



Fritz Berger

People and Water

Kalam 1982 to 2019

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Cover photo:

Overview of Kalam at the entrance of the valley from the new road to Boyun. Mixed agricultural land on both sides of Ushu river. Kalam Bazar along Utror river with part of the settlement Kas and the flat Bankale forest. 2019.

Back photo:

A farmer in Tamra village washes turnip before filling them in the bags for lowland market, 2019.

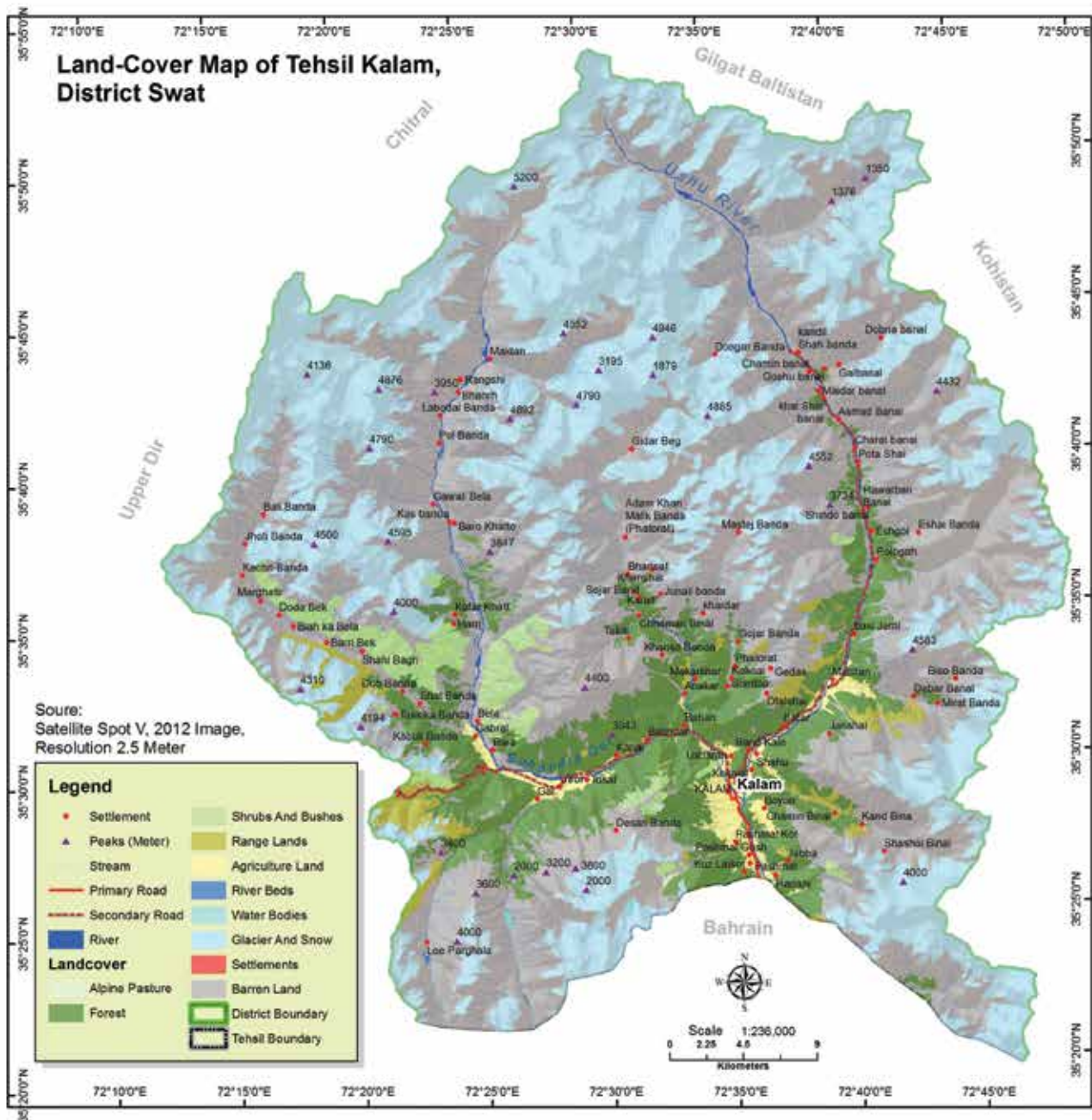
Districts of Khyber Pakhtunkhwa



Tehsils of District Swat



Land-Cover Map of Tehsil Kalam, District Swat



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Fritz Berger

Foreword

Thomas Kolly,
Ambassador of Switzerland in Pakistan

Since arriving in Pakistan as ambassador, I have travelled widely in the country, from the mountainous regions of the north to the port city of Karachi in the south. I was impressed by the welcoming and engaging people I met as well as by the country's diversity and cultural richness. The northern region with its snow-covered peaks reminiscent of the Swiss Alps made me feel particularly at home. It fills me with great satisfaction to see that Switzerland was able to work with the people in Pakistan in their development efforts. In over 50 years, the Swiss Agency for Development and Cooperation (SDC) has successfully completed numerous development projects in partnership with governments and civil society organisations at local, provincial and federal levels. The hallmark of SDC's work has been its consistency and impartiality in promoting economic growth and stability.

In 1981, the Swiss Agency for Development and Cooperation, through Intercooperation (today Helvetas), started its rural support programme in the Kalam valley. The Kalam Integrated Development Project had a considerable impact and outreach. The project created awareness to protect forests as an essential element of the local livelihood. It helped farmers to move away from subsistence agriculture and introduced cash crops. Farmer's skills to bring their products to the consumers were improved. The promotion of girl's education was also part of the project. The Swiss expertise



matched well with the needs of the local population. Key for the success of the project was the willingness of the involved partners to work together in a highly complex context.

Kalam has been excellent learning ground to understand social and ecological complexity of a high-altitude area richly endowed with water resources. This book presents a rich collection of pictures capturing the trajectory of water, landscapes and people in the Kalam valley from 1982 to 2019.

Introduction

Dr. Arjumand Nizami

Water context of Khyber Pakhtunkhwa and significance of Kalam

The Khyber Pakhtunkhwa (KP) Province is home to about 35.5 million people (settled districts 30.523 million and tribal districts 5.001 million), of which 83.5% live in rural areas (81.22% settled districts, 97% tribal districts)¹. Among other, lack of access to water (clean drinking water and irrigation) is a major driver of poverty and deprivation. Therefore, engaging in water sector development for improved access to water is a key driver to improve people's well-being and harmony.

Agriculture is the major source of livelihoods in the province where 80% of the work force in the rural areas is engaged with a sizable input to the provincial as well as national economy. Out of the total area of 7.45 million hectares, the cultivable area is 2.72 million hectares².

The province comprises diverse landscape with agricultural plains, drylands and mountains. This diversity is an opportunity but at the same time increases exposure to vulnerability due

to climate variability and change. The province is extended from north to south with diversity of terrain causing substantial seasonal variations. A large area of KP comprises highlands which are highly vulnerable to climate variability and change³ and rich in water resources playing an important role in the regional hydrological cycle⁴. Kalam is one of these highlands which serve as water towers of the province and the Indus water basin.

Kalam is located at a distance of 99 kilometers (km) from Mingora in the north of Swat valley along the bank of Swat River in KP province of Pakistan. Kalam is surrounded by lush green hills, thick forests, deep blue lakes, meadows, waterfalls and an attractive landscape. It is the birthplace of Swat River which is formed with confluence of two major tributaries i.e. Gabral River and Ushu River. Kalam is located at an elevation of about 2,000 meters above sea level (asl) with several high-altitude valleys and mountains including Mount Falaksar; 5,918 meters.

¹ Bureau of Statistics, Government of Pakistan 2017.

² Irrigation Department KP data

³ Ali, J and Nizami, A. 2014. Hydro-meteorological Hazards, Vulnerabilities and Coping Strategies in Garam Chashma Chitral, Pakistan. Helvetas <http://www.asianhighlands.org/uploads/soft/150415/1-150415133358.pdf>

⁴ Grumbine, E. R., Nizami A. et al. 2014. Water Governance in Asian Highlands. Working paper 198. Kunming Institute of Botany China, Helvetas <http://www.asianhighlands.org/uploads/soft/150409/1-150409163518.pdf>

Land holding in Kalam is generally small and owners have very little risk-taking capacity. Water in Kalam faces competing demands from various sectors including but not limited to drinking water and sanitation, irrigation, manufacturing and industry, environment and ecosystems and hydropower. Despite rich water resources, several communities still do not have access to clean drinking water.

A major initiative for the development of Kalam, was taken during 1980s with the initiation of Kalam Integrated Development Project (KIDP) mainly to improve people's livelihoods. The KIDP made several efforts following nexus approach in water, forest and agriculture and tried to improve livelihood opportunities in the area. Since the implementation of KIDP, the KP province remained a flag bearer for integrated resource management at various scales using various tools and approaches⁵. Hence KIDP approach was novel in early 1980s and is still relevant today as we see an emphasis by the government and developmental agencies on integrated approaches in many sectors including water.

Coordination among various actors and water users, received a high attention after the 2010 mega floods which changed the landscape of many valleys in KP including Kalam. Recognizing that water is an integrated development issue, the government of KP embarked on developing an integrated water resource management strategy for the province in 2018.

The major portion of surface irrigation system in KP is fed by the River Swat (CA = 14000 Sq.km). The main stem is about 162 KM long till its confluence with Panjkora River and about 231 km till outfall to Kabul River opposite Jala Bela and Agra payeen. It originates from Hindu Kush Mountains in Swat Kohistan. Its catchment consists of snow bound high mountains in the northern part of the province up to an elevation of about 4877 meter asl. The main government-operated canals from the river are Fatehpur, Nipki Khail, Baldwin, Upper Swat Canal, Lower Swat Canal & Doaba Canal system. Besides, there is a network of hundreds of civil channels taking off from the river. The command area of the river is situated in the districts of Swat, Dir, Malakand, Mardan, Nowshera, Mohmand and Charsadda. The average annual discharge at Amandara headwork ranges from 1800 cusecs to 8000 cusecs as per available data of the last 30 years resulting in an average dependable volume of about 3.54 Million Acre Feet (MAF).

This book is a rich collection of pictures capturing a trajectory of water and people's journey from 1982 to 2019. These pictures have witnessed several changes in agriculture-water-forests nexus in relation to the people of Kalam. The readers will draw their own food for thought from these pictures – including one for sure – that the beauty of Kalam is drawn from its green and blue colours. Any measures for structural development need to cater for sustainability of resources and preservation of landscape.

⁵ KIDP followed by similar projects in Mardan, Dir, Malakand, Tarbela watershed, Integrated Natural Resource Management Programme (2006) etc.

About the book

Fritz Berger

This photo book is about changes in the past forty years in the mountain valley of Kalam in northern Pakistan. It gives an insight on how people manage their lives in harsh and neglected environment and deal with hazards caused by climate change. Old and new photos are supplemented with texts based on experience, observations and discussions with people from Kalam. These changes are mainly based on innovations of the farmers, the KIDP project, devastating floods and tourism.

People and Water is about Kalam valley where I worked from April 1982 to September 1986. Most of the photos are from that time and some from my later visits. My last visit was in August 2019 when I had the pleasure to visit Kalam for two weeks and interact with several friends from the old times.

This is my last book of the trilogy after Nepal and Greece about changes in the project areas where I worked for several years. As I had the chance to return regularly to all three places I could talk to people and take new photos. After my project time I visited Kalam in 1997, 2005 and 2019.

This photo book is my thanks to the people of Kalam for their hospitality and for all the valuable things I have learned from them. The photos of changes in their valley may be an incentive to reflect on their past and future.

All the photos are taken by me, except the one mentioned otherwise. The original photos are saved at Archive für Zeitgeschichte, Zürich Switzerland (www.afz.ethz.ch).

Stockholm, October 2019
fritz@transhmana.ch



Chapter 1

People and Water





The valley of Paleer in the entrance to the Utror Valley with freshly planted potatoes and mountain tops with walnut trees growing on the edge of the fields. The Utror River gives a picture of “swollen river” during summer because of snow melting on the mountains.

Kalam and its people

Located at an elevation of about 2,000 meters above sea level (asl) with several high-altitude valleys and mountains including Mount Falaksar 5,918 meters asl, Kalam has a distinct high-altitude way of living among its people. Life is harsh in Kalam due to its remoteness and extended winters. Conversations with people (Chapter 8) suggest that people in Kalam are better off today than their counterparts in comparable mountainous regions of KP. They have higher incomes, are less dependent on seasonal migration, have more business and trading activities, and enjoy higher levels of well-being - at least in valleys closer to the markets. Access to remote valleys has improved, small businesses have flourished, farming has become diversified and more tourists have started to approach Kalam than before. The pictures included in this chapter capture living environment and some beautiful moment of people at work in Kalam.

I found the people in Kalam as sincere, hard-working and reliable. I was amazed how they deal with the difficulties in their life. Only with joint efforts was it possible to control floods and avalanches in this isolated valley. In winter they wore only light boots or plastic shoes and protected themselves from the freezing cold with a blanket thrown over the usual Shalwar Qameez.

When the Kalam Integrated Development Project (KIDP) started working in Kalam in the early summer of 1982, we had little information about the people and the valley. That is why in the fall of 1982 I held talks with two farmers from every village (38 villages) in Kalam. The results of this conversation were recorded in the “Kalam on the Move⁶” report. This report also contains information on the history and the people which Asmat Gul from Usharan had brought together with the help of interviews and talks with and local knowledge of village elders. Here is a short summary:

The majority of the residents in Kalam are Gawri who have their own language. The minorities include Chitralis in Ushu, Pashtuns in Kalam Kas, and the Gujars in Gabral and Anakar. About 40,000 people lived in Kalam over summer. Over half of them migrated in winter to lowlands to graze their animal on fields of sugarcane. It is believed that people have been residing in Kalam for thousands of years. Legends circulated among the Gawris about other ancient ethnic groups that lived in Kalam before them. These people, named Sillior and Deshinor, were especially famous for being strong and wrestling lover Buddhists. Archaeological remains in Lamdi at Kukunail, Rshanail, Usharan and Kanai give a hint about it.

These people were later killed in a plague of hunger or natural disasters. It could also be that the people emigrated to Gilgit or Chitral, because there are people who still remember the graves of their ancestors in Kalam.

During the administration of Wali (King) of Swat Mian Gul Jehan Zeb, Kalam found its way to modernity. He was assigned this task in 1954 by the Government of Pakistan. As a result, he used funds provided by the Pakistani government to build roads, bridges, schools, health posts and a hospital in Kalam. On the subject of education, Asmat Gul writes, “...the years under Wali were times of learning and knowledge...” and further, “...the flame of modern-day schooling was lit by Wali of Swat...” I have heard a lot of praise from Kalamis over the Wali period. Above all, his judgements were hard but wise and justice was dispensed without delay. In 1969, Swat and thus Kalam were annexed with Pakistan and the system of administration changed. The traditional democratic jirga slowly lost importance. Political parties and elections to parliament were introduced. At this time the potato came to Kalam, which was the first step out of poverty for the Kalamis as they could then buy food and build better houses with Hujras as Asmat Gul writes in his report.

As is customary in a devout Muslim society, in Kalam I had only indirect access to women. Nevertheless, their life was characterized by hard work and little freedom. Young marriages were common, and they were loaded with a lot of duties. Women were also very creative. In the village Mateltan I photographed wonderful murals, which women had painted. The colourfully decorated headdresses for their

6 The document prepared by Helvetas Swiss Intercooperation on Dardish mountain tribes in Upper Swat / Kalam – one of the first ever documentation on Kalam in Pakistan. 1984. <https://portals.iucn.org/library/node/19472>

babies, with all sorts of materials impressed me a lot. Men often mentioned foot-operated sewing machines that they gave to their brides for the wedding. But young women were not able to operate them as they could not read the manual. To my surprise, when we asked if their wives could go for a training course, they responded positively and explicitly supported such courses for women. This was one of the instances of social spaces women got in this society.

At that time, child mortality rate was about 50% below the age of five. As soon as the parents thought it was possible, the children were involved in the daily work in the house and on the field. Through this they learned early to assert themselves in their environment and their intended roles as a woman or a man. Since there were no toys, the boys would use waste material like wires, wood pieces and expired batteries and convert them into toys like tractors, buses or trucks etc. Sometimes strong vehicles emerged out of this engineering on which they could rush down the streets. I bought some

of these vehicles from the boys, which I provided to the Ethnological Museum in Basel and the Museum of Transport in Lucerne, Switzerland.

The schools suffered lack of trained teachers and contemporary materials for teaching. How far the compulsory school attendance was, is difficult to judge. Mixed classes were only possible in the villages where Gujars lived. As in most villages, there were no girls' schools, the girls remained excluded with no opportunity to attend school. The KIDP in 1998 opted to introduce home-based girls' schools which was celebrated among people. After 2010, the "Gawri Community Development Programme" (GCDP) in Kalam began in several villages teaching girls and boys in Gawri - their mother tongue during the first three years of schooling. For this purpose, own teaching materials had to be created by the project team. Abdul Haq from Boyun wrote poems for a booklet in 1997 for the first time in the local Gawri language. In addition to Kalam, Gawri is also spoken in the upper Dir valley.



