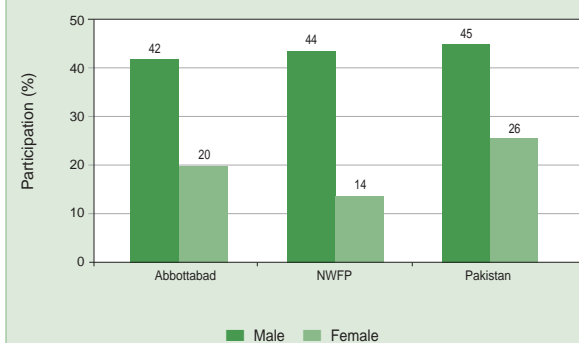
In both rural and urban areas, examined separately, Abbottabad's progress in literacy has surpassed provincial figures. Between 1995 and 2000, literacy in the district's urban areas

FIGURE 42 RELATIVE PARTICIPATION, MIDDLE SCHOOL, ABBOTTABAD, NWFP AND PAKISTAN (1998–99)



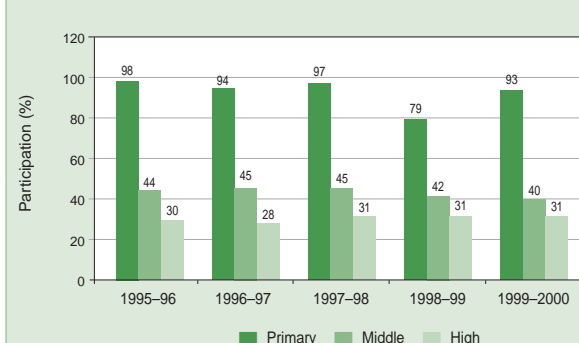
Source: GoNWFP 1999.

FIGURE 43 RELATIVE PARTICIPATION, HIGH SCHOOL, ABBOTTABAD, NWFP AND PAKISTAN (1998–99)



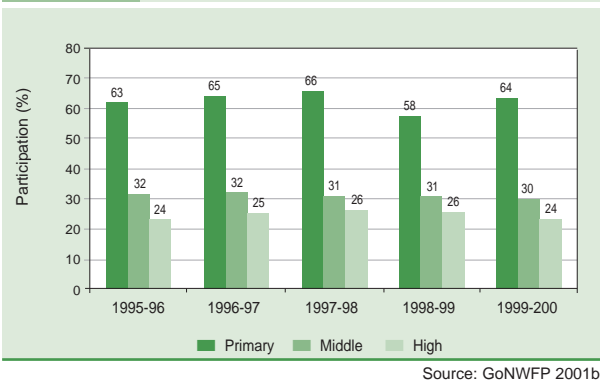
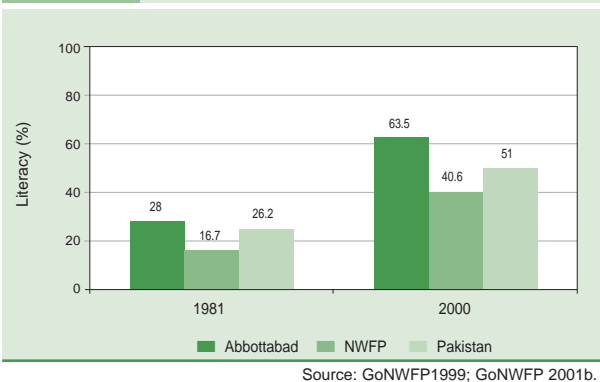
Source: GoNWFP 2001b.

FIGURE 44 PARTICIPATION TRENDS, ABBOTTABAD (1995–2000)



Source: GoNWFP 2001b.

increased over 22% (from 66.4% to 86.7%) compared to an 11.8% increment for the entire province (from 50.1% to 61.9%) during the same period (Figure 50). Similarly, literacy in rural areas rose 11.4% (from 45.6% to 57%) between 1995 and 2000, surpassing provincial

FIGURE 45 PARTICIPATION TRENDS, NWFP (1995–2000)**FIGURE 46** LITERACY RATIO, POPULATION AGED 10 YEARS AND ABOVE, ABBOTTABAD (1981–2000)**FIGURE 47** LITERACY RATIO, ABBOTTABAD AND NWFP (1981–2000)

growth of 6.8% (from 29% to 35.8%) in the same period (Figure 51). Here, one concern is that rural literacy grew at a slower rate than urban literacy, at both the district and provincial level. The plight of rural students, particularly women, will need to be the focus of analysis and interventions.

What is evident from the statistics is that although literacy in Abbottabad surpasses both provincial and national levels, the district must also contend with a number of other variables, particularly its relatively poor performance in higher education, female education and rural access. For this reason, literacy ratios must be examined with caution.

The accepted definition of literacy is also cause for concern, since the term is crudely defined (see glossary). In addition, we need to heed the warning of researchers studying demographic trends, particularly with regard to misinterpretation, as noted by a specialised analysis of census data carried out by the Multi-Donor Support Unit. This study notes that while most districts show rises in literacy levels over the last two decades, the number of individuals who are illiterate has doubled or even trebled in the same period, while low female literacy persists (MSU 2000: 3).

This tendency is confirmed in Figure 52 and Figure 53, which show rural and urban literacy ratios in Abbottabad. In both areas, literacy has increased among men as well as women. The census definition of literacy, however, is rudimentary and requires that these trends are interpreted with caution. Moreover, the figures simply indicate quantitative gains, which does not necessarily mean that quality has improved.

■ STUDENT-TEACHER RATIO

Despite seeming improvements in literacy, the student-teacher ratio in recent years has shown a steady decline. In other words, classes are getting larger, with the result that the standard of education has fallen. Coupled with already inadequate facilities and poorly-trained instructors, this spells disaster for the quality of education on offer. The student-teacher ratio in Abbottabad has increased from 28 students per teacher in 1995–96 to 34 in 1999–2000 (Figure 54). Trends for the province as a whole are similar. It is likely that part of this increase in class size is the result of population and density increases, as well as poor planning and the implementation of ad hoc measures.

■ DROP-OUT RATIO AND REPEAT RATIO

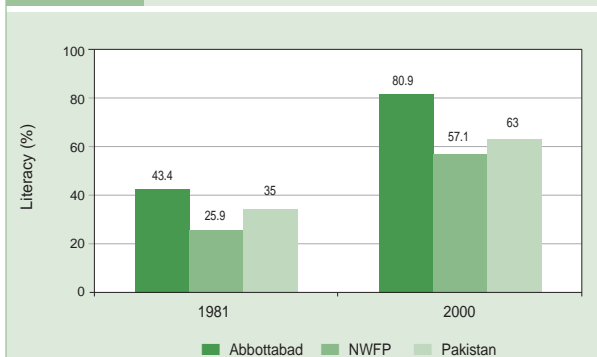
Besides student-teacher ratios, the quality and efficacy of education at all levels may be gauged by repeat rates and drop-out rates. Unfortunately, these vital indicators are not widely available—perhaps because these sensitive benchmarks carry implicit elements of serious accountability—nor is their importance fully understood.

From the little information that is available for the district, some 10,631 children at the primary level repeated a year of education during 2000. With total enrolment at 105,705 for the same year, the repeat ratio is as high as 11% (Table 16). Overall, repeat rates for Abbottabad are only nominally lower than those for the province, with Class V being a particular cause for concern.

In the absence of recent district-specific drop-out rates, a rough estimate for the province as a whole between the years 1976–77 and 1986–87 will have to suffice (Table 17). This estimate is based on the crude drop-out rate, which may in fact more accurately be described as a discontinuation rate between various levels of schooling. For discontinuation, the drop-out rate for any given year is calculated by subtracting enrolment in the base year from figures for students at a lower level in the preceding year. Of course, this method does not yield an exact picture of class-wise drop out rates, which are needed to assess progress in the sector. But the figures do serve to provide a general picture that may be used as a benchmark to predict the district's future performance, as part of a monitoring and review process. Without specific drop-out rates, the promotion rate is difficult to calculate.

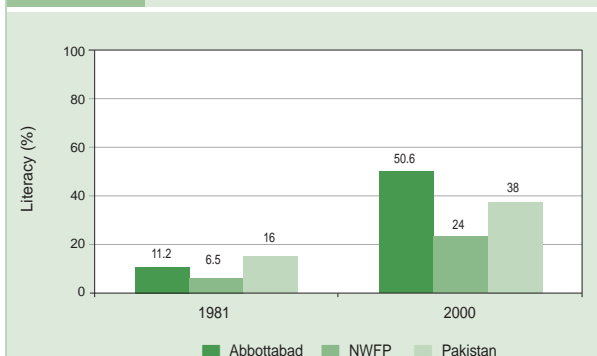
While the decline in female drop-out rates at the primary and middle level is laudable, increasing drop-out rates at higher levels are discouraging. Drop-out rates available for 1986–87 range from 11.5% to 20.9%, indicating that serious flaws exist in the system. According to government projections, national primary level drop-out rates are as

FIGURE 48 MALE LITERACY, ABBOTTABAD, NWFP AND PAKISTAN (1981–2000)



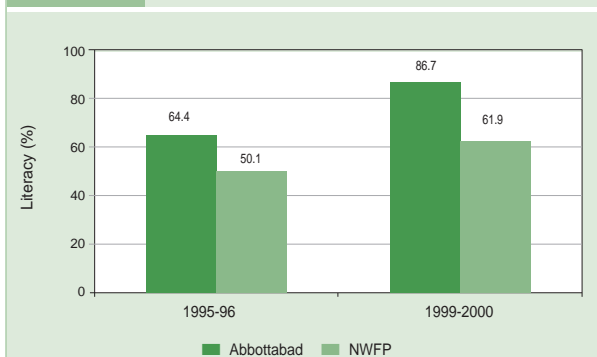
Source: GoNWFP1999; GoNWFP 2001b.

FIGURE 49 FEMALE LITERACY, ABBOTTABAD, NWFP AND PAKISTAN (1981–2000)



Source: GoNWFP1999; GoNWFP 2001b.

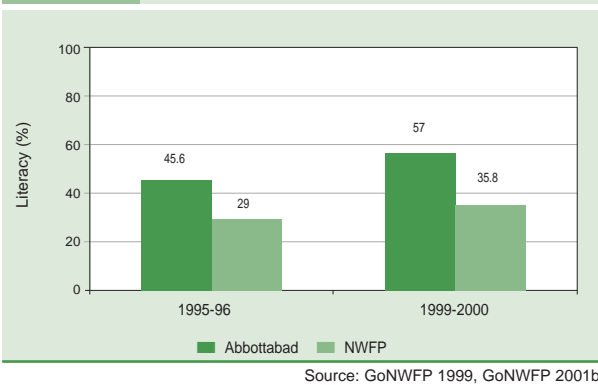
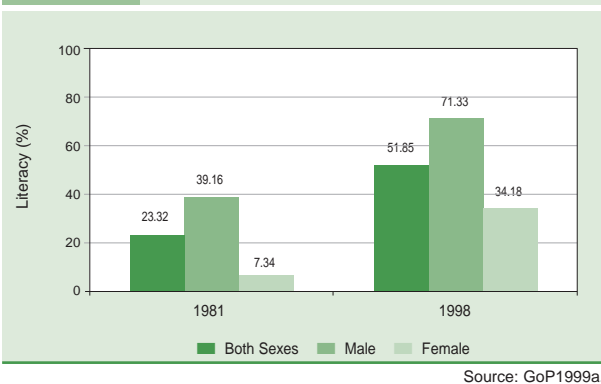
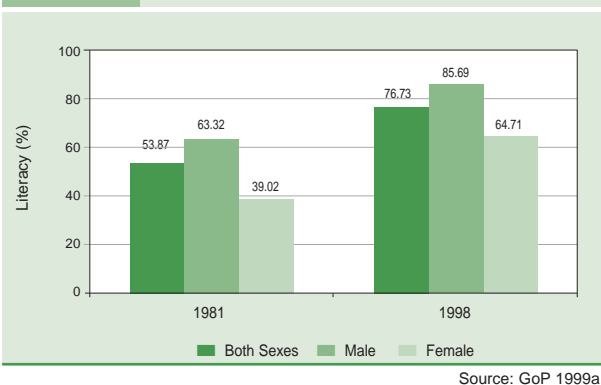
FIGURE 50 URBAN LITERACY, ABBOTTABAD AND NWFP (1995–2000)



Source: GoNWFP 2001b.

high as 48% (43% male and 42% female) for 2001–02 (GoP 2003).

At the tertiary level, drop-out rates are comparatively low but these figures must be viewed in the context of overall enrolment or participation at this level, which is dismal.

FIGURE 51 RURAL LITERACY, ABBOTTABAD AND NWFP (1995–2000)**FIGURE 52** RURAL LITERACY RATIO, ABBOTTABAD (1998)**FIGURE 53** URBAN LITERACY RATIO, ABBOTTABAD (1998)

Meanwhile, failure rates, particularly in English and the sciences, are alarming. These figures are important in and of themselves, serving as an indictment of the current system in terms of accessibility and equity as well as standards. When viewed in the context of marketability and employment prospects, the failure rate at

the tertiary level becomes cause for grave concern.

■ PERCENTAGE OF EDUCATED POPULATION

A little over 56% of Abbottabad's total population is educated, with higher figures for males in both rural and urban areas (Figure 55). Female education at all levels remains an area of concern in terms of equal access.

■ PRIVATE SCHOOLS

In addition to government schools, the district is home to a large number of private educational institutions. Detailed statistics for private schools and colleges are not available, but the FEF estimates that they contribute some 13% to enrolment in the district. Elite schools such as the Abbottabad Public School, the Army Burn Hall School and College, and the Pakistan Military Academy Kakul are located in and around Abbottabad city, although they cater only nominally to local residents, given the high fees and stringent entrance criteria. Growth has taken place in private-sector education during the last few years, particularly at higher levels, in technical education and information technology, and at the kindergarten and pre-school levels.

■ TECHNICAL AND VOCATIONAL INSTITUTIONS

A total of three technical and/or vocational institutions operate in the the district, with a combined enrolment of 918 (Table 18).

■ TERTIARY EDUCATION

Through its distance learning programmes, the Allama Iqbal Open University registered 6,678 students from Abbottabad for the spring 2000 semester. With 49.4% female and 50.6% male registration, courses selected ranged from matriculation to advanced degrees (Table 19). Registration for primary teaching and Master of Education (simple and general) courses constituted around 54% of all registration, while 14.8% opted for undergraduate studies and 2.6% registered in the Master of Business Administration programme.

