

# Improving accessibility for mountain development: Role of transport networks and urban settlements

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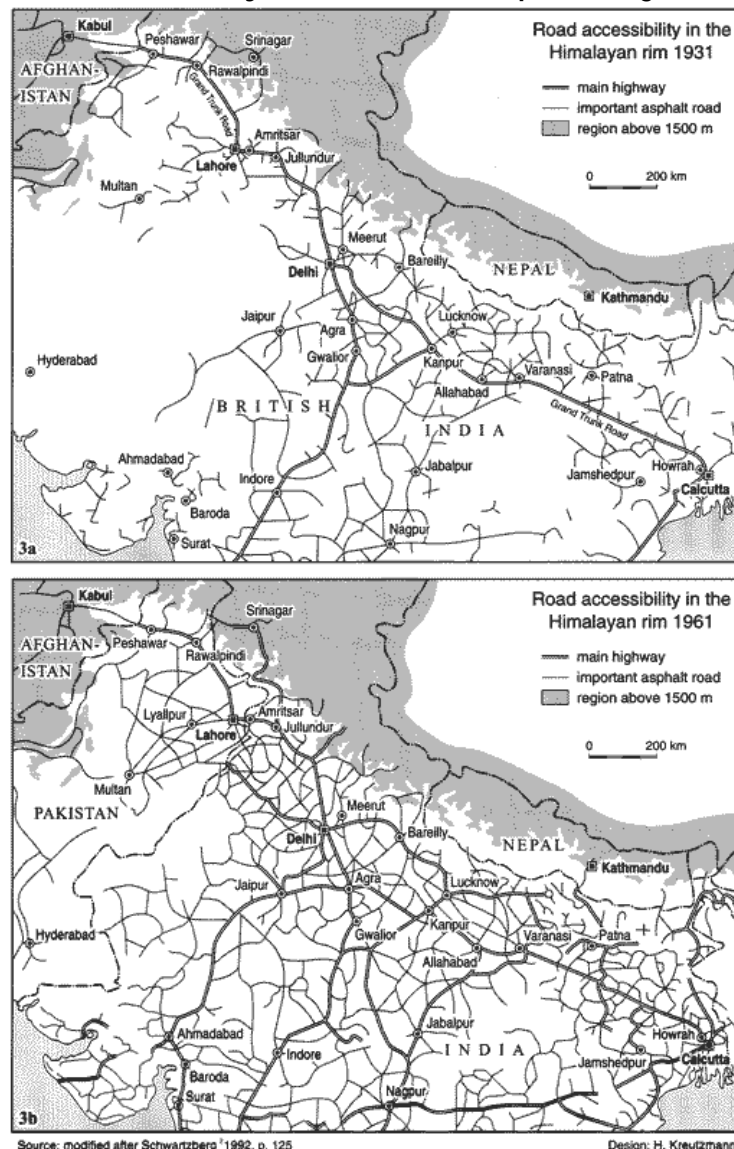
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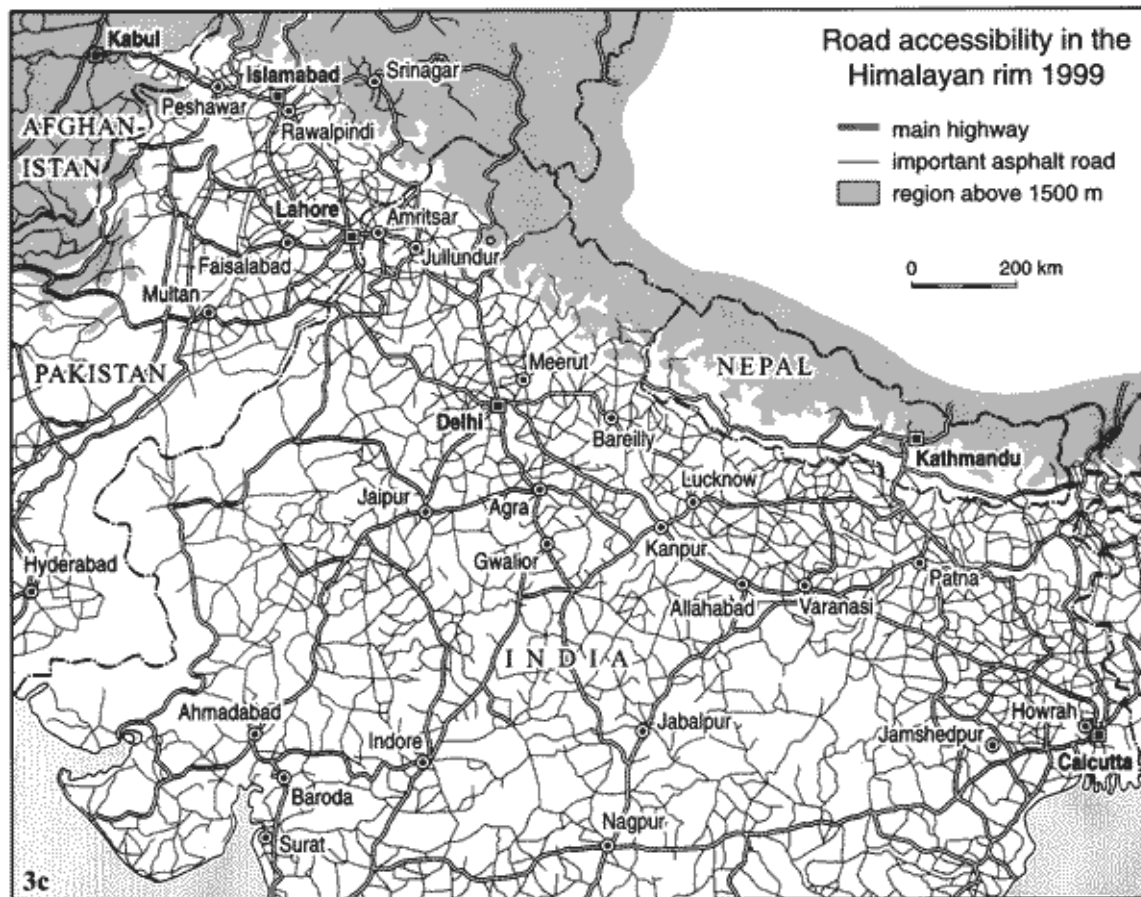
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## Case Study: Karakoram Highway

