

Settlement Processes and the Formation of States in the High Himalayas Characterized by Tibetan Culture and Tradition

Concept and First Results

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Topic and aims

With the beginning of the year 1992, a new research programme has been started by the Nepalese Department of Archaeology and the German Research Council. The topic of this Nepal-German research programme deals with settlement processes and the formation of states in the High Himalayas, characterized by Tibetan culture and tradition, a programme conceived to last for a period of 5 years. At the upper limit of habitation the establishment and decay of settlements as well as the rise and fall of state entities will be studied as processes together with their effects on the structuring of space. This interdisciplinary project, with a primary base in the humanities and cultural studies, was initiated

by Tibetologists and architectural historians, designed by representatives from the fields of settlement archaeology, historical settlement geography and ethnology, and methodologically rounded out by the disciplines in the natural and engineering sciences, e.g. dendrochronology and photogrammetry/cartography (Fig. 1). As far as the scope of inquiry and the thrust of research are concerned, the programme will concentrate on the territory of the whole High Himalayas, while the planned field work will concentrate on exemplary areas in the Mustang District of northern Nepal, well known for its old trade- and pilgrimage routes and in the high-mountain valley of the Indus in Ladakh (Fig. 2). Reasons both scientific and pragmatic in nature led to this decision: for all areas of scholarly study

concerned with Tibet and its culture, the High Himalayas are currently the most important region for conducting research. There, Tibetan culture continues to be kept alive, lived out in practice and further developed. A number of things favoured the choice of Mustang and Ladakh as the sites for field research - in particular, their settlement history, which dates back to prehistoric times, and, as preliminary work has shown, their unexpectedly great amount of historically exploitable sources, chiefly written sources but also ones bearing on archaeology and architectural and settlement history.

Preliminary studies in the High Himalayas thus bear witness to several thousand years of settlement and cultural history, during which large-scale population movement, cultural superimpositions and interpenetrations as well as conflict-laden interaction took place. The fundamental facts are unknown, beginning with the most elementary ones: the chronological specification of the various settlement phases. What the research programme envisages, however, is not so much documentation surveys being carried out by projects of interest to archaeology and settlement geography as rather resolving unanswered questions concerning the rise and fall of settlements and state structures, that is, the close connection between settlement processes and the formation of states.

The settlement processes and the formation of states in the High Himalayas, particularly in the highest elevations of the habitational zone, should not be viewed in isolation from the likewise constantly changing natural environment; the dependencies and reciprocal relations between man and the not seldom threatening aspects of nature in the high mountains are all too obvious. In a systematic approach, therefore, the concern will first be to analyze the numerous relations

between the growth of settlements and the stages of social and economic development, and secondly to pursue the implications of the dependence of man on an environment that can truly be called extreme.

Methodologically, the project embraces a twofold approach. The intention on the one hand is for archaeologists, Tibetologists, historical settlement geographers and dendrochronologists, among others, to study the past by evaluating as broad a spectrum of sources as possible; secondly, starting from a perspective in the present, the development of the settlement area will be followed step by step back into the past (retrospective method) - an approach that is used primarily by settlement geographers, but also by architectural historians, architects and ethnologists. Furthermore, the attempts will be made to achieve the application of methods and working procedures of historical-genetic settlement research (settlement archaeology and geography, dendrochronology, architectural history), whose use has previously centered for the most part on Central Europe, to the High Himalayas, that is, to a cultural domain that has hitherto been neglected by historical research, it being at the same time a natural domain whose ecological conditions are extreme.

Beyond these somewhat more methodologically oriented aims, however, a further concern of the proposed research project is to maneuver established, highly specialized disciplines out of their isolation by selecting themes and research topics that can be dealt with only through an interdisciplinary approach. Thinking that reaches beyond the borders of single disciplines should be considered not as an overstepping of specialized competence but as a challenge to engage in interdisciplinary cooperation. Research carried on in isolation, as the preliminary studies have shown, very soon reach the limits of what is

possible in terms of method and content, and also in terms of the practical conduct of research. The energy expended on planning, organizing and carrying out research work under extreme conditions often cease to bear any relation to the results achieved.

The region under study

With its extreme elevations, its dry climate and its high-lying mountain valleys inhabited by Tibetan ethnic groups, the High Himalayas form a geographic unit that extends in the west as far as Ladakh and in the east as far as Bhutan (Fig. 2); its natural and cultural features set it off clearly from the surrounding regions.