MAJOR INITIATIVES AND LESSONS LEARNT

Responsibility for education cannot be left entirely to the public sector, nor can it be viewed in the narrow context of service delivery. Thinking about education should be tied in to the broader context in which education is delivered. Nor can problems in the education sector be viewed simply through the lens of resource allocation, as has been the case in the past. Building more schools is not the only answer or even the best solution. Rather, integrated improvements should be sought in terms of access, quality and economic value.

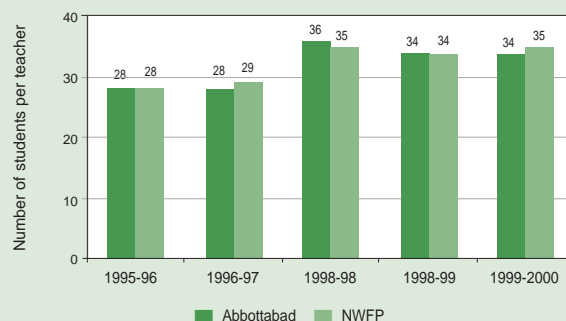
Female education at all levels and in rural areas needs to become the focus of public-private interventions to restore the gender imbalance currently prevalent in education. At the same time, grassroots involvement from parents, voluntary community organisations, NGOs and elected representatives must be actively pursued to promote ownership and commitment.

Most initiatives undertaken in this sector have been executed through the provincial education department. Meanwhile, the private sector's involvement at most levels, particularly in the cities of Abbottabad and Havelian, has served to increase enrolment and raise the quality of education on offer. Several projects have also made a contribution to the sector.

PRIMARY EDUCATION

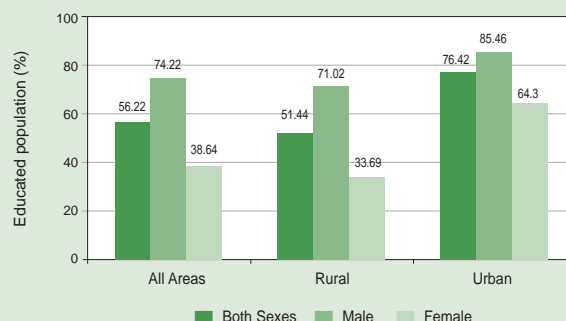
Going by enrolment ratios, participation rates and physical facilities, primary-level education in the district has improved in recent years. With a high 80% participation rate for the district as a whole, and literacy increasing

FIGURE 54 STUDENT-TEACHER RATIO, ABBOTTABAD AND NWFP (1995–2000)



Source: GoNWFP 2001b.

FIGURE 55 EDUCATED PERSONS AGED 10 YEARS AND ABOVE, ABBOTTABAD (1998)



Source: GoP 1999a.

from 28% in 1981 to 57% in 1998 (with ratios going up for both males and females), it is tempting to view this sector as relatively efficient. These performance indicators are, however, misleading.

Despite massive investment in the sector, primary education is dogged by problems of access, quality and continuity. While drop-out rates for this level are not available, repeaters constitute 11% of the students at this level. Estimated drop-out rates, derived by comparing participation rates between primary and middle school in successive years, indicate

TABLE 16 REPEATERS BY GENDER AND CLASS, PRIMARY LEVEL, ABBOTTABAD (2000)

Type	Nursery	Class I	Class II	Class III	Class IV	Class V	Total
Boys' schools (boys and girls)*	2,337	116	1,039	928	824	1,298	6,542
Girls' schools (boys and girls)	1,134	653	588	610	499	605	4,089

* Although separate boys' and girls' schools exist, it is often the case that girls are enrolled in boys' schools and vice versa.

Source: GoNWFP 2000.

TABLE 17 DROP-OUT RATE, NWFP (1998–99)

Year	Boys (%)	Girls (%)	Total (%)
Primary Level			
1976–77	25.1	40.3	28.3
1986–87	20.4	23.1	20.9
Middle Level			
1976–77	15.7	32.1	19.2
1986–87	10.5	18.9	11.5
High Level			
1976–77	17.9	8.1	18.0
1986–87	16.2	9.3	14.9

Source: GoNWFP 1999.

TABLE 18 TECHNICAL AND VOCATIONAL INSTITUTIONS, ABBOTTABAD (1998–99)

Type of institution	Number	Enrolment
Polytechnic	1	517
Commerce college/commercial institute	1	355
Vocational institution	1	46
Total	3	918

Source: GoNWFP 1999.

TABLE 19 REGISTRATION FOR COURSES, ALLAMA IQBAL OPEN UNIVERSITY (2000)

Level	Number	Percentage
Primary teaching course	2,244	33.6
M.Ed	1,568	23.5
BSc	682	10.2
BA	306	4.6
MBA	173	2.6
Other	1,705	25.5
Total	6,678	100

Source: Allama Iqbal Open University, Abbottabad Office.

that education is not valued. By failing to inculcate a desire for learning—both among children and, perhaps more importantly, among parents—primary education has failed to fulfil a key function.

Part of the problem is that the quality of education, particularly in rural areas, is far from satisfactory. Poor teaching, outdated syllabi, non-functional schools, absent teachers, lack of transport and inadequate facilities plague the sector. Making matters worse, massive funding has not always achieved the desired results. As expressed in the Primary Education Programme-Improvement of the Learning Environment (PEP-ILE) concept, what is needed is a broader approach to education, rather than patchy interventions by individual players. The

involvement of local communities, especially parents, is critical, since drop-out rates among school children are largely determined by the social mores and values of parents, such as encouraging early marriage among women, expecting children to participate in farming activities and placing a low value on education. The nexus between education, employment and poverty alleviation also needs to be highlighted in order to increase participation at higher levels of education.

Primary Education Project

In Phase I (1979–84), the World Bank-assisted Primary Education Project, implemented by the provincial education department, addressed issues of access, quality, teacher training and drop-out rates, as well as widespread absenteeism among primary school teachers. Solutions to these problems were sought to improve the overall system of delivery by constructing residential quarters for female teachers, upgrading school buildings, constructing additional classrooms, and supplying furniture and equipment. A new cadre of learning coordinators was created to provide professional support to teachers by developing new learning modules.

In Phase II (1985–92), Abbottabad was included in a group of six districts where specific attempts were made to remove the bottlenecks that arose during the previous phase. Meanwhile, efforts continued to improve physical facilities, access and quality, by enhancing service delivery, developing learning modules and teaching material, and providing teacher training.

While the performance review of Phases I and II endorses the learning coordinators concept, it was also found that in comparison to non-project schools, improvement in project schools was not significant. The key lesson here is that extending resources and infrastructure facilities in isolation does not constitute an effective solution.

Primary Education (Girls) Project

The ADB-assisted Primary Education (Girls) Project (1990–95), implemented by the provincial education department, aimed to improve

the quality of and access to primary education for girls. In this connection, five community model schools were set up in the district.

Primary Education Programme

Significant work to improve access and quality was carried out through the United States Agency for International Development-assisted Primary Education Programme, launched in the early 1980s and implemented by the provincial education department. This work was subsequently carried over under the multi-donor assisted Primary Education Programme which concluded in December 2000.

between teachers and the community, especially with the parents of pupils, is critical to improving the quality of education and lowering drop-out rates. Under the PEP-ILE, 1,492 parent-teacher associations were formed in the district by 1999. Parent-teacher activities thought to be important included the construction and maintenance of schools, improving hygiene in schools, building latrines, supplying electricity and providing furniture.

Directorate of Primary Education

Since 1997, the Directorate has worked to improve the quality of education by introducing



With high tuition fees and stringent entrance criteria, elite private schools located in and around Abbottabad city cater only nominally to local children.

Primary Education Programme- Improvement of the Learning Environment

The fundamental premise of this ADB-funded programme, which ran from 1997 to 2000 and was implemented by the provincial education department, was that a positive relationship

pupil-centred methods of teaching. Several thousand teachers from Abbottabad have benefited from this initiative.

Social Action Programme

Primary education received special attention under the federal government's Social Action

Programme Phase I (1992–93 to 1996–99). Activities in Phase I covered the following areas: improving physical facilities in primary schools, constructing additional classrooms, rehabilitating existing facilities and upgrading primary schools to middle school status. Phase II attempted to bring about a quantitative expansion and qualitative improvements in content as well as delivery. Efforts focused on promoting public-private partnerships and shifting from a four-tier system to a three-tier system, through the introduction of elementary education in primary schools.

■ MIDDLE EDUCATION

The number and reach of middle schools, particularly in rural areas and especially for girls, is inadequate. This might be one reason for low participation rates, which stand at 42% for the district as a whole (55% male and 30% female). Repeat rates at this level are estimated to be 12%, pointing to problems with the quality of instruction and teacher capacity as well as student motivation and parental interest.

Although literacy in Abbottabad surpasses both provincial and national levels, literacy ratios must be examined with caution. The fact is that most districts in the country show a rise in literacy over the last two decades, but the number of individuals who are illiterate has doubled or even trebled during the same period.

■ Middle School Project

Launched in 1994, this ADB-assisted project implemented by the provincial education department has constructed eight middle schools (four each for girls and boys), supplied furniture, awarded stipends to female students and improved in-service teacher training. Under this project, by 1998–99 some 98 schools were

upgraded to middle status and provided with the necessary equipment.

■ SECONDARY EDUCATION

Like middle schools, the number, quality and reach of secondary educational institutions is not satisfactory. Participation rates are low for both high school and higher secondary education, while repeat rates are estimated to be 15% in high school and as much as 20% at the higher secondary level.

Access in rural areas, and for young women, is limited, so that a significant percentage of the population is marginalised in terms of service delivery. As a vital link to employment prospects, failures at the secondary level need to be seen in the larger context of the socio-economic life of the district.

Recent attempts to improve access to secondary education have included upgrading high schools to higher secondary schools. In 2001, there were 10 such schools operating in the district. Science laboratories have also been constructed in secondary schools by the Science Education Project.

■ OTHER INITIATIVES

The continued growth and success of the private sector validates the contention that quality remains a key concern in public-sector institutions. In Abbottabad, the burgeoning private-sector

presence at various levels is concentrated in the district's urban areas. Some 459 such institutions are operating in the district and studies estimate that the private sector contributes around 13% to enrolment at all levels (FEF 1999).

Between 1994 and 1998, the FEF provided financial assistance to a number of private-sector educational institutions to promote

access and quality. It also provided in-service training in modern teaching technologies to teachers in private schools.

Besides the formal sector, around 400 *maktabs* and *masjid* schools provide religious education. Meanwhile, technical and vocational training, albeit of low quality, is available through three institutions: a polytechnic, a commerce college and a vocational institute. Having failed to cater to market demands, it is not surprising that these institutions have not made a meaningful impact. Technical and vocational education needs private-sector involvement as well as non-governmental initiatives to provide up-to-date skills training geared towards the employment market.

The Pakistan Literacy Commission has established 11 literacy centres which are operated by two NGOs, Naveed-e-Sahar and

Human Resource Development. Combined enrolment in these centres is 351 students, 94% of whom are female.

While the private sector's presence in education is increasing, NGO involvement is conspicuous by its absence. This is all the more disheartening since the voluntary organisation network established by NGOs in rural areas could be effectively deployed to address many of the problems that plague the education sector. NGOs can utilise their social mobilisation strengths to foster fruitful interaction between teachers, students and parents. Community involvement in supervision, management and even financing is an inescapable necessity that has been ignored in the initiatives undertaken so far. If properly addressed, stakeholder participation can serve to bring about attitudinal and behavioural changes with regard to the relevance and importance of education.

H

Health and Population Welfare

The health of a population is a key development indicator. The World Health Organization stresses health security as well health accountability. The former concept calls for equity in health care while the latter obligates all concerned to take into account the impact of development efforts on health issues.

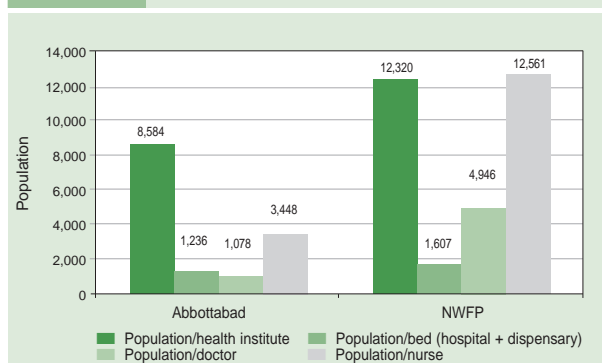
ON-GROUND STATUS

A total of 110 public-sector medical facilities are operating in the district, with a combined capacity of 1,754 beds (Table 20). Although most district statistics exclude the AMC, which is technically a project of the federal government, it makes sense to include this facility in our survey because of its physical presence in the district and the fact that it provides the local population with access to medical treatment. Besides employees of the AMC, some 476 government doctors, 264 nurses and five lady health visitors were working in the district in the year 2000. According to figures for the previous year, 109 compounders, 189 *dais* (traditional birth attendants) and 634 paramedics were employed in Abbottabad's public sector. The private health care sector is thriving, with 12 hospitals, eight x-ray facilities and 20

TABLE 20 HEALTH FACILITIES, ABBOTTABAD (2000)

Type of facility	Number	Beds
Teaching hospital	1	1,000
Hospital	9	728
Rural health centre	4	18
Basic health unit	52	—
Dispensary	37	8
Tuberculosis clinic	2	—
Mother and child health centre	3	—
Other	2	—
Total	110	1,754

Source: GoNWFP 2001b.

FIGURE 56 HEALTH INDICATORS, ABBOTTABAD AND NWFP (2000)

Source: GoNWFP 2001b.

laboratories employing 100 doctors (65% male and 35% female). The nature and extent of the coverage and contribution of privately-run medical facilities is yet to be surveyed.

■ HEALTH CARE INDICATORS

Health indicators for the district present a positive picture, particularly when compared to statistics for the province as a whole. The figures below are based on statistics for the year 2000, and calculations do not take into account the AMC. As such, the on-ground status of many indicators may actually be higher.

In terms of population per health care facility in 2000, the district's showing of 8,584 is 30% ahead of the provincial figure of 12,320 persons per facility (Figure 56). One hospital or dispensary bed is available for every 1,236 people in the district, a respectable 23% higher than the provincial figure of 1,607 persons per bed. Abbottabad's performance on these indicators improves if the facilities of the AMC are included

in this analysis. For instance, the figure for population per bed falls to 524.