Kalam 1985-86

The entrance to Kalam, which may be seen from the mountain over Usharan direction south. In the foreground from left to right the forest Bankale, the settlement of Ushuran and the Utror River. In the centre of the picture is Kalam village with Jalban and Kalam Kas. To the left the settlement of Boyun may be seen on a terrace. **1984.**



The Ushu Valley in direction east seen from the Shau (on the left slope are (not visible) the villages of Gurkin, Bafar and Ushu). In the centre of the picture is the village of Mateltan, the only place in Ushu Valley with reasonable flat agricultural land. **1986.**



The fertile plain of Sazgal northwest of Utror towards Gabral. **1986.**



Jotta Jabba in Gujjar Gabral with the Utror River. **1986.**



The old village of Kalam in spring. In the centre of the picture is a mosque with corrugated roof. On right the wooden bridge can be seen and the main road to Bahrain. **1983.**



The mosque of Boyun with a white poplar tree beside it. **1986.**



A two-storey farmhouse in Kalam Kas with standing wooden poles to store hay. The wooden wall framework with white tree-like patterns is built to keep privacy of the household. **1985.**



A two-storey farmhouse in Bara Jabba built from assembled tree-trunks. **1983.**



A farmer from Kilgal is drying vegetables on the house roof for winter stock. **1983.**



Farmers harvest potatoes with simple equipment in October. For transport to the market, the potato tubers are filled in jute bags after drying. **1985.**



A bus overloaded with passengers on an unpaved road in Sazgal on the way home from Mingora to Gujar Gabral. **1983**



A richly painted truck in Utror village with labourers to transport timber to Swat. **1985.**



An elderly man from Gabral on the way home with willow branches to feed his livestock. **1982.**



A Farmer carries a load of oak branches to feed his cattle which stay in the valley over winter. **1985.**



A classical scene of seasonal migration. Shepherd family on the way from the summer pasture to lowlands pass the village of Kalam. The household utensils are loaded on donkeys or carried by the ladies on their heads. **1986.**



One of the summer pastures settlements on Desan above the tree line. Below the huts, Samchal vegetable grows in enclosed gardens. **1986.**



One of many wonderful lakes in the high mountains of northern Gabral. **1986.**



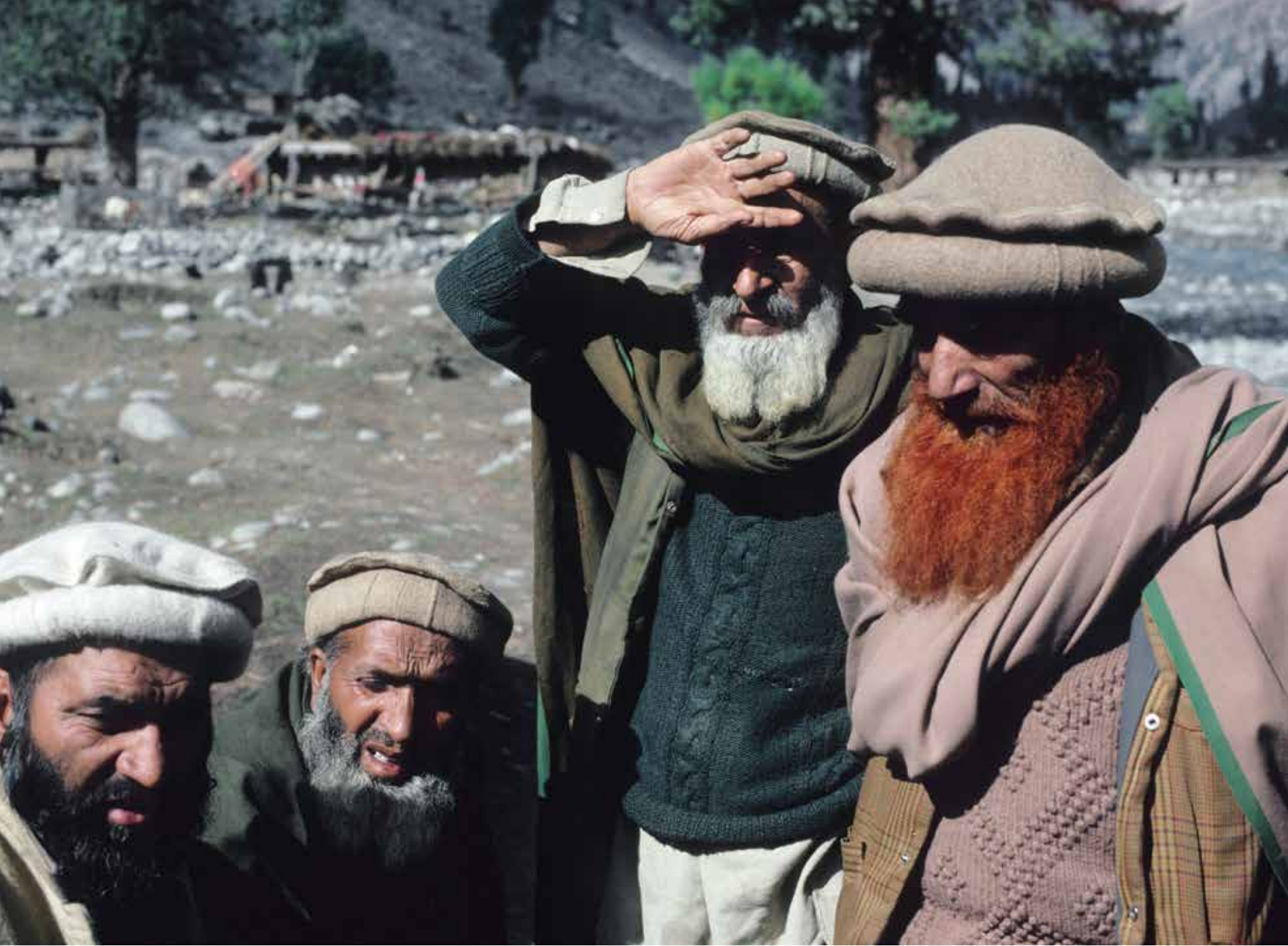
The famous mountain Falaksar
towering the blue skies. **1986.**



The forest over Shau with its thick coniferous stands. **1983.**



Workers in a steep forest of Gabral move a tree trunk to the roadside. **1983.**



Farmers discuss their problems related to potato growing at a jirga in Bela. **1985.**



A view of a jirga in Mateltan. All problems are discussed, and disputes are sorted out with consensus in the presence of village men and leaders. **1984.**



The residents of Bella collectively transport a beam for the construction of a bridge. **1983.**



Batandar men repair a bridge damaged by the floods with a tree trunk. **1986.**



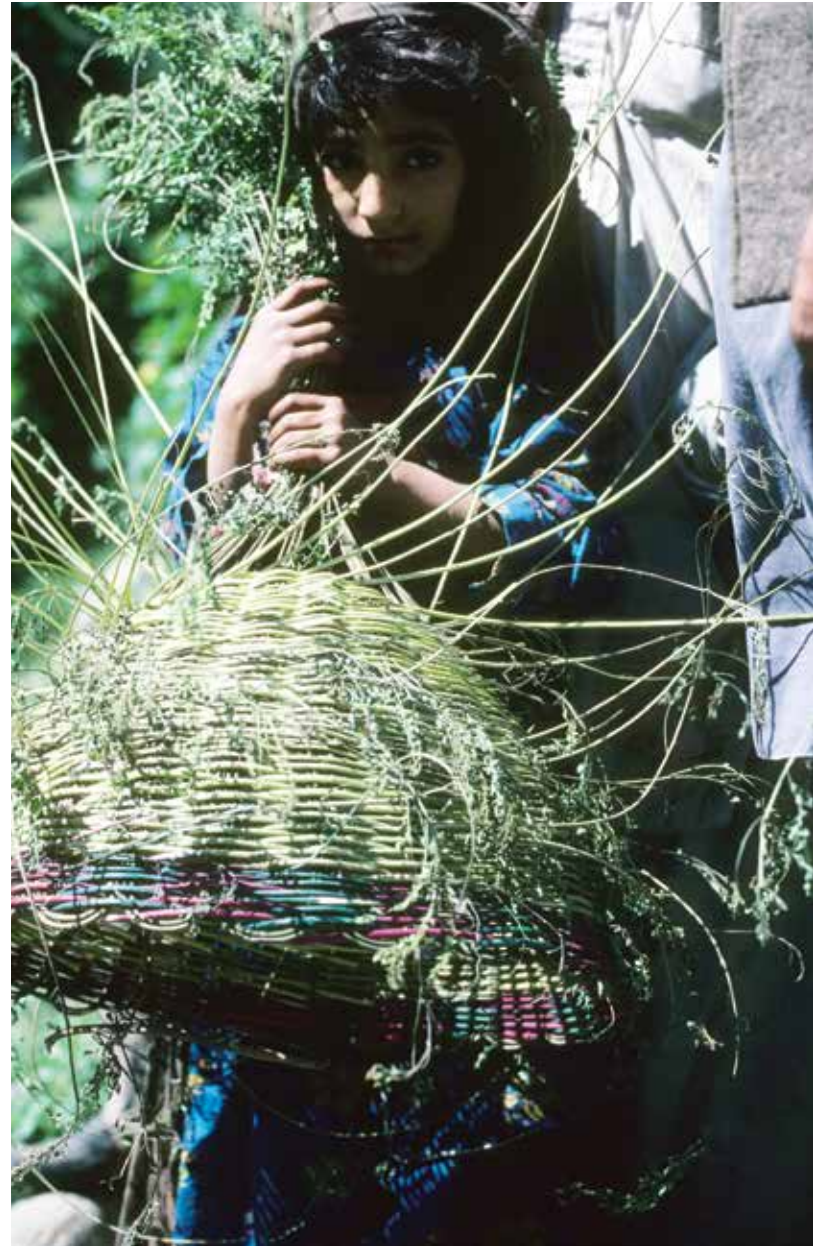
Men from Tamra sit on the roof of a newly constructed house. At that time, it was common for every man to daily carry his rifle as a personal pride. **1984.**



A man from Ushu proudly presents his Sarood,
a traditional sitar. **1997.**



Specialized men from the lowlands work in Kalam to produce a colourful rug out of sheep wool to cover the floor at a local house. **1986.**



A young lady holds a woven basket made of Indigo branches for the household use. **1985.**



A wooden waterwheel used to turn a millstone for grinding corn. **1986.**



Home-made maize bread wrapped in a cloth with local handmade embroidery placed over handmade baskets. Maize bread with spinach (Samchal) was the main food of the farmers. **1983.**

A baby from Usharan wearing a decorated warm cap made by a local woman. **1983.**



A boy plays with his self-engineered tractor made of wood and wires. **1983.**





Happy children help their elders with potato planting.
The girls' special hairstyle is worth noticing. **1985.**



Gurkin boys play with homemade wooden sledges. **1982.**

Chapter 2

Water and Climate





The Rivers of Kalam are the lifeline for people and agriculture; they share the valley bottom with villages, trees and fields. For decades they were in harmony going together. But this has changed to a conflict for space since several years. **2019.**

Water and climate

Kalam is a highland of KP with vast mountainous area in Hindukush range and is the source of Swat River which directly and indirectly sustains lives of millions of downstream dwellers. The river is formed from several small and large watersheds richly endowed with natural resources. The dwellers of these watersheds experience both threats and opportunities. On one hand they are the custodians of these precious water resources and habitats from where streams emerge. On the other hand, many people, particularly the poor, face disproportionate vulnerabilities. The 2010 mega floods which affected approximately 20 million people in Pakistan, changed the shape of several watersheds in Kalam including the span of vivid Swat River. In addition, changing climate is also potentially altering water regime in Kalam with increased temperatures and melting of glaciers, greater access of monsoon in Kalam and torrential nature of rainfall. The pictures included in this chapter provide a few glimpses of historical trajectory of water in Kalam.

At Kalam the Swat River divides into the Ushu and the Utror rivers. Both flow quietly and tame out of flat, long valleys. The riverbanks were lined with trees, shrubs, flowers and fields that invite people to enjoy their beauty. Damage from avalanches or small landslides were rare. I and probably also the Kalamis could not imagine in 1982 how these harmless rivers one day could turn into angry, destructive monsters.

But before I report about destruction from rivers, I take you up the river with white-foaming waterfalls and through steep forests to the high pastures. Once the snow has melted in early summer, yellow crocus, pink primroses and many more flowers are blooming. Rare flora and fauna are in abundance around wetlands. In addition to adding beauty to the landscape, green cover in the valley regulate surface water flow and protect mountains. The many lakes in the area above the tree line perform a similar task. These blue gems are “glacial lakes” formed a long time ago with the melting of the ice. Important, indeed vital, are the glaciers higher up and the eternal snow. From there originates water that is supplied to the people in the big cities and the fields in the lowlands.

Kalam farmers irrigate their crops, vegetables and fruit trees but also the grass fields and when water is available also the summer pasture. Long canals had to be built to bring the water from the river to the fields. The farmers even today get together to maintain and repair the canals jointly.

The women fetched the water for the household from irrigation canals. If there were no channels or no water springs nearby, they took it from the streams. With the help of the KIDP,

the residents were able to build water pipes, thereby finally gaining access to clean water at home.

What made life in Kalam difficult over the winter was a lot of snow. The flat roofs had to be cleaned regularly from fresh snow so that melted water does not soften the mud roof and penetrate into the house. Several times over a winter an avalanche interrupts the road short before Kalam. The snow was cleaned to clear the road by the locals together with the help of hand tools.

In midsummer 1985, there was a violent thunderstorm in the mountains above the valley of Utror. It was an extraordinary event, as there were no signs of similar storms earlier in Kalam. Particularly affected was the section from Batandar to Utror Kas, where violent debris flows carried away a lot of farmland. The thunderstorm also had a bad effect on the other side of the mountain in Gabral where a debris flow temporarily blocked the Gabral River. KIDP performed some of the difficult projects of building protection walls to tame wild rivers and I captured some photos at that time and in later years.

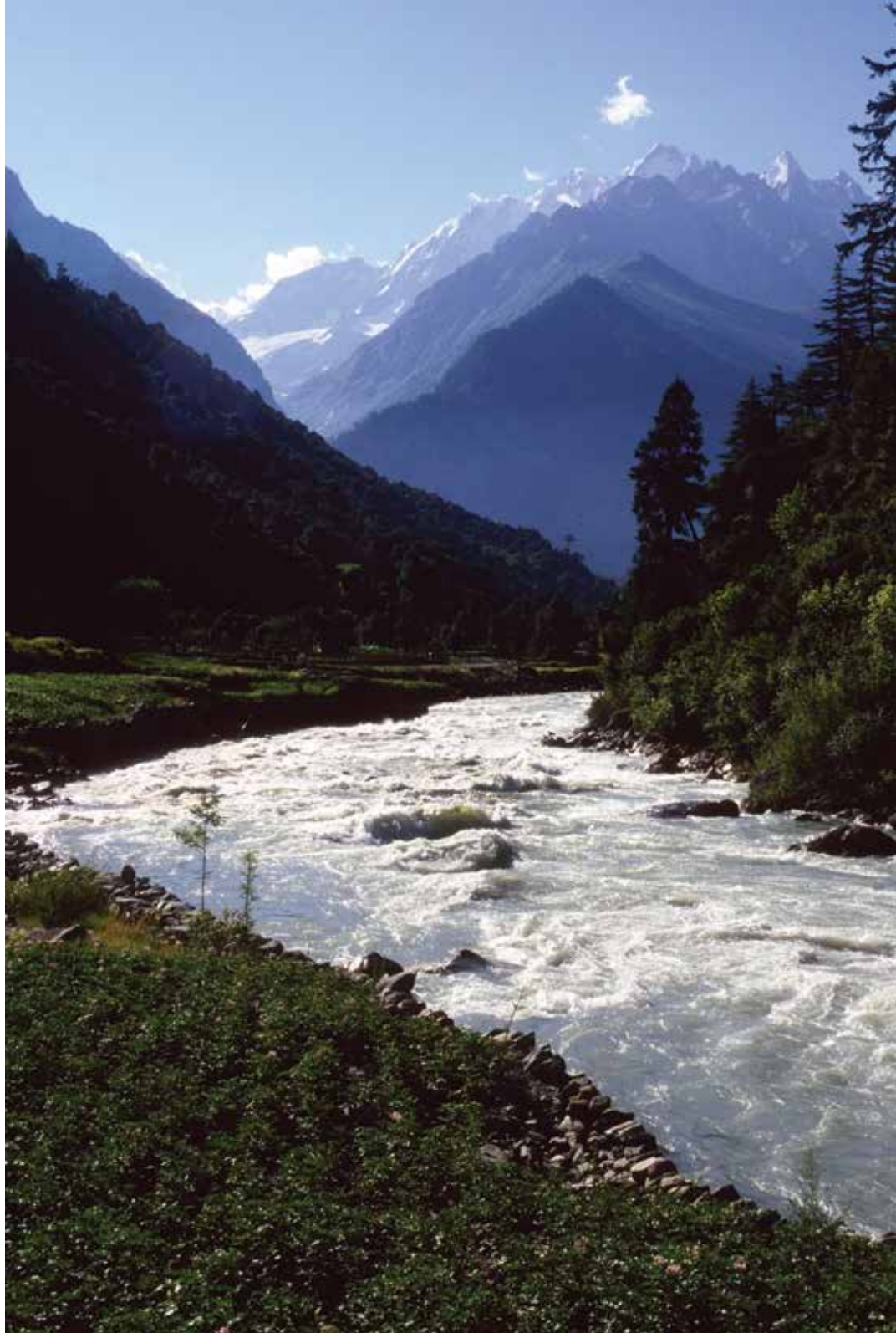
However, the damage was much greater in August 2010 with the torrential rainfall. This precipitation occurred all along the first mountain ranges from Chitral to the Kaghan. Pictures of the subsequent flooding in the lowlands went around the world at that time. Less well known were the damages in the affected high valleys, which were cut off for weeks. I was in Nepal when I heard about the catastrophe which appeared on Facebook videos showing how the floods swept away hotels and houses in Kalam and Bahrain. This time again most affected were the mountains in south of Utror and

Kalam. The flood came in the midday and so people could manage to escape to safe places. The road from Utror below Madyan was badly damaged and was closed for vehicles for more than a month. The men from Kalam had to walk down to Swat on improvised footpaths which took them two days to get basic necessities for their families.

For several years, monsoon has visibly moved north beyond the first mountain range, which acted as a barrier until now. This climate change could have devastating consequences in the geologically unstable valleys of northern Pakistan. In Kalam, the rainy, overcast summer weather could negatively impact tourism. For the farmers it brings new uncertainty in case of their crops specially the potatoes and apple must be increasingly sprayed against fungal attack.