Among the characteristics of this habitat are:

- its unique natural setting (extreme elevations, climatic aridity, sparse vegetational covering) and
- its unique location on the periphery, as seen from the governmental centers,
- its situation at the point of interaction between two high cultures (the Tibetan-Buddhistic in the north and the Nepalese/Indic-Hindu in the south).

Thus, while the main crest of the Himalaya represents a sharp natural divide between the southern side of the range, moistened by monsoon rains, and the arid northern side, which is protected from the rains, it in no way forms a cultural divide. In the central Himalaya, ethnic groups of Tibetan origin and tradition also have settled in the high-mountain valleys on the south side of the range, particularly in transverse valleys and along mountain passes.

The following points pertaining to the ecology

and culture were crucial for the decision to concentrate efforts spatially on the region of the High Himalayas:

Ecologically, the High Himalayas are a habitat of extreme living conditions for humans. The rough topography, the inhospitable features of the high-mountain climate, the threat posed by natural hazards (earthquakes, landslides, outburst of glacier-lakes) are ecologically limiting factors for the economy of the high-mountain dwellers. They limit the area available to human life pursuits to island-like valleys and basins. The ecologically favoured zones lie principally at the foot of glaciated mountain ranges, whose flow-off of water ensures the irrigation of fields. As the relation between man and environment must be considered to be particularly sensitive in the ecological border regions, the thesis was put forward in the programme committee, that a deeper understanding of the processes of settlement formation and decay can only be achieved if one starts out on the basis of an environmental analysis that is relevant to present conditions and integrates questions concerning the history of the ecological environment into the overall picture.

From a **cultural point of view**, the transverse valleys of the High Himalayas have been traditional transit areas but due to their remoteness areas of cultural isolation at the same time - an approach not only to explain the ethnic, linguistic and religious diversity but also to explain the conservation of cultural relics, both documented within the cultural landscape. The High Himalayas today represent the most significant refuge for Tibetan religion and livelihood. Given the destruction of monastic culture and the drastic changes in social and economic structures in Tibet, Tibetan tradition and high culture, documented in a unique form of

architecture, and in a rich literature, has been preserved mainly here, being available for study by Tibetological research. The High Himalayas are doubtless an as yet unexplored field of research for the disciplines that have been integrated into the research programme.

High-mountain environment and settlement processes

The first field research was begun in the autumn of 1991, in the southern Mustang District. The work, combining the disciplines of cartography, architectural history and above all settlement geography, concentrated at first on the example offered by the village of Kagbeni and the valley of the Dzong Chu (Muktinath valley). Several results, still preliminary in nature, will be presented here.

The aerial photograph (attached to this volume) taken from a helicopter shows the village of Kagbeni and the surrounding fields and countryside in the valley of the Kali Gandaki in northern Nepal. The predominating grey and brown sand colours are reminiscent of the dry Tibetan Plateau. The view extends far down the valley southwards to the main crest of the Himalaya with the glaciated 8,167-metre pyramidal summit of Dhaulagiri. Situated in the rain shadow of the High Himalayas, the region experiences so little precipitation (200-300 mm/year) that the cultivation of crops is only possible in artificially watered oases. Fluvial fan plains that project out from side valleys into the main valley of the Kali Gandaki are favoured locations for settlement and irrigated agriculture. This applies in particular to the village of Kagbeni (2,280 m), located on the fan plain of the Dzong Chu (Fig. 3): sediments recently deposited on the

fan plain can as a rule be easily tilled; the slightly inclined surface facilitates the layout of a network of irrigation channels sufficiently supplied with water the whole year round by the glacier-fed Dzong Chu. A suitably long vegetational period allows for two harvests in the fields: winter barley and buckwheat. Harvest yields on the calciferous, well fertilized and irrigated soils are strikingly high, attaining not seldom a 15-fold return on the initial seed. Still, they are not enough to feed a family for the entire year, as the cultivated plots are extraordinarily small, and do not exceed an average of 0.6 ha. For this reason, besides animal husbandry, trade with Tibet has traditionally been important, and nowadays tourism offers additional income. Apple trees have been cultivated over the past 25 years with astonishing success, but except for pilgrims and tourist trekkers who stop over in Kagbeni, there is little demand.

