

Communication and Cash Crop Production in the Karakorum: Exchange Relations under Transformation

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1. Introduction

In 1990, the South Commission advocated the preeminent importance of the satisfaction of basic needs as the goal of development activities in Third World countries. This approach, begun in the 1970s (cf. BURKI & MAHBOOB UL HAQ 1981), has introduced a measurement of development based on the availability of basic resources like shelter, food, and work to the needy people of a society. Besides the role of access to those resources, an important aspect of this concept is how and where people manage to fulfil these basic needs. The most crucial aspect in a socioeconomic analysis of a given regional setting is composed of the exchange relations it has to extra-regional markets and employment centres. This relationship in space and time reveals the potential of endogenous productive forces and the degree of dependence on external support and supplies. These exogenous influences cause internal transformation processes affecting all aspects of life. How is a local economic system modified by outside interventions and by linking its communication network to that of a national economy? This basic question of development studies has to be raised again in order to understand the transformation processes and innovations in a given study area like the Karakorum. One of the main communication features of the present-day Hunza Valley is the Karakorum Highway following the line of the Hunza River from Khunjerab Pass down the valley to where it joins the Gilgit River and subsequently the Indus. This highway and additional linkroads have established a traffic network that within the last two decades, has connected 97% of all villages to a motorable road and transport system. This fact characterises a degree of accessibility not reached in any other mountain system of the Hindukush-Himalaya high-mountain belt of the Indo-Pakistan subcontinent. My hypothesis in this paper is this: The construction of the Karakorum Highway (KKH) has enhanced and amplified the southward-directed exchange relations of the Hunza Valley that had originated from an earlier period. In this context, we expect an intensification of highland-lowland exchange relations and, at the same time, a transformation of all sections of the household economy with an impact on the allocation of labour and resources.

2. Hunza Valley: The Setting of the Environment

The Hunza subdivision covers an area of app. 12,000 km² with a population density of 2.3 inhabitants per km². Concentrated along the main line of the Hunza Valley, the settlements of the more than 34,000 Hunzukuts (Fig. 1; Tab. 1) are basically located on river terraces and fans. The resident population of Hunza is composed of four different ethno-linguistic groups: Burusho (67.1%), Wakhi (19.2%), Shin (12.6%), and Dom (1.1%). In their economic activities, all inhabitants follow a basically similar approach of mixed mountain agriculture, i.e., the combination of crop farming and animal husbandry with the seasonal utilisation of different ecological zones. The villages are located on fans and river terraces along the main Hunza River and its tributaries. With an average annual precipitation below 150 mm in the valley bottoms, the oases of Hunza are exclusively irrigated by gravity-fed channels. The irrigation system forms one of the prominent features of the cultural landscape that structures the spatial patterns of resource utilisation (cf. KREUTZMANN 1988). Winter wheat and summer-sown barley, buckwheat and millets, as well as maize and potatoes form the range of crops, while lucerne creates the link between crop farming and livestock. The crucial and minimum factors in the traditional economic system have been the amount of available winter feed for the livestock, on the one hand, and the provision of animal manure for fertilising the crops, on the other hand. Other limiting factors to farming have been the location, productivity, and size of the irrigated land. Contrary to lowland Pakistan, where landlordism, extreme divergence in landholding patterns, and tenancy structure are prevalent (AKMAL HUSSAIN 1989), we find here a more homogenous distribution of landholdings, averaging in size about one hectare per household¹. In the 1960s, the ruler of Hunza, Mir, still appeared to be, in principle, the sole proprietor of all lands, claiming a personal property (120 ha) twenty times bigger than his present one, which has dwindled away to 6 ha for the upkeep of his household. With this holding, his son still happens to be the biggest landowner in Karimabad. Traditionally, in an agricultural society like Hunza, property rights and access to land were the major parameters for measuring social standing and wealth while simultaneously meaning that one had enough food to survive. Famine periods occurred regularly, and different strategies to cope with them can be identified for the last quarter millennium.

¹ One hectare equals app. 20 *kanal* of local measure.

3. Chronological Framework of Exchange Relations

Hunza has never been a typical entrepot for tramontane trade, never having derived its major portion of revenue and of wealth from this source. Nevertheless, in a direct and/or indirect manner, Hunza has participated in supra-regional exchange. These relations have experienced manifold transformations, which can be attributed to four distinct historical phases (KREUTZMANN 1991). The transformation of Hunza's exchange relations in each of these periods was characterised by external interventions and internal responses leading to a socioeconomic restructuring within the community.