The drinking water supply schemes started by the KIDP was further expanded by the government and other agencies, although sometimes with insufficient care. For example, the iron pipe supplying Kalam village with drinking water from the Anakar valley flows superficially along the road and even crosses it once unprotected. Meanwhile, the power supply of the Kalam villages continued with the construction of new small power plants. The government also started using the streams of Kalam to construct hydro power schemes to meet the growing demand for electricity. The construction of a power plant by China in the Ushu valley is already well advanced. Another at Paleer is currently undergoing geological surveys. Hence a lot of development is going on in water and energy sectors in Kalam.

An existing view to see the Utror River near Bhan with fields, slopes, trees, the Shahu valley and the snow covered Mankial. **1997.**





From heavy rainstorm in Kayal, the swollen and fuming Utror River passes by Kalam bazaar without damages. **1986.**

During the freezing winter with many meters of snow the rivers in Kalam are low. **1982.**



From April to June the snow melts on the hills and the rivers carry maximum of water. **1986.**







Wetlands and lakes regulate the flow to the valley. **1983.**



Wetlands and lakes regulate the flow to the valley. **1985.**



The upper parts of valleys in Kalam with wide riverbeds and a slight elevation gradient give its rivers the gush and vigour. **1985.**

Running down along villages and agricultural land the river descends between rocks and fields or flow in flat wide sections with big potential to flood the nearby fields or houses. **1986.**





Ushu River flows between Paloga on right and Mateltan on left. **1983.**

Men dig an irrigation channel. **1997.**



A farmer irrigates a maize field. River water is essential for the cultivated crops, grasslands and to improve pastures. **1986.**





In summer the irrigation channels transform into swimming places for children. **1985.**



Girls wash utensils in a river stream. For domestic use, water is fetched from sources, channel or river. **1986.**



A blacksmith cools his hammered axe in water. **1986.**



Two tourist ladies enjoy resting on a charpai over the cold water from glaciers. The glacial rivers of Kalam are the main attraction in tourism. **1997.**



Near Dorga several avalanches from both sides of the valley block the road between Mateltan, Paloga and Kilgal every winter. **1984.**



The road from Bahrain to Kalam is blocked during winter by avalanches. The locals from Kalam are preparing a passage with hand tools for cars to maintain the traffic to Swat. **1985.**





A view of Boyun settlement with a coniferous forest on the hill behind, acting to protect the inhabitants from avalanches 1985 and 2005. In the middle of the forest is an empty part where in one night of March 2004 (month with most snowfall) an avalanche slipped down over a farmhouse killing the whole family. **2005.**



Passengers follow a bus over a potato field as the floods in river at Batander washed the road away in July. **1986.**

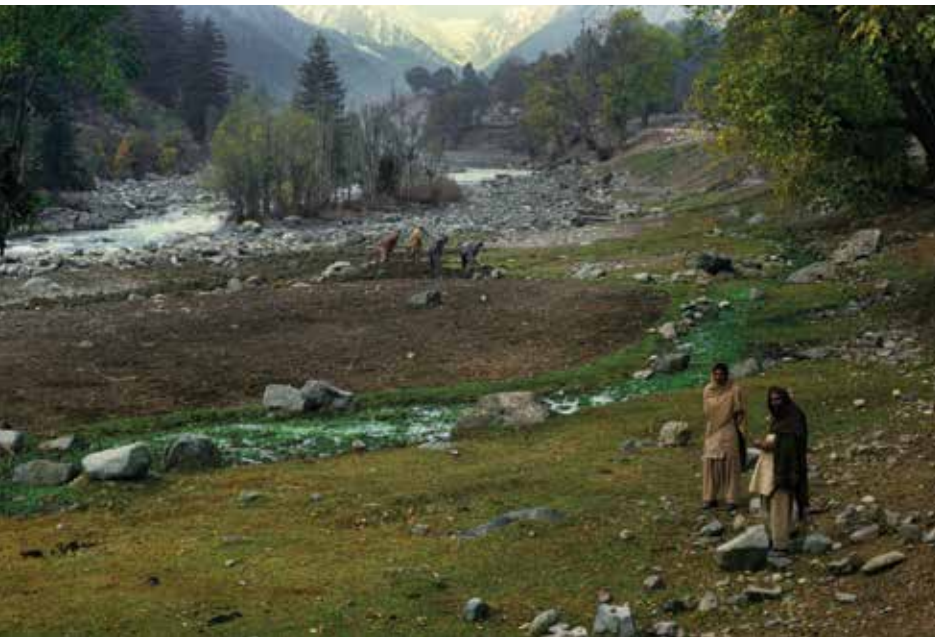
Locals of Utror watch the river in flood mixed with soil brought from the mountains. **1986.**



Men offer prayers on the dry soil brought by the river. **1986.**







The two-photo series of the flood at Kanai document the situation before **1985**, during the flood in July **1986** and eleven year later in **1997**. The photos show people's fight against the river to protect their small pieces of land.





This photo series documents the damages on road and field of a side valley due to heavy rain in summer blocking the Gabral River in 1983, 1985 and 1986. On the request of the local people, KIDP repaired the damaged road by increasing the roadway with gravel and build a protection wall in 1984 and 1987 as seen in the photos. **1997.**

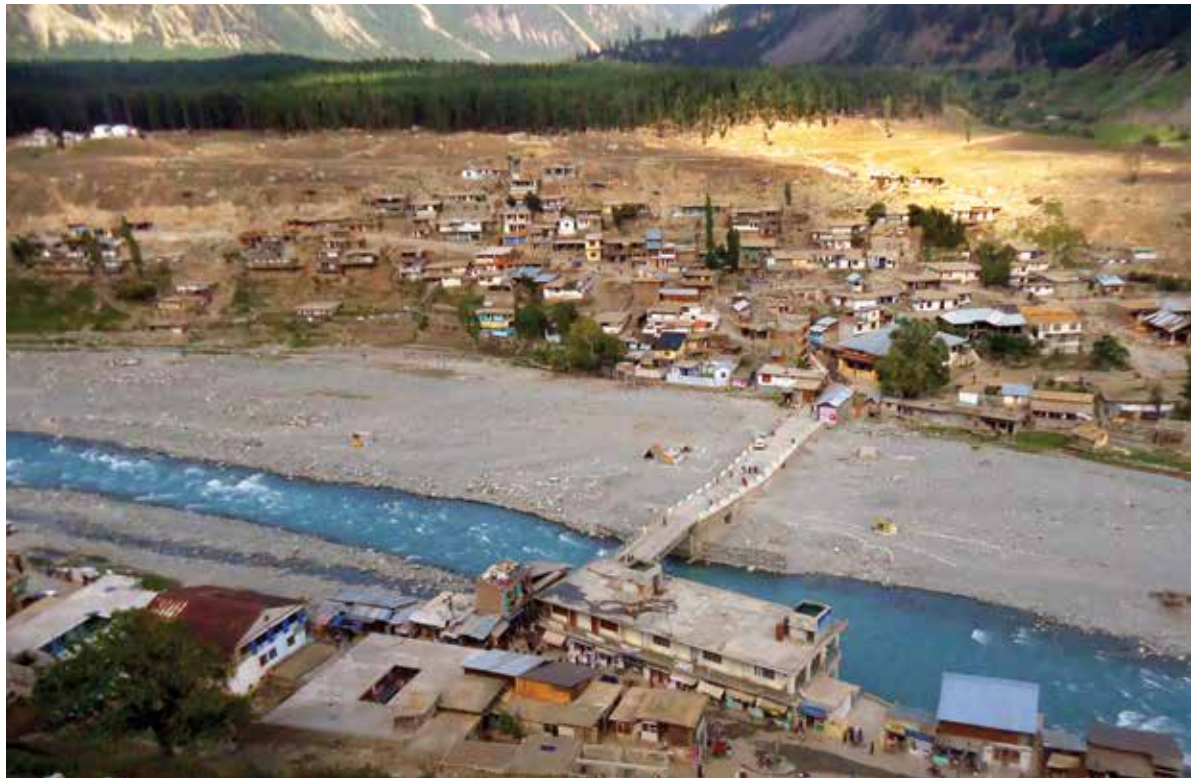


A river protection wall built by KIDP in Anakar valley. **1986.**

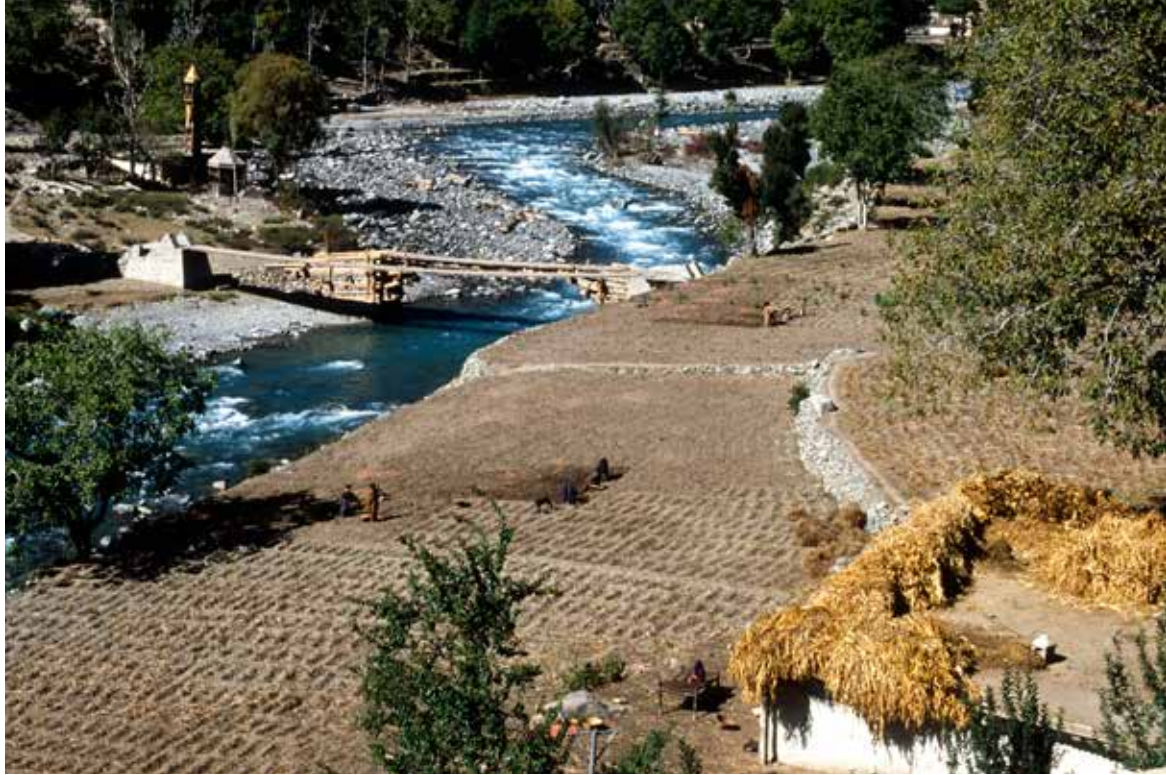


A protection wall made of stone and tree branches built by local people to protect newly cultivated field from the river. **1983.**

The Utror river at Kalam bazaar between 2005 and 2014, four years after the devastating flood of 2010 when several shops, huts, hotels and two watermills were washed away.



The valley bottom between Paleer and Bhan where many hectares of agricultural land, houses, the road and the bridge were washed away by the 2010 floods in pictures from 2005 and 2014 (photo Zaman Sagar)

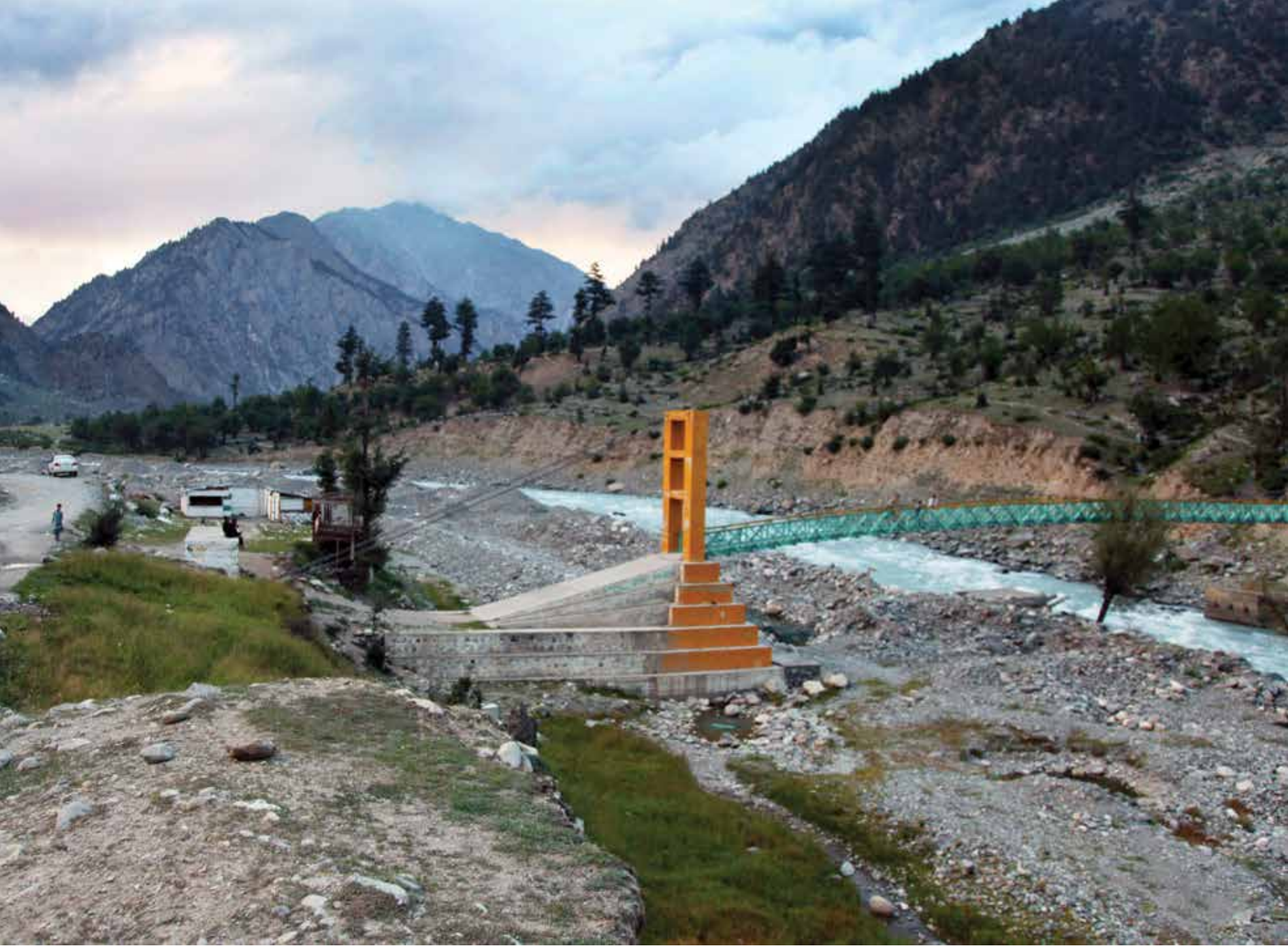


The changes in the plane of lower Utror Gabral through different floods in pictures of 1997 and 2019 show the immense losses of fields, the road and houses.





The old and new bridge in Bhan over Anakar River. 2019.



The new suspension bridge built by an NGO over Utror River to Shamoot. **2019.**

Examples from Paleer and Utror on how farmers start cultivation on the stony riverbed with humus brought from other places. 2019.



Absence of waste management system at Anakar and Kalam Bazaar is damaging the aesthetic environment and polluting the rivers, soil and groundwater. **2019**.



The small village hydropower house in Utror
Gabral. **2019.**



A local electric hydropower generator in
Batal valley. **2019.**



The massive earthwork of the water intake for the Chinese constructed hydropower Project in Ushu valley. **2019**.



A look into the turbine room of the Kalam village hydropower house at Paleer. **2019**.





Tap drinking water with plastic pipes from a natural source near mosque at Boyun. **2019.**



The intake of drinking water with an iron pipe in Anakar valley for supply to the Kalam village. **2019.**



Rainfall during summer is a new phenomenon at Kalam. Farmers are exposed to summer rains over the past 10 years which is a challenge for local agriculture system. **2019.**



As a result of regular rain during summer a farmer of Boyun must frequently spray his potato crop against late blight. **2019.**



Farmers of Jabba jointly repair a water channel damaged by an avalanche during the month of August. **2019.**



The damage by a slide due to rain in 2018 indicates the lurk danger of possible climate change in Kalam valley. **2019.**

Chapter 3

Fruits and Vegetables – an amazing success





Farmers in Mateltan repair an irrigation channel. **1983.**

Fruits and Vegetables – an amazing success

The upper Swat is a marginal region in relation to the major agricultural areas of KP. Due to short growing season, most of the areas are single cropping zones and therefore considered marginal. The KIDP in 1982 recognized potential of Kalam in agricultural sector and supported farmers to grow vegetables with resource efficient practices. Vegetables, especially off-season cultivation to benefit from Kalam's altitudinal difference from down country, were introduced for diversifying farming system. How to induce crop rotation when one crop (e.g. potato) has high market value, was a big challenge. The experience suggests that a project can offer opportunities to farmers, e.g. to compile a crop rotation pattern according to their choice. The choice, however, is theirs; and here, economic interests are understandably important. This chapter captures evidences that crop diversification is indeed taking place and farmers are able to respond to changing climate including the emerging opportunities with changing temperature regime and atrocities from flash floods.

The farming season at Kalam was determined by a dry, sunny summer that lasted from June to the end of September. The summer was surprisingly mild at over 2000 meters, making the crops unusually grow up slowly. The winter was snowy and very cold. The winter started by the end of October often directly with snowfall, which reached its peak in March. In April, when the farmers from the lowlands returned to the valley there was a lot of rain. This lasted until the beginning of June when the farmers started to prepare their fields.

After spending the first few weeks in Kalam I realized that the farmers here are different than those with whom I had previously worked in Nepal and Greece. The officials of the agriculture department described farmers of Kalam as very poor and backward, but I was fascinated by their courage. Years before I came, the farmers switched from maize as their main food to potatoes, which they cultivated mainly for sale. They could afford taking this risk with just under a hectare of arable land because they also had other sources of income, such as, from goats and sheep, from nuts and the morels they collected. In addition, they received a royalty from the state for harvested timber. The farmers led a semi-nomadic life since generations, which in my opinion was a reason for openness to new ideas. Over time they broadened the horizons and from the farmers in the lowlands they gained new valuable experiences.