Abbottabad is home to 1,078 people for every doctor, a massive 78% improvement on the provincial figure of 4,946 persons per doctor. For nurses too the district registers a 72% lead, with a nursing ratio of 3,448 compared to the province's 12,561. For health care staff, AMC doctors and nurses are included in the analysis, explaining the massive 131% increase in numbers between 1998 and 2000, the latter being the year that the AMC opened its doors.

However positive these statistics may appear, it is important to recognise that they are pseudo indicators and present a misleading picture. The calculation of averages and ratios always results in a certain degree of obfuscation and ambiguity, especially when such figures are taken as absolute values. On the ground, a crucial issue in health is equity, demonstrated by coverage and access for a wide segment of the population. In Abbottabad the majority of beds, doctors and institutions are found in and around the district's urban centres, where only 18% of the population resides. As such, the true picture of health coverage is less sanguine than the figures suggest.

It is not only in terms of coverage that the figures are misleading. Besides their physical presence, the functional status of various health delivery mechanisms is also important. Other types of indicators may be required to assess the state of health care and coverage more accurately. For instance, it is estimated that in Abbottabad only 15% of women with obstetric complications manage to reach a hospital (MSU 2000). This figure is far from adequate. Similarly, ratios such as population per bed and population per doctor should be calculated separately for rural medical facilities before a more realistic picture of the system can be drawn.

Attention must also be paid to the type of medical facilities that are required to make a meaningful impact on public health. Investment in mega projects such as the AMC rarely benefits the poor and marginalised segments of the

population. Here, the analogy with the education sector is apt: constructing additional primary schools is an attractive option that does not always have the desired impact on the ground, and the case with hospitals is no different.

When assessing trends, a similar problem arises. Although pressure on medical facilities and staff has increased across the board between the years 1995 and 2000, Abbottabad performs consistently better on three key indicators compared to the province as a whole Table 21, Table 22 and Table 23. Yet the filter-down effect of these seemingly positive trends has not been observed and the vast rural component of the district's population continues to be deprived of basic health services.

BUDGET AND PERSONNEL

Under the provincial budget for 2000–01, the district was allocated a sum of Rs 125.065 million for health, which amounts to 13% of total provincial allocations. The biggest chunk (40.5%) of this sum goes to the district headquarters hospital, with 30% to basic health units and around 10% each for rural health centres, dispensaries and other hospitals. The district also received Rs 8.566 million for health from the Annual Development Programme (ADP), accounting for 1.5% of ADP allocations for the entire province. Development allocations for the health sector between 1996 and 2000 rose from 1.5% of total provincial development allocations in 1996–97 to 9.2% in 1999–2000, but fell to 3.5% of total provincial allocations in 2000–01. Fund utilisation was low, leading to drastic reductions in both revised allocations and expenditures, and pointing to a significant lack of capacity in the sector. Of the 1,241 posts sanctioned for the sector, nearly 95% are filled by 180 doctors, 11 dental surgeons, 120 nurses (with an additional 55 in other institutions), 103 compounders, 80 lady health visitors, 162 *dais* and 467 paramedics.

THE AYUB MEDICAL COLLEGE AND HOSPITAL COMPLEX

A high-profile component of Abbottabad's health sector, this project was initiated in 1972. The first two phases were completed in 1998–99 at a total cost of Rs 1.416 billion. Phase III,

TABLE 21 POPULATION PER BED, ABBOTTABAD AND NWFP (1995–2000)

Area	1995–96	1996–97	1997–98	1998–99	1999–2000
Abbottabad	1,150	1,171	1,209	1,214	1,236
NWFP	1,452	1,623	1,689	1,745	1,593

Source: GoNWFP 2001b.

TABLE 22 POPULATION PER DOCTOR, ABBOTTABAD AND NWFP (1995–2000)

Area	1995–96	1996–97	1997–98	1998–99	1999–2000
Abbottabad	4,539	4,732	4,932	4,966	1,912
NWFP	7,237	6,439	5,674	5,738	4,946

Source: GoNWFP 2001b.

TABLE 23 POPULATION PER NURSE, ABBOTTABAD AND NWFP (1995–2000)

Area	1995–96	1996–97	1997–98	1998–99	1999–2000
Abbottabad	7,075	6,844	6,601	6,385	3,448
NWFP	20,761	19,687	18,585	15,786	12,561

Source: GoNWFP 2001b.

budgeted at Rs 660.312 million, was being processed but was not included in the federal government's annual Public Sector Development Programme for 2000–01. The federal government incurs all fixed expenditures related to the AMC while recurrent costs to the tune of Rs 123.373 million are met by the provincial government.

POPULATION WELFARE

Population welfare activities, initiated in Abbottabad in 1965, are undertaken by the federal government. Work in this sector focuses on family planning, and services are provided through one reproductive health services centre unit (type A), 16 family welfare centres, one mobile service unit and 100 village-based family planning workers.

Demographic variables assert increasing pressure on resources and quality of life indicators. We have already noted the negative impact of variables such as population and density growth, the youthful age profile of the population, and increasing urbanisation, which have brought existing civic amenities and municipal services to the point of collapse. For this reason, remedial measures and planned interventions aimed at sustainability must seriously address the contentious issue of population control.

Abbottabad's indicators for population are not particularly gratifying. The average size of households in the district grew from 6.2 persons in 1981 to 9.4 persons in 1998, an increase of more than 3 persons per household, despite the fact that the average annual population growth rate declined from 2.52% in 1981 to 1.82% in 1998. This increase in household size has a direct impact on the congestion ratio and proximate poverty indicators, illustrating the cross-sectoral influence of population growth.

The crude birth rate for Abbottabad is 35.61 births per 1,000 population, exceeding the provincial rate (28.5) and only nominally lower than the national rate (36). The district's fertility rate stands at 5.2 births per 1,000 women, exceeding the provincial figure (4.0) and also marginally ahead of the national rate (5.0). In this context, the national goal is to lower the population rate to 2.1 births per 1,000 women by the year 2020. If Abbottabad is to have any hope of attaining this target, the district needs to tackle the high fertility rate on an urgent footing. The importance of keeping population growth in check extends beyond the district's borders, because areas with fertility rates that are higher than the national level "contribute to Pakistan's underdevelopment . . . and add to the population's poverty and misery" (MSU 2000).

Across the board, the fertility rate—and therefore overall population size—is determined to a great extent by the mean age at which women are married. In Abbottabad, the mean age of marriage for women is 22.7 years, second only to Haripur (22.9 years) and favourable in comparison with the province (21.5 years) as well as the country as a whole (22.5 years). This would explain Abbottabad's relatively lower population growth rates. While this is a positive trend, the need to control fertility is nonetheless important in the context of Abbottabad because population density is increasing all the same.

Besides the age at which women are married, the total fertility rate is determined by factors such as high-risk reproductive behaviour. An 'ever-married woman' (EMW) is one whose

husband remains alive her entire life. In Abbottabad, 47% of EMW bear five or more children, only nominally lower than the provincial figure of 48%. Related to this figure is the average number of children born to mothers in various age groups. Here too Abbottabad's 4.5% of EMW is marginally lower than the province's 4.9%. This indicator highlights the cross-sectoral linkages that are critical to the spirit of this strategy, because the average number of children born is linked to the education level of mothers.

Unschooling women in Abbottabad bear an average of 4.7 children (5 in the province as a whole), while those who have studied below the matriculation level bear 3.9 children (4.1 in the province). Among women who have studied to below the Bachelors level, the average drops even further, to 3.5 (compared to 3.6 in the province). Women who have been educated up to and beyond the Bachelors level have by far the fewest children, with 3.2 in Abbottabad (3.3 in the province). These figures clearly indicate the need to emphasise female education, not only for its own sake but also to help lower fertility levels (MSU 2000).

The number of mothers giving birth at the age of 19 years or younger also affects fertility rates. Here, Abbottabad at 13.6% of EMW fares better than the province at 17%. Given the demographic pressures that the district already confronts, this figure needs to be reduced further.

Another indicator that determines fertility rates is the percentage of mothers giving birth beyond the age of 34 years. In this connection, Abbottabad's 6.1% of EMW is lower than the province (9.5%). Education once again emerges as an important factor, since areas with low female literacy show high proportions of women giving birth in their teens or beyond the age of 35 years (MSU 2000: 4). This is a matter of concern not only from the perspective of population growth but also with regard to maternal and child health. Very old and very young women are exposed to far greater risk of obstetric morbidity, leading to maternal and infant mortality (MSU 2000: 4).



Abbottabad's health care indicators are distorted by the presence of the Ayub Medical College and Hospital Complex, which caters primarily to the district's urban residents.

In terms of maternal morbidity and mortality, Abbottabad accounts for 5% of the province's annual maternal deaths, about proportionate to its population compared to the province. But the district's infant mortality rate (calculated per 1,000 births) is 24, far lower than the provincial rate of 84 deaths per 1,000 births. This is indeed commendable, especially considering that in the country as a whole, the infant mortality rate in the year 2000 stood at 91 (WB 2000). Although Pakistan has made progress in this area since 1998, when infant mortality was as high as 127, the country is nevertheless far behind the low-income nation average of 68.

Even with these improvements, neonatal death (calculated for infants in the first month of life) has not declined, standing at 55–58 per 1,000 live births for the country as a whole. Separate figures are not available for the district, but there is an accepted correlation between neonatal infant mortality and factors such as the mother's age, the gap between children and the number of births. As such, there is no reason to assume that the district fares better than the country as a whole. Family planning services and advocacy by elected representatives, especially women, can greatly

reduce the rate of mortality among infants and newborns. Neonatal mortality also serves as an indicator of development: neonatal mortality is highest among poor families, those living in remote rural areas, and households with unsanitary and unhygienic living conditions (MSU 2000: 38).

The cross-sectoral impact of rapid population growth may be observed in the context of basic preventive medicine for babies. Under the Expanded Programme for Immunisation, children under the age of one year require full vaccination. In Abbottabad, 2.3% of the population falls into this age group, almost identical to figures for province (2.38%). Yet current vaccination coverage in the district is poorer than in the province: 100% for Bacillus Calmette-Guerin or BCG (compared to 116% for the province), 77% for measles (100% for the province), 85% for diphtheria, pertussis (whooping cough) and tetanus or DPT (104% for the province), and only 49% for polio (compared to a much higher provincial rate of 104%).

In the ultimate analysis, an equally important factor in health and population welfare is individual behaviour. Behaviours related to fertility

and its implications are often characterised by a sense of fatalism. Particularly among poorly-educated segments of the population, such matters are left up to chance. To achieve the national goal of 1% annual growth, effective implementation of family planning and reproductive health programmes across the board will be required (MSU 2000: 1).

MAJOR INITIATIVES AND LESSONS LEARNT

The federal government has made a substantial investment in Abbottabad's health care sector with the construction of the AMC, currently in its

health care facilities. The basic health units, rural health centres and dispensaries in operation are inefficient and desperately in need of staff, equipment and resources.

Salaries constitute a major component of the sector budget, with scarce funds left over for basic medicines and supplies. Outlays for development expenditure, already inadequate, have been drastically cut in recent years. To add insult to injury, under-utilisation is an issue of grave concern, limiting growth and pointing to serious capacity shortfalls in the public sector.

On the administrative level, political interference and centralised decision making continue to dog

Across the board, the fertility rate—and therefore overall population size—is determined to a great extent by the mean age at which women are married. In Abbottabad, the mean age of marriage for women is 22.7 years, second only to Haripur district and favourable in comparison with the province as well as the country as a whole. This would explain Abbottabad's relatively lower population growth rates. But the need to control fertility is nonetheless important for Abbottabad because population density is increasing all the same.

third phase. In addition, six hospitals and a number of rural health centres and basic health units operate in the district. In terms of indicators such as population per doctor, per health institute and per bed, the district performs far better than the province as a whole. Behind these seemingly positive figures, key shortfalls persist.

To begin with, the figures are heavily biased in favour of urban areas and inflated by the presence of the AMC. In fact, the vast majority of Abbottabad's rural population lacks access to

the sector, along with the shortage of operational funds and qualified personnel. Alternative financing, community-based service delivery, service charges and privatisation are key areas that will need to be addressed if the sector is to become self-sufficient.

Already, urban areas of the district have witnessed the emergence of a thriving private health care sector. This serves as an indictment of the public sector's ability to address the health care needs of the population.

In addition to the private sector, NGOs such as the DUA Welfare Organisation have recently introduced an innovative health care model, establishing rural health centres through community mobilisation and membership. With at least 2,000 members, these centres are self-financed, charging Rs 120 in annual registration fees and an out-patient fee of Rs 10 per visit. The centres are managed by a board of local CBOs. One such centre is already working in Abbottabad in conjunction with the SRSP. This

innovative approach needs to be examined as a possible means to improve health care coverage in rural areas. NGOs such as the Society for Public Awareness and Development Economics (SPADE) and the Abbotonian Medical Association are engaged in similar activities.

A key lesson for the health and population welfare sector is that interventions must be integrated with cross-sectoral concerns such as education, nutrition and sanitation.

Infrastructure: Roads and Communications

Communications networks are a fundamental prerequisite for economic activity to take place. Abbottabad once served as the provincial summer capital as well as the headquarters of the now-defunct Hazara division. As a result, the district is relatively well served in terms of roads and communications infrastructure.

ON-GROUND STATUS

The district is traversed by 571 km of roads in various categories along with 50 major bridges (Table 24). These figures do not include roads maintained by local communities and the former district council, or urban roads maintained by the cantonment board and former Abbottabad Municipal Corporation, since records for these components are not available. Between 1995 and 2000, the district's roads network grew more than 46%, mostly as a result of the massive 297% increase in 'low type' roads (where the thickness of the blacktop is kept at a minimum because traffic on such roads is low). A significant portion of this massive increase is accounted for by the construction of new farm-to-market roads, the majority of which are low-type roads.

TABLE 24 ROADS AND BRIDGES, ABBOTTABAD (2000)

Type	Span (km)
Total roads network	571
Highways	104
High type	155
Low type	312
Major bridges	50

Source: GoNWFP 2001b.

TABLE 25 OTHER IMPORTANT ROADS

Road	Span (km)
Abbottabad–Thandiani	25
Havelian–Kanyal	22
Maqsood Lora–Goragali	27
Abbottabad–Sherwan	36
Havelian–Kalabagh	47

Source: Khan, sector paper, 'Infrastructure, Roads and Communications'.