The first link for 'modern' traffic from Northern Pakistan with down country Pakistan was established from the railhead in Havelian (NWFP, Figure 18.1) via the Kaghan Valley in 1949.

Road Accessibility 1931 & 1961 map [See figure below.]





Source: Indian Subcontinent (1:4 Mio.) 1999

Design: H. Kreutzmann

### Road Accessibility 1999 map (Above)

This route followed a mule track built in colonial times to support the British administration and the garrisons in the Gilgit Agency.<sup>1</sup> It was only after independence that the first jeep reached Gilgit - a cul-de-sac of its own - before the track was extended to Hunza in 1957<sup>2</sup> (The Times 1949). The road across Babusar Pass (4,173 m) remains open for three months in summer only and during the rest of the year air links transport valuable supplies at high cost.<sup>3</sup>

After the inception of Pakistan's first Village Aid Five-Year Plan in 1956, development efforts paid for by public funds reached the mountains and were made available to the Gilgit Agency. A participatory approach facilitated the construction of suspension bridges to span the Hunza River near Danyor and the Gilgit River at Sher Qila. Villagers provided three-quarters of the cost and all the unskilled labour and cut all the wood for bridge construction from communal forests (Clark 1960). In this early stage of development the Central Government covered '75% of all non-recurring expenditure and 50% of recurring

expenditure' (Clark 1960) trying a holistic approach by introducing new wheat varieties, new ploughs, different fruit varieties, improved livestock (pedigree bulls, merino rams, and so on), silkworm production, and new weaving looms for local tweeds. Out of the annual Village Aid Programme's budget of Rs 300,000 (circa US \$ 65,000), two thirds were spent on transport alone. Without accessibility goods from the lowlands sent to places in the mountains where they were needed were very expensive. Consequently, the budget remaining for development projects decreased substantially.