1. Pre-colonial period: In the aftermath of the consolidation of Chinese predominance in Xinjiang (1759), Hunza secured autonomy by establishing a long-lasting tribute relationship with the Chinese authorities in Kashgar and Yarkand. In this phase, the Mir's household acquired a substantial income from exchange presents, from his control of nomads in the Sarikol Pamirs, from the slave trade, and from the regular looting of trade caravans. The exchange relations of Hunza had been directed mainly northwards.
2. Colonial period: The "Great Game" between Russia and British India led to the expansion of their respective spheres of influence towards the mountain areas of Hindukush, Pamir, and Karakorum. The mountainous, neutral interface of independent states was considerably narrowed. Thus, in preceding an expected Russian advance, the "Hunza Campaign"² of 1891 established a combined British-Kashmiri suzerainty over the principalities of the so-called Northern Frontier. During this period, the predominant exchange relations of Hunza were reversed to follow a southward direction towards Gilgit, which had become the regional centre as the main garrison town and administrative headquarters.
3. Post-colonial period: After independence in 1947 the principalities of the North unanimously declared their alliance with Pakistan and fought for this goal while denying Kashmiri suzerainty and defending themselves against it. On November 1, 1947 the "Independent Republic of Gilgit"³ was declared and accession to Pakistan was then striven for, finally being achieved in 1949. The conflict over Kashmir resulted in the closure of borders and the interruption of all exchange relations with Indian-held Kashmir (cf. LAMB 1966; PRESCOTT, COLLIER, & PRESCOTT

² The pretext for the Hunza Campaign was given through the formal denial by Mir Safdar Ali Khan to allow a road to be built through the Hunza Valley (HUTTENBACK 1975: 21).

³ Cf. SHAH KHAN 1950: 13; SHERULLAH BEG 1976:9. Through the intervention of the United Nations, a ceasefire was negotiated, effective December 31, 1948.

1977). The Chinese revolution led to the termination of transborder trade between Hunza and the Xinjiang province of China. Within a few years, the colonial confrontation between Russia and British India had been transformed into a Pak-India conflict leaving the Gilgit Agency without a proper traffic link to downcountry regions. The jeep road via the Kaghan Valley was built, and in 1949, the first jeep reached Gilgit⁴. In 1957, Hunza was linked to this downcountry traffic connection, which was open only for three months in summer. During the remaining nine months, air links supplied valuable goods at high transportation cost. After the inception of Pakistan's first Village Aid Five-Year Plan in 1956, development efforts were also extended 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.⁵ Out of the annual Village Aid Programme's budget of 300,000 Rs, two-thirds were spent on carriage. Not surprisingly, the transport charges for one *maund* (1 *maund* equals 37.32 kg) of goods from Rawalpindi to Gilgit amounted to 25 to 35 Rs, while the carriage costs on the return trip ranged between zero and 8 Rs (STALEY 1966: 102), highlighting the limited to non-existing exports from the mountains. Inter-regional transport charges from the pre-KKH time reflect the then-difficult access for trade to Hunza: While carriage cost per *maund* ranged around 7 Rs on the Yasin-Gupis-Gilgit and Chilas-Gilgit routes, the jeep charges between Baltit (Karimabad) and Gilgit amounted to 12 Rs/*maund*.⁶ Air transport from downcountry regions to Gilgit increased the cost of a sack of chemical fertiliser from 5 Rs, by a factor of twelve, to 60 Rs (CLARK 1960: 21). During this period, the idea of an Indus Valley Road from Swat was born, and in 1959, construction started. As one of the results of the Pak-China border treaty of 1963, bilateral, co-operative efforts led to what we have become acquainted with as the Fri-

⁴ The Times, June 22, 1949. A photograph of this event is on display in the Municipal Library Gilgit.

⁵ Villagers provided three-quarters of the cost did, all the unskilled labour, and cut all the wood for bridge construction from communal forests (CLARK 1960: 22). At this early stage of development, the central government covered "75 per cent of all non-recurring expenditure and 50 per cent of recurring expenditure" (CLARK 1960: 21) trying a holistic approach by introducing new wheat varieties, new ploughs, different fruit varieties, improved livestock (pedigree bulls, merino rams, etc.), silkworm production, and new weaving looms for local tweeds.