Farming in Kalam was hard and connected with problems that had to be overcome during the short growing season. Every spring the irrigation channels had to be repaired and cleaned. They had to procure potato seed, plough field, plant potato, irrigate and harvest them in the autumn before the snowfall. Almost everyone had enough money to plough

the fields though hired tractors. The camel owners from the lowland had to be paid for the transportation of harvested potatoes from the fields to the roadside. They bought artificial fertilizer with the loan borrowed from banks. They jointly organized sale of their harvest. With time, the families joined together to rent a truck for transportation of potatoes to the markets in the cities. Since then, the farmers are following the same routine for the sale of vegetables.

My local counterpart and I had the task to introduce vegetable varieties in a mainly potato monoculture farming system. Even the first attempts we made with seeds from Switzerland were promising as all vegetables grew profusely. The vegetables could be sold at lucrative prices in the market, as per survey conducted in Rawalpindi market. It is because like the potatoes, the Kalam vegetables reached the customer at a time when vegetables were not supplied from other parts of lowlands. The task however was to convince the farmers to grow new vegetables. Plots for Training and Rotation (PTR) brought the solution where farmers plant and test new vegetables themselves and also decide which ones they wanted to grow next to the potatoes in the future. As a result, the farmers preferred vegetables that were easy to care for and could be transported like potatoes to the marketplaces. These were turnip and white cabbage. The cultivation of sweet pea, bush beans, broccoli, Eisblatt salad and zucchini started only in later years.

In the second year, tests by the project showed the possibility to grow two crops instead of one during the summer. As the first crop had to be started in May protection from free grazing animals was necessary. The farmers were shown how to fence their fields with a self-made picket fence. The so-called double cropping is very common in Kalam today.

This allowed the farmers to increase their income significantly and even double in good years with clever combinations of crops. Several farmers started to grow gladioli and chrysanthemum. The innovation of Kalam farmers continues, with no significant external support (from government and others). The agriculture extension service established by KIDP stopped in 1998 with the end of the project. However, it is important that farmers get advisory services especially on use of pesticides so that they comply with instructions regarding environmental issues and protective measure needed while using pesticides.

As a result of cultivation of profitable crops like potatoes and vegetables, many more people live today in Kalam than 40 years ago. In this boom, the agricultural area has been greatly expanded in recent decades. Remaining grazing land in the valleys and woodland has been turned into fields where the irrigation is possible. In many places, terraces were developed on slopes. Examples: The upper Gabral valley, in the valleys of Sind and Batal and on a large pasture

south of Boyun. On the other hand, floods destroyed large areas of farmland. As shown in the photo series, no forest areas have been converted into fields.

Kalam is the home to walnut trees growing on the edges of the fields. Although the nuts are of low quality because of their hard shell, they nevertheless brought some income through its sale. The wood of walnut tree is valuable that made the farmer cut trees for sale. Apple trees were popular, and the fruits were in high demand on the market. On demand of farmers for better apple varieties, KIDP imported low-stem varieties from Europe. But soon the farmers returned to high trunk varieties as they were protected from animals. The Government Horticulture Station at Mingora established an experimental station for fruit trees in Kalam with the support of the KIDP. At present, only fruit varieties are tested there. In addition to apple, cherries, plums and pears show promising results. The cherries introduced by KIDP prospered very well in Kalam. Cherries are especially interesting because their fruits ripen when the tourists come to the valley.



This old postcard from Sazgal confirms that buckwheat used to be grown at Kalam in earlier years. However, it is not clear if growing buckwheat was stopped when Maize was introduced to the valley or it happened with the introduction of potatoes after **1970**.



A farmer irrigates his maize field with the help of a wooden shovel. Maize was grown in a white and a yellow variety and for decades the main food in Kalam. **1983.**



Ploughing in Paloga with oxen for maize cultivation. With the cultivation of potatoes as cash crop, farmers could afford to rent a tractor for ploughing. **1984.**



People in Kalam generate additional income by selling walnuts, morel collected from the forest and pumpkins grown at the edge of the fields.



Samchal was the only leafy vegetable grown by the farmers. It is consumed fresh and/or dried. **1997.**



Planting of potatoes at Gulabad. 1986.



Locally made wooden irrigation channels over a dried rivulet at Batander. **1986.**



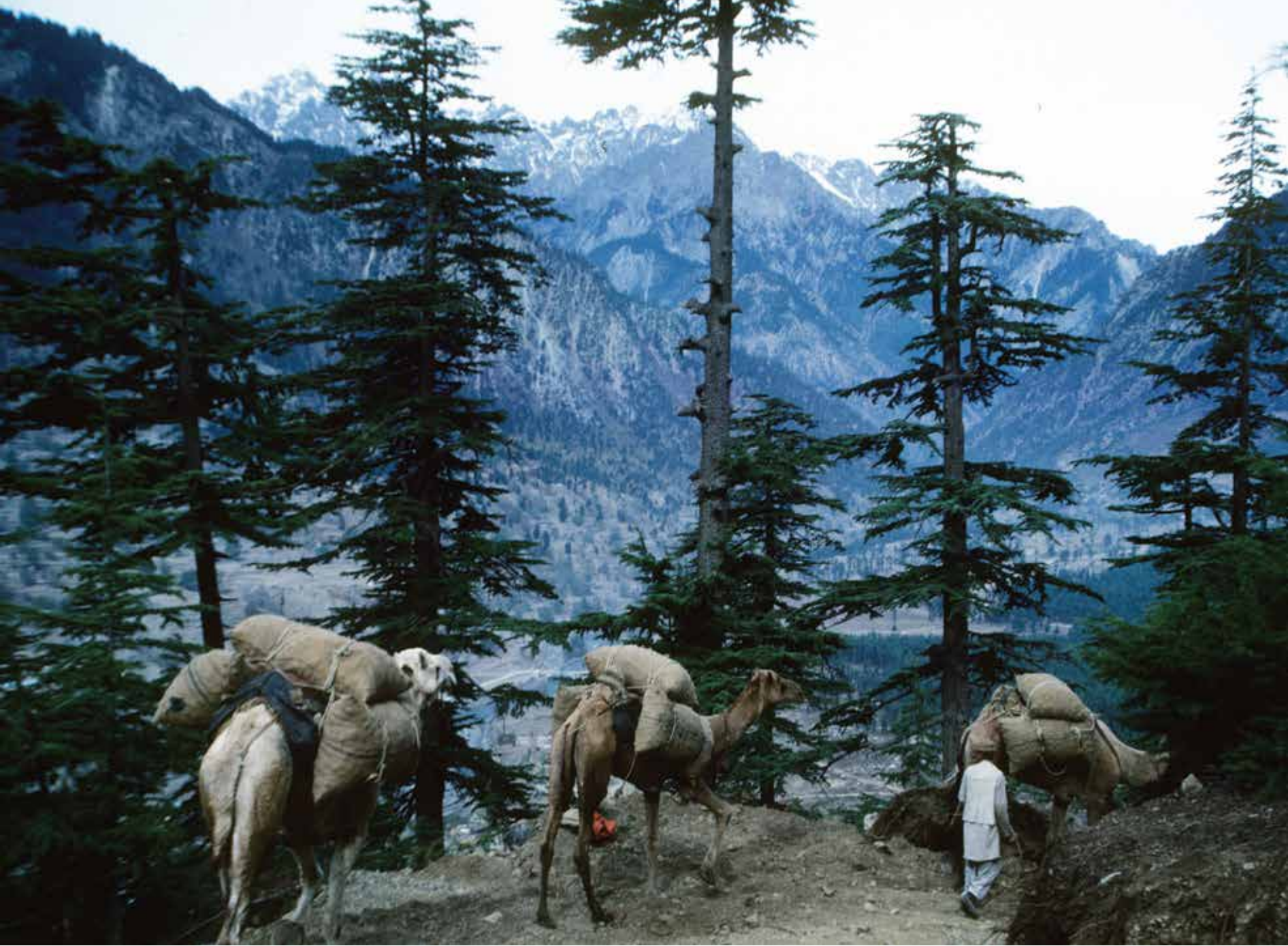
A farmer irrigates a field with young potato crop. **1984.**



Potato crop in full bloom at Shay. In 1983 potato crop was covering most of the fields. **1985.**



The harvest of potatoes with local tools in September / October. Potatoes are mainly sold to wholesale markets in the big cities earning profitable prices. **1983.**



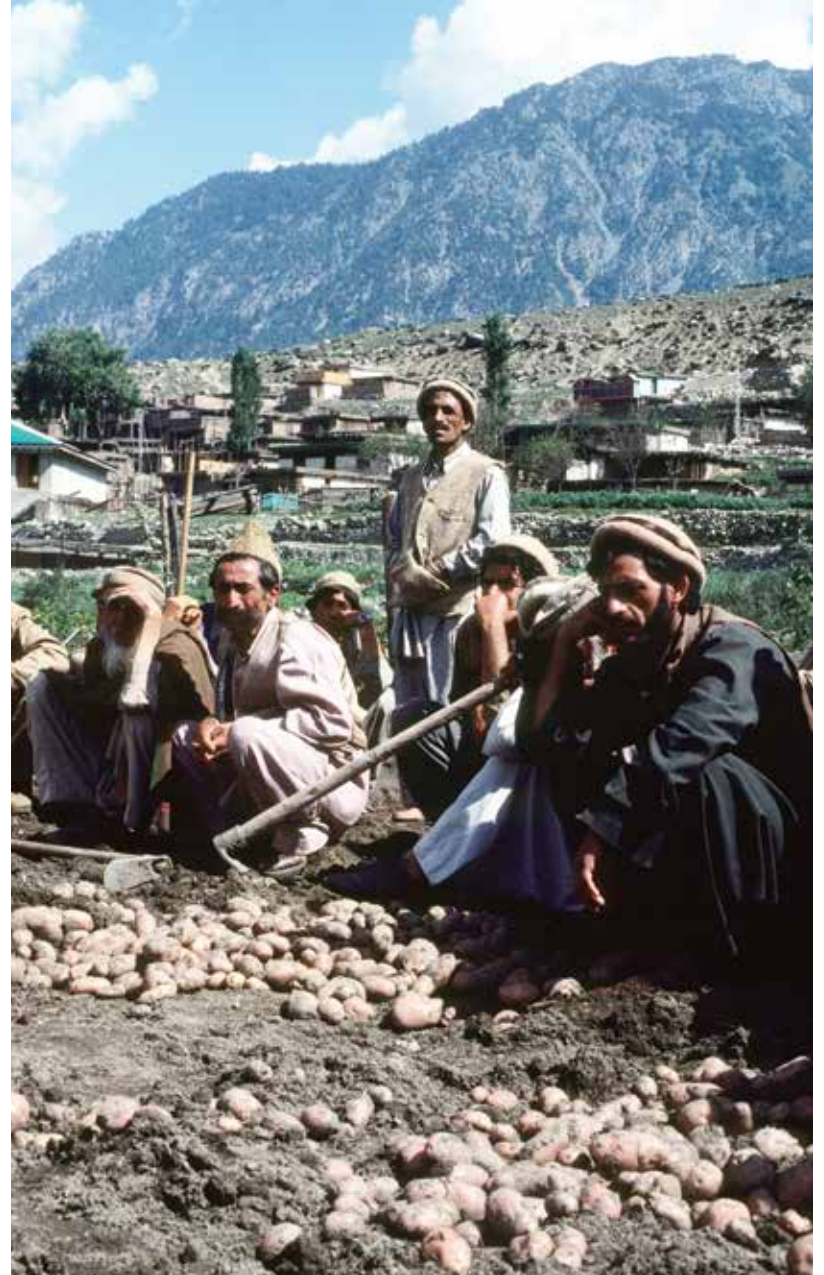
Rented camels from the lowland transport harvested potatoes from remote fields in Boyun to the roadside to be loaded on a truck. **1982.**



A pathologist from Islamabad inspecting potato crops at Shay infested with several diseases. **1984.**



An elderly man with a straw-braided hat sow maize grains directly into the open furrow. **1984.**



Farmers of Kalam attend a training organized by KIDP in a seed potato storage site. **1986.**



A Gujar farmer prepares a soil pit with a layer of straw to store his potato seeds over the winter. **1986.**

Road to Gulabad

With the support of KIDP the Gujar farmers build a road to Gulabad - and later further north - where they converted meadows into terraced fields to grow potatoes and build new irrigation canals. **1986**.





Horticulturist Fritz Berger in a plot at Kalam to test vegetables from Switzerland. **1982.**



A farmers' group at Bara discuss possibilities to start vegetables growing as an alternate to potatoes with Asmatullah Khan the agriculturist of KIDP. **1983.**



Planting cabbage seedlings in a vegetable training programme of KIDP at Sazgal. **1985.**



Plot for Training and Rotation (PTR) established by KIDP at Ushu where farmers tested cultivation of new vegetables and selected their favourite varieties. **1985.**

Farmers from different villages admire display of locally produced fruits and vegetables in an exhibition at Kalam bazaar. **1985.**



A farmer with newly harvested apples in a handmade basket. **1982.**



A farmer from Ushu with three dwarf apple grafting brought by KIDP from Switzerland to improve the fruits production at Kalam. **1985.**



The profusely fruiting 20-year old cherry trees at the government horticultural station at Kalam imported from Switzerland by KIDP. **2013**
(photo Zaman Sagar)



The Director of the Horticultural Farm at Mingora discusses with farmers the plan to install a substation at Kalam. **1982.**





Fruit trees trials at the horticulture station at Kalam showed promising results for blue and yellow plums but especially also European and Asian pears. 2019.



Apple trees bearing fruits in a cabbage plantation at Utror. **2019.**



Newly planted cherry trees in a field with broccoli at Kalam Kas where the soil is best for cherries. **2019.**





Bafar (left) and Anakar valley (above) are enormously popular for growing a wide range of vegetables. **2019.**

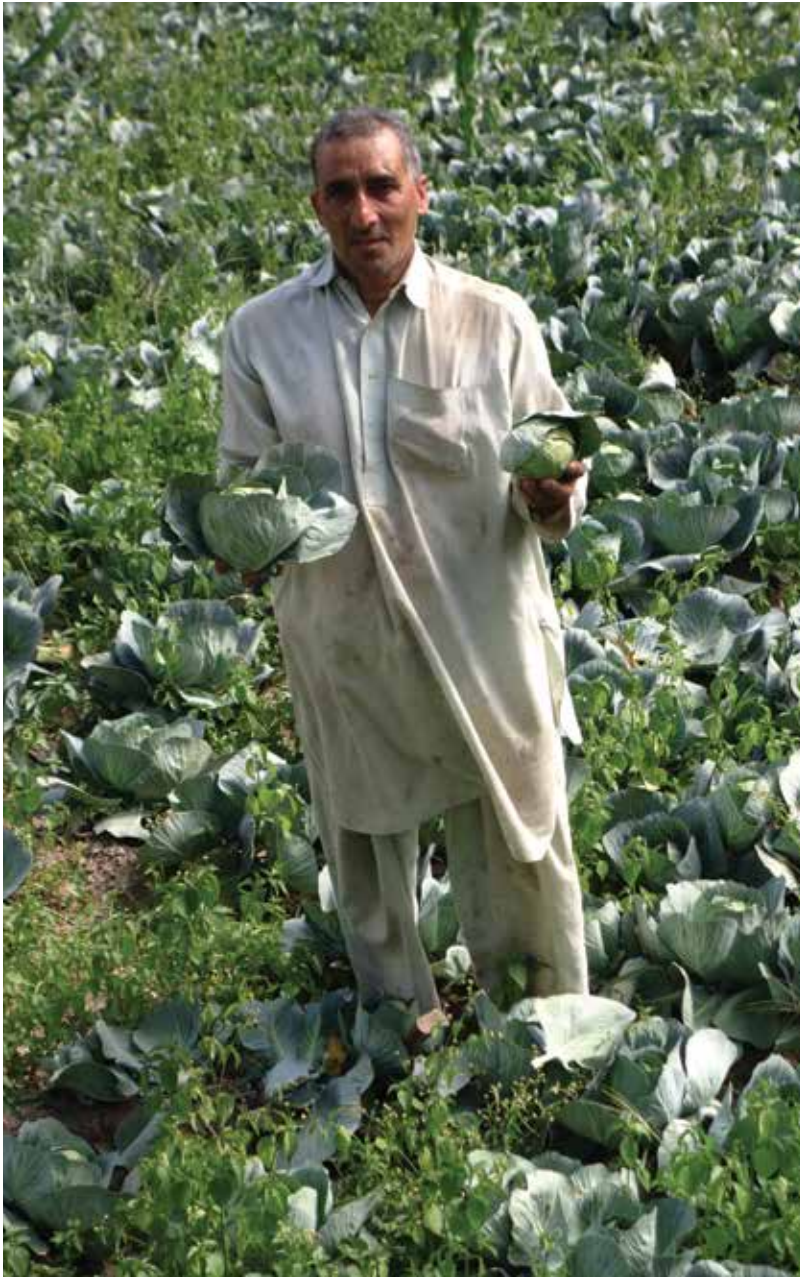


Growing iceberg salad, broccoli and potatoes in the same plot help the farmer distribute the production and selling risk. **2019.**



At Bakjar a farmer produces more than one crops in one summer season. The double cropping introduced by KIDP has improved the financial situation of the famers. **2019.**





The most grown vegetables: radish, zucchini (round and long), cabbage and sweet peas shown in the photos. **2019.**



Washing and sagging of harvested turnips near Utror. 2019.



Farmer from Shahi Bagh valley transport turnip on a unique tractor suitable for rough roads, to be loaded to big trucks at Gabral for onwards transportation. **2019.**

Boys at Kas mark zucchini with the number of the producer for joint marketing to lowlands. **2019**.



In Usharan a farmer fills harvested cabbage in plastic bags. **2019**.