The landscape, redolent of Tibet, obviously exercises a particular fascination over trekkers. The village of Kagbeni with its densely crowded houses, carefully parcelled and terraced fields, the palace ruin and the red gumpa, a Buddhist temple visible for miles around, attracts growing numbers of tourists from year to year. The harmony of a natural and cultural landscape offered by the photograph taken from the air in autumn 1991 is nevertheless misleading: the mountain village of Kagbeni has had to fight against ecological problems and natural hazards that may occasionally take on catastrophic proportions - and this since many centuries.

What has proved to be a special kind of ecological handicap in climatic terms, and is regarded as unpleasant both by the native population and by tourists, are the daily recurring valley winds that are familiar to the transverse valleys of the Himalaya. These thermal induced anabatic winds compensate the horizontal

gradient of temperature respective of air pressure between the Himalayan foreland and the Tibetan high plateau north of the main Himalayan range. The valley wind, which in the summer sets in around 10 o'clock, and in the winter around 12 o'clock, quickly and uniformly attains storm-force values of between 70 and 90 km/h, subsiding only towards sunset. One constant peril, for example, is represented by the stones set rolling by the wind onto the path that leads along the cliff opposite Kagbeni (Fig. 3). It was only to be expected that the modern wind generators should have since been torn to pieces by the strong, gusty winds. The only oases of windlessness during the day are the zigzag village lanes and the enclosed inner courtyards of the houses.

Along with the wind, the erosive power of the water plays an important role in ecological terms. Annually, during the monsoon period in summer, and coinciding with the melting of snow in the high mountains, the flow of water in the Kali Gandaki rises to from 12 to 14 times its former rate, and the erosive power of the river increases correspondingly. It is particularly parts of the settlement, including the gompa, as well as entire portions of the agricultural land, that are most at risk from the regular erosive undercutting of river terrace rims.

Of catastrophic effort, finally, is the sudden outburst of glacier- or moraine lakes. According to our information, the last bursting of a glacier lake occurred at Thorong Pass approximately 30 years ago. The flood produced thereby considerably widened the bed of the Dzung Chu, as can still be clearly seen today (Fig. 3), and also swept away groups of houses and portions of the farmland. A similar type of catastrophic flood occurred in August 1987, in this case caused by a flooding of the Kali Gandaki. The outburst of lakes dammed by glaciers or moraines and the

resulting flood wave are not only a constant source of danger for settlements in valley locations, but also can alter or destroy the traditional irrigation systems by shifting or deepening the channel beds.

Abandoned sites as evidence of settlement processes

Whether it is the case, though, that the numerous deserted settlement sites and abandoned fields are the result of natural hazards or whether other reasons (economic, political, religious) were the decisive ones is a question that will engage the energies of the research programme in upcoming years. The ruins of settlements, fortresses/palaces and monasteries, abandoned fields and deserted groups of once inhabited caves are a striking feature of the cultural landscape of the High Himalayas, being common in northern Nepal, Ladakh and Tibet. As the most important evidence for past cultural conditions alongside historical texts (e.g. legal documents, village chronicles; e.g. PANT & PIERCE, 1989; SCHUH, 1992), they may provide an idea of who the one-time inhabitants were and the latter's economic way of life, their territorial conflicts and the past phases of settlement rise and decay. The climatic aridity and low settlement density have been essential contributing reasons why settlement ruins have been well preserved and clearly visible up to the present, and thus subject to mapping by means of field surveys and aerial photographic analysis. If there is still a long way to go in the study of the causes of the abandonment, nevertheless, from the distribution and typology of the abandoned sites, preliminary statements can already be made as to why such a heavy concentration of relict-related elements should occur where they do - for example, in the

Muktinath valley. An explanatory approach based on a single cause may certainly be ruled out from the start: the joint influence of natural and cultural factors in this region is too complicated.

If one takes a look at the map (Fig. 4), the large concentration of abandoned sites in the region of Baragaon in southern Mustang is immediately apparent. Highly diverse types of such sites (cave settlements, abandoned villages and fields, fortress/palace and monastery ruins) lie along rivers between 2800 and 3800 m as well as in the valley basins of the side valleys of the Kali Gandaki, where conditions are favourable for settlements. The valley of the Dzong Chu with its more than 40 abandoned sites within a stretch of only 10 km displays a particularly high concentration of such sites.