⁶ STALEY 1966: 102. The transport charges per kilometre to Hunza amounted to twice the cost of goods delivery to Yasin.

endship or Karakorum Highway (KKH) and to the renewed transborder exchange of goods.⁷

4. Post-autonomy period: By 1975, the KKH had been improved to a sturdy enough state for trucks to ply. This development reduced transport charges between Hunza and Gilgit by such a factor that costs were far below the carriage costs to Gupis, Yasin, and Ishkoman. With the opening of the metalled road and the distinct reduction of travelling time and transportation costs for goods, other important measures were introduced. In 1974, Prime Minister Zulfikar Ali Bhutto terminated the rule of the Mir of Hunza as the last step in his campaign to eradicate feudalism in the mountain principalities. Connected to the deposal of hereditary rulers was the abolishment of forced labour and direct taxation. The introduction of transport subsidies and the supply of food grains in great quantities was facilitated by the physical infrastructure of the KKH, which linked the newly created administrative unit of the Northern Areas⁸ with downcountry Pakistan. 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 Punjab and the exchange of a different range of productive cash crops from the mountain valleys for surplus staple foods from the plains. In his opinion, self-sufficiency in grain production could not be achieved in the mountain valleys. These innovations have had a strong impact on different levels of socioeconomic development. In this strategically important region, the high-mountain agriculture and the consumption patterns have become increasingly dependent on lowland developments within the framework of Pakistan's nation-building process and domestic economy. For the first time, and up to the present day, no starvation and famine periods have occurred, thanks to food subsidies and crisis management from the Federal Government and the World Food Programme. The advent of development projects since the completion of the KKH has confirmed the development theorem of CHAMBERS that research and development projects follow networks of roads. The Government of Pakistan and non-governmental organisations with international funding have

⁷ In 1968 the "Northern Areas Trading Co-operative" was established in Gilgit as the trading partner of the "National Chinese Trading Organisation" of Xinjiang province. By 1969, the first barter-trade caravans exchanged goods via the Karakorum Highway. Since then, the volume of trade has increased: Starting from 0.240 million Rs in 1969, it had, for example, reached 100 million Rs in 1990 (KREUTZMANN 1991: 725-727).

⁸ Cf. DANI 1989: 416-419; SHERULLAH BEG 1976: 10-11, for the history of administrative changes within this context. The constitution of the Northern Areas Council dates back to 1975.

established a number of rural development and community services' projects with impact on the physical infrastructure, local supply, and health situation.

4. Evaluation of the Transformation Process on the Domestic Level

For the evaluation of recent changes as a result of the aforementioned innovations, some aspects of the impact of exogenous contributions on the household income patterns in Hunza should be exemplified in order to understand the acting forces behind the socioeconomic transformations. The present income structure is outlined by a triadic model of the main sources composing and augmenting the household budget:

1. At the core of agricultural enterprises functions the traditional subsistence system, which is represented by the two main sections of mixed mountain agriculture: crop farming and animal husbandry. Additional income from agriculture is derived from market-oriented agricultural production in both sectors: cash crops and livestock products.
2. Non-agrarian income comprises the salaries and wages from army and government services, from trade and tourism, and from the monetary transfer of migrants.
3. The third component of household incomes derives direct and indirect advantages from the activities of developmental, social, and public institutions operating within the Northern Areas. These provide jobs, scholarships, loans, and subsidies in one or another form. In a first step, the quantitative values of the shifts between different sectors are demonstrated with two figures: About two-thirds of all foodstuffs consumed in Karimabad are of non-local origin, i.e., they are imported from down-country Pakistan.

Tab. 1: Population Development in Hunza, 1873-1981⁹

year	inhabitants <i>in absolute figures</i>	population growth <i>percentage increase</i> ¹⁰
1873	--11	--
1880	6,000	--
1890	10,000	5.2
1901	8,451 ¹²	-1.6
1911	10,126	1.8
1921	12,277	1.9
1931	13,535	1.0
1941	15,341	1.2
1951	15,691	0.2
1961	21,291	3.1
1972 ¹³	26,544	1.9
1981	27,797	0.5
1991 ¹⁴	34,527	2.4

The overall figures for the Gilgit District show that more than 32% of all household food¹⁵ has to be purchased from the bazaars where the government operates civil-supply depots (36 within the Northern Areas, 4 in Hunza), but numerous co-operative societies and private entrepreneurs also offer these

⁹ Sources: BIDDULPH 1880: 24-25; Census of India 1912: 220; 1943: 49; DREW 1875: 554; Government of Pakistan 1975: 11; IOL/P&S/7/246/815: Gilgit Diary March 1911; Census of 1911; LAWRENCE 1908: 83, 107; LEITNER 1891: 243-248; PAL 1928, 1934; STALEY 1966: Tab. 8; KHAN 1890: 368, 615, and calculations by the author.