■ HIGHWAYS AND ROADS

Two major highways run through the district. The Karakoram highway starts at the Chamba bridge on the Haripur–Abbottabad border and extends up to the Abbottabad–Mansehra border at Lodhiabad. Its length within Abbottabad is 46 km. This highway plays a crucial role in the life of the district, connecting many of its secondary roads to the national roads network. The second highway is the Murree–Abbottabad road, which enters the district at the border village of Barrian and joins the Karakoram highway inside the Abbottabad cantonment. Its length within the district is 58 km. Other important roads in the district are shown in [Table 25](#).

■ COMMUNICATIONS INDICATORS

Road coverage in Abbottabad district is good (3.44 roads/km²) compared to both the province (0.14 roads/km²) and the country as a whole (0.45 roads/km²). This indicator does not account for environmental factors, particularly the impact on air quality, noise pollution and congestion of transit traffic carried by the Karakoram highway. The absence of EIAs prior to construction is a cause for concern. Measures to ensure compliance with the EIA regime must be incorporated into future planning for the sector.

Postal access for Abbottabad residents also compares favourably with the province. The district is served by 185 post offices (one post office for every 11 km²), surpassing provincial coverage (one post office for every 37.2 km²). Access to telephones is only slightly higher in the district, with a total of 16,995 connections and 54 persons per telephone, compared to the provincial average of 59 persons per telephone. As with other indicators, the rural-urban imbalance needs to be examined and rectified.

MAJOR INITIATIVES AND LESSONS LEARNT

While the work carried out for infrastructure development is laudable, a few drawbacks are worth mentioning. To begin with, the system of centralised planning and execution needs to be revisited. When planning fails to allow for the involvement of local communities, interventions tend to be implemented without an assessment of the needs of the people. Alienated at the outset, such communities then have little stake in maintaining the assets created. Without ownership, little attention is paid at the grassroots level to the protection or upkeep of existing facilities.

Besides the impact on local communities, infrastructure development must also be examined in relation to protected areas. Building roads around the Ayubia National Park, for example, has been detrimental to the environment in the area.

Infrastructure planning continues to be carried out without the benefit of EIAs. The negative impact of infrastructure projects on the environment, and on local communities, is yet to be systematically addressed. A trade-off between conservation and economic development is inevitable. What is needed is a system of assessment that is able to take into account cross-sectoral implications.

The current system of management of roads in the district creates an overlap between the National Highway Authority (NHA), the Frontier

Highway Authority, and the works and services department. These overlaps need to be examined, and a coordinative mechanism introduced to ensure efficiency and achieve synergy.

Finally, vested interests continue to dominate the sector, with the result that infrastructure development is characterised by ad hoc decision making, nepotism, unrealistic planning and a lack of transparency. Not surprisingly, local communities tend to view public-sector infrastructure development with suspicion. To increase transparency and improve efficiency, the involvement of NGOs and the private sector needs to be encouraged.

■ ANNUAL DEVELOPMENT PROGRAMME

Under the ADP, 10 projects in the district were in various stages of completion by 2000–01, covering 125 km at a budgeted cost of Rs 336 million. Of these, 74 km of roads were completed in 2000–01. Allocations for 2000–01 amounted to Rs 48.778 million.

■ COMMUNICATIONS AND WORKS DEPARTMENT

Much of the infrastructure development in the district was carried out by the now-defunct communications and works department, which was responsible for the construction and maintenance of secondary and access roads as well as bridges. Following the devolution of local government, these responsibilities have passed to the NHA, and the works and services department.

While in operation, the communications and works department constructed 46 major and minor roads with a combined span of 420 km, as well as 29 bridges. In all, it completed 45 projects (totalling 364.349 km of roads) and constructed the Abbottabad–Murree road up to Barrian (58 km), which has now been handed over to the NHA. It also built and maintained several hundred culverts and drainage structures which are now the responsibility of the works and services department.

As far back as 1987, the communications and works department proposed the construction of

an Abbottabad bypass to deal with the congestion caused by traffic on the Karakoram highway. More than a decade later, no progress has been made on this proposal, initially budgeted at Rs 265 million.

■ DISTRICT COUNCIL

Once a major player in infrastructure development, the former district council's financial allocations prior to devolution amounted to a meagre Rs 0.3 million for roads. By 2001, the federal Poverty Alleviation Programme (now called the Khushhal Pakistan Programme or KPP) spent Rs 57 million in Abbottabad, of which 40% was used to fund the construction of farm-to-market roads. The district council has been disbanded following the devolution of local government.

■ DONORS

Two donor-funded projects with a 73% donor contribution and 27% government contribution are operating in the district. Under the Rural Access Roads Programme (previously known as the Farm to Market Road Project), a 45 km road from the Thandiani–Pattan Khurd road to Paliar was built in 2001 at an estimated cost of Rs 234.5 million. In the same year, under the BADP, three roads were in various stages of completion with a total span of 30.1 km and an estimated cost of Rs 136.94 million.

■ NATIONAL HIGHWAY AUTHORITY

The federal NHA has so far completed construction on two major highways passing through the district: the Karakoram highway (46 km) and the Abbottabad–Murree road. The NHA also built the Barrian-to-Murree portion of the Abbottabad–Murree road (7.8 km), while the 58 km stretch from Abbottabad to Barrian was completed by the communications and works department.

■ OTHER INITIATIVES

The SRSP assists rural communities in improving accessibility in their areas. As part of its multi-sectoral intervention, the SRSP has been involved in constructing rural roads in partnership with local communities.

D

Drinking Water

Access to clean drinking water is a vital quality of life indicator. Supply to the district's rural areas, the responsibility of the public health engineering department (PHED) prior to devolution, is now part of the duties of the works and services department. Within the cities of Abbottabad and Havelian, the TMAs and cantonment boards are entrusted with this task, while the Military Engineering Services supplies drinking water to the Pakistan Military Academy and related military institutions in the district. A separate water supply scheme is in place for Nathiagali, maintained until 2001 by the now-defunct communications and works department, while NGOs such as SUNGI and the SRSP have also executed small water supply schemes across the district in partnership with local communities.

ON-GROUND STATUS

According to the 1998 census, only 32.73% of households have access to drinking water inside the home, while the remaining 67.27% rely on an outdoor source (Table 26). In-house connections are widely available in urban areas (79.55%), with a large portion of this water

TABLE 26 HOUSING UNITS BY SOURCE OF DRINKING WATER, ABBOTTABAD (1998)

Source	All Areas (%)	Rural (%)	Urban (%)
Indoor			
Pipe (nul)	29.87	21.66	73.03
Hand Pump	1.64	1.17	4.12
Well	1.22	0.99	2.40
Total (indoor)	32.73	23.82	79.55
Outdoor			
Pipe (nul)	31.29	34.73	13.19
Hand Pump	1.17	1.14	1.29
Well	10.21	11.84	1.64
Pond	3.62	4.18	0.67
Other	20.99	24.28	3.65
Total (outdoor)	67.28	76.17	20.44

Source: GoP 1999a.

TABLE 27 RURAL WATER SUPPLY, EXPENDITURE* AND COVERAGE, ABBOTTABAD (1998–99)

Area	1998		1999	
	Expenditure	Coverage (%)	Expenditure	Coverage (%)
Abbottabad	313	97.06	332	97.65
NWFP	4,144	72.87	4,354	73.31

* In million rupees.

Source: GoNWFP 1999.

supplied through pipelines (73.03%). But 76% of rural households depend on an outdoor source of water, about half of which is supplied either through pipelines or from wells.

According to estimates provided by government agencies, in 1999 nearly 98% of Abbottabad's population had access to water supply schemes (Table 27). Estimates for 1998–99, provided by the concerned agencies, show that 85% of the rural population and 90% of urban residents have access to water supply schemes. These figures are encouraging, although 1999–2000 estimates indicate a fall in coverage to 86% for the district, while overall coverage in the province increased to 75%.

Official statistics need to be viewed in the context of national figures provided by independent sources. According to the World Bank, for instance, only 60% of Pakistan's population had access to an "improved water source" during the period 1990–96 (77% urban and 52% rural in 1996), while only 30% had access to sanitation (WB 2000: 287). Given the disparity between government department claims and estimates from independent

sources, the district and town administrations need to examine coverage claims more carefully, and create indicators to promote transparency and accountability.

While increasing access to drinking water is of course imperative, existing supply should also be sufficient to meet the needs of the population. Rural area supply is overwhelming based on community standposts (connections installed in public places) or tanks, which are provided in places where in-house connections are not available. These public facilities are designed to supply 5 gal per capita daily, far short of actual demand. In the case of community standposts, unauthorised connections taken by third parties have disturbed the hydraulic balance of the distribution network, severely affecting housing units further down the supply line. In urban areas, meanwhile, water supply is unreliable and intermittent, ranging anywhere from 15 minutes to one hour of continuous supply daily.

Another aspect of water supply that must be taken into consideration is quality. In the pursuit of increasing coverage, quality considerations have largely been overlooked. Current indicators disguise the fact that even where water is available, it is not always fit for human consumption.

Finally, wastage as a result of misuse, theft and leakage is high. Conservative estimates put wastage in rural water supply schemes at 30%, and as high as 50% in the case of urban schemes.

Drinking water must be fit for human consumption and supplied in sufficient quantities to meet the needs of the population. Wastage in the distribution system must be plugged in order to maximise efficiency. It is only by examining such additional factors that an objective assessment can be made of the progress achieved in this sector.

Recent investment in water supply schemes for the district is shown in Table 28. These figures for 1999–2000 do not include allocations made through the People's Works Programme, the Tameer-e-Watan Programme, and members of

the provincial and national assemblies, since no data for such activities is available. The KPP is now mandated to spend 30% of its outlays on drinking water supply, which amounts to a sum of Rs 15 million for 2000–01. In order to ensure proper disposal of waste water, 14 sanitation schemes have also been completed, with sanitation coverage for urban areas estimated at 70%, but only 12% in rural areas.

■ FINANCIAL CONSTRAINTS

The tariff structure, particularly the flat rate charged in rural areas, has created serious financial problems for the concerned departments. During the year 1998–99, a resource gap of Rs 26.2 million, or nearly 79% of total expenditure, had to be filled through subsidies, leaving little funding for new initiatives (Table 29).

MAJOR INITIATIVES AND LESSONS LEARNT

Before 1970, government water supply schemes focused primary on urban areas. Thereafter, the issue of supply to rural areas began to be addressed and the PHED started installing gravity-based water supply systems using local springs.

Despite massive investment in water supply schemes—more than Rs 650 million spent between 1990 and 2000—results in the sector have not been impressive. For one thing, piped water is available inside the home to only 33% of the district's households, nearly 80% of which are situated in urban areas. Rural water distribution systems are outdated with limited capacity, while supply in urban

TABLE 28 INVESTMENT IN DRINKING WATER SUPPLY (1990–2000)

Project	Investment (million Rs)
Provincial Annual Development Programme	436.398
Second Urban Development Project	161.530
Barani Area Development Project	15.786
Kreditanstalt für Wiederaufbau	40.00
Total	653.714

Source: Azeem, sector paper, 'Drinking Water'.

areas is unreliable. Illegal connections are ubiquitous, and even conservative estimates put wastage through misuse and leaks at 33% in rural areas and as much as 50% in urban schemes. The flat rate charged for water supply, combined with transmission losses, has meant that the PHED and local government authorities have faced an astounding resource gap of nearly 80%.

The quality of water supplied is poor and it is only recently that planning for sanitation has become a requirement for all water supply schemes. Even so, the problem of waste water in Abbottabad and Nathiagali is yet to be addressed. The single-minded pursuit of coverage, at the expense of quality, has characterised efforts in this sector. This points to a wider problem with cross-functional accountability.

Issues related to water supply also affect progress in other sectors. For instance, the importance of clean water with regard to the tourist industry cannot be downplayed. Public-private partnerships, community involvement and greater intervention by NGOs are required because it is no longer possible for the existing players to achieve tangible gains unaided.

TABLE 29 OPERATION AND MAINTENANCE EXPENDITURES, AND REVENUE COLLECTION* (1998–99)

	PHED	MC Abbottabad	MC Haripur	TC Nawanshehr	Total
Operation and maintenance	21.032	9.893	1.760	0.664	33.349
Revenue collected	3.412	2.030	1.047	0.627	7.116
Resource gap (% of expenditure)	83.8	79.5	40.5	5.6	78.7

MC = Municipal Committee; PHED = Public Health Engineering Department; TC = Town Committee

* In million rupees.

Source: Azeem, sector paper, 'Drinking Water'.