The cave settlements, which go back to prehistoric times (SIMONS, 1992-93), presumably represent the oldest evidence of settlement in this region (Fig. 5). First surveys by Tibetologists and archaeologists (SCHUH, 1992; SIMONS, 1992-93), have shown that numerous separate caves, formerly serving various functions (habitations, storage facilities), were here combined into residential complexes and hollowed out of the conglomeratic cliffs into storeys one over the other. Today they are preserved for the most part as fragmentary systems, the steep walls of conglomerate from the glacial period being extremely subject to erosion. One needs to ask how the caves were accessible in the first place to their former dwellers, as nowadays they are mostly located at unattainable heights. The location of the caves, with their favourable exposure to the sun, is striking - an indication that the early cultures had climatic and ecological considerations in mind when choosing sites for habitation and knew how to exploit the high intensity of radiation in subtropical high

mountains to compensate for the low air temperatures in high altitudes. Cave communities of this type are common not only in Mustang District, but also in south-western Tibet, particularly in the former kingdoms of Guge and Purang. Only excavational and related research work undertaken by archaeologists will be able to produce secure results concerning the prehistoric use of the caves. Their present-day scattered use as meditation caves and buddhist temples (Purang), together with numerous wall paintings and reliquaries, point to a more recent, religious motivated phase of use, which must have begun at the earliest during the introduction of Buddhist teaching in Tibet in the 7th century A.D.

Village ruins are situated in front of two of the largest cave communities (Phudzeling, Mebrak), and in the case of Phudzeling (Fig. 4 and 5) there are also abandoned fields. In spite of first results concerning the place in time assignable to the use of the cave sites (SIMONS, 1992-93), the motives of their establishment and their abandonment are not yet clarified, thus, the questions that arise in this context are all the more wide-ranging: Who were the cave dwellers? Were they the same ethnic group that lived on the land down beneath, possibly at a later time, or were they other migrant ethnic groups? Nothing has been handed down, either in the written or in the oral tradition, concerning the cave settlements and their inhabitants - this in contrast to the abandoned villages across the way. A mythological story, for example, is told in the case of Phudzeling. A demon that had the head of a lion and the body of a serpent is said to have destroyed the village (Phudzeling) along with another one (Kak Nyingba), whereupon the surviving inhabitants of the two villages got together and founded a new settlement, namely, present-day Kagbeni. It is perhaps significant that this mystifying story is told in connection with a

report about natural hazards (floods caused by the outburst of glacier lakes)? At present, one can only speculate about the reason for the abandonment of the village, but one thing is certain: The present inhabitants no longer wish to use the settlement or the surrounding fields of Phudzeling, even though the irrigation of fields may be still quite feasible there. This example shows that such widespread abandoned sites cannot be explained, as frequently reported, chiefly in terms of insufficient irrigation facilities resulting from climatic changes, but that a more subtle view of things is called for, one taking into account other factors, such as natural hazards, conflicts in land ownership and land use, epidemics etc.

Whereas a dating of the abandonment of settlements and their associated fields has just started, there is already extensive oral and written material available concerning the founding of the fortresses and fortress settlements that today lie in ruins (cf. SCHUH, 1990, 1992; JACKSON, 1978; KRETSCHMAR, 1985). According to SCHUH (1992), the fortresses of the Muktinath valley were constructed in the second half of the 15th century by members of a Tibetan noble family. They are situated at strategically favourable locations - the fortress of Dzong is one example of this (Fig. 6) - and expressed the political and economic power of the local territorial princes, who reigned for over 3 centuries. With the campaigns of conquest undertaken by the Gorkha kings at the end of the 18th century, the rise of the kingdom of Nepal and, above all, the suspension of taxation authority during the past century (Rana rule; cf. REGMI, 1970-89; SCHUH, 1992), the territorial princes were deprived of their economic and political preeminence. A visible expression of the gradual loss of power was the decay of the fortresses and palaces, which in Kagbeni was

speeded along by an earthquake. Closely associated with the change of local political power structures were the founding of new settlements and the abandonment of old ones. In comparison with the case of fortresses, the reasons for these settlement processes are far less understood. Similarly fragmentary is the present level of knowledge concerning the numerous decayed monasteries and monastic settlements (Fig. 4) in that region. Muktinath is still today one of the most significant Hindu and Buddhist pilgrimage centers of the Himalayan region, but formerly it attracted not only pilgrims but also representatives of a wide variety of religious schools, which established there an institutional presence for themselves. Numerous monasteries that today lie in ruins bear testimony to the former period of Buddhist flowering.