¹⁰ Average annual growth rate in the previous decade.

¹¹ BELLEW (1875, App.: 8) mentions "1200 houses and a fort".

¹² Calculated according to the population census of 1911 in: IOL/P&S/7/246/815.

¹³ Tahir Ali (1983: 16-17) relates that the Hunza Census was executed only in 1974.

¹⁴ Estimate on the basis of a household survey as the population census of 1991 is still being awaited.

¹⁵ KHAN 1989. In his sample study of villages in Northern Pakistan, including selected villages of Hunza as well, KHAN (1989) gives a range from 55% (Ghulkin) to 73% (Khaiber) for the share of non-local household food in the consumption pattern.

commodities. Carriage of goods was subsidised at a rate of 30 million Rs in 1990 (The Frontier Post June 2, 1990). Before independence, no grain was imported from extraregional sources for the supplies of the local population. Estimates for the 1960s range from 50,000 to 100,000 *maund* of imported wheat flour in the Gilgit Agency, i.e., 3 to 6% of the regional consumption.¹⁶ These figures are quite surprising in a rural mountain area where, traditionally, the main emphasis was placed on agriculture. Other sections of consumer goods, like clothing, footwear, household articles, etc., are totally comprised of non-local products. At this stage, the question has to be answered as to where the inhabitants of the Hunza Valley derive the resources that enable them to cover their basic needs and to purchase these items. Some of the strategies applied shall be elucidated in order to understand the structural background.

4.1 Resource Transfer through Migrants' Remittances

Migration appears to be the single most important factor in this respect. Migration started long before the construction of motorable roads into these mountain areas, e.g., mercenaries had been looking for jobs downcountry and in Kashgar since the end of the 19th century. During the reign of Mir Muhammad Nazim Khan (1892-1938), who pressed the colonial authorities for the provision of land for Hunza's "surplus population", cultivators in search of inexpensive land left Hunza for neighbouring valleys (Ishkoman, Yasin) and for Gilgit, as the Political Agents recorded (Tab. 1). Presently, there is literally no household in Hunza without a temporary or permanent migrant engaged in a non-agrarian job. The spatial pattern of out-migration has to be distinguished on three different levels:

1. Intra-montane migration has led primarily to other valleys within the Northern Areas and towards Gilgit Town. Skilled and semi skilled occupational posts are filled by Hunzukuts in subdivisional and district headquarters like Skardu, Chilas, and Astor.
2. Extramontane migration has preferred to orient itself to the urban industrial centres in the lowlands of Pakistan. Hunzukuts in great numbers

¹⁶ KREUTZMANN (1989: 112); STALEY (1966: 374). Two-thirds have been transported into the mountains by jeep and one-third by aircraft. There have been regional differences in the supply situation. While Hunza has a record of regular famine situations, and Astor and Gilgit have recorded deficiencies, other valley communities like the farmers of Nager, Punial, Ishkoman, Gupis, and Yasin have the reputation of being predominantly surplus producers and of selling the surplus to the grain dealers in the bazaars of Gupis and Gilgit (STALEY 1966: 249-250).

have chosen Karachi as migration target although this pattern has been affected by the communal riots and general state of insecurity there in recent years.

3. Overseas migration has been directed, for limited periods of stay, to the Persian Gulf states and to some of the industrial countries in North America and Western Europe. Within this classification, individuals can belong to one or another group of migrants at different stages of their working life.

In a quantitative perspective these classes are quite differentiated. As probably expected, the highest number of migrants remains within the mountains. In Gilgit Town and its hinterland, there are to be found about 15,000 settlers from Hunza who started cultivation projects there at the beginning of this century. In recent years, more migrant labourers, traders, and businessmen have followed. Compared to a resident population of more than 34,000 within Hunza itself, these figures are quite high. The population pyramid (Fig. 2) shows, on the one hand, a workforce deficiency of male members of the respective age bracket within Hunza while, on the other hand, it reveals quite explicitly the impact of migrants on the gender structure of Gilgit Town: A ratio of 168 males per 100 females indicates a typical pattern for an urban centre offering jobs on a temporary basis. Nevertheless, the majority of the intramontane migrants settle permanently outside of Hunza as they have invested in land property.