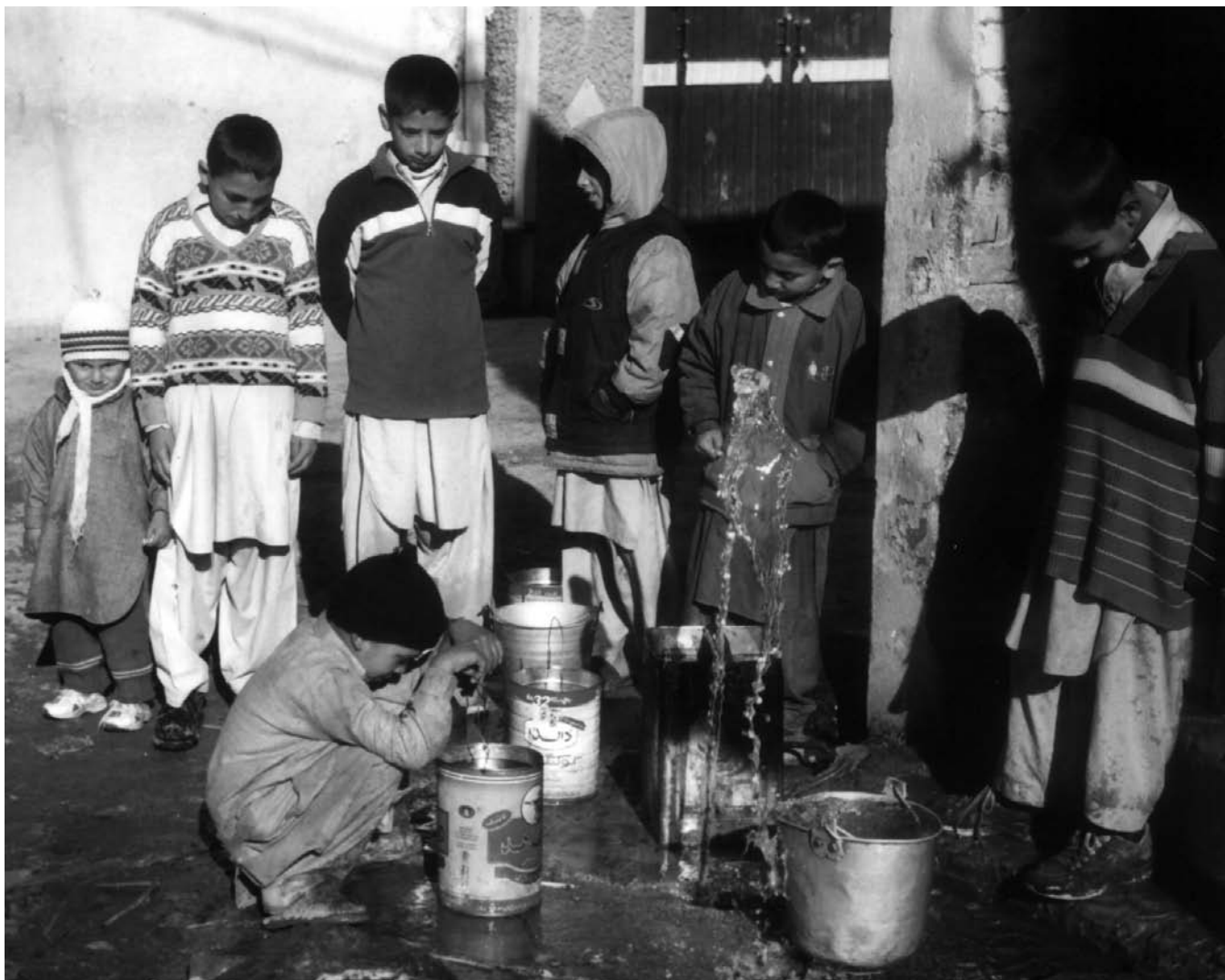
A unified policy on rural area water supply came into effect in 1995, under which communities were made responsible for the operation and maintenance costs of water supply schemes, either directly or through the payment of water tariffs. Progress on implementation of this policy needs to be evaluated. Closer monitoring, community vigilance, advocacy on water scarcity and rational use, and a more economically viable system of tariffs need to be introduced.

■ PUBLIC HEALTH ENGINEERING DEPARTMENT

Designated as an independent department in 1992, the PHED served as the main government

agency responsible for planning, designing and implementing drinking water supply and sanitation schemes. It also operated and maintained rural water supply schemes until these responsibilities were transferred to local communities under the Unified Rural Water Supply Policy 1995. With the adoption of this policy, the PHED became responsible for facilitating community participation in projects, which are to be operated and maintained by local communities, using funds collected by means of water tariffs.

Starting with gravity-based water supply schemes, involving local springs and community standposts or tanks, the PHED eventually



Across the district, water from supply schemes is diverted through illegal connections or lost as a result of leakage from damaged pipelines.

acquired the capacity to implement more complex schemes based on pumping ground water. In 1997, the PHED's institutional capacity was strengthened through the creation of a specialised Community Motivation Team. By 2000–01, the PHED had completed 200 water supply schemes in the district, covering 85% of the rural population.

Under the devolution of local government, the PHED was merged with the works and services department. The PHED's functions have been transferred to the works and services department as well as the new town councils.

■ OTHER INITIATIVES

In addition to the PHED, a number of other players have worked in limited and strictly demarcated areas. These include the district council, municipal committee, communications and works department, and district local government and rural development department, all of which are now defunct. Entities which continue to operate under the devolved system include the town committee Nawanshehr, cantonment board, GDA and Military Engineering Services. Most of these entities operate within specific

jurisdictions and are rarely in a position to undertake large-scale or complex initiatives. Their efforts are for the most part confined to routine operational matters.

Several smaller projects have also been implemented. Under the provincial government's Second Urban Development Programme, 17 tube wells were installed in Abbottabad and the entire distribution system for the city was replaced. The BADP undertook three water supply schemes and rehabilitated the supply system of Nawanshehr town under a KfW grant-in-aid. Work was also carried out under the People's Works Programme, Tameer-e-Watan Programme and KPP, in addition to various schemes initiated by elected representatives with development funds assigned to them by the federal government. These initiatives have not been documented.

Under guidelines issued by the provincial planning and development department, it is now mandatory that sanitation is included in rural water supply initiatives. So far, 14 sanitation schemes have been completed in the district.

Ecotourism

Now a major industry across the globe, tourism accounts for 11% of world GDP and provides employment to nearly 200 million people (IIED 2001). Currently, some 700 million tourists travel each year and this number is expected to double by 2020. For many societies, the benefits of this booming global industry can be significant. Tourism is today considered to be a vital component in the wider effort to promote sustainable development in many parts of the world. In India, for instance, while income from the tourist trade amounts to just 2.5% of GDP, it is estimated to account for as much as half of the economic activity of the hill region of Uttar Pradesh (IIED 2001: 2). For areas such as Abbottabad, tourism is potentially an important means to diversify the district's economy.

■ EVOLVING CONCEPTS IN TOURISM

As new development concepts such as the national strategies for sustainable development (NSSD) paradigm have gained ground, ideas about tourism have also changed. It is important to understand these changes as we try to chart a course that will enable the district to develop its tourist industry in a sustainable manner.

As early as 1988, the World Tourism Organisation defined the term sustainable tourism as activity that leads to:

the management of all resources in such a way that economic, social and aesthetic needs can be fulfilled while maintaining cultural integrity, essential ecological processes, biological diversity and life support systems (IIED 2001).

In 1992, the Rio Earth Summit established the 'triple bottom line' approach that takes into account economic, social and environmental sustainability. Since then, however, the emphasis has been on 'greening'. For example, *Agenda 21 for the Travel and Tourism Industry* refers to the interdependence of development concerns and environmental protection, but the main thrust of the document is on environmental sustainability (WTTC et al 1996).

Parallel to these ideas, the concept of ecotourism was developed. Ecotourism is defined as tourism that is nature oriented, and that incorporates a desire to minimise negative social and environmental impacts. This concept is particularly valuable in the context of debates about the viability of top-down approaches to conservation in and around protected areas. Ecotourism revolves around nature, where the principal tourist activity is the observation and appreciation of nature and traditional cultures. As a form of economic activity, it is more complex and far-sighted than the hustling and money orientation that characterise traditional tourism. By taking into consideration conservation and the environment, the socio-economic impact on local communities, and the interests of tourists themselves, ecotourism fosters a symbiotic relationship between stakeholders.

This concept in turn spawned a broader interest in community-based tourism, often as a component of community-based natural resource management strategies. Obligations of donors and governments under the United Nations Convention on Biological Diversity (UN 1992b), with its emphasis on sustainable use and

benefit sharing, have served to reinforce this trend.

While ecotourism concepts appear highly attractive on paper, disillusion with the term is spreading. Although many ecotourism strategies incorporate pro-poor elements, poverty reduction per se has not been a priority for the sustainable tourism agenda of Northern countries. Significantly, though, in 1999 explicit reference to pro-poor tourism was made at the 7th meeting of the Commission for Sustainable Development, which urged governments to:

maximise the potential of tourism for eradicating poverty by developing appropriate strategies in cooperation with all major groups, indigenous and local communities (IIED 2001: 5).

Here, pro-poor tourism was defined as tourism that benefits the poor.

Strategies to promote pro-poor tourism aim to unlock opportunities for disadvantaged communities, with three core areas of focus: (i) increasing economic benefits, (ii) enhancing non-economic impacts and (iii) bringing about policy and process reform. The goal of achieving sustainable development in Abbottabad can be greatly facilitated by a pro-poor orientation that puts poverty at the centre of the sustainability debate.

■ HISTORY OF TOURISM IN THE DISTRICT

Most of the area that falls within the limits of Abbottabad district has historically been the focus of resort tourism. As early as 1880, the British colonial administration established summer camps for its troops in the Galliyat area, with Dongagali, Nathiagali and Thandiani being reserved for civil servants. Following independence from colonial rule, the cantonments in the Galliyat areas were abandoned. In 1961, the HHTIT was created to reduce excessive tourist pressure on Murree by redeveloping these abandoned cantonments. Most of the development came in the form of auctioning plots, and building a few internal roads and nondescript hotels. The only significant input was the scheme to build a ski

resort in 1969, although this initiative did not progress beyond the installation of a chair lift at Ayubia. In 1999, the GDA was established to promote tourism, taking over from the HHTIT. The GDA has ambitious plans but is currently stymied by procedural and organisational constraints limiting its role in tourism promotion.

ON-GROUND STATUS

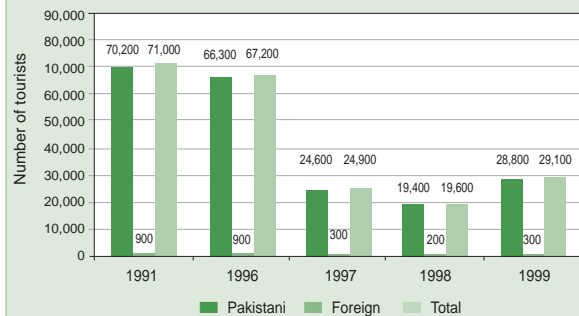
While accurate historical data on tourism in the district are not available, a survey conducted by the federal government's tourism division shows that 99% of visitors to Abbottabad are Pakistani and that tourists spend an average of 1.5 nights in the area (GoP 1999b). Most such visitors travel with their families or in groups, and the majority hail from Sindh and the Punjab.

According to this industry survey, in 1999 a total of 38,400 visitors stayed in Abbottabad city and Nathiagali, of whom only 1.3% were foreign nationals (Figure 57 and Figure 58). This figure is substantially lower than the 86,300 tourists visiting the area in 1991. The statistics should be read with caution, however, since they do not include day visitors or tourists opting for non-traditional accommodation or accommodation rented on a seasonal basis. The figures also exclude day visitors, currently estimated at 1,000–1,800 visitors daily during the peak June–August season.

Some 54 major hotels operate in Abbottabad, Ayubia and Nathiagali, in addition to numerous guesthouses, non-traditional accommodation and smaller hotels. The district is traversed by an extensive roads network, with the Karakoram highway, the Murree–Abbottabad road and a number of smaller roads that link the district to Azad Kashmir, the Kaghan valley, the Northern Areas and Swat. Telephone links are well established, with a digital exchange in Abbottabad city and smaller exchanges across the district.

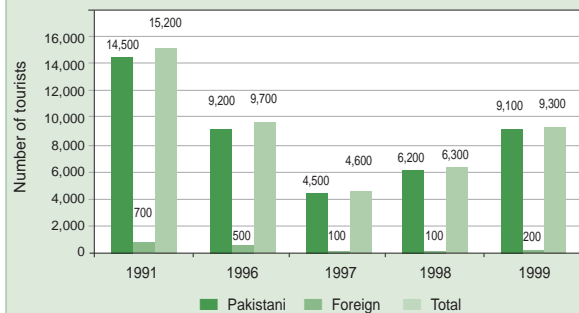
Despite these relative advantages, few tourists choose to reside in the district itself. Rather, Abbottabad is better known as a transit point for

FIGURE 57 HOTEL OCCUPANCY, ABBOTTABAD (1991–99)



Source: GoP 1999b.

FIGURE 58 HOTEL OCCUPANCY, NATHIAGALI (1991–99)



Source: GoP 1999b.

more popular tourist hotspots such as Gilgit, the Kaghan valley, Kashmir and Swat. Day visitors, meanwhile, prefer using Murree as a base rather than Abbottabad.

TOURIST ATTRACTIONS

There exists tremendous potential to develop pro-poor tourism in the district. Such prospects are particularly bright for areas in and around the Ayubia National Park, and the Birangali, Chhatri and Phalkot reserve forests. If properly developed, these areas could serve to attract nature tourists, ornithologists, hikers and trekkers, creating employment opportunities for local communities.

Currently, Abbottabad city, Ayubia, Dongagali, Nathiagali and Thandiani are a few of the district's favoured tourist destinations. Abbottabad city is easily accessible, offers reasonable facilities, and is surrounded by the Sarban and Shimla hills. The city is home to one

main park, two gardens and a golf club, as well as numerous sites of tourist interest.

Ayubia

With four mini-resorts spread over an area of 26 km², Ayubia is perhaps best known for the chair lift at Ghora Dhaka, which was a pioneering recreational facility at the time of its inception in 1967 and continues to attract visitors today.

The Galliyat

Dongagali, at an elevation of 2,460 m, is situated on the slopes of the Mukshpuri hill. It serves as an entry point for the Ayubia National Park, spread over 3,312 ha. Nathiagali is situated 3 km from Dongagali and, at 2,510 m, is the most picturesque hill station in the Galliyat area. It is covered in pine, walnut, oak and maple trees, and enjoys a favourable climate. Its pine forests are crossed by a number of trails and tracks that are ideally suited for both short and long treks. The British built a small timbered church and an imposing governor's house in Nathiagali, along with a number of small cottages.

Thandiani

Situated at an elevation of 2,750 m, Thandiani commands spectacular views of the surrounding landscape. It is reputedly the coolest hill station in the country. As the least developed tourist spot in the area, Thandiani is ideally suited for ecotourism.

MAJOR INITIATIVES AND LESSONS LEARNT

In the absence of significant industrial activity and with poor prospects for the expansion of agriculture, tourism can serve as a key component of sustainable development in Abbottabad. It is a reflection of administrative failure and short-sightedness that little or no development has taken place in this sector, with little hope for significant growth in the near future. A number of initiatives have been undertaken but execution and implementation have been far from satisfactory.

The British colonial administration established camps for its troops and civil servants in three locations. These cantonments were abandoned

following Independence. In 1961, the HHTIT was established to develop the tourist potential of these abandoned cantonments, partially as a means to reduce excessive tourist pressure on Murree. Besides the indiscriminate auctioning of buildings and plots, and the haphazard construction of roads and a few nondescript structures, the only worthwhile contribution made by the HHTIT was an attempt to build a ski resort at Ayubia. Ultimately, the project was confined to the installation of a chair lift, which remains a popular tourist attraction to this day.

In 1999, the government established the GDA to develop the tourist potential of the Galliyat area. Its operations have been mired in procedural and bureaucratic wrangling. Management of the GDA has now been handed over to the new district government, and the hope is that this will allow the GDA to function more effectively in the future.