Not surprisingly, the transport charges for one 'maund' (1 'maund' equals 37.32 kg) of goods from Rawalpindi to Gilgit were from 25 to 35 Rs, while carriage costs on the return trip ranged between zero and eight rupees (Staley 1966), highlighting the limited to negligible exports from the mountains. Air transport from the plains to Gilgit increased the cost of a sack of chemical fertiliser by a factor of twelve from five to 60 rupees (Clark 1960). In order to reduce transportation costs for basic goods, an Indus Valley Road from Swat was proposed and in 1959 construction began (Table 18.1). As a result of the Pak-China Border Treaty of 1963, bilateral cooperation led to what has been termed the Pak-China Friendship or Karakoram Highway (KKH). By 1975 the KKH was carrying trucks, and since 1978 regular traffic has plied between Rawalpindi and Gilgit.

In addition to Trans-Montane exchange of goods, the KKH brings in subsidised cereals from down country Pakistan into the region. It is the lifeline for Northern Pakistan with its ever-growing food deficit (Table 18.2). Cereals, fresh meat (imported as live animals for slaughter in the bazaars), and cooking oil account for more than three quarters of all imports from the lowlands. The per capita dependence on supplies through this artery is highest for the Gilgit District and significantly lower in Chitral and Baltistan. Chitral will be seasonally cut off from external supplies until the tunnel under the Lowari Pass is completed.<sup>4</sup> Baltistan has been linked to the Karakoram Highway by an asphalt road that now enables year-long traffic and a rapid change in the market prices of basic commodities.<sup>5</sup> In addition to its obvious military importance, huge quantities of food are brought into the region to supply army personnel, tourists, and growing numbers of local farming and trading households.

As early as 1972, the Government Report of Abdullah (1972) advocated the regular supply of basic food items to northern Pakistan from the grain chambers of lowland Punjab. The concept proposed favours an exchange of a different range of cash crops from the mountain valleys with surplus staple foods from the plains, with transport subsidised from public funds. In Abdullah's opinion, self-sufficiency in cereal production cannot be achieved in the mountain valleys. For example, the highly subsidised and competitive prices of wheat flour (ata) cannot be met by local producers. Consequently, the proportion of food produced locally is steadily decreasing. In some villages of

the Hunza Valley, local production of ata nowadays is less than one third of the household's annual consumption. The dependency on down-country supplies for other consumer goods is even greater than for flour. Consequently, for the first time in history there are now no periods of starvation and famine, as such disasters have been prevented by subsidies and crisis management on the part of the Federal Government and the World Food Programme.

Table 18.2: Import of regular items from the lowlands to the eastern Hindu Kush and Karakoram valleys of northern Pakistan in 1989						
Commodity	Import via Karakoram Highway (in million Rs)				Import via Lowari Top Road (in million Rs)	
	Gilgit District		Baltistan District		Chitral District	
	absolute	%	absolute	%	absolute	%
Wheat flour and grain	70.00	34.7	3.60	15.4	23.00	49.5
Rice					13.00	28.0
Pulses	7.00	3.5				
Cooking oil	37.00	18.4				
Fresh vegetables	9.30	4.6	2.74	11.7	1.61	3.5
Fresh fruit	5.04	2.5	0.68	2.9	1.83	3.9
Beef and mutton	29.95	14.9	10.01	42.8	1.21	2.6
Poultry products	18.30	9.1	5.72	24.5	0.84	1.8
Milk products	17.57	8.7	0.64	2.7	5.00	10.7
Fruit juices	1.25	0.6				
Kerosene oil	6.06	3.0				
Total	201.47	100.0	23.39	100.0	46.49	100.0
Total (Rs per capita)	738.6		83.2		172.2	