The proportion of extramontane migrants from Hunza accounts for about 4,000 persons, which is still well above the 10% margin of the resident population within the valley community. Less than 1% of the migrants work overseas. The periods of absence vary from a few years up to 30 years, depending on the service, secondary job offers, destination, etc. The transfer of monetary funds by members of all three groups secures for the household those resources required for the purchase of the necessary food items from non-local sources. In this respect, Hunza has an exceptional role in its dependence on a remittance economy while in the Gilgit District on the average, two-thirds of all income is derived from agricultural enterprises (KHAN 1989; World Bank 1990: 116).

4.2 Division of Labour and Agricultural Innovations in Hunza

The extremely high proportion of absent household members from Hunza modifies the local economy as well. A shortage of male workforce appears to be a ubiquitous phenomenon. Two aspects essentially affecting the mountain agriculture are to be emphasised: the impact on the utilisation of high pastures and the impact on the gender division of labour. The scientific work of a local Hunza scholar, Qudratullah Beg, author of the *Tarikh-e-Hunza*, makes possible a comparison of the status of individual pastures in 1935 with the present situation. While, in 1935, one fifth of all Hunza households deployed shepherds to the high pastures during the summer season (QUDRATULLAH BEG 1935), the number is now below 1% in central Hunza. There is an acute shortage of male shepherds. To spend the summer in the high pastures was a privilege for the eldest sons of a household in former times. Today, it appears to be a burden for old men. This results in a two-class system of high pastures: Remote pastures cannot be utilised anymore, while pastures in easy reach are overstocked, causing tremendous ecological problems. The staging pattern has been simplified - cultivation of grain crops, which was formerly common in one-third of all pasture settlements, has been given up everywhere. These observations are characteristic for central Hunza, where due to traditional belief systems, females are not permitted to participate in the livestock keeping in the high pastures. A different approach is followed in Ghujal, where, traditionally, Wakhi women are in command of the high pastures, assisted by male household members in shifting the equipment and the herds to and from the grazing grounds. The management of their natural pastures has been less dramatically influenced by male out-migration and the gendered division of labour. A more flexible approach in the assignment of agricultural tasks to women and men enables a community's higher persistence in traditional practices.¹⁷ Overall out-migration has caused a shift of agricultural management from the authority of able-bodied males, who are nowadays basically absent, to the responsibility of women and elderly men. One side effect of this shortage of workforce turns out to be the reduction and/or abolition of time-consuming practices with little economic impact. Labour deficiency has been compensated for to a growing degree in recent years by the employment of intramontane migrants. Inexpensive labourers, available from Baltistan and Ishkoman during seed and harvesting periods, tour the valley upwards according to the local growing cycles. Other developments have reduced the amount of required household labour, like the introduction of tractors and threshing machines on a hire basis. These technical devices are available through local co-operative societies or from mobile contractors who follow

¹⁷ See for a comparative perspective within the Karakorum HEWITT 1989.

the seasonal pattern of ploughing and harvesting along the KKH. Motor-driven grist mills provide grinding facilities at inexpensive rates all year round. All these technical innovations shorten time-consuming practices, support local enterprises, and save resources.¹⁸

4.3 Market-Oriented Agricultural Enterprises Utilising the KKH Infrastructure: The Case of Potato Cash Crops in Hunza

The construction of the KKH has intensified the overall transformation in the villages, which are - with the exception of Shimshal - all accessible by road. Besides the physical construction, additional programmes have been introduced, by governmental and non-governmental institutions, that aim in their approaches at the development of the local agriculture and at integration into the national economy of Pakistan. Their methods follow a Green Revolution approach for smallholders by introducing high yielding varieties of grain, mechanisation, chemical fertilisers, and pesticides (cf. BAYLISS-SMITH & WANMALI 1986). They aim at intensified crop management and improved animal husbandry as a means of increasing the share of market-oriented agriculture: Economic growth is expected through the extension and the melioration of cultivated lands, and through higher productivity per land unit. The experiments with seed-potato cultivation, which have been promoted by development agencies and are supported through their extension services, exemplify the approach followed: The growing cycle of this crop, introduced among others during colonial times, has been adjusted to meet the demands of the potato growers in Punjab province.