A number of other public-sector initiatives have either directly or indirectly impacted the tourism sector. The construction of modern roads, establishment of hotels and guesthouses, and provision of communications facilities create a broadly supportive canvas. The Pakistan Tourism Development Corporation operates three rest houses in Nathiagali, a motel in Ayubia and a tourist information centre in Abbottabad city. The Sarhad Tourism Corporation operates three rest houses in Nathiagali, with plans to develop another such facility in Dongagali. The wildlife department manages the Ayubia National Park, providing additional support to tourism in the district.

In the private sector, the Adventure Foundation, Pakistan, a non-commercial organisation, provides outdoor education and adventure training for young people, and offers a number of courses through its centre in Kakul. Hoteliers, transporters and the business community form a core group of concerned stakeholders.

Despite these initiatives, the overall picture for the sector is far from satisfactory. Available figures indicate a persistent decline in tourism in the district over recent years. Day visitors,

based in Murree, frequent the area but most of the revenue they generate accrues to Murree. This trend needs to be examined in order to assess marketing and advocacy failures on the part of successive institutions and players.

Tourism planning must be carried out within the context of an overall strategy for sustainable development. The mere construction of roads and hotels is simply not enough. An integrated approach is required, where a number of related issues are addressed simultaneously, such as the availability of facilities, ease of booking and reservation, transportation, prices, quality control, health and security cover, tourist guides, waste management, and hygiene. The involvement of local communities will also be critical, along with capacity building across the board among various stakeholders.

Developing projects and facilities to make Abbottabad a year-round tourist attraction will benefit the local economy. In this connection, earlier plans for ski resort should be revisited. At the same time, uncontrolled development and the construction of palatial commercial complexes and shopping centres exerts unnecessary pressure on an already fragile ecosystem. Particularly given the existing inadequacies of water supply and municipal facilities, this type of commercial development is bound to adversely impact the tourist appeal of the area.

While the district itself needs to formulate a comprehensive, long-term tourism policy, a similar initiative at the national level would be beneficial. Legislative cover and stronger monitoring and implementation mechanisms are needed to check environmental degradation, unplanned land use and illegal construction. Administrative stability, security and continuity, while necessary, are only part of the picture. A comprehensive effort involving investors, elected officials, opinion leaders and transporters is needed to tackle the deeper problems that afflict the sector.

Concerned stakeholders, particularly existing and potential investors, need to be taken on board to market the district. Swat is one example of how an area can be promoted as a tourist haven. More than anything else, the marketing aspect of tourism development has yet to be fully comprehended.

Similarly, the very idea that tourism can serve as a component of a diversified economy has not gained currency among most stakeholders. The concept of ecotourism needs to be explained and sold to local residents as well as potential visitors. Nature-based excursions and entertainment are still not widely popular. Efforts are needed to promote not tourism, but ecotourism. In future, inputs of the GDA should be aimed in this direction. Simultaneously, the recreation needs of traditional tourists should be addressed, particularly in urban areas of the district.



By creating a demand for handicrafts and promoting cottage industries, tourism can serve to boost the local economy.

Capacity-building inputs are needed to strengthen the sector. Developing human resources and providing training to local residents will create employment opportunities for local communities to work in a variety of occupations, such as tourist guides, hosts, group leaders and information providers.

Enterprise Development

Abbottabad district is poorly positioned in terms of employment opportunities while the workforce by and large lacks the skills required in today's market. The main sources of employment in the district are agriculture, construction, trade, transport, and the seasonal hotel and restaurant business. With few manufacturing industries in operation and meagre prospects for agricultural expansion, the economic future of the district is not promising. The challenge for Abbottabad lies in developing enterprise, creating employment opportunities and diversifying the rural economy to encompass productive, value-added activities.

ON-GROUND STATUS

Official unemployment in the district stands at 31.14% with considerable underemployment and only 29% of the population categorised as employed. What is worse, unemployment will grow in future years since more than 40% of the district's current population is below the age of 15. As these young people enter the job market, further pressure will be exerted on an already fragile economy. Proximate poverty indicators for the district are not encouraging and poverty estimates, albeit crude, are equally dismal.

Broad issues in enterprise development that the district government will need to address include capacity development, opportunity identification and sectoral allocations. Even government efforts and funding are no guarantee of success. For example, in 1992–93 the federal government's self-employment scheme disbursed Rs 180 million in Abbottabad for the establishment of 43 enterprises, 32 of which stand abandoned today.

NGOs have only recently started implementing enterprise development programmes. This move came in part as result of problems created by earlier attempts at credit provision. It was noted that loans taken by NGO-formed community organisations ended up being invested in activities with low value addition, with little consequent impact on poverty alleviation. Today, the work undertaken by SUNGI and the SRSP needs to be analysed before proceeding further in the sector. Investment in enterprises involving local materials should be targeted more vigorously.

MAJOR INITIATIVES AND LESSONS LEARNT

Poverty alleviation is a central concern in sustainable development strategic thinking. In Abbottabad's case, limited prospects in the agriculture sector, the depletion of forests, the failure to capitalise on the area's tourist poten-

tial and the general dearth of economic activity make microenterprise development all the more important. Unfortunately, the significance of this sector has not been recognised and microenterprise development has generally occurred as an adjunct to natural resource management initiatives.

Ultimately, environmental conservation is inextricably linked to poverty. The poorer the community, the greater its dependence on natural resources. As an area with few employment opportunities for the people, Abbottabad confronts this problem continually. Although inputs are underway to exploit the income-generating potential of the district, such efforts are for the most part patchy and confined to mainstream sectors.

In addition to the government, several NGOs and development projects are working in enterprise development. While Abbottabad has benefited from multi-sectoral initiatives, microenterprise has only recently begun to receive individual attention, largely through the work of NGOs operating in the area. Today, efforts are needed to improve coordination, guidance and oversight. At the same time, the active participation must be sought of all segments of society.

■ BANKS

Following the success of NGO-supported microcredit initiatives, banks have also entered the fray. By making it mandatory for banks to set aside a part of their portfolio for microcredit and loans to small operations, the State Bank of Pakistan greatly facilitated progress in this sector.

While other banks have been slow to enter the field, the Bank of Khyber (BoK) has already established a specialised microenterprise unit which uses the SUNGI and SRSP to channel loans to rural communities. Since 1996, the BoK has disbursed a total of Rs 18.65 million to 465 individuals in Abbottabad district, with a utilisation portfolio as follows: shops (60%), livestock (20%) and agriculture (20%). In Bagh village, a total of 65 small loans amounting to

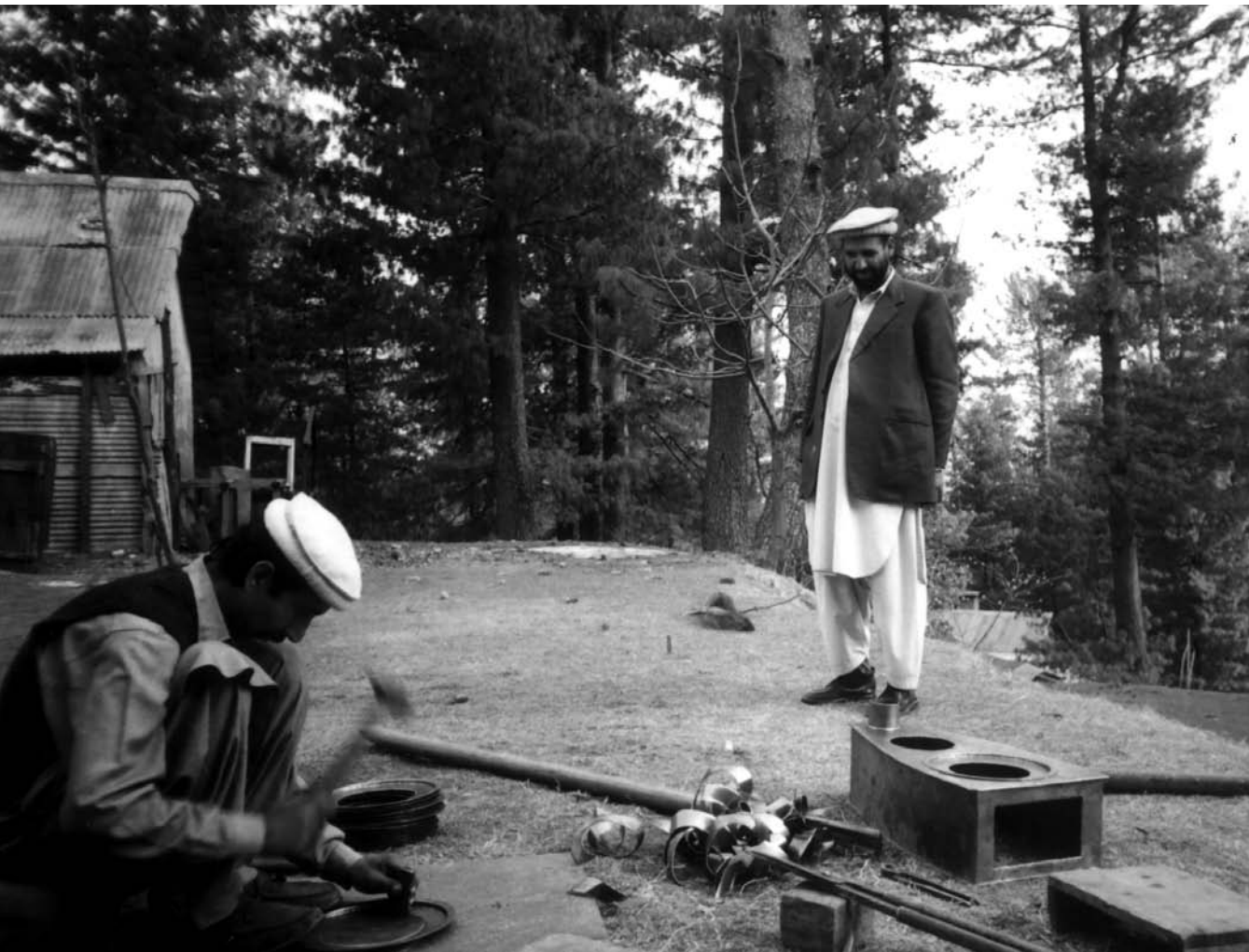
Rs 5,925,000 were disbursed by 31 October 2001. Savings generated through 793 CBOs in the district amounted to Rs 518,827.

Habib Bank Limited also provides small loans through CBOs. The First Women Bank has made poor progress in the microfinance sector.

The extension of credit should not be viewed as an end in itself, but rather as a foundation for income generating activities. As such, credit must be seen in the wider context of support mechanisms and capacity building as well as the potential for expansion in a particular sector. For instance, providing loans

to meet living expenses or to fund activities in an already saturated sector will ultimately aggravate poverty by increasing indebtedness. Such thinking has not yet permeated credit providers, and institutional support for the evaluation of credit extension is still lacking. The necessary capacity is missing and this affects the productive utilisation of funds. The PPAF has not been able to offer support in this area.

In addition to credit, assistance is also required in project identification and formulation, marketing, basic management and information. Without such inputs, credit extension cannot alleviate poverty or contribute to development.



With unemployment set to rise in the coming years, small businesses will play an important part in creating jobs and providing the district's population with opportunities for income generation.

■ EXPORT PROMOTION BUREAU

The EPB established an Abbottabad office in 1993 and has since held 30 seminars and exhibitions to promote export awareness in the district. As a result, 200 new exporters have been registered and it is estimated that the Hazara region witnessed an 11% increase in exports between 1993 and 2001. For the future, the EPB plans to seek the involvement of the private sector with particular focus on industries operated by women.

■ SARHAD RURAL SUPPORT PROGRAMME

A major component of the SRSP's activities consists of enterprise development through training and capacity building. The SRSP serves

information about markets and relevant technologies.

■ SMALL INDUSTRIES DEVELOPMENT BOARD

In the mid-1970s, the provincial government's Small Industries Development Board set up a Small Industries Estate (SIE) at Mandian in Abbottabad, where all 109 plots were allotted to various parties. The site was subsequently developed and the SIE was formally inaugurated in 1981. Since then, progress on the SIE has been dismal. In 1994–95, only 28 units were in operation, providing employment to some 571 individuals. Subsequently, activity in the SIE declined further, with just 25 units operating in 2000, employing fewer than 500 workers.

The extension of credit should not be viewed as an end in itself but rather as a foundation for income generation. Credit must be seen in the wider context of support mechanisms and capacity building as well as the potential for expansion in a particular sector. Providing loans to meet living expenses or to fund activities in an already saturated sector will ultimately aggravate poverty by increasing indebtedness.

as the implementing agency for the BADP. In addition, it is implementing a programme funded by the Pakistan Poverty Alleviation Fund (PPAF). Under the PPAF, the SRSP has established an Enterprise Development Section in Abbottabad and launched an enterprise programme to identify new, viable projects.

The SRSP provides loans from its own credit pool and also facilitates the BoK in channelling loans to rural communities. Its extensive network of CBOs and its impressive 80% credit recovery rate makes it a key partner in future development efforts in the sector.

Despite its laudable efforts, the SRSP remains stymied by difficulties of access to

■ OTHER INITIATIVES

In conjunction with its microcredit programme, SUNGI provides marketing support for traditional crafts industries such as embroidery through a commercial outlet it has acquired in Islamabad. It also facilitates the BoK in channelling loans to rural communities.

A number of other NGOs and development projects have expanded their operations to include a microcredit or enterprise development component. The BADP, which launched its activities in Abbottabad in 1997 to promote fruit and vegetable cultivation and livestock rearing, today uses the SRSP to implement credit-related decisions. Similarly, the NRCP, essentially a forestry initiative, is working on a

strategy for enterprise development with support from IUCN. It faces hurdles in the form of information, capacity and technology short-falls. The Community Infrastructure Project too is expanding its activities beyond infrastructure development and is currently looking to provide credit facilities for enterprise development. The PHP, funded by the SDC, also operates in the area, helping to finance fruit tree nursery production with the support of local communities.

Smaller NGOs such as SPADE have launched various programmes aimed at enterprise development. SPADE has established an

Afghan carpet weaving training centre for local women. This type of initiative in particular should be explored further, as part of a multi-pronged strategy to transfer skills and provide a sustainable source of income generation.

In the public sector, two technical training centres managed by the Directorate of Manpower and Training operate in the district, one each in Abbottabad and Havelian. These centres provide training in automobile repair and computers. Near Narian, the Army Welfare Trust runs a women's vocational centre where basic sewing skills are taught. In addition, the social welfare department runs several vocation centres for women.