Source: Data compilation and calculation according to Khan and Khan (1992: 15) and Kreutzmann (1994: Figure 7)

The observation of Robert Chambers that research and development projects follow networks of roads (Chambers 1983) has been supported by the extension of major development projects to this region in the aftermath of construction of the KKH. The Government of Pakistan and non-government organisations with international funding have established rural development and community services' projects. These projects are having a substantial impact on the physical infrastructure, local trading, education, and health services. Their efforts also focus on the extension and improvement of existing agricultural resources. By applying economics to different scales of production, they aim to increase productivity through the cultivation of valuable niche products such as seed potatoes, vegetable seeds, and special varieties of fruit (Khan and Khan, 1992; Kreutzmann, 1993a, b; Streefland, Khan, and van Lieshout 1995). Exchange of goods between the lowlands and highlands is the impetus for this.

In periods of crises, these development models based on long-distance trading relations for cereals and other staples are vulnerable. Possible drawbacks must be kept in mind. Closure of the road because of natural or hazards caused by human intervention can have dreadful results. In the case of the Karakoram Highway, the engineer corps is maintaining the road and most of the natural hazards - especially in spring and during the monsoon season - are managed in such a way that the affected stretches are re-opened after a short while. Providing a service line throughout the year incurs high costs. It is a great achievement that such a road in extremely difficult terrain provides such a high standard of transportation. Less control is executed when highway robbers and/or politically motivated activists threaten the safety of travel along this lifeline and make use of its uniqueness to exert pressure.

Blockage of the Karakoram Highway by the inhabitants of Kohistan took place in May-June 1993 to convince the public administration that timber exports from the few remaining, and rather depleted, natural forests should no longer be prohibited. The royalties for wood-cutting concessions formed an important source of income in colonial times, especially for the 'jirgaders' (residents with entitlements to community resources) of Tangir and Darel. Local unrest and fluctuating timber prices in Punjab regulated the demand and supply situation. Nevertheless, in 1925, six timber companies, as well as the Northern Forest Company, were involved in timber procurement from Tangir and Darel. These companies originated from as far away as Abbottabad, Sialkot, Lahore, Hoti (near Mardan), and Peshawar.<sup>6</sup> Royalties paid by two timber firms in Darel alone accrued to more than 1.2 million rupees in the course of a few years. In comparison, all subsidies received by the hereditary rulers and governors from the Kashmir Durbar and the Government of India amounted to less than 10,000 rupees prior to 1927 and 12,800 rupees later.<sup>7</sup> Timber has been the most

valuable natural resource in the region and a source of income for the jirgaders (Janjua 1998). In neighbouring Gilgit, marginal forest resources appear to have been depleted by 1929, as the administration remarked in their annual report:

"Wood is every year becoming increasingly difficult to obtain. Practically all the wood on the nearest hills and in the nullahs [valleys] has now been cut, and it is necessary to go far field for supplies."<sup>8</sup>

Nevertheless timber harvesting without appropriate replantation has continued in the Chilas District and Kohistan. In recent years, royalties from this enterprise, the major source of income for the proprietors of forests, have been at stake. While local residents negotiate bilateral contracts with timber dealers annually, the local foresters from the administration identify the suitable stems to cut. Despite the only marginal incomes from toll taxes, the Forestry Department plays a crucial role as a regulative force. Efforts by the administration to restrict overexploitation and to stimulate replantation were counter-checked by the residents by interfering with traffic flow and other measures. The correlation of road access and forest exploitation or, to be more specific, the degree of tree felling is quite substantial (Schickhoff 1998a, b). In this context, questions about ownership and control of natural resources, such as forests, mineral wealth, and water (irrigation and hydro-energy potential), have become political issues relating to the unsolved constitutional status of the Northern Areas. Road blockages occur more frequently as the result of hazards caused by human intervention such as sectarian clashes. These have resulted in tragic loss of life and have led to the closure of the KKH because of unpredictable dangers. These unstable conditions affect other spheres of global and inter-regional exchange like tourism and trade.