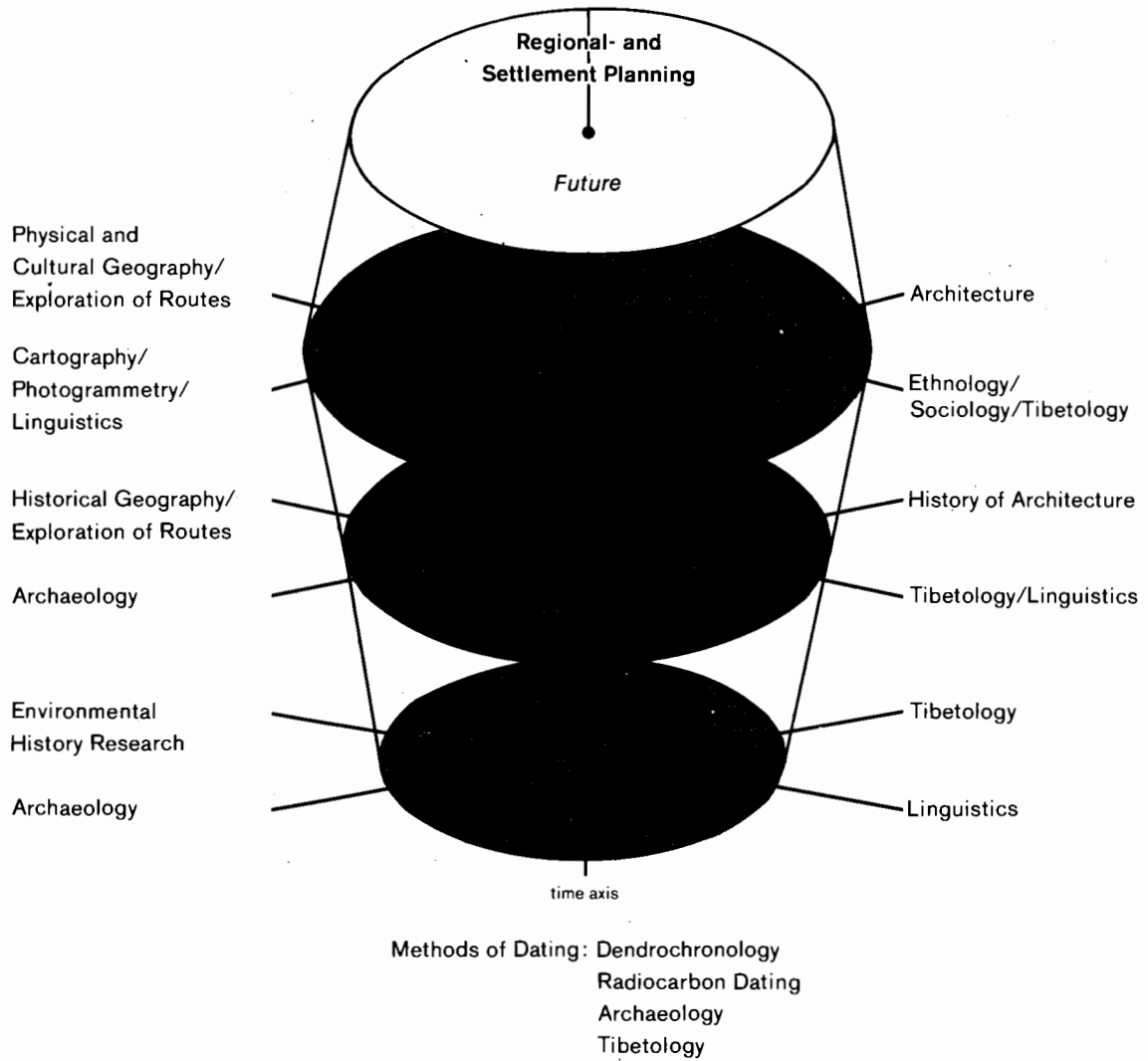
In summary, it may be said that we are dealing with a high-mountain region which has probably been inhabited for thousands of years and been culturally influenced by different ethnic and cultural groups, and which has had a very chequered history, including military conflicts, periods of economic and religious prosperity, but also periods of decline. The reason why Mustang has repeatedly seen the site of military conflict during its history is presumably connected with its geographical location. In extending from north to south along the Kali Gandaki valley, the region joins in an ideal manner the high plateau of Tibet with the Nepalese Himalayan foothills and so with India. Even in earlier times, the Kali Gandaki was thus a favoured route of trade (FÜRER-HAIMENDORF, 1975; GRAAFEN & SEEBER, 1992-93) along which primarily grain from the south was transported in large caravans to Tibet, and salt from the north to Nepal and India. The ability to exercise control over such a route has meant from times long past political power on the one hand and economic gain on the other.