Culture

The culture of the Hazara area, which today covers the districts of Abbottabad, Battagram, Haripur, Kohistan and Mansehra, is strongly influenced by its past. Hazara was ruled by the Durrani dynasty from 1747 to 1818, by the Sikhs between 1819 and 1849, and finally by the British in the period 1849–1947. These changing rulers left their mark on the cultural and social life of the region.

HISTORICAL CONTEXT

The early history and culture of the area is not well documented. Around 200 AD, the region was part of the Kushan empire of Gandhara. Little more is known about the history of the area until the 18th century.

During Durrani rule, the cultural milieu was influenced by tribal divisions. Prominent tribes, among them the Abbassis, Dhunds, Jadoons, Karlals and Tanolis, occupied their own territories. Each tribe developed distinct financial, educational and ritual systems, along with social structures designed to facilitate the division of labour. Women played a subordinate role in this culture. Many of these traditions persists to this day.

The Sikhs, largely interested in security and taxes, built numerous armed citadels but exercised nominal interference in the social or religious affairs of local communities. This changed with the arrival of the British, who developed infrastructure, established educational institutions, and set up an administrative and judicial system. These interventions resulted in significant cultural shifts. A new class of government servants emerged, access to information increased and women began to participate in some spheres of public life. Following independence from British rule, the pace of cultural change in the area picked up. Education, local government and infrastructure development contributed to this acceleration. The Karakoram highway and other roads brought external influences to the district so that today urban areas in particular are characterised by a strong consumer culture and western orientation. In some places, the traditional *jirga* has become obsolete, traditional

family bonds have weakened and the joint family system is no longer prevalent. These changes have not affected rural areas to the same extent. The district's rural population is more traditional and their way of life has undergone few major changes. Single-storey mud houses continue to serve as the predominant form of dwelling, while traditional family and religious values are strong, exerting a clear influence on daily life.

ABBOTTABAD TODAY

The district's urban areas, particularly Abbottabad city, are relatively modern, influenced by education and access to information about the outside world. The younger generation seeks to emulate the West in its choice of clothing and fondness for fast food, and displays the general disregard for authority that characterises modern youth. The rural



To this day, many communities maintain traditional *hujras* where the residents of a locality meet to discuss matters of common interest.

areas, while more traditional, are also beginning to change. An ever-expanding roads network increases access to and from remote areas. Growing numbers of villagers are now employed outside the place of their birth and bring back with them experience and knowledge of urban centres within Pakistan as well as influences from abroad.

Men continue to dress in the traditional *shalwar* (baggy trousers) and *kamiz* (loose, long shirt) in the summer, worn with *patti* coats and sweaters in the winter (*patti* is a type of woollen cloth manufactured in Chitral and the Northern Areas). Women wear what is known as the *sothan* (a term for *shalwar* in the local Hindko language) and *kurta* (loose shirt), with shawls and sweaters in the winter.

Children's recreational activities include *gulli danda* (a game played using a stick and stones, popular throughout the subcontinent) and hide-and-peek. *Batti* (lifting millstones) and other feats of strength are popular pastimes among youth and adults. In some villages, unique marriage rites are still

prevalent, such as the *tamman*, a ritual which requires the bridegroom to shoot at a thin wire placed high on a tree by the bride's family. The groom's friends become involved in the challenge and, once successful, they are officially received by the bride's party.

Animal transport has more or less disappeared, replaced even in rural areas by Suzukis (small pick-up trucks) that have been modified to accommodate passengers. Processed and manufactured goods are widely available in rural areas, and the *mahiya* (folk song) and *turi* (trumpet) have been replaced by a booming video and music business.

Global political events have also influenced cultural practice in the area. The Afghan *jihad* against Soviet invasion which began in 1979 has had visible effects on the local population. Among other things, the clergy is increasing in influence.

Today, the cultural milieu of the district is in a state of flux. This needs to be understood and turned to the benefit of future developmental interventions in the district.

Gender

Lower-tier sustainable development strategy documents, both in Pakistan and elsewhere in the world, are increasingly focusing on the participation of women in the development process. The SPCS, finalised in 1996, includes the topic of women and development in its discussion on poverty alleviation and population. Internationally, the consultation process emphasised by Local Agenda 21 explicitly identifies women as significant contributors to development. Similarly, the Beijing Platform for Action (UN 1995) calls for a focus on women and the environment, underscoring the fact that positive measures have to be taken towards implementation, with both the government and civil society playing an active part in the process. The Pakistan National Conservation Strategy mid-term review (Hanson et al 2000) also focuses on the need for gender equity. The recent shift towards the NSSD paradigm, with its particular stress on poverty alleviation, has made mainstreaming women's participation an inescapable contingency.

In this broader context, women are understood to have close and undeniable links with nature, conservation and the economic prospects of the family. Women have been described as resource users as well as resource savers. They are, therefore, an integral component of any immediate or long-term strategy for environmental conservation and sustainable development.

Poverty and environmental degradation affect women in the worst possible manner. Lacking entrepreneurial skills, knowledge and information, their attempts at self-sufficiency are thwarted by the limitations imposed on them by traditional societies. Given that their participation in socio-economic activity is now increasingly a necessity, it is vital that gender concerns are advocated across the board from local communities to the nation as a whole.

The district-level strategy formulation process recognises the overarching importance of gender concerns in sustainable development planning, and has incorporated this knowledge into the project development cycle. As a cross-cutting theme, gender issues are taken into consideration in all priority areas.

ON-GROUND STATUS

According to the 1998 census, the district is home to 43,9948 women, making up 49.96% of the population. The sex ratio for the district as a whole is 100.2%, standing at 94.96% in rural areas and 128.08% in urban centres, indicating that women comprise a higher percentage of the rural population. The age dependency ratio for women is 80.37 (82.04 rural and 71.92 urban).

Literacy among women is low compared to men. Overall female literacy in the district stands at 39.11% (compared to 74.52% among males), with a greater proportion of literate women living in urban centres (64.71%) rather than rural areas (34.18%). The enrolment ratio for girls is also low at 40.11, compared to 56.06 for boys. As with literacy, enrolment among young women is higher in urban centres (58.49),

compared to rural areas (36.70). The condition of rural girls' schools and the dearth of middle schools, coupled with early marriage and a general indifference to education, explain the low literacy status of women as well as poor participation and higher drop-out rates among females. The discontinuation rate for girls between the primary and high school levels is a shocking 46%, largely as a result of cultural, attitudinal and behavioural factors. The situation is aggravated by poverty in general, as well as specific constraints such as the lack of transport and tertiary facilities.

In terms of employment too women are at a significant disadvantage. The 1998 census lists only 0.91% of women as 'economically active', with a labour force participation rate of 1.25 (compared to 55.21 for men). Curiously, the unemployment rate for women (1.05%) is much lower than for men (31.84%) and compared to the district as a whole (31.14%). This anomaly exists because the participation rate does not take into account domestic workers, over 70% of whom are women, while unemployment figures includes this category of work. Of the women employed outside the home, 60.2% work in government organisations, mostly at lower levels, 15.14% are self-employed and 16.48% hold jobs in the private sector. A mere 0.28% of women are employers.

The federal and provincial governments' commitment to employment quotas has not percolated down to the district level. A shocking illustration of this fact is that the 10% quota of the KPP reserved for women has either been nominally disbursed or actually surrendered. Local planners seem unable to devise ways of spending the government's money for activities that involve finding gainful employment opportunities for women.

GENDER ROLES

The division of labour and responsibilities within rural households is socially defined, based on age and gender. These roles are also influenced by tribal affiliations. For instance, women belonging to the Karlal and Tanoli tribes are engaged in domestic labour as well as

employment outside the home more often than Jadoon and Abbassi women who, besides being more conservative, are also more affluent.

In general, men work outside the home, and are responsible for the family's material and financial needs. Women's responsibilities involve farm work (other than sowing and watering), livestock rearing, fodder and fuel wood collection, and household chores. Some handicraft activities, needlework and weaving on the model of Kashmiri products are also carried out by women. They are the principal

caretakers of the family's health and nutrition, and are expected to manage the household, bear and raise children, and cater to the needs of men. Responsibility for the family's drinking water also lies primarily with women, assisted by children, and they are often required to spend considerable time fetching water from distant locations.

■ LIVESTOCK AND AGRICULTURE

Women are an untapped resource in the livestock sector. Already, they are responsible for a wide range of livestock production activities

including feeding, watering, cleaning, care of pregnant and sick animals, milking, rearing of young stock, health monitoring, and heat detection. They collect and process animal products, and sometimes sell produce such as milk, *ghee* (clarified butter), butter and eggs in the market. It is estimated that more than one fourth of a woman's average day is spent on animal husbandry and livestock care. They are already involved in agricultural production and possess the capability of playing an even greater role in kitchen gardening and floriculture.

■ NATURAL RESOURCES

Women draw heavily on forest resources for cooking and heating. They play a major role in fuel collection. In particular, the collection of biomass is the responsibility of women. Restrictions placed on the collection of biomass for sale and



Since fuel wood collection is primarily the responsibility of women, they can also spearhead the transition to cleaner and safer technologies such as solar cookers.

household use have increased the hardship of women, who are forced to travel greater distances in search of fuel. Women also depend on pasture and rangeland for grazing animals.

■ EDUCATION

Since girls in rural areas are perceived as future wives, mothers and housekeepers, little importance is attached to their formal education. This situation is exacerbated by restrictions of movement placed on girls at the onset of puberty.

Women have limited access to education, particularly at higher levels. Even at the primary and secondary levels, access is restricted, retention rates are low and facilities, particularly in rural areas, remain abysmal. Women are poorly represented in higher and technical education, and thus have poor employment prospects.

■ EMPLOYMENT

Women are underrepresented in both the private and government sectors, while their farm



As resource users as well as resource savers, women are potentially important players in conservation and management activities.

activities do not form part of the formal economy. The relative position of women in urban areas is better, although their representation in key jobs such as district management, line departments, the judiciary and the police, is still thin. There are no female agricultural or livestock extension workers.

Dependent on men and hampered by socio-cultural restrictions, women face procedural hurdles as well. Their empowerment is restricted, for instance, by the current requirement of male guarantors in the process of securing loans. Similarly, the closing down of rural post offices adversely affects women's ability to manage their own savings.

Gender-disaggregated data is rarely available, so that planning and evaluating progress are difficult. Additionally, gender sensitivity is severely lacking. The mere construction of a girls' school in a village, or the token presence of women at meetings and conferences, are perceived to be tangible measures supportive to women. Even the ASSD consultation process at the union council level ignored women. It was only later, at district-level consultations, that they were involved through women's groups organised by a local NGO. The women consulted served to highlight economic issues and problems related to basic social sector facilities, and the outcome of these meetings was issues-oriented.

In the sector paper formulation process, gender emerged as an important cross-cutting theme in poverty alleviation and microenterprise development; biodiversity, parks and protected areas; and grazing land and fodder management. This further articulates the significance of gender issues across sectors, and their intrinsic relationship with sustainable development.

MAJOR INITIATIVES AND LESSONS LEARNT

Women remain marginalised, restricted to performing household chores and almost entirely dependent on men. Gender is yet to be

addressed seriously and systematically in the context of sustainable development and natural resource management. Despite their unequal status, women are key players in the district's poverty-stricken rural areas. They are involved with natural resource management activities and form a crucial part of the rural economy, whether or not their contribution is acknowledged. Their formal involvement, as a key component in the integrated, broad-based pursuit of sustainable development, is very much the need of the hour.

While specific gender initiatives are not evident or explicitly undertaken, gender issues are addressed through multi-sectoral and process-oriented inputs. The SRSP's work in relation to gender is guided through the creation of women's community organisations. It has formed 95 such organisations with a total membership of 3,706 and has extended over Rs 5.5 million in credit to women for income generating activities. Similarly, the NRCP has formed 87 women's organisations in 47 villages and provided women with training in activities such as kitchen gardening, and poultry and livestock management. In the non-governmental sector, SUNGI is helping women to market handicrafts and provides training in kitchen gardening and fodder-related activities.

For the most part, however, gender concerns have been addressed through isolated and fragmentary interventions. Rather than providing tangible long-term benefits, most such ventures have carried only symbolic value. Public-sector inputs in gender mainstreaming are lacking, and this affects the legitimacy and sustainability of initiatives undertaken by NGOs and other players.

Mass gender sensitisation and adequate representation in key public sector decision making jobs are critical. At the same time, attempts must be made to mitigate the impact of socio-cultural norms that undermine the status of women and restrict their participation in society. Such issues need to be targeted through broad-based partnerships between civil society, the district government, NGOs and donors.

PART

V

Inter-Sectoral
Themes

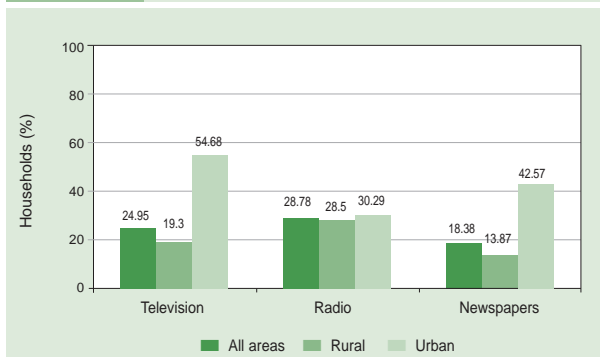
Cross-Cutting Themes

The preparation of the ASSD sector papers brought to the fore a number of cross-cutting themes. These were issues that went beyond the scope of a particular sector and were important across sectors. Such issues need to be addressed and kept in mind while considering strategic interventions and implementation options in all sectors.

GOVERNANCE

Explicitly addressed in the SPCS, the topic of good governance is equally important for the ASSD. As a cross-cutting theme, governance impacts all sectors, whether it is the efficiency of natural resource management departments, the effectiveness of agriculture, livestock and dairy extension services, or education, infrastructure, health, tourism, biodiversity and mining.

The devolution of powers to the district level and the delegation of decision-making in vital sectors are expected to provide impetus for district-level initiatives such as the ASSD, as part of a broader attempt to improve governance. The key issue here is that good governance—through transparency, accountability and a participatory orientation—can promote the move towards sustainability by optimising the performance and utilisation of existing resources.