¹⁸ Threshing, ploughing, and grinding are three examples of practices that previously afforded several man-days for a workload but are now completed in a few hours. One obvious result is the dilapidated state of the traditional watermills (*yáin*), which have been abandoned. Out of Karimabad's 18 watermills in Harchi Har, only two are functioning; a few electric or diesel-driven mills compensate for this loss. In Gulmit, out of 28 watermills (*xedorg*), only twelve are used by their owners and relatives - depending on the seasonal availability of glacier meltwater. The rest of the community uses the single electric mill, which, by its location on the KKH, causes intra-village transportation problems: From the grain stores/residential quarters to the KKH, extra carriage costs are involved. Mechanical threshing is even more profitable and time-saving for the farms: Within less than one hour (150 Rs rent/hour for tractor and threshing machine), most households accomplish the threshing task of the season, which traditionally required regular work from several days to up to two weeks and involved a workforce and cattle, which have to be remunerated, respectively, through food - or cash if hired from neighbours or relatives - and fodder.

Tab. 2: Potato Production in Hunza, 1983-1991¹⁹

Year	Potato Production (in tonnes)	Seed Potatoes (price in Rs/kg)	Ration potatoes (price in Rs/kg)
1983	2		
1984	100		
1985	1000	2.0	1.5
1986		2.25	1.5
1987		3.0	2.5
1988		4.0	5.0
1989	2000	3.25	1.7
1990		3.0	2.5
1991	2000	5.5	5.8

Thus, a substantial proportion of the required seed in downcountry regions, which was formerly imported from the Netherlands, can be substituted by virus-free Hunza seed. Potatoes are the prominent and successful cash crop of the area, providing the Hunza farmers with an income of 10.2 million Rs from sales in 1991 (AKRSP 1992: 81). A multiplication factor of 20 allows a production of 20-25 tonnes/hectare when following a proper rotation management. From 1983 to 1991, potato production in Hunza increased a thousand-fold, from two to 2000 tonnes annually (Tab. 2). Price differences between seed and ration potatoes as well as fluctuations on the demand side have led to much speculation in this profitable agricultural undertaking, reflected in the market prices (Fig. 3).

Since the beginning, fixed prices for seed potatoes have been guaranteed to the farmers of the Hunza Potato Growers Association (founded in 1986), who are bound to the downcountry dealers through contractual marketing arrangements. Surplus ration potatoes were offered in the bazaars through different channels. A failing *kharif* crop in Punjab in 1988 led to increasing prices for ration potatoes in Hunza, reaching a peak of 5 Rs/kg in November and resulting in an overproduction with failing demand in the following season. Since then, the competition of different potato dealers and the direct marketing by farmers dictate the terms of trade. Some Pathan traders exchange wheat flour (*ata*) for potatoes, optimising the carrying capacity of their trucks; other dealers engage local subcontractors with a presumed following among the village

¹⁹ Sources: AKRSP 1990: 77; KREUTZMANN 1991: 732; WHITEMAN 1985: 114; own observations.

farmers to secure a market share. Moreover, there are still valid contractual arrangements with seed-potato dealers. These developments, triggered off by short-supply situations, have resulted in high and nearly equal prices for seed and ration potatoes since 1990 (Tab. 2). The farmers' profits have fluctuated as well: From earning 2,230 Rs/*kanal* in 1987, the peak was reached in 1988 with 3,671 Rs/*kanal*, going down to 1,615 Rs/*kanal* in 1989.²⁰

All these activities require the road network of the KKH leaving stagnant at a low level the value of potatoes in off-road production zones, e.g., at 0.8 Rs/kg in Imit (Ishkoman) in 1991. The consumption and marketing pattern of agricultural goods in Khaiber (Fig. 4), which represents the Hunza pattern, shows a marked peak on the cash crop side for potatoes while wheat production remains on the subsistence level and of only local importance. Lucerne (*Medicago sativa*) finds its market only within the villages. Other cash crops generated in different production zones of the Hunza valley include the following: fresh and dried fruit (most prominently: apples, dried apricots, mulberries, and walnuts), fresh vegetables (turnips and cauliflower), and vegetable seeds. All of these commodities have the additional advantage of filling the otherwise empty trucks that ply the Karakorum Highway upon their return from delivering mainly food supplies to upcountry regions.