The sensitive iceberg salad from Tamra is transported in plastic boxes in refrigerated trucks to other destinations as far as Lahore. **2019.**



Gladioli packed for transporting to Kalam bazaar for an evening auction. **2019.**



Bags of different vegetables at Kalam for the evening auction. This marketing method is for farmers with smaller quantity. **2019.**



Loading a truck with potatoes in upper Gujar Gabral where farmers still grow potato on most of the fields. **2019.**



Chapter 4

Forests – The Treasury of the Valley





A timber depot of Pakistan Forest Development Cooperation at Bhakhar in the riverbed transported from Desan forest by a cable, later to be transported by trucks to market in the lowland. **1985.**

Forests – the Treasury of the Valley

Kalam is richly endowed with natural resources, especially high-altitude coniferous forests. Forests play a major role in ensuring water quality and regulation. Major watersheds in high altitude areas including Kalam drain into the Indus River system. Therefore, Kalam is included among water towers of Pakistan which feed the Indus. In the modern era forests are subject to multiple demands such as regulation of water, ecological functions, carbon sinks, etc. in addition to meeting demand for timber, fodder and energy. Experiences from development projects, such as KIDP, show that new and innovative means of livelihoods need to be developed and go beyond traditional approaches. KIDP also suggests the need to search new ways to interact with local people regarding forest grazing and the use of communal lands. However, with an ever-growing population and increasing demands for wood and wood-products on a very small forest resource base, all forests in KP remain under continuous stress. The pictures included in this chapter reflect that Kalam is akin to these challenges.

Coniferous and deciduous forests dominate the picture of Kalam and give the valley its great fascination. Famous and sacred to the inhabitants is the unique cedar forest at the entrance of the valley. The farmers are well aware of the protective power of forests against avalanches, river erosion and landslides. On the way to the pasture they graze their animals in the oak forests. During winter they cut young branches to feed to their animals. After the snowmelt they collect morels for sale and asparagus for food. From logs they build their houses. The forest provides them with firewood to cook and heat. Fallen needle and leaves are collected and spread as fertilizer on the fields.

Among the coniferous trees, the cedar is the most wanted for its aromatic wood. White and red firs and several species of pines prosper and less common are yew and juniper. Deciduous trees are also common but only oaks on dry slopes form larger forests and the birch in remote valleys or near upper forest line. Maples, hazel nuts tree, poplars, and willow species grow sporadically in valleys and are all chopped for fodder in summer.

Commercial use of the coniferous forests in Kalam has a rather young but conflicting past. It was not until the end of their rule in sub-continent that England started to explore timber in Kalam and was continued by the Pakistani government after independence. Kalam was never occupied by Britain and enjoyed independency until it was merged to Pakistan together with Swat in 1962. Timber was brought by river to Swat. The Wali of Swat had built a jeep road to Kalam around 1958. After tough negotiations with the government, the Kalamis obtained the right to receive payment as royalty on every harvested tree. The ownership issue of the forests at

Kalam remains unsolved until today. In a passive resistance in 1983, the farmers managed to stop a legal claim of the government over natural forests of Kalam. Most natural forests in Pakistan are owned by the government.

The KIDP trained forest workers on methodical and sustainable forest harvesting techniques to change unsustainable harvesting techniques used by the forest contractors. In 1992 after big floods in Pakistan, the government announced to cease all commercial use of forests. Since then, the inhabitants of Kalam are allowed to harvest trees for their own use (building houses), but these must be marked by a Forest official. They can get firewood from the forests but only dead branches or dead trees. This practice has a negative impact on animals and insects that rely on dead trees or decaying wood. An ecologically compatible solution would be to mark trees in the many outdated stocks and allow them for firewood use. Another problem is the illegal cutting of trees and the smuggling of wood out of the valley. As the photo-monitoring series in this chapter indicate, the encroachment mostly in areas such as the Gabral valley where the tree population is particularly low.

Critical places for the forest are mainly the places with low density or where only isolated trees are growing. It is at the tree line where on steep slopes landslides prevent natural regeneration. A very critical danger is to forests at tourist destinations such as Mahudand where the beautiful forests on the river side have been cut down. In order to preserve and protect the unique forests and valley landscape in the long term, the establishment of a natural reserve should be seriously considered. This could go far beyond Kalam and cover the entire mountain area in the triangle Mingora, Chitral and Gilgit.





The big deodar forest east of Kalam bazaar is praised for its beauty. The local people protect it like holy forest where no tree cutting is allowed. For tourists it is an easily reachable spot for picnics and walk around the elegant logs. **1985** and **1997**.

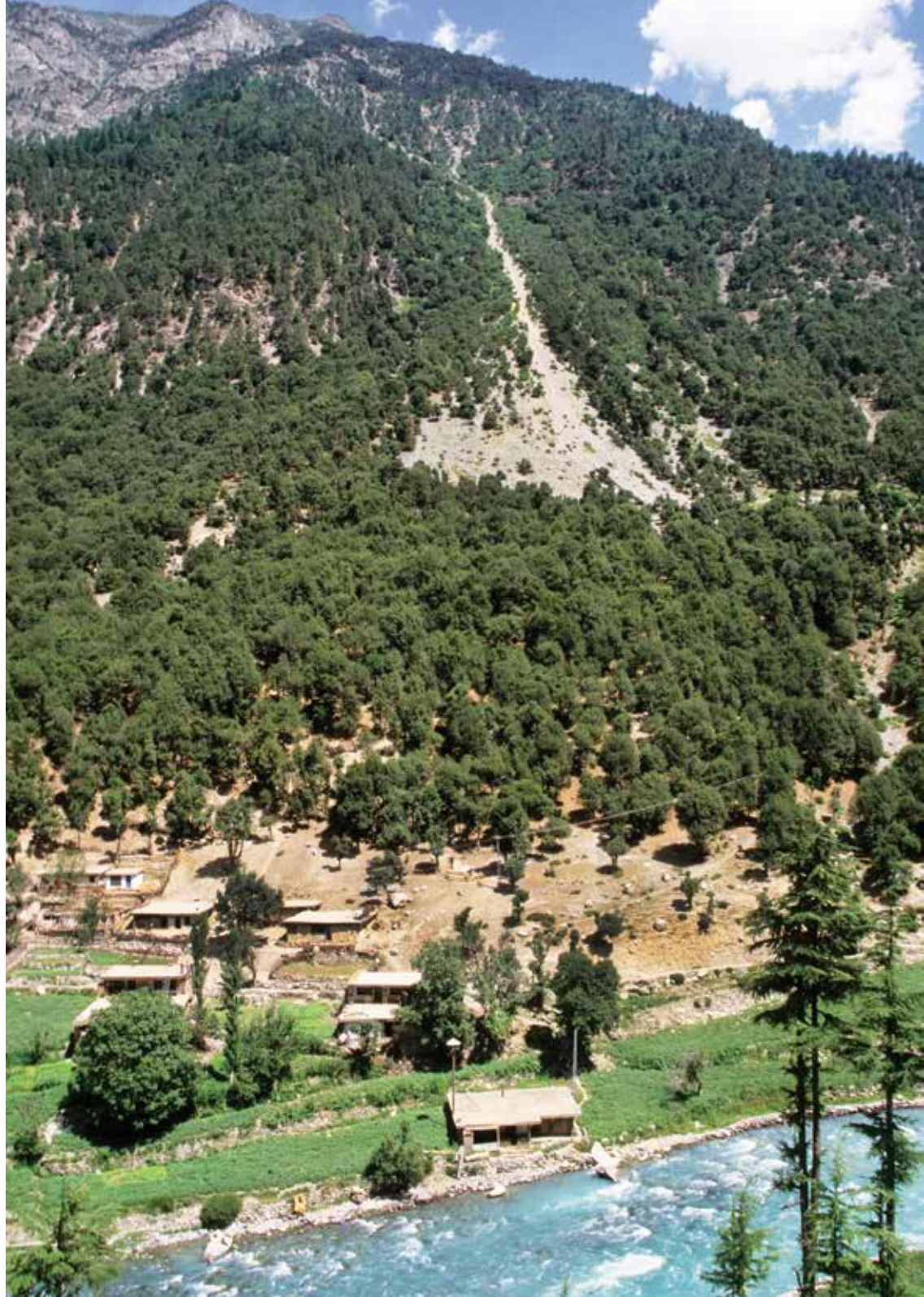


An old stand of mixed coniferous forest on the far end of Desan. **1997**.



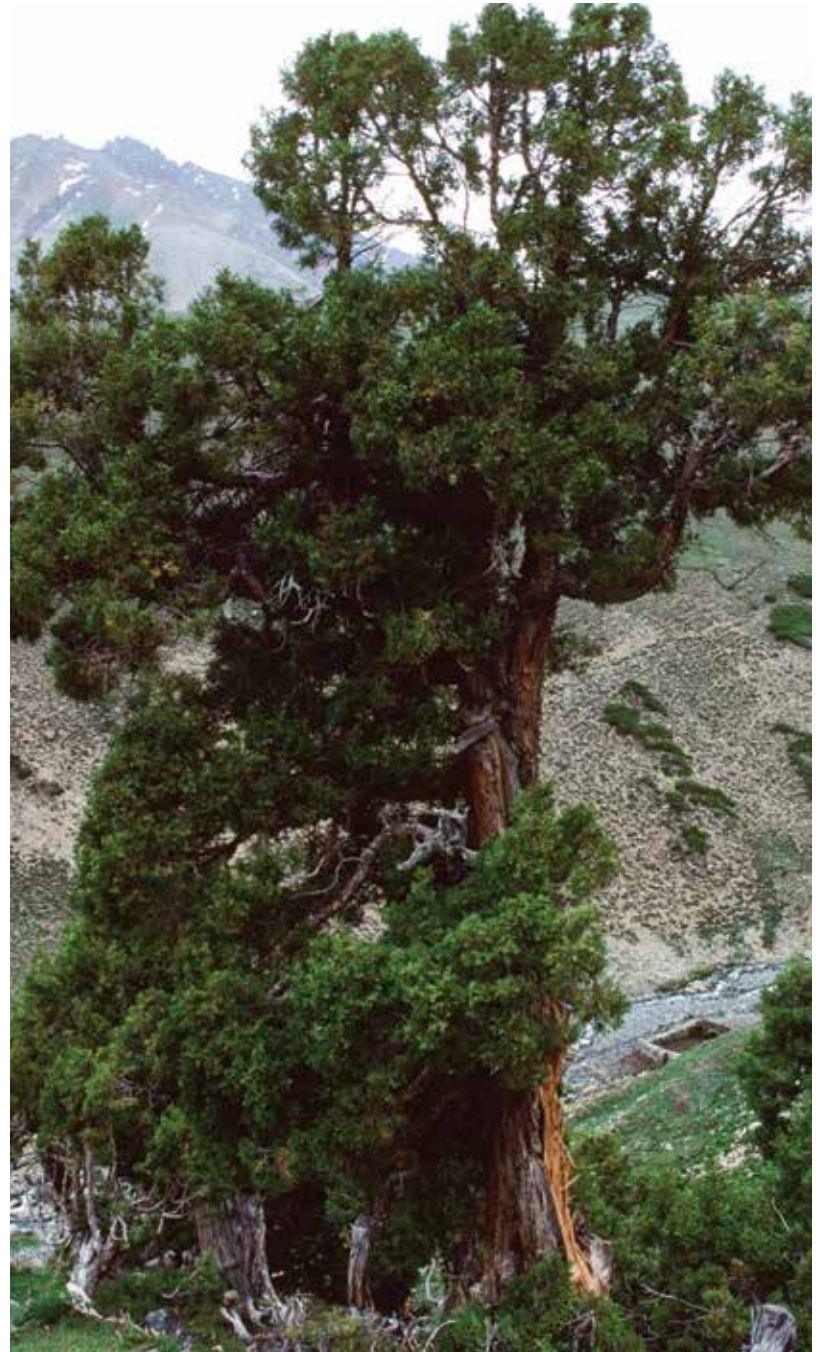
The deodar forest above Boyun functions as avalanche protection for the village and the land below. The forest on the slopes helps regulating flow of surface water, support soil stabilisation and prevent erosion. **1983.**

The evergreen oak forest above Kargalo, a source for winter fodder is also a protection from rock falls. **1997.**



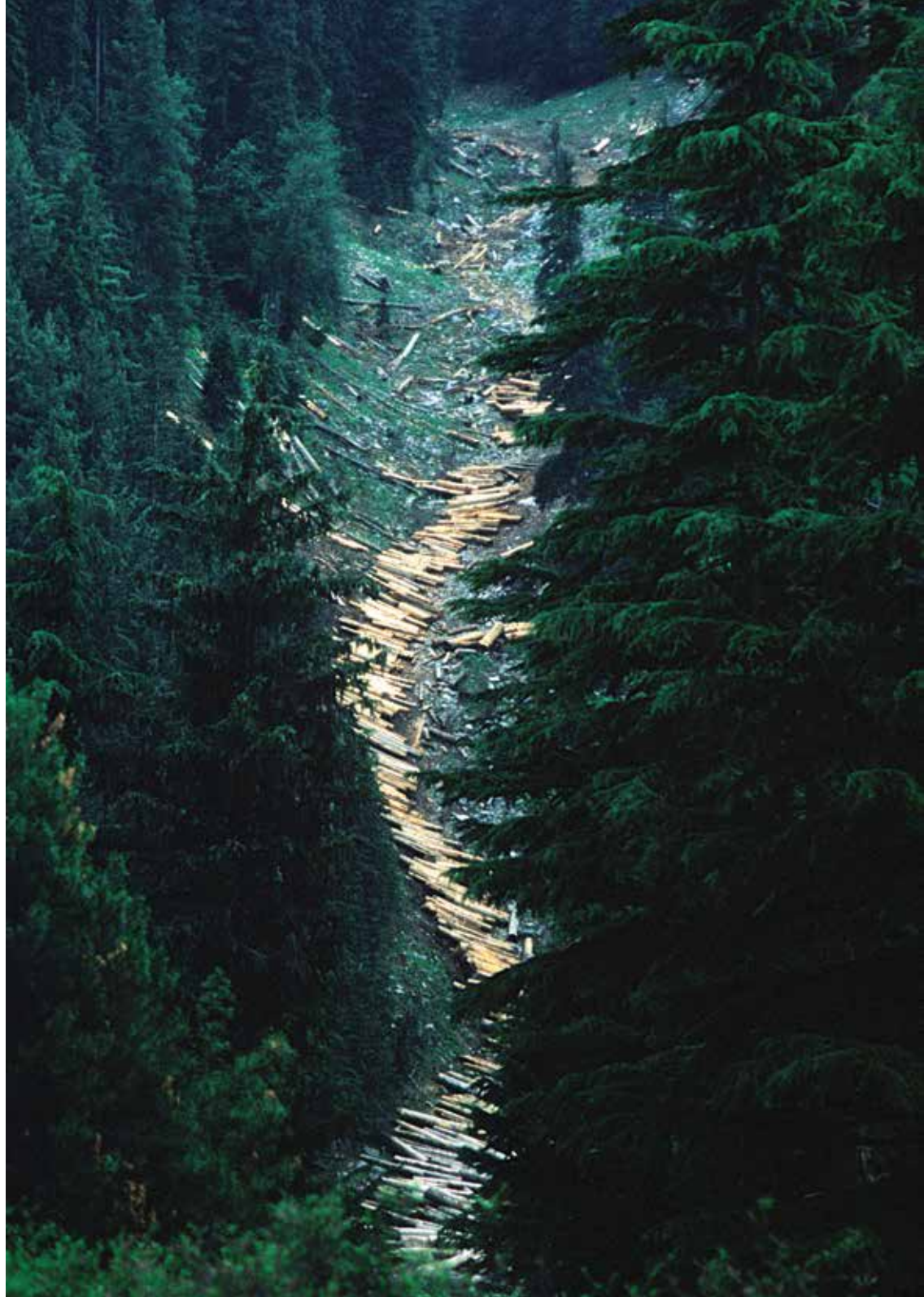


Birch forest high over Mateltan with a glacier in the background. **1985.**





Coniferous trees beside deodar grows at Kalam are pine, juniper (only in remote valley), fir and silver fir.



