

"A JOURNEY TOWARDS PALPA"¹, 1922-1932 / 1997

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"There are few Englishmen who, spending their service in India, have any conception of what a visit to Nepal is like. When once the Terai has been crossed, when once the lower foothills are entered on, one is in an entirely new world." (Bruce in Northey & Morris 1928)

In December 1922, after having left the Terai and crossed the Curiya, Major William Brook Northey reached Masyam ridge², south of Tansen (Palpa District). He later wrote:

"From here, a magnificent view is obtained of the Palpa country, the home of many of the Magars, a tribe which forms so important a part of the Gurkhas enlisted in our Gurkha regiments. The hand camera I had with me was unfortunately quite insufficient to reproduce satisfactorily the panorama that was unfolded before me, a scene made more interesting by the fact that no European, certainly of modern tie, had ever witnessed it before." (Bruce & Northey 1925)

Recounting this trip in another book in 1928, he emphasized that:

"... no European had ever set foot in the Palpa country, save perhaps an occasional Jesuit missionary in the dim past..." (Northey & Morris 1928).

It is true that at the beginning of the twentieth century, Nepal was still closed to Westerners. It remained closed from the beginning of the nineteenth century until 1951, the year of the abolition of the Rana regime and the installation of a parliamentary monarchy. Everything known about the country came from the accounts of a few explorers and triangulation surveys patiently made under difficult conditions from stations set up in Sikkim, Kumaon and on the Ganges plain in northern India³. These data were cross-checked with those recorded by a few Indian pandits trained by Montgomerie (1868); disguised as pilgrims or traders, they were able to traverse the country. The data were further cross-checked with observations made by the British residents intermittently posted in Kathmandu since the beginning of the nineteenth century and permanently after the British-Nepalese peace treaty of Segauli in 1816. The latter could not leave the capital except with special authorisation and were restricted to a few well-defined routes. The roads were deliberately not maintained, "the idea being that the worse the road, the more difficult it would be for attacking troops to enter the country" (White 1920). A sketchy map of this country thus took form from one survey to another. Although there were descriptions of the Kathmandu Valley, the route linking the capital to the Indian and Tibetan border and the east⁴ and south border, in contrast, nearly nothing was known of the rest of the country. Until 1951 Nepal remained an "unknown kingdom".

Hence, when Majors Northey and Morris, then "Recruiting Officers for the Gurkha Regiments in Nepal", received authorisation from Prime Ministers Chandra, Bhim and Juddha Shamsher, to go to Masyam (in December 1922 and 1932 for Northey; in 1931 then in December 1932 for Morris), they discovered completely unknown areas, which along with some trips to the east of the country, permitted them to write the first general works on Nepal⁵.

At the time the British were interested in knowing more about the country, as well as about the configuration of the High Range and the appearance of the Nepal/Tibet border for strategic purposes. As Morris could not see these snow-covered summits in 1931, he asked to return to Palpa in 1932 (Morris 1963). As a matter of fact, at this date, even though the Survey of India maps were being published (its first campaign was in 1921-1924), the exact location and altitude of all the great summits was not known. Discussions on the location of Machapuchare or Dhaulagiri, for example, were heated at that time. Major Morris participated in such discussions, thanks to the photographs taken from Masyam ridge (cf. Mason 1934 and 1935).

The photos presented here come from the sojourns of these two recruiting officers and particularly the trip in 1932; they were taken just before their departure at the end of a rainy visit⁶.

These photos were principally used after their publication in discussions on the nomenclature of Himalayan summits, but today they interest us because of the landscapes presented in the foreground. Indeed, data on the history of land use in Nepal, either textual or iconographic, are very rare. As far as we know, these photos are the only ones, and the oldest, which testify to methods of land use in this region and are therefore very precious documents, for at least two reasons:

1. In general, they allow us to evaluate the evolution of forests, gullying, land use and to bring concrete elements to discussion on environmental degradation. Discussion too often biased, as its reference is at best the 1950s after the opening up of the borders—this has become in fact "ground zero" (the starting point) for observations—and at worst, data from the expert's short stay, who after a single monsoon, becomes alarmed by the damage resulting from the diluvial rains. Other work (Ives & Messerli 1989) has shown to what point comparing photos taken at intervals of several years can call into question *a priori* and erroneous ideas.

2. These photographs interest us all the more because they concern a region close to other research areas in the districts of Gulmi and Argha Kanci where a number of questions have been raised relative to sloping fields and trees in the fields (Smadja 1993, 1995). These photos thus permit us to support some hypotheses which, up to the present only grew out of investigations of the oldest people in the villages.

This is why after research in the London archives, we chose these photos from the iconography department of



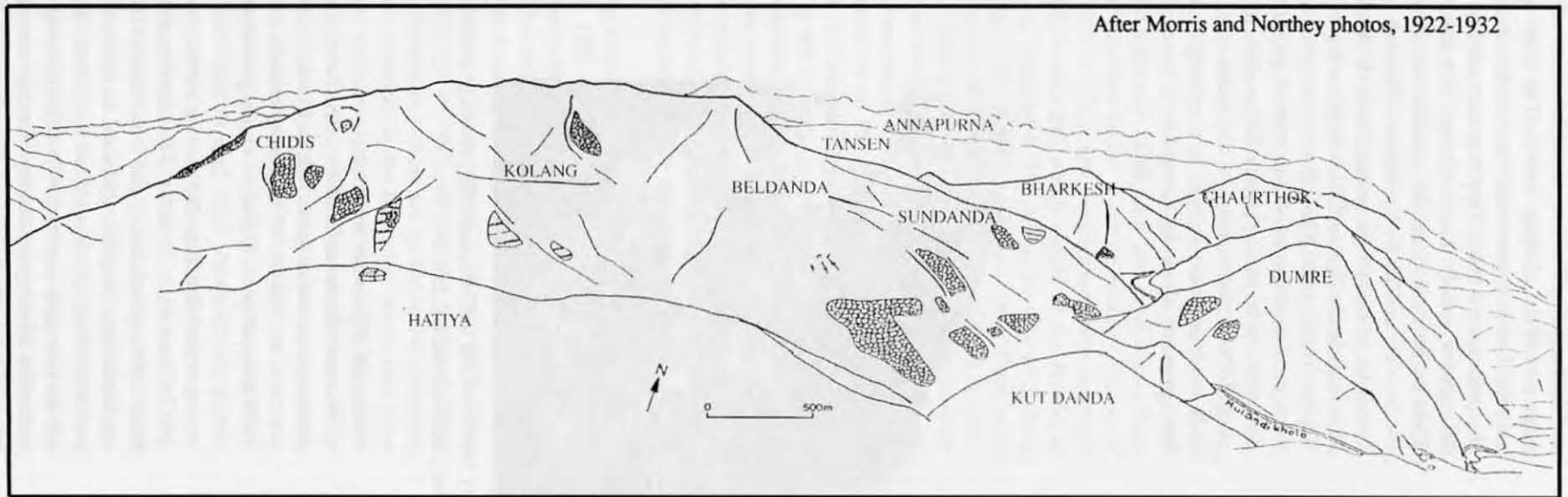
Photos taken by Morris, from the Masyam ridge (Palpa district, West Nepal), looking northward, November 1932. © Royal Geographical Society, London