5. Conclusions

The exemplification of certain aspects of the income-generation structure in Hunza has shown the overall impact of socioeconomic transformations on all spheres of life. No single sector can alone be termed entirely traditional or fully modern. There are a number of activities resulting from the interaction between internal and external developments. The completion of the Karakorum Highway and the availability of less expensive transport has gained omnipresent importance: While the carriage cost for a bag of wheat flour amounted to the same value as the purchase price of it in pre-KKH times in the 1960s, this ratio has changed quite dramatically since the traffic infrastructure of the Pak-China Friendship Highway became available. Transport charges of a *maund* of goods by truck from Rawalpindi to Gilgit account for around 20 Rs at present, i.e., the unit cost of transport was reduced from 50%

²⁰ DEOMAMPO (1989: 34). The calculation takes into consideration the purchasing cost of seed and the selling price. Marketing costs (including transport) on top of the farmgate price are around 1.86 Rs for ration and 3.50 Rs for seed potatoes (DEOMAMPO 1989: 30, 35).

in the 1960s to 20% in 1991.²¹ This calculation, which can be replicated for other commodities as well as for the structure of fares in passenger traffic, underlines the significant reduction of communication costs because of the Karakorum Highway. This precondition, in connection with a set-up of favourable frame conditions, explains the amplification factor of such a physical infrastructure for all of the aspects of life dealt with previously, like migration and the introduction of exchange patterns based on a market economy. The easier accessibility to the mountain valleys due to the Karakorum Highway, the coverage of its maintenance costs through the Frontier Works Organisation (FWO), and the grant of numerous subsidies on transport, development, and other projects support an economy based, on the one hand, on remittances of migrants from downcountry and, on the other hand, on developing additional productive enterprises like seed-potato marketing, tourism, trade, and services within the mountains. Thus, the Hunza Valley is nowadays extremely dependent on its exchange relations with the lowlands. The basic needs of the majority of the people are satisfied extraregionally. Consumer goods and work are provided from the lowlands while the share of income generated in the mountains has been reserved for certain production niches in the primary and tertiary sectors. For a holistic approach, other sources of income have to be included in the examination. Trans-border trade with China through the involvement of local and external merchants and the exploitation of mineral wealth along with other natural resources contribute to a rapidly transforming economic-exchange pattern.²² Not only the food supply but also an important transfer of resources and consumer goods as well as the influx of tourists, which accounts for a substantial part of the income in a certain but limited number of settlements, are extremely vulnerable when the lifeline KKH is interrupted. The capacity of flight connections has not been increased substantially since independence as Fokker flights are still subject to visibility conditions. Natural hazards like the annual avalanches in spring, the

²¹ The purchasing price in Gilgit Town for wheat amounted to 23 Rs/*maund* in the 1960s, and the carriage costs ranged between 25 and 35 Rs (STALEY 1966: 102, 257). Transport charges for goods on trucks of forwarding companies plying the highway between Rawalpindi and Gilgit amount to approximately 0.5 Rs/kg, while the *bori* (90-kg bag) in Hunza could be purchased for 310 Rs in 1991 - not to mention the saving of travelling time. The journey between Karimabad and Gilgit has been reduced from an eight-hour adventure trip by jeep to a comfortable bus or minibus (wagon) journey in less than half the time and on cheaper rates. Hunza had been the most expensive destination for the distribution of goods from Gilgit Town (see above, under 3); nowadays, delivery of goods has reached in bulk and quality a peak in quantity at low carriage cost.

²² These aspects have been dealt with in other studies (KREUTZMANN 1991, 1993) and have therefore been excluded here in order to analyse the most recent developments in the agricultural sector.

episodical rock slides and mudflows, or events like the heavy rains and thunderstorms of September 1992 interrupt these communications regularly, and the flow of commodities is thus discontinued for a short while (cf. The Muslim, Sept. 16, 20, 24, 1992; The News, Sept. 18, 23, 1992). During such periods when the KKH is blocked, supply deficiencies in basic foodstuffs occur immediately. Nevertheless, the general tendency in the direction of change presently leads towards an increase of highland-lowland exchange relations.