(Translated into English by Philip Pierce)

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Settlement Dynamics and Nation Building as Interdisciplinary Research Task



Draft: W. Haffner, P. Pohle

Fig. 1: Settlement processes and the formation of states as interdisciplinary research task (altered draft of LIENAU, 1972)

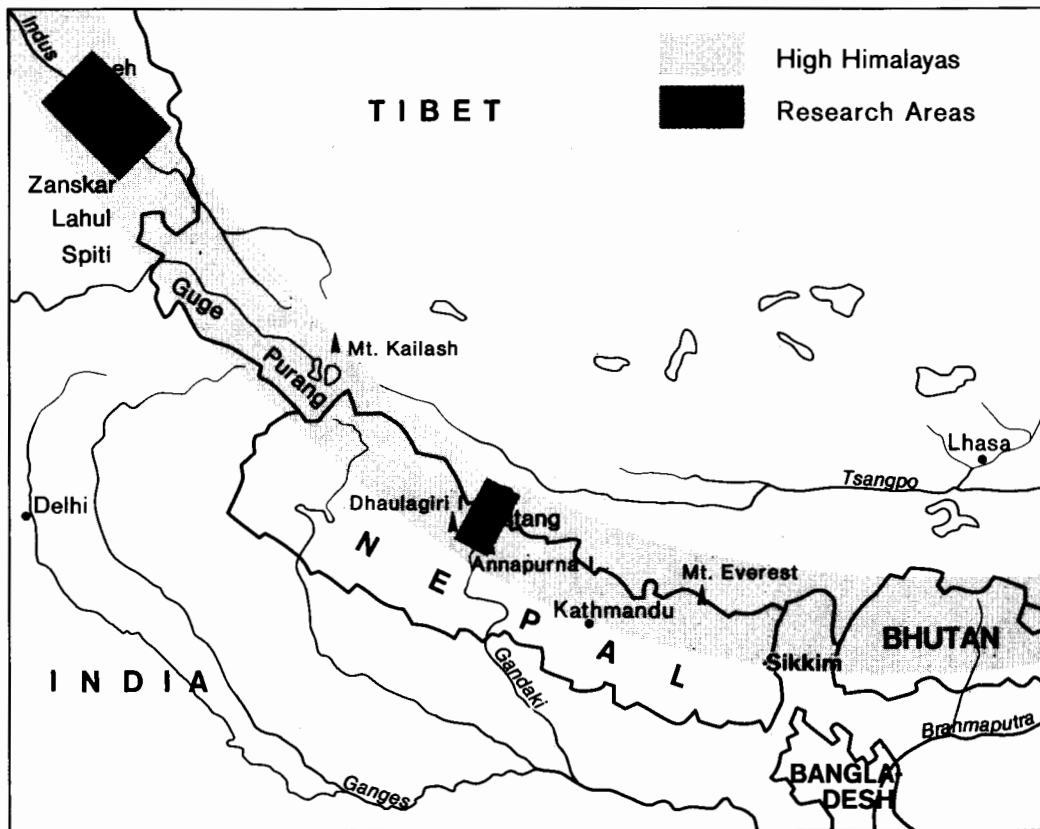


Fig. 2: The High Himalayas as spatial frame of the research programme and the particular research areas