Rolling is a method to move timber from a high location down to the valley. **1982.**



Workers pose with a huge timber they have loaded on a truck for transport to the market. **1983.**



Timber sleepers could be transported easily by a man and were therefore produced directly in the forest after felling the tree. **1985.**



A big disadvantage of sleepers is the loss of wood while hand-making them with an axe. **1983.**



Two local men of the KIDP forest workers training determine the felling direction of a tree. **1985.**



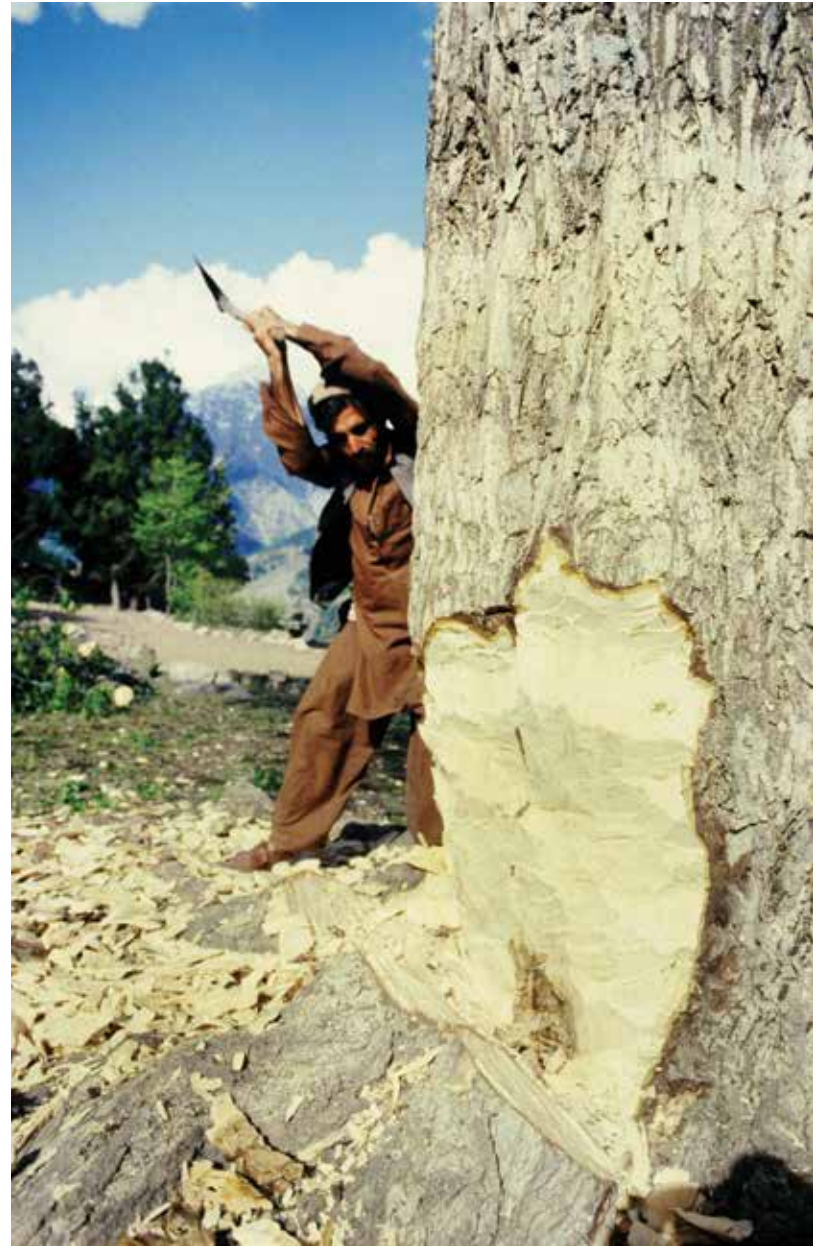
Two men of Mateltan saw a timber in the traditional method. **1983.**



Making a flat house roof with wood put on beam and covered with pieces of brushwood and finally a layer of soil. **1982.**



A man with a load of dried firewood collected in the forest on the way home to Utror. **1982.**



Felling a walnut tree with an axe to sell the timber for a high price. **1985.**



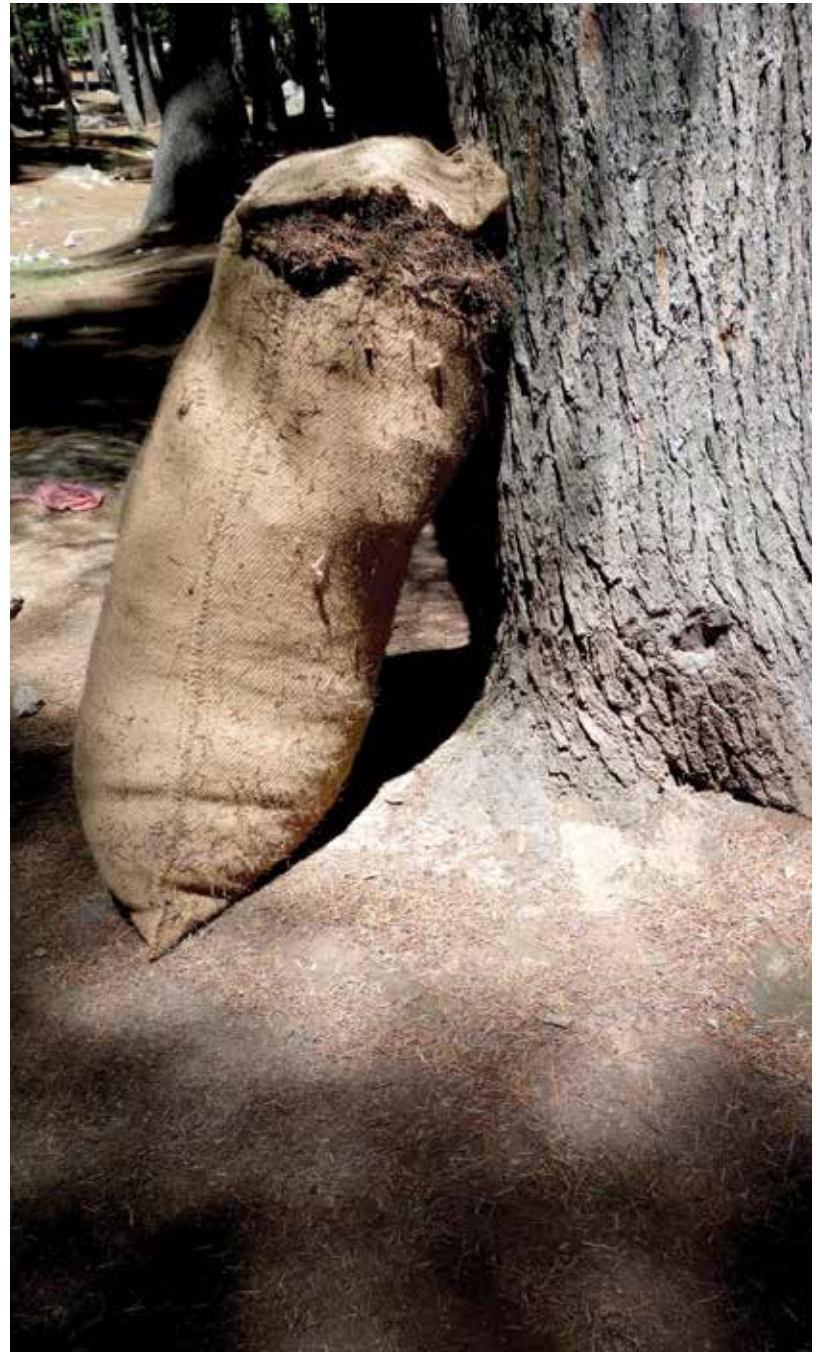


The private sawmill at Utror **1997** and **2019**. The demand on local harvested timber has increased due to the construction of hotels and private farmhouses as the population and their income is increasing gradually.



This growing young deodar in the Bankale forest shows the regeneration power of the Kalam forest in general. Howsoever forest stands are seriously in danger on riverside where farmers encroach for fields in Gujar Gabral (following page top) or on the upper tree line on steep slopes due to overgrazing near Gahi pass to Dir (following page bottom). **2019**.







Causes of damage to the forest of Bankal: cutting of green branches for firewood, selecting needles to manure the field and tourism. **2019.**



The series of photo monitoring pictures show the changes in landscape and of forest edges in different locations in different years.



Photographer and year of the first photo is unknown. I estimate it was taken around **1960-65** after a road was built to Kalam. The road to Boyun was built in **2018**. There are fewer walnut trees with houses and hotels.

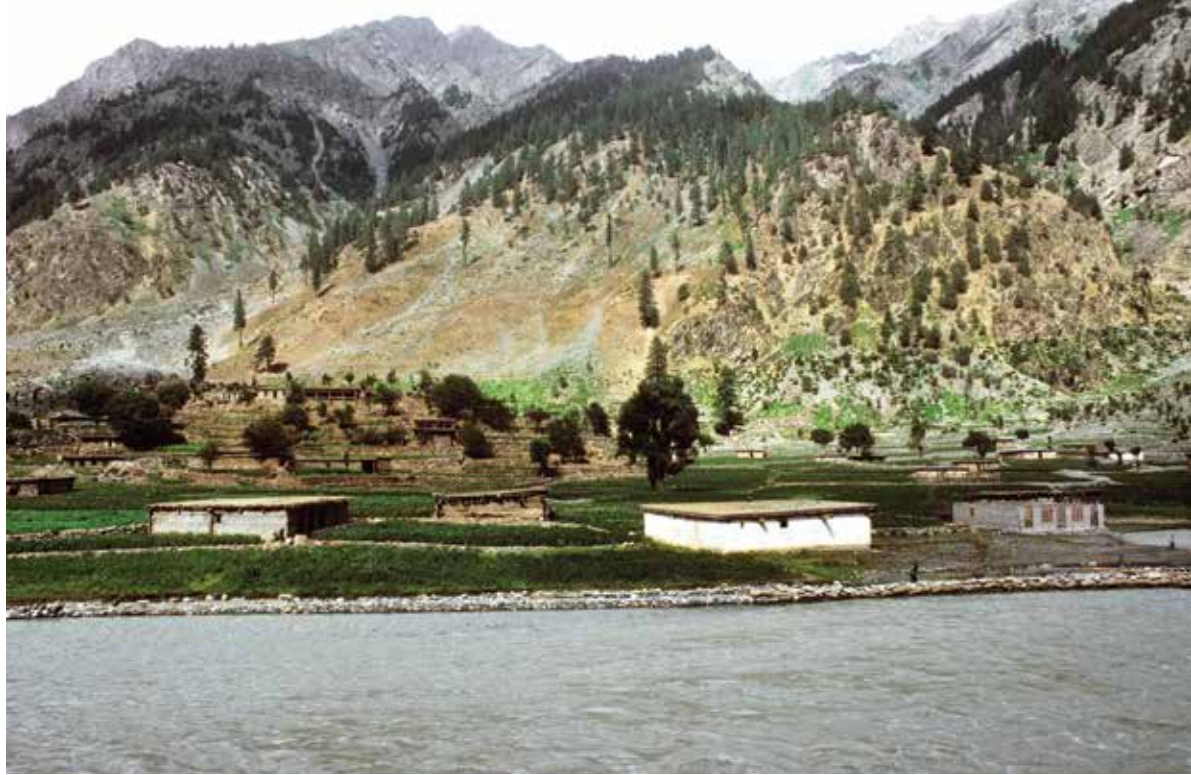
Mateltan south **1982** and **2019**. The conifers in the grassland have been eliminated and walnut trees were grown instead. The forest edge is more or less the same.



Shay south **1986** and **2019**. The fields are fenced. Crops have changed from potatoes and maize to radish and cabbage. New houses are built and most of the forest trees on the hill are no longer there.



Bela hills **1986** and **2019**. Due to floods two houses are damaged and later a house was rebuilt, and trees planted. The forest on the hill, already rare in **1986**, is pushed even higher. The forest area in Gujar Gabral is very limited and therefore more exposed to illegal cutting than in the other valleys with plenty of forests.



Chapter 5

Livestock, Shepherds and Pastures





A shepherd with his goats at the entrance of Mahudand lake. **1986.**

Livestock, Shepherds and Pastures

Kalam is a favourite high-altitude pasture for nomads in KP province during summers. All the areas above the altitude of 2000 meters are visited by nomadic herds every summer to feed on natural vegetation growing on rich pastures endowed with water resources. Pastures are also an important filter of water from glaciers and natural streams running down the fluffy grassy and rocky watersheds. One of the most known sites is Mahudand lake and surrounding areas in the foothills of Hindu-Kush Mountain Range at an elevation of 2,927 metres asl. This area has lush-green meadows with snow-capped mountain peaks and thick forests. The pastures are also shared with tourists who enjoy the beauty by camping and enjoying the landscapes. During early winters, hundreds of nomadic flocks are seen traveling to the down country on foot for winter grazing grounds. This chapter captures some of the glimpses of pastoral activities in Kalam.

The high pastures of Kalam have a great ecological significance. Above the tree line at around 3500 meters, sward grows very slowly and is therefore very susceptible to overgrazing and erosion. The vegetation is sparse in many places, and steep slopes are exposed to dangerous landslides. In view of the increased summer rains, it is important to observe what effects they have on the pastures. Does the increased moisture help healing wounds or does the expected heavy precipitation causes more erosion? If the latter were true, that would have devastating consequences for the inhabitants of the valley. Therefore, a ban on the grazing of endangered pastures may be considered today.

The high-altitude pastures and forests of Kalam were the property of the ethnic groups. Every farmer from Kalam had the right to drive his animals in the summer to the high pasture he was entitled to. The pastures are rented to nomadic Gujars in case the local farmers do not utilize them. There were disputes about the pasture ownership and until today, farmers from Kalam and Utror contest borders on the large pastures of Desan. In autumn 1982, about half of the farmers were found interested in improving their high pastures. However, most were against rotational grazing, the removal of weeds and to reduce the number of animals on pastures. Agronomists in the agriculture department were interested in pasture improvement. They had seen pictures of green Swiss pastures and wished that the pastures in Kalam perform similar. Unfortunately, experience in Nepal shows that no improvement was possible without rotation and restriction of animals. Achieving green pastures in Kalam is also difficult because the pastures are common property of a big group of farmers making it difficult to manage them sustainably. And climate conditions in Hindukush are also different than those in Swiss Alps.

To ascertain the condition of the pastures, Paul Berger came to Kalam in the summer of 1983. At that time, he worked as

an alpine pasture consultant in southern India and later in Switzerland. He concluded that in the meadows in the valley, the nutritional value of hay be increased by an earlier cut. The greatest potential he observed was in the pastures in central locations with irrigation. After removing the weeds, the previously free grazing would have to be replaced with a knitted rotation. Paul proposed that on the high pastures, which are the largest in terms of area, improvement could be achieved only by controlled grazing. These pastures cannot be irrigated and get dried two to three weeks after the snowmelt which results in reduced vegetation growth. Increased summer rains can have a positive effect on the vegetation growth.

In 2005, one farmer told me that no family member was ready to take over the laborious work of a shepherd anymore. As the photos show, a pasture summer settlement near the road to Dir abandoned in 2019 and the huts have already collapsed. I observed myself in 2019 nomadic Gujars returning with their flock to the plain without their families. In the past the entire families moved to the summer pasture with their animals. The pastures in Kalam could improve as less and less people are now going to summer pastures. The farmers earn well with vegetables and tourisms, they could reduce number of animals sent to the pastures and not rent pastures to nomadic Gujars. Urgent is the protection of the slopes above settlements to avoid landslides and avalanches. This can only be achieved by a fence made of wire mesh.

To solve the high pasture problems is difficult. KIDP therefore dealt with fodder plants in the valley. Good fodder varieties were tested in trial plots. Italian ryegrass and fodder vetch showed the best results. Growing them in rotation with vegetables and combination with hay and maize straw, it would be possible to start commercial dairy farming in Kalam. The resulting manure could be mixed with crop waste to make compost organic fertilizer for the crops. What is missing, however, are improved cows and goats and a well-established veterinary service.



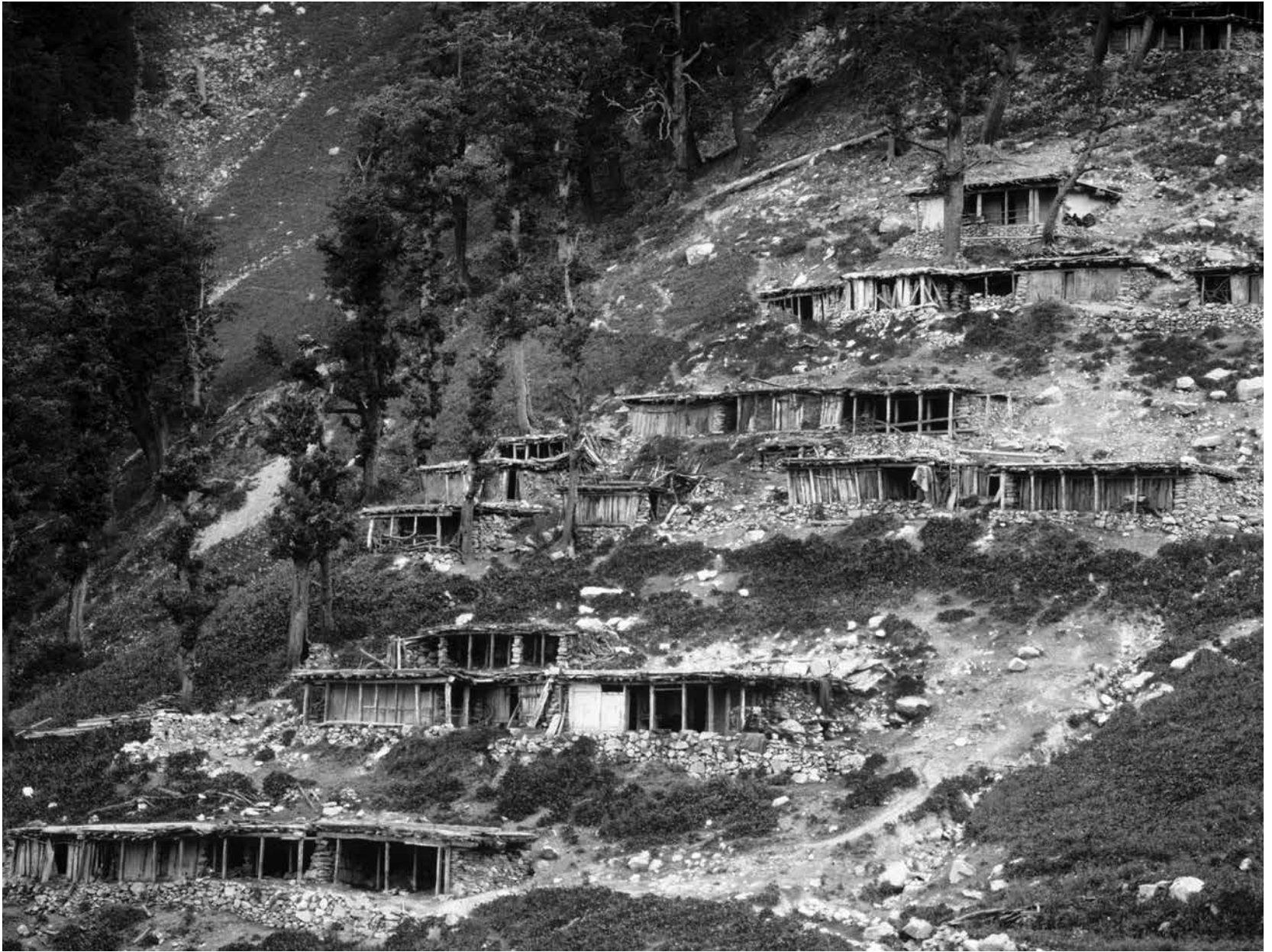
A truck with household goods and animals of a farmer arrives at Gabral from the winter stay in the planes. **1984.**



Animals graze at Kalam in spring. “Free grazing” on the fields is the traditional right of local farmers before they move animal to higher pastures after the snow melts. **1984.**



In distance of this pasture settlement on Desan lays the area of Boyun with snow covered mountains. The famous Desan pasture covers a large area on the mountains between Kalam Kas and Utror. **1982.**



The dense summer settlement of Jabba pasture is on a steep slope with serious surface damages. The Kalam farmers are free to rent out the pastures for grazing and the use of huts to nomadic Gujars from the planes. **1986.**



The green flat area of Jeanshay is an irrigated pasture located in the forest belt. On the left side the summer huts are visible with samchal gardens below. **1983.**



This pasture of Desan above tree line is partly irrigated but for real improvement additional weeding control and grazing rotation are needed. **1983.**



A pasture settlement on the tree line with grazing cows, a horse and a donkey. The coniferous forest trees behind the huts are dying due to unknown reasons. **1986.**



Two poorly maintained goat shelters. **1982.**





Two shepherds in front of a summer hut on a high pasture of Utror Mountains. **1986.**



A woman of migrating Gujar family rest in a kitchen of a stone-built mountain hut. **1986.**

Hay such as bushes, grasses, branches from deciduous trees cut in the forest and grasses cut on irrigated fields in the valley bottom are collected for winter feed of cattle staying at Kalam. **1985.**



A young farmer from Kanay on a winter day carries a heavy load of hay home that was stored temporarily in the forest. **1985.**





Grass spread to dry on the roof of a farmhouse in autumn. Behind the house is the open winter storage of hay already dried. **1983.**

A farmer from Mateltan carries load of maize straws used for winter feed as supplement to hay. Since the introduction of potatoes less maize is cultivated in Kalam resulting in import of maize straws from Swat. **1987.**





The well maintained winter green oak forest on the steep slope in the entrance to Ushu valley protects the road from falling rocks and avalanches. Farmers own a part of the forest and have the rights to chop oak trees for cattle feed. **1984.**



A farmer with an axe cuts branches of a willow tree to feed his goats. **1985.**

A shepherd with loaded mules and cows on the way in Paloga from the pasture to the lowland. **1986.**



A shepherd lit a fire to cook and warm himself near his herd on an overnight stop near Paloga. **1986.**





In the Ushu valley a farmer with his goats cross the river to reach the shelter behind a snowfield. **1985.**



Yogurt in an aluminum pot brought from the pasture to the valley is covered with a birch bark. **1983.**



A Gujjar drives his herd of sheep and goats for a night stay near the Kundel Lake. **2019**.