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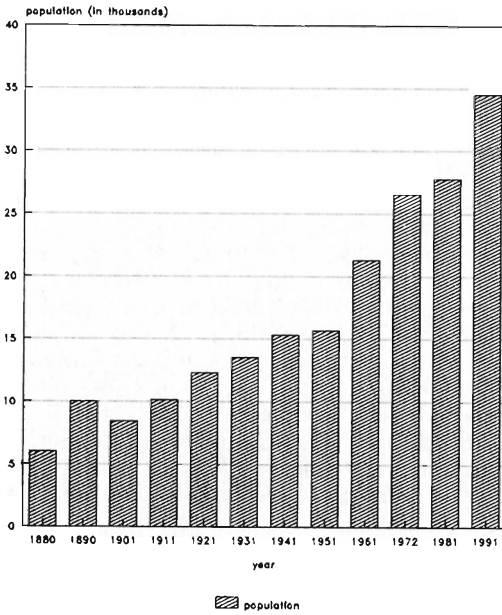
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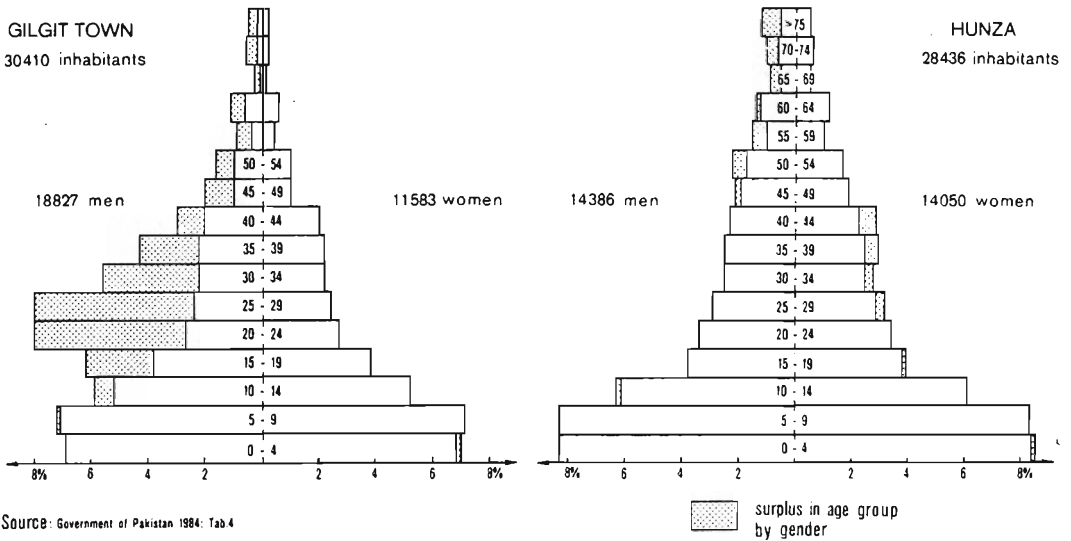
Appendix

Fig. 1: Population Development in Hunza, 1880-1991



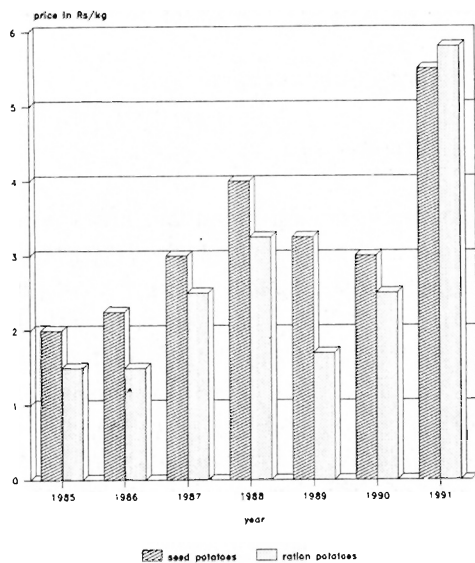
Source: IOL/P&S/7/246/815; KREUTZMANN 1989; survey by author

Fig. 2: Population pyramid of Hunza and Gilgit Town 1981



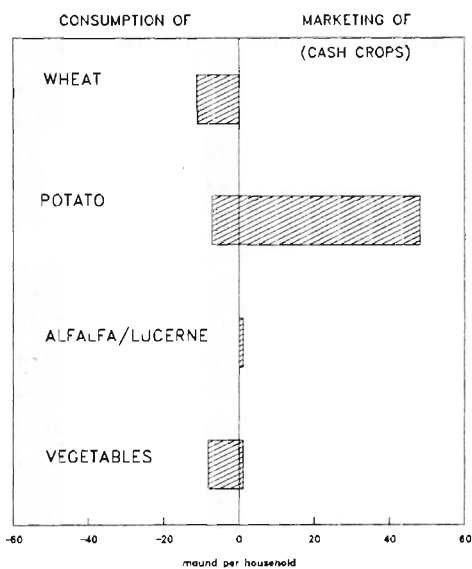
SOURCE: Government of Pakistan 1984: Tab 4

Fig. 3: Development of Potato Prices in Hunza 1985-1991



Source: data collection by author

Fig. 4: Consumption and marketing pattern of agricultural goods in a sample village of Hunza (Khaiber)



Source of data: Khan 1989