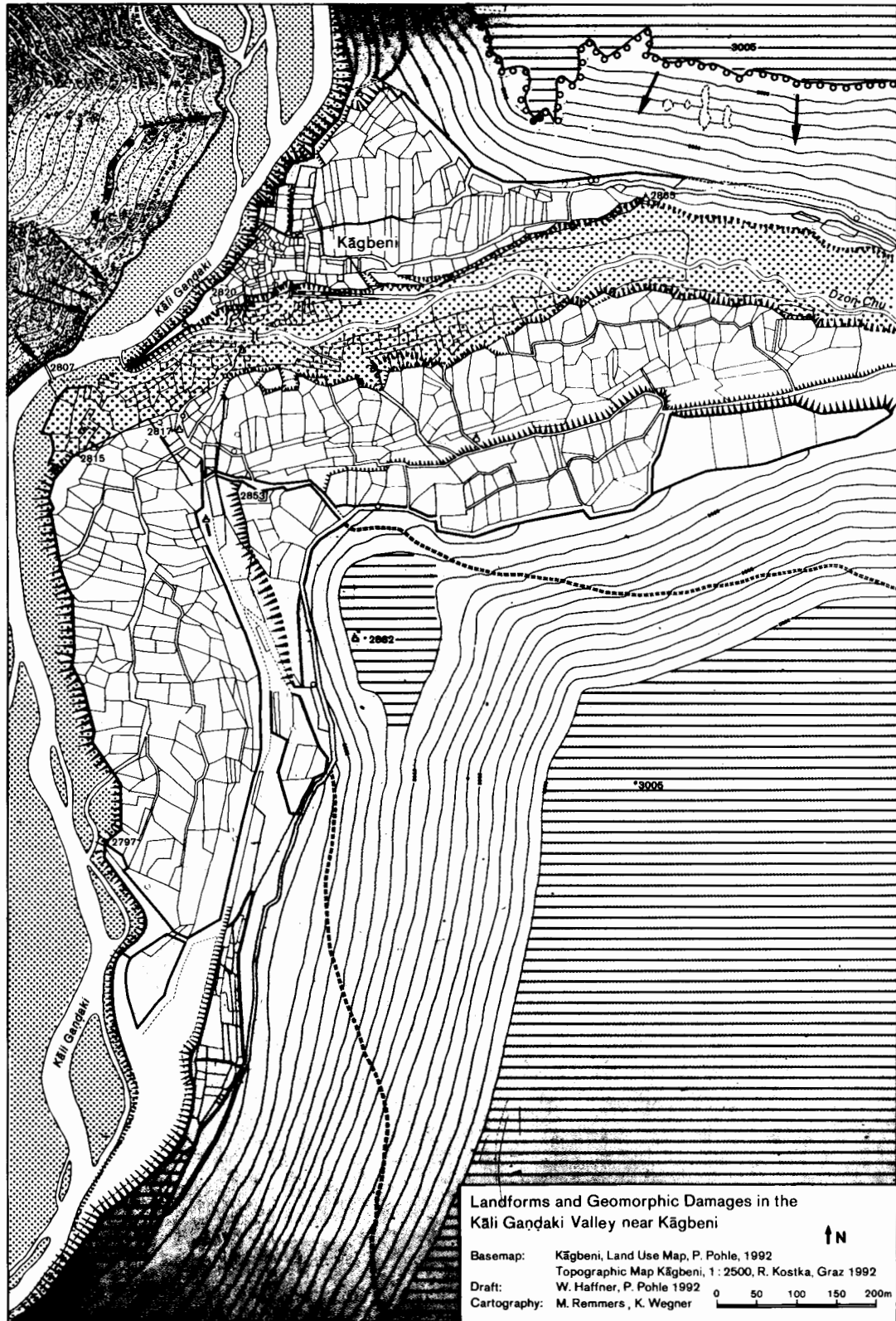


Fig. 3: Landforms and geomorphic damages in the Kali Gandaki Valley near Kagbeni

Landforms and geomorphic damages in the Kāli Gaṇḍaki Valley near Kāgbeni

Geologic/geomorphic units	Erosion processes by:		
	running water	wind	
	Active recent flood plain and river deposits of Kāli Gaṇḍaki	Lateral erosion, shifting of river channel caused by flood and by outburst of moraine-dammed or fluvial-wash-dammed lakes	Deflation of sand and silt
	Edge of fluvial terrace deposits	Endangered by river erosion	
	Recent river deposits of Dzoñ Chu	Shift of river channel, extremely endangered by outburst of lakes	
	Edge of fluvial terrace	Endangered by river erosion	
	Fluvial fan plain of Dzoñ Chu	Endangered by migrating river channels and extreme floods caused by outburst of moraine-dammed or fluvial-wash-dammed lakes	
	Quaternary sediments (conglomerates, silty sediments, loess etc.)	Stone and boulder fall, regressive erosion of the face of the slope	Wind erosion
	Quaternary sediments covered with slope debris	Slope debris slides	Wind erosion
	River terraces		Wind erosion
	Quaternary conglomerates/remnants of an older river terrace/anthropogenic caves	Stone and boulder fall	Wind erosion
	Bedrock of cretaceous age (Neocom/Aptien)	↓ ↓ Slope debris, slides, stone fall	Stone fall partly induced by wind