Herds of cows and sheep graze on the pasture near Gahi pass on road to Dir valley. The meadows of Kalam are quite green due to more rainfall during the past summer. **2019.**



Two shepherds from Utror on road to Dashti Layla to have a check on their herds on a pasture. 2019.



A pasture hut covered with plastic canvas and guarded by a dog with a night enclosure for the herd on Dashti Layla. **2019.**

A seriously degraded pasture south of Dashti Layla with danger of erosion and no regeneration of trees to replace the few old ones. **2019**.



Extreme damage on a pasture just after the Gahi pass, due to unplanned water drain after the road was built years earlier. **2019**.





A pasture below Dashti Layla with intact houses and samchal gardens. **1984.**



In the photo of the same place (total and in details) in **2019** on way to Dashti Layla, the houses of the settlement are totally broken, a sign that the settlements are not used any more. These photos show the observed trend that the interest to stay on summer pasture has decreased. It may be due to other income sources available to the Kalam farmers. Contrary to the past when the whole family moved to the summer pasture, the nomadic Gujar men go to the pastures without women and children.



Chapter 6

Tourism – Opportunities and Risks





Tourists enjoy sitting in charpai on the river in Anakar valley. 2019.

Tourism – Opportunities and Risks

Kalam is a jewel of nature with its breath-taking beauty. It has gushing streams, splendid mountains with tall peaks, rich forests and vast colourful pastures. While the temperatures rise above 35 to 45 degrees Celsius in summer in the plain areas of the country, the temperature in Kalam remains pleasant with chilled nights. Kalam is relatively closer to some major cities (only about 260km from Peshawar, about 370km from capital Islamabad) compared to other high-altitude destinations of similar qualities and extent. Kalam is resurging as a popular tourist spot after a dip of a few years of insecurity. With this, new opportunities are emerging for Kalamis in terms of business and job opportunities. At the same time, risks are emerging fast due to irregulated behaviours of tourists and the hospitality industry. The pictures capture these opportunities and risks – hoping that the decision makers' act in a manner that the risks are minimized before it is too late.

I came to Kalam in May 1982 with my wife and two small children. For a few weeks we stayed at the Forest Rest House in Mateltan. Sitting on the terrace, we enjoyed the warm sun, and the green nature. In front of us was snow melt water accumulated on a meadow in which a mare with her foal was looking for grass. Behind it, a valley with many light green sprouting nut trees spread out. Above it arose snow-capped mountains crowned by twin peaks of eternal snow. This overwhelming beauty made me happy and let me imagine that Kalam would attract many tourists in future. Later, I read in "A Preliminary Economic Survey of Kalam from 1956", "...the Bahrain road has just been upgraded and Kalam can become one of the most important summer resorts from Pakistan".

After the Wali had opened the main villages of Kalam and also Mahudand with a road, government officials visited the high valley. Escaping the heat of the lowlands, they stayed for a few days in one of the Forest Guest Houses in Bankale, Mateltan, Utror or Gabral. The PTDC Bungalows and the Haven Breeze (first private hotel) received guests from the cities by cars. They spent the stay in Charpai sitting on the channels flowing from Kalam River. Some tourist enjoyed fishing trout or made a day trip to Mahudand. In the sixties, the hippies had a stopover on their bus journey from London to Kathmandu for a two-night stay at the meadow on Bankale. With the exception of cyclists on their tour to Asia or friends who visited us, not many foreigners visited Kalam since then.

It was towards the end of the eighties when investors from the lowlands bought land from the locals and build the first hotels near Kalam village. In 2005 there were already around 100 hotels and many more in 2019. Once started, the trend was only temporarily halted by the Swat conflict and devastating floods. In the Kalam bazaar, the torrents of 2010 took away several hotels and in Utror a recently opened

hotel was badly damaged and has been empty since then. The details about the number of existing hotel and beds at Kalam are unfortunately missing. With few exceptions, most tourist facilities are owned by the people from lowland. The inhabitants from Kalam benefit from tourism by providing services, operate shops, organize car trips and trekking. More and more city dwellers are buying land in the high valley and are building private holiday homes on it. With the actual expansion of the road from Swat it is further expected that tourism will increase in the area.

In the social media, the local people describe their home as a paradise on earth with the slogan "Swat the Switzerland of Pakistan" to attract guests, especially from abroad. Kalam needs to facilitate tourist with cash machines and a tourist information office where you can find information about the valley and its inhabitants or ask for a map. In Kalam I met a man from the lowlands who has travelled around the world and is now building a jeep road to Kundal Lake. With bright eyes he testified to me, "I will build a hotel there, because the Kundal Lake is the most beautiful place in the world." In order to let the visitors, experience the beauty of the mountains in an easy way, a road shall be built up to the meadow of Dashti Layla higher than the tree line. A cable car shall be erected to a lookout over Bayu, which will also be an attraction for winter tourism.

Where the unplanned tourism is going so far, is not foreseeable. One thing is certain: It is growing and is also a risk. I am thinking of the management of waste and sewage. Valuable and sensitive areas, such as the wetland of Mahudand should be protected from buildings to preserve their beauty for future generations. It is vital to me that all players involved in tourism work out a master plan for Kalam on how to protect their "paradise" and how to create mechanisms that will be respected.



The famous forest of Bankale and Kalam area seen from a mountain top. **1984.**



The nostalgic valley of Mahudand in the view of tourist. **1983.**



Beautiful flowers from the hills of Kalam; Aquilegia, wild Rose, Efedra and a Lily.



The exciting waterfall
near Paloga. **2019.**



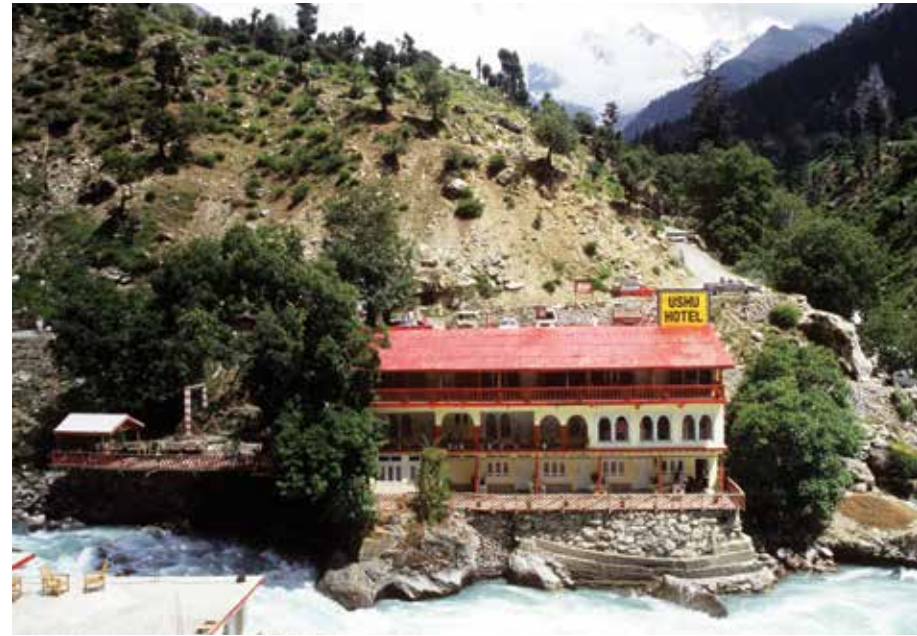
The 5918 meters high mountain peak Fakaksar, seen from Falaksar pass. First ascent by Berry and Tyndale-Biscoe of New Zealand in 1957. **1982.**



Tourists enjoying in the cold waters of Kalam village in their summer holidays. **1997.**



A tourist group hike the steep path up to Boyun. **1997**.



The building stages of the Ushu Bridge Hotel in 1985,1987 and in its final shape in **1997**.





A timber lorry used for transport of tourist on a daily trip from Kalam to Mahudand. **1997.**



Tourist at Mahudand facilitated by wooden hut for food and drinks, horse riding, children plays, sun-bathing and hiking around. **1997.**



With the tourists, other values and food items like burger and chips are introduced to Kalam. **1997.**



The increase of hotels on the flat land near Kalam village. In **1985** only few hotels existed near the junction to Kalam Kas. The green area in the middle is a graveyard which will be kept free from buildings all the time.



A worker burns a trunk of oak wood to heat water boiler for a Hotel.
The supply of firewood remains an unsolved problem. **1997.**



The unique tourist spot connected with a suspension bridge over the river near Utror. **2019.**



At Bakjar the river water is peaceful and pleasant with cafés nearby. **2019.**



Welcome to Mahudand Lake, protect nature and collect garbage says the poster. Mahudand remains the main tourist attraction at Kalam as shops and other facilities spread rapidly to nearby areas. **2019.**



A special attraction on Mahudand is a smooth trip on the river lake with a calm engine boat moving slowly. **2019.**



The situation of the main tourist spot at Mahudand in **1983**, **2014** and **2019**. Mahudand could change as recently the land was distributed among the right holders of Ushu valley.





With the private ownership permanent houses can replace the temporary wooden huts. Therefore, a careful planning is urgently needed for this unique natural spot to keep it virgin for future generations. **2019.**

A shop with walnuts and almonds from Kalam, other areas of Pakistan, Afghanistan and China. **2019.**



Souvenir shop with colourful dresses for ladies and hats for men. **2019.**



A shop with dried bark removed from growing walnut trees and used for cleaning teeth. **2019**.



At a restaurant a man bakes paratha bread in butter for breakfast. **2019**.





Unloading sand. The construction boom for hotels and other tourist infrastructure demands a big number of workers and specialists that Kalam cannot fulfill. In construction but also to run the hotels many people from lowland work in summer season at Kalam. **2019.**



On the entrance to the valley a lot of construction is under way in **2019**. A new building boom is expected with opening of the new road in 2020.



The flat cedar forest at Kalam is a famous picnic spot for tourist but at the same time without proper waste management plan and a threat to regeneration. **2019.**

A careful watch is needed for new locations that will be explored for tourists in future. The meadow Dashti Layla was made accessible for jeep on a private initiative in summer 2019 with garbage left everywhere. **2019**.







This photo of peaks in south of Utror 1986 and from Blue Lake north of Mateltan 1986 illustrate the spectacular, bountiful and immense mountainous area around the Kalam valley. However, some guided tours started to lead trekkers to remote valleys over passes and on top of the mountains, but huge potentials remain to be explored in future. **1986.**

Chapter 7

**Mirror of time -
1982 and 2019**





Clear water flow in mountain stream during snow melting. **1983.**

Mirror of Time

The numbers e.g. increasing population, changing natural resource base, changing landscape do not lie, but they also do not tell the entire truth. The numbers do not describe what exactly changed in the physical sense compared to the past. Even though when we see our reflection in the mirror every day, it is difficult to actually notice if we are making progress. A best way people monitor themselves is by comparing past and present photos. This chapter may have some sad images of change – but also pleasant surprises. It is a privilege to have been able to photograph places from the same point over years or photos with the same objective to document what changed. Some of these photos appeared in the preceding chapters under different themes. This chapter show pair photos that reflect the changes that took place in Kalam during the past four decades.



A groom with his friends in
Utror. 1984.



A decorated marriage car at Kalam bazaar. 2019.



Men involved in traditional Kabaddi game in Kalam. **1986.**



An afternoon basketball game played at Mateltan. 2019.



A boy on the way to school with a written wooden board in his locally made backpack. **1997.**



A boy with a modern backpack bought in a shop. **2019.**





An elder sister taking care of the younger siblings from **1985** and **2019**.



The vegetable fields in Batander near Utror river. **2005.**



The fields covered with gravel by the flood
havoc in 2010. **2014**



Camels from lowland transport potatoes from Boyun to Kalam Bazaar. **1982.**



Camels are decorated in Kalam Bazaar to carry around tourist in Bankale. **2019.**



A man rides a horse from Shayn towards Utror. 1984.



Two men ride motorbike on the same spot. 2019.



A widely used scarecrows on the fields. **1982.**



The signboard on the fields is written with Mashallah meaning "as God willing". **2019**.



A man fixes bags of potatoes for market in the plains on a truck. **1986.**



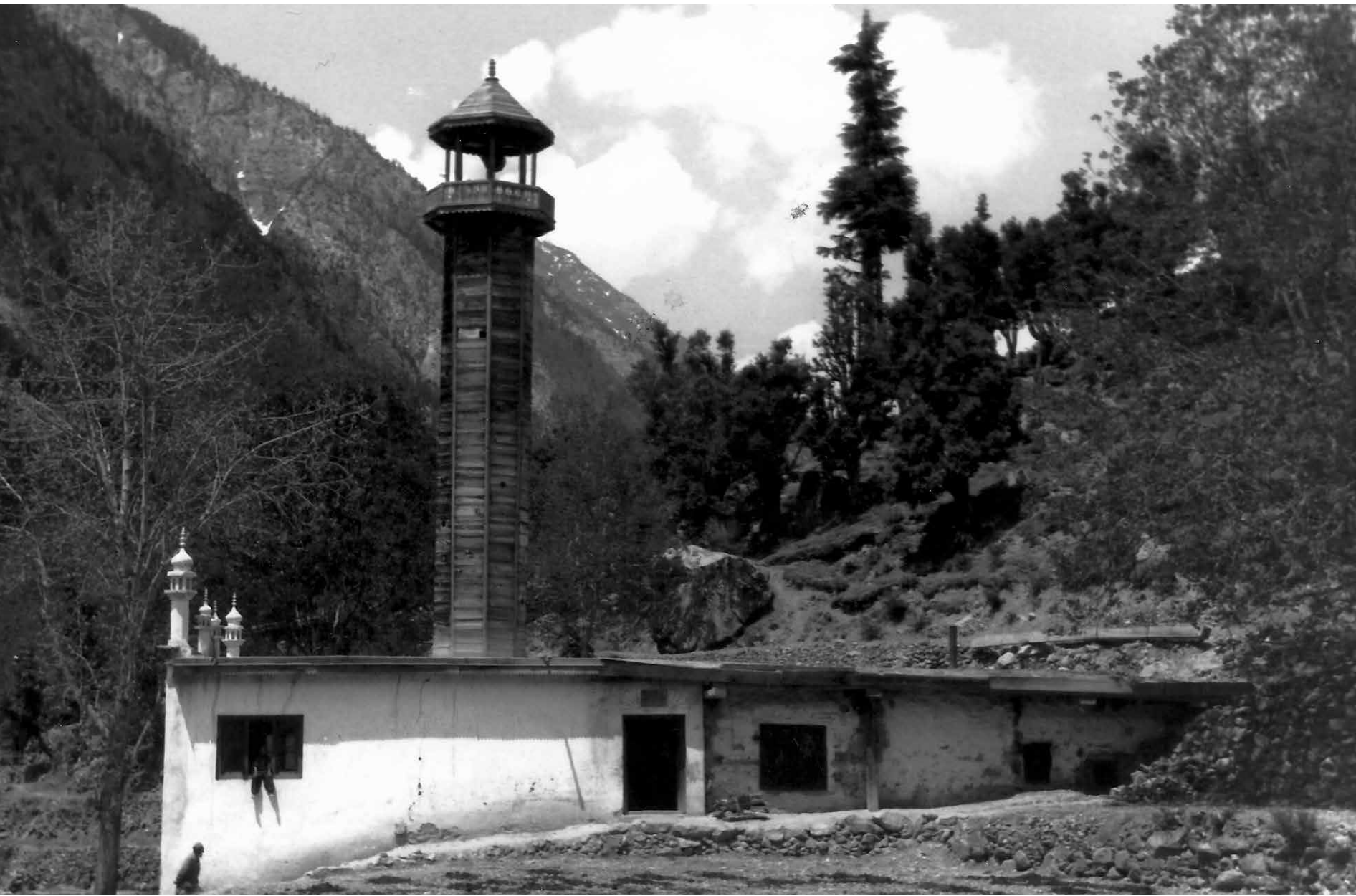
A farmer in his cabbage field ready to harvest at Mateltan. Earlier, potatoes were growing in monoculture but now farmers grow a number of varieties of vegetables. **2019.**



Boys with playing cars made themselves out of wood and recycled material. **1987.**



Boys play with toy cars purchased in the shop. 2019.