The initial construction of the KKH as an artery between the lowlands and the Karakoram has led to a secondary road network of link roads. In the Hunza Valley more than 95% of all households are connected by jeepable or truckable roads. In the side valleys, such as the Gilgit, Ishkoman, Yasin, and Astor valleys and in Baltistan, the same density is planned and has been achieved almost. New suspension bridges were constructed with bilateral aid. Most link roads have been financed by public funds and regional development plans, some of them have come into existence as a productive physical infrastructure programme of the Aga Khan Rural Support Programme (AKRSP). This development agency has taken on the role of a planning institution for accessibility and connection to markets, especially in remote areas where there are a few scattered settlements. In contrast to public enterprises, which are based on institutional planning and sub-contracting (tekedari) of the work, its key advantage lies in its greater cost efficiency. A link road project is executed as a cooperative effort by a village organisation - supplying the initial idea, workforce, and labour input - and by the development institution - providing labour costs, machinery, and technical expertise (AKRSP 1996).<sup>9</sup> The result is a degree of accessibility only reached in the neighbouring mountain

areas of India and the People's Republic of China, but quite outstanding if compared with the road networks in Nepal. The quality of roads influences the cost of transportation, and being accessible does not mean a village is on a par with others. For example, potato dealers from Punjab and NWFP purchase seed and potatoes in the Northern Areas. Their main business is concentrated along the asphalted highways, very little commerce occurs on truckable roads, and next to none along jeep roads, although the cost of purchasing potatoes is substantially lower there.

#### Notes:

1 Before 1935 the Gilgit Agency was supplied with goods via Burzil pass (4,200 m) from Srinagar. After the lease of Gilgit to British India, the Babusar route was expanded and improved by military engineers and contractors for the summer caravans. Both routes were closed in winter because of heavy snowfall.

2 A photograph of that event is on display in the Gilgit Municipal Library.

3 Air traffic between the Punjab and Gilgit was introduced as early as 1927.

4 The Lowari tunnel has become a story in its own right. After planning for two decades, work commenced in the 1970s but was stopped soon after and never commenced again. The tunnel has become a symbol of the unkept promises at prime ministers and candidates to their electorates.

5 The Baltistan road did not exist as such in previous times when Baltistan was oriented towards Srinagar. In 1963 the first road link to Gilgit was established across the Deosai Plateau, two years later by the Indus Valley. The road was extended and asphalted in the mid-80s.

6 Records in the Gilgit Agency Diaries between 1921-1930 (IOL/P&S/10/973) provide insight into the practices of timber merchants in exploiting the natural forests of the Western Himalayas and Karakoram.

7 IOR/2/1083/284, 59.

8 IOL/P&S/12/3288, 6.

9 With each and every inauguration of a new link road and/or bridge the representatives of the public administration emphasise the quality and low cost of these projects. Even difficult roads, such as the Shimshal and Yarkhun Valley Roads, including major bridges, have been built in this way. Most link roads were built in Chitral (164 out of 277) in 1994 (World Bank 1996, 144-146) where traffic infrastructure lags behind in a valley without all-year round connection to down-country Pakistan. Road construction has become the second-most

important activity of this rural development programme only to be surpassed by the construction of irrigation channels.

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### Notes to readers

The paper is a case study on Mountain infrastructure: access, communications, energy published in Banskota, M.; Papola, T.S.; Richter, J. (eds) "Growth, Poverty Alleviation and Sustainable Resource Management in the Mountain Areas of South Asia": Proceedings of the Int'l conference, 31 Jan - 4 Feb 2000.