Deserted settlements and fields - classification and regional distribution

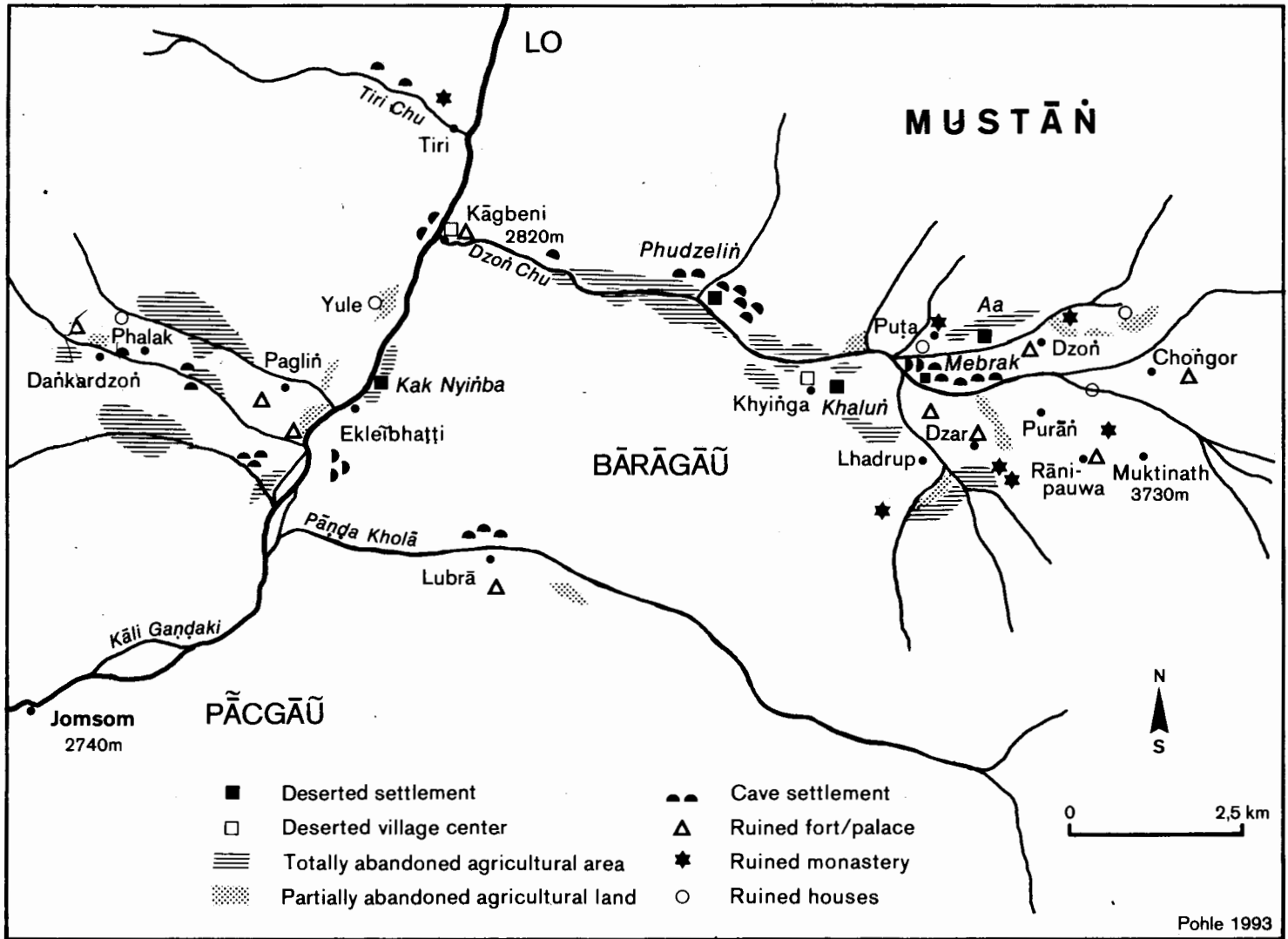


Fig. 4: Deserted places in Baragaon , their classification and regional distribution



Fig. 5: The caves and the abandoned settlement and fields of Phudzeling (3,060 m) in the Dzong Chu Valley (Pohle, Oct. 1987)



Fig. 6: The ruined fort of Dzong (3,580 m) in the upper Muktinath Valley with the Dhaulagiri (8,167 m) in the background (Pohle, Oct. 1991)



Aerial photograph of Kagbeni (2820m) in the Kāli Gaṇḍakī Valley with the Dhaulagiri Himāl (R. Kostka, Nov. 1991).