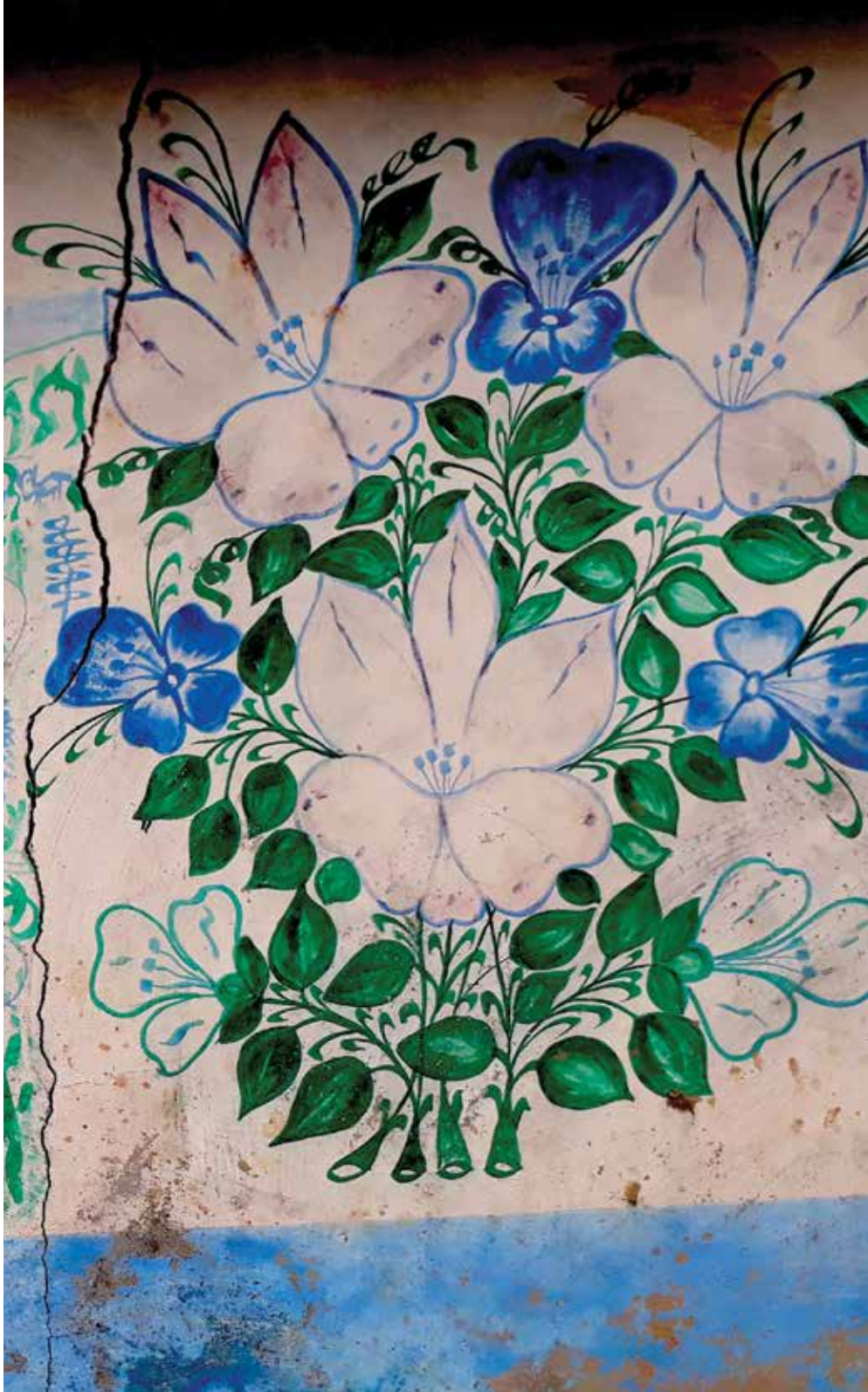
The central mosque of Mateltan had a traditional flat roof and wooden minaret. **1982.**



The central mosque of Mateltan is a two-storey modern building with corrugated sheet in a “lean to roof” style. **2019.**



A flower mural in Mateltan. **1984.**



A flower mural in Boyun. 2019.



Chapter 8

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Interviews with local people

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The staff of Water for Livelihoods Project of Helvetas had a chance to speak with local people ages 30 to 65, women and men, from Gabral, Utror, Ushu, Boyun, Buyu, Kas and Mateltan. All these villages due to their location, have unique features and living conditions. The people interviewed were shown most of the photos included in this book. Excited from the old images, they gave their views of how things have changed over time.

The voice of women

All the women interviewed in the age of 30s reported having a chance to go to school and most of them reported to have received their primary education from the home-based schools established by the Kalam Integrated Development Project (KIDP) in late 1980s. These schools were the first drop in the ocean as stated by Rehana of Utror Salehabad (age 30). She said that women of higher ages missed the chance and were left illiterate. All the women stated that now-a-days young girls have access to public or private schools or madrassas. Some even mentioned enrolment of girls with universities including online higher education facilities. This is revolutionary comparing the situation in early 1980s when sending girls to schools was a taboo and a difficult topic for discussion.

Women above 50 years of age reported that workload on women has reduced today compared to three to four decades ago. Jabeen of Bella village aged 55 gave several examples. She said that workload related to wood collection has reduced due to use of gas (cylinders) for cooking. Most of wood collection was done by women except for the one-time bulk wood collection for winters by men. In the past men had to go to the central Kalam bazaar for little needs whereas many utilities are now available in the villages or in nearby villages. Men therefore have more time for farming

and women have more time for themselves and look after the children. Most of the villages have drinking water supply through tap water which has significantly reduced workload on women. Gulbahar of village Boyun (age 48) said that tap drinking water is available in every house. Earlier, women spent hours to fetch water from the river. Walking uphill from the river to home with heavy pots filled with water was a laborious and extremely difficult tasks which women had to do few times every day.

The women interviewed consider diversification of agriculture a highly successful and welcome change in Kalam. Shahida from Salehabad Utror (age 53) stated that earlier villagers used to grow only maize and potato in a monoculture farming system; now people grow turnip, cabbage, spinach, pea, marrow, and other crops. Similar voices came from women interviewed in Ushu and Gabral villages.

Interestingly most of the women reported reduction in livestock herd size. Gulbahar of Boyun (age 48) mentioned that this was due to non-availability of labour needed for livestock farming activities. Yasmin from Mateltan (age 55) mentioned family's preference for high quality but fewer livestock heads because of space issue. Nasim Begum from Ushu (age 43) said the herds were reduced because families are dispersed and divided and there are fewer people to perform multiple tasks.

All the women in one way or the other compared today's life better than in the past in terms of access to market, availability of utilities in the villages and purchasing power of people. All woman appreciated an ease in managing kitchen due to easy access to grocery items and having alternate energy sources (gas for cooking, electricity for cooking and

lightening, solar for lightening). In the main Kalam town (now a small city), using e-payment of bills was also reported which was impossible to think of fifteen years ago. It was also reported that winters in general are still harsh while summers got extended for over a month even in high altitude areas like Utror, Boyun, Mateltan and Gabral. With these changes, people are able to cultivate more vegetables and at times two harvests.

Flash flood and avalanches in Kalam have frequented. Women reported having deep sad memories of the 2010 floods. People from Utror didn't face major effects of the floods. However, women like Nelagai from Kas Kalam (age 56) recalls floods 2010 as a nightmare and stated, "we were reborn after surviving those devastating floods". She reported that villages were sliced out and taken away by the flood. She also mentioned that irrigation channels still received flooding and had to be repaired in every season. A school was taken away by floods just last year. Sabina from Gabral (age 44) recalled that floods 2010 took away the China Bridge which connected them with Utror. This bridge was rebuilt a year ago. Roozia from Kas Kalam (age 49) spoke about disasters at length. For her, "we live with risks, even today when I go to bed, I sometimes recall havoc of the 2010 flood and damages to the villages and our properties". The floods destroyed land, houses, trees, livestock and pastures.

Khaista Bibi from Mateltan attributed floods to deforestation on the slopes. The flood further damaged forests on its way. She said that most of the damages (infrastructure, houses etc.) were repaired except for the forests which will take a long time to regenerate if people make an effort.

Many women indicated that winter rains and snow has decreased. The snow in winters starts late when compared to 10 years back. Permanent glaciers in Kas Kalam, Utror, Mateltan and Ushu are gone. Heavy infrastructure development is causing disasters in Mateltan, Ushu and near Utror. In Kas Kalam construction and mining for construction has disturbed the environment. More than 50% land of Kas Kalam is sold out to external people for hotels and summer guest houses. That has a negative impact on farming systems. Irrigation is available everywhere through unlined channels. The community cleans channels and follows rotation system (warabandi) ensuring that every farmer get irrigation water on 4th or 5th days.

It was reported that migration although reduced but is still common. Out of nine women interviewed, seven reported seasonal migration. Due to migration, people get a chance to earn extra income, seek exposure to education and bring new ideas (Shahida of Utror, age 53). Some people have leased out or sold their land and cash crops (e.g. walnut) to outsiders for cash and have reduce livestock. From some families only individual male members migrate seasonally for jobs. Others take some family members with them. In any case family life gets disturbed including education of children. For the migrant families, life in the new destinations is not easy also. In search of better and cheaper accommodation they keep changing houses which disturb family life including education of children.

Women from Utror said that people never forget the contribution made by KIDP especially for building an access road of Utror from Kalam. This road brings everything for the people of Utror including health, education, market and their extended family relationships.

A striking aspect in the interviews was regarding tourism. Three or four decades ago, Kalam was not socially open to receive tourists – even domestic. They were seen as a threat to their culture. Now, increasing tourism is considered a good opportunity. Families rent out their houses to tourists and keep good relations with the visitors so that they return next time. Some visiting families spend three months every summer in Kalam. Nelagai from Kas Kalam (age 56) said proudly that thanks to rivers, lakes, waterfalls and forests of Kalam that so many people visit the valley. Nasim Bibi of Ushu (age 43) however said that tourists were not responsible enough and leave their trash along the rivers and picnic grounds especially in Deosan Forests. Gulbahar from Boyun (age 48) said that her village was not benefiting from more tourists despite it was the nearest village located on top of Kalam town where visitors could enjoy a high plateau with just twenty minutes car drive uphill. The reason is lack of tourist facility in her villages.

Voices of men

Literacy rate in Kalam is generally low. Only about 10% of the men interviewed (aged 40 and above) had secondary level education. Higher literacy rate was reported among youth. As higher education institutions do not exist in Kalam, about 40% of those who attend high school level education go for higher education elsewhere in the country. Due to cultural consideration girls are not sent away from home alone. Therefore, they have limited opportunities for higher education. Most of villages have only primary schools. Middle schools are few while there is only one girls' high school which is situated in Kalam town. Compared to the past, education facilities have however increased. Ali of Gabral (49) indicated more access to education especially for girls, as the most pleasant change in Kalam.



Mohammad Ali

Compared to the past living conditions in Kalam have improved. This is because due to better facilities of transportation, health, education, drinking water, electricity and agriculture. On farm and off farm livelihood opportunities within the valley have increased. Some people also go to other parts of the country for businesses and better and higher salaries jobs. Majority of the respondents attributed this development to Kalam Integrated Development Project (KIDP).

Ghazi of Mateltan (59) recalled his youth days spent in a large extended family, where mutual respect among people was key to live a peaceful and happy life. For him, hardships have reduced over time. Family structure has changed significantly with more nuclear families.

The farmers said that they are very happy with the decision they made 35 years ago to grow high value short seasonal

vegetables. This decision still pays off. The KIDP had trained farmers in improved farming techniques and marketing. New, varieties of potatoes and other high value seasonal and off-season vegetables i.e. turnip, cabbage, peas, squash etc. were introduced. Ghazi of Mateltan (age 59) said, “short duration vegetable and maize varieties have changed our lives not just in Mateltan but also in the whole valley of Kalam.



Ghazi Ud Din

In the past we grew maize and beans in summer that could not even suffice our own consumption but now each farmer is earning a significant amount through improved varieties of potato and other off seasonal vegetables”. Farmers very earnestly adopted these varieties and increased their production. Their income increased significantly. Farmers have become more market oriented and off-season vegetables of Kalam could be found in many markets across the country. Besides, the farmers have an easy access to agriculture services and inputs. Muhammad Din of Kas

Kalam (age 63) highlighted farmer to farmer dissemination of knowledge. He noted that several farmers had adopted new farming techniques even in far off valleys and many of them were marketing their products. Ayaz of Utror (46) was excited to indicate that food at home had become diverse beside more marketability in agriculture.



Mohammad Din

In the past, water for drinking was fetched by women from springs and streams. Thanks to developmental projects by the government and NGOs majority of the households have tap water at home. Muhammad Din of Kas Kalam (63) said that most of the drinking water supply schemes were destroyed by the flood 2010. Several schemes have been rehabilitated and are functional. Women save a lot of time fetching water from distant sources including the river and springs.

There was less pressure on irrigation water in the past due to

limited cultivation in summer. Now-a-days farmers grow multi-seasons and off-season crops. There is more demand for irrigation water while the infrastructure is still the same. Nearly all the irrigation channels are damaged at heads due to flood in 2010 which were mostly repaired by the community with support from different development and humanitarian agencies.

Demand of increased population for fuel wood is a great challenge for forests conservation. Although some alternate sources of energy are also being used, forests are the major source of fuel wood. In winter each household meanly consume one truck load wood for heating. Depletion of forest is a major concern of the local population.

Health facilities are scarce in the valley. Educational facilities are also rare. There are only two boys secondary School (Kalam and Utror) and only one Girls High Schools in Kalam. There are basic health facilities (dispensaries) in Gabral and Utror while the only hospital in the valley situated in Kalam town which is also provides basic health facilities. Some private health facilities also exist in Kalam town. Some of the KIDP trained paramedical male and female individuals are now government employees and serve their communities through private practice. Ali of Gabral (age 49) is one of those. According to him, there is still a dire need of health facilities in the valley. His village has a dispensary with 2 medical technicians and a Lady Health Visitor provide basic health services to the population.

Muhammad Din of Kas Kalam (age 63) proudly indicted two of his daughters teaching in a government primary school in Kalam. His daughters got their primary education from home-based schools established by KIDP when there was no concept of girls' education in Kalam. He stated that his

daughters were contributing to girls' education by going door to door to bring more girls to the school.

People in Kalam recognize changing climate in the valley. According to the people of all sub valleys, the temperature is rising. Ayaz of Utror (age 46) mentioned that for the first time in his life he used a fan in Utror in summer. They noticed rapid glacier melting due to increase in temperature. Ghazi of Mateltan (age 59) indicated that the overall duration of winter had shortened when compared to 30-40 years ago. Some people considered this a good change as the season became less harsh, people consumed less wood, and have more time for cultivation. A shift in the amount and season of snowfall has also been observed in the area. Ayaz of Utror (age 46) recalled that during his childhood, the road remained closed for 3-4 months due to snow. Now the road gets blocked only for few days or a week with fresh snow. The snow maxima occur in February and onward instead of December-January in the past.



Muhammad Ayas Khan

The respondents said that tourism is increasing every year despite the fact that roads were badly damaged by flood in 2010 and were in bad conditions for the last several years. The increasing trend of tourism is often attributed to increasing temperature in plains of the country, positive change in behavior of local population towards the sector,

enhanced facilities in the valley and improved security situation in the province as a whole over the last few years. Ali of Gabral (age 49) is worried that rapid deforestation will result in declined tourism, yet he hoped that improved infrastructure will encourage more tourists and demand for better conservation.





About the Author

Fritz Berger attended an apprenticeship as a horticulturist. After qualification at the age of 24, he commenced his career as an adviser for development projects – first in Lefkas in Greece (1962 to 1972), followed by Nepal (1972 to 1978) and then Pakistan (1982 to 1986).

In 1987, Berger returned to Bern and began working as a freelance photographer. His assignments took him far afield once again, documenting activities in Nepal, Pakistan, Palestine, and ex-Yugoslavia (today known as the Balkan region). He particularly enjoys documenting people, their work, and their struggles.

He is specialized in photo-monitoring - that is, the comparative pictures taken from the same spot in a certain interval showing the changes of landscapes due to human activities, climate or by natural forces.

In 2010, Berger performed some of this work for ICIMOD, travelling to many sites in Nepal to record the impacts of natural forces and human encroachment. Some of this work was eventually published by HELVETAS-Nepal: Kathmandu to Jiri, "A Photo Journey" (2011), and "Changing Landscape in the Highlands of Nepal, Sikkim-India, Pakistan" (2013).

He has published a number of photo books in Greece ("The Shape of Years Lefkada 1962 to 2016"), Nepal ("Moments of Life" and "In the Shadow of Gaurishankar") and Switzerland. He has regularly organized exhibitions of his work. In



Fritz Berger with workers of the sawmill in Utror, August 2019.
Photo by Nabi Swati

Switzerland he has produced teaching material on issues such as "Recycling" and "Buddhism" and they are still used as education materials at school level. Details of his work may be found on "<http://www.transhumana.ch>".

Berger is the third of eight siblings. He was born on a farm south of Berne in Switzerland in 1938. Today Berger lives in Stockholm, Sweden. He has five children and four grandchildren.

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Further Readings from Fritz Berger

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This book tells the stories of how bravely people in a remote mountain valley of Pakistan overcome difficult times and find a resilient way of living over decades. Historical and new photos show the modest life of farmers 40 years ago and their innovative way out of poverty. Women and men give authentic insights into their hard lives that have profoundly

changed since 1982. Foaming streams amidst green nature and snowy mountains are attracting more and more tourists to Kalam. But the climate change brings new challenges for nature and humans in the much-tormented valley inviting new thoughts and strategies to sustain peaceful lives.



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