FIGURE 59 ACCESS TO THE MEDIA, ABBOTTABAD (1998)

Source: GoP 1999a.

Rather than seeking more funds to invest in an institutional system that has time and again failed to deliver, it is time that the system itself is critically examined. Integrative and cross-functional decision making will play a key role in this connection, and support will be needed in the form of capacity building.

POVERTY

Poverty is a major concern within the NSSD paradigm and is widely accepted as one key reason why increasing pressure is exerted on natural resources. As such, it is an important cross-cutting theme. Poverty alleviation requires explicit attention through microenterprise development, education and economic diversification.

NON-GOVERNMENTAL ORGANISATIONS

Increasingly important in the development milieu of this country, NGOs serve an important cross-cutting function. With multi-sectoral work already undertaken by players such as SUNGI and the SRSP, NGOs play a critical role in every sector. It is now also widely accepted that NGOs are particularly effective in community mobilisation. Experience shows that through community involvement, women are progressively mainstreamed and actively included in the planning and implementation process. This reinforces the importance of NGOs as a cross-cutting component, central to integrative planning.

AWARENESS RAISING AND COMMUNICATIONS

The success of a sustainable development strategy depends in large measure on the extent to which community involvement, stakeholder participation and ownership can be created. Advocacy, awareness raising and efficacious communications thus emerge as important components of both the planning and implementation phases of the development process. In the context of Abbottabad, advocacy has to be broad-based and innovative, since electronic and print media penetration is low (Figure 59). To be meaningful and effective in this milieu, advocacy efforts and improved communications will have to be pursued through NGOs, CBOs, village organisations and other grassroots collectives.

EDUCATION

Education is a critically important component of multi-sectoral integrated planning. It is a cross-cutting theme with influence in a wide range of sectors. Whether it is in the form of formal education (which promotes the understanding and appreciation of sustainable development issues, and mitigates poverty through employment and upward mobility aspirations), technical and vocational skills (which directly address employment and poverty alleviation issues) or professional training, education is central to development. Further, education promotes effective communication, facilitates meaningful participation, increases commitment to the conservation of natural resources and increases motivation to curb environmental degradation.

COMMUNITY SUPPORT AND INVOLVEMENT

The participatory approach is fundamental to the evolution of a strategy for sustainable development, with community support,

mobilisation and involvement emerging as powerful and significant cross-cutting themes. It is now widely accepted that no sector can achieve discernible and sustainable progress without the active involvement of stakeholders, beneficiaries and local communities. To this end, the formation of village organisations and other similar collectives is already being incorporated into development planning by a number of agencies. The ASSD process itself grew out of elaborate consultative work involving local communities. Any effective implementation of ASSD strategic interventions will have to take into account the cross-sectoral impact of community involvement.

POPULATION GROWTH

Particularly important in relation to the increasing pressure on natural resources and uncontrolled urbanisation, population growth is a major cross-cutting theme with relevance to all sectors.

GENDER

Gender is a critical issue that is central to any sustainable development process. In recognition of this fact, the ASSD consultation process arranged 15 separate meetings with women's groups and commissioned a sectoral paper on gender.

Gender issues are usually perceived as a women-specific issues. In fact, gender concerns focus on community growth and cohesiveness, where the recognition of each gender's contribution to survival and harmonious existence is emphasised, and where people co-exist through participation and sharing.

OTHER THEMES

Other cross-cutting themes are (i) the involvement of opinion leaders (social and religious) in the consultation and ownership aspects of the strategic planning process, and (ii) training and capacity building at all levels.

ANNEXES

- Technical Terms and Concepts
- Bibliography
- Map of District Abbottabad

ANNEX 1: TECHNICAL TERMS AND CONCEPTS

EMPLOYMENT AND DEMOGRAPHICS

These definitions are taken from the Government of Pakistan's *District Census Report of Abbottabad* (GoP 1999a).

Age Dependency Ratio

The ratio of persons falling within the age groups defined as 'dependent' (under 15 years of age and over 64 years) to persons defined as 'economically active' (15–64 years).

Economically Active Population

Persons aged 10–64 years who are engaged in work for pay or profit (including unpaid family helpers); includes unemployed individuals seeking work as well as laid-off workers. Also see 'labour force'.

Economically Inactive Population

Individuals below the age of 10 years and above 64, who are not part of the labour force; includes domestic workers students and others. Calculated as a percentage of the economically active population.

Employed Population by Industry

Classifies employment by major industrial groups. Consists of five major categories and 10 informal occupations grouped under the category 'other', which is not adequately defined in the census. The five major categories are:

1. agriculture, forestry, hunting and fishing: covers agriculture, livestock, hunting, forestry, logging and fishing;
2. construction: covers building and project construction as well as the construction, repair and maintenance of streets, roads, highways and bridges; irrigation, flood control, drainage, reclamation and hydroelec-

tric projects; and docks and communications projects;

3. wholesale and retail trade, restaurants and hotels;
4. transport, storage and communications (postal service, telegraph, telephone); and
5. community, social and personal service: covers public administration and defence service; sanitary services; social and community service; recreation and cultural services; and personal and domestic services.

Employed Population by Occupation

Classifies the working population on the basis of 10 major occupational groups:

1. legislators, senior officials and managers;
2. professionals;
3. technicians and associate professionals;
4. clerks;
5. service workers and retail sales workers;
6. skilled agricultural and fisheries workers;
7. crafts and related trades;
8. plant and machine operators and assemblers;
9. 'elementary' occupations; includes mining, construction, manufacturing and transport; and
10. workers not classified by occupation.

For the purposes of our analysis, we have grouped smaller categories into a single group ('other') and considered only five major categories, as follows:

1. Professionals: includes physics, mathematics, engineering and life sciences professions; health care providers; teachers; and other professionals;
2. Plant and machine operators and assemblers: includes plant operators, machine operators and assemblers, mobile plant operators, and drivers;

3. Service workers: includes shop and market sales workers, personal and protection service workers, models, salespersons, and demonstrators;
4. Skilled agriculture and fisheries workers: includes market-oriented skilled agricultural and fisheries workers as well as subsistence-level agricultural and fisheries workers; and
5. Elementary occupations: including sales and services; agriculture, fisheries and related labour; mining, construction, manufacturing and transport.

Employment Status

Determined according to the type of employer, consisting of six major categories:

1. self-employed: persons operating their own farm, business or industry; and professionals employing no paid workers;
2. government: paid employees in government or semi-government organisations;
3. autonomous: paid employees in autonomous organisations;
4. private employee: persons employed in paid work for individuals, on farms, or in shops, firms, organisations or offices that are not owned by any tier of government or autonomous body;
5. employer: persons operating their own farm, business or industry, or practising a profession, and who employ one or more persons; and
6. unpaid family workers: persons working without pay or profit on a family farm or in a family business or industry.

Labour Force

Synonymous with the term 'economically active population', although in census terms this category includes domestic workers, who are excluded from the 'economically active' category.

Labour Force Participation Ratio

Economically active population as a percentage of total population. Also known as the 'active rate'.

The 'crude' participation ratio is calculated as a percentage of the total population:

$$\frac{\text{economically active population}}{\text{total population (0-64 years)}} \times 100$$

The 'refined' ratio, used in this document, measures the economically active population as a percentage of the age group that qualifies to enter the labour force:

$$\frac{\text{economically active population}}{\text{total population aged 10-64 years (including students)}} \times 100$$

Migrant Population

Those residing in the district for 1-10+ years.

Sex Ratio

Number of males per 100 females.

Tenure

Refers to the type of home ownership, assessed in various categories such as 'owned', 'rented' and 'rent-free'.

Unemployment Rate

Calculated as:

$$\frac{\text{unemployed labour force (looking for work/laid off)}}{\text{total labour force}} \times 100$$

Interestingly, in the census, the category 'labour force' includes domestic workers but this group is excluded from the 'economically active population' category. As a result, unemployment rates for women are unrealistically low.

Unpaid Family Helper

A person who works, without pay or profit, on or for a family farm, business or industry.

EDUCATION

Drop-out Rate

Calculated as:

$$\frac{\text{enrolment - repeaters (base year)}}{\text{enrolment - repeaters (next class, subsequent year)}} \times 100$$

Enrolment Rate

Calculated as:

$$\frac{\text{total number of students}}{\text{total population in age group 5–24 years}} \times 100$$

Literacy Ratio

Calculated as:

$$\frac{\text{total number of literate persons (10 years and above)}}{\text{total population}} \times 100$$

Literate

A person who can read a newspaper and write a simple letter in any language.

Participation Rate

(a) Primary school. Calculated as:

$$\frac{\text{total number of students (Class I–V)}}{\text{total population in age group 5–9 years}} \times 100$$

(b) Middle school. Calculated as:

$$\frac{\text{total number of students (Class VI–VII)}}{\text{total population in age group 10–12 years}} \times 100$$

(c) High school. Calculated as:

$$\frac{\text{total number of students (Class IX–X)}}{\text{total population in age group (13–14 years)}} \times 100$$

Primary school: Class I–V; age 5–9 years.

Middle school: Class VI–VIII; age 10–12 years.

High school: Class IX–X; age 13–14 years.

Promotion Rate

Calculated as:

$$\frac{(\text{enrolment in base year}) - (\text{repeaters in base year})}{\text{enrolment in subsequent year}} \times 100$$

Repeat Rate

Calculated as:

$$\frac{\text{repeaters in base year}}{\text{enrolment in previous year}} \times 100$$

LAND USE AND AGRICULTURE

Area Not Available for Cultivation

Includes categories such as barren or mountainous land, area under canals or rivers, areas under homesteads and all other areas not available or not utilised for agricultural purposes.

Barani Area

Rain-fed cultivation or areas where rain-fed cultivation is undertaken (term used in the Indian subcontinent).

Cultivated Area

Farm land that is sown at least once during the year under report, or in the preceding year. Calculated as: net area sown + current fallow.

Cropped Area

Aggregate area of crops grown during the reported year, including the area under fruit trees.

Cultivable Area

Calculated as: cultivated area + cultivable waste.

Current Fallow

Farm land not cropped during the year under report, but cropped in the preceding year.

Cultivable Waste

Area suitable for cultivation but not cultivated.

Intensity of Crops

Indicates the extent to which the cultivated area was used for cropping. Represents the total area sown in the *kharif* and *rabi* seasons during a given year. Calculated as:

$$\frac{\text{total cropped area}}{\text{total cultivable area}} \times 100$$

Intensity of Land Use

Indicates the extent to which cultivable land is used for agricultural production. Calculated as:

$$\frac{\text{cultivated area}}{\text{total cultivable area}} \times 100$$

Irrigated Area

Cultivated area irrigated by artificial means during the year under report.

Kharif

Summer crop season from April to September (term used in South Asia).

Land Utilisation

Classification of a farm area according to use.

Net Area Sown

Farm land sown at least once during the year under report (*kharif* and *rabi*), including land on which fruit trees may have been planted in the past, but bear fruit in the year under report.

Rabi

Winter crop season from October to March (term used in South Asia).

FORESTS

Afforestation

The establishment of trees on an area that has lacked forest cover for a very long time or has never been forested.

Agroforestry

A collective name for land use systems and practices where woody perennials are integrated with

crops and/or animals on the same land management unit. Integration may be carried out either in terms of spatial mixture or temporal sequence. There are normally both ecological and economic interactions between the woody and non-woody components in agroforestry.

Cantonment Location Forest

Carved out of reserved forests, these are state owned and managed by selected state institutions.

Deforestation

Clearing an area of forest on a permanent basis for another use.

Degradation

The diminution of biological diversity or productivity; reduction in grade, quality, yield.

Depletion

The gradual reduction or destruction of the supply of natural resources.

Designated Forest

Areas exclusively set aside for management as forest. Includes state managed, private and communal forests. The term denotes a legal category. Designated forests may or may not actually support forest cover.

Forest Area

In the non-technical sense, merely that area which is under forest. The technical definition includes all of the following: forest land, whether state land or private land; state rangeland; and state land or private land that is predominantly maintained in one or more successive stands of trees, successive crops of forage, or wilderness.

Forest Cover

Forest stands or cover types consisting of a plant community made up of trees and other woody vegetation, growing more or less closely together.

Forest Cover Types

As opposed to administrative types, forest types are classified according to similar characteristics and species composition.

Forest Land

Actual area within designated forests supporting forest cover.

Guzara Forest

Privately-owned forests close to populated areas, managed through state intervention and intended to meet local community requirements for timber, fuel wood and grazing.

Mazrooa Forest

Privately-owned forest that are un-demarcated, non-designated and unplanned; excludes areas already designated as *guzara* forest.

Open

Term used to describe forest density. Open forest is an area where the tree canopy is open and trees are sporadic, as opposed to compact or dense growth.

Reserved Forest

State-owned forests far from populated areas, intended to cater to the state's requirements.

Seigniorage Fee

A portion of the sales proceeds from reserved forests adjacent to *guzara* forests to which *guzara* owners are entitled.

Silviculture

The theory and practise of controlling the establishment, growth, composition, health and quality of forests and woodlands. Silviculture entails the manipulation of forest and woodland vegetation to meet the diverse needs and values of landowners and local communities.

LIVESTOCK AND FODDER**Animal Unit**

Calculated on the basis of different combinations for various animals. For cows, 1 animal unit = one mature cow with calf (a combined weight of approximately 455 kg).

Dry Matter

Used to calculate feed requirement per animal unit. For a well-nourished grazing animal, the feeding requirement amounts to 24 lbs. or 10.9 kg of dry matter per day.

Rangeland

Any land supporting vegetation suitable for wildlife or domestic livestock grazing, including grasslands, woodlands, shrub lands and forest lands.

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ANNEX 3: MAP OF DISTRICT ABBOTTABAD



LEGEND

District Boundary	Abbottabad Development Authority	Hospital	Sindh Resort Hotel
No-tiled	District Nazim Office	CHB	Hydril Masjid
Un-tiled	General Post Office	Town Ships	Havelia Cantt
Railway Line	Schools & Colleges	Jinnah Town Ship	Forest House
Dargaga/Ayubia (Pipe line)	Abbottabad Fribid School	Site for Abbottabad Town Ship Scheme	Havelia Bridge
Attache (Mek to)	Army Sta. Hill College	Parks	
Dry Hills	Saad Forest School	Lady Garden	
Ayub National Park	PMA	Sindh Park	
Forest			
Agriculture			
Range Land			
Sinks and Buzied			
Habitats			
Water Bodies			

Scale : 1 : 210 000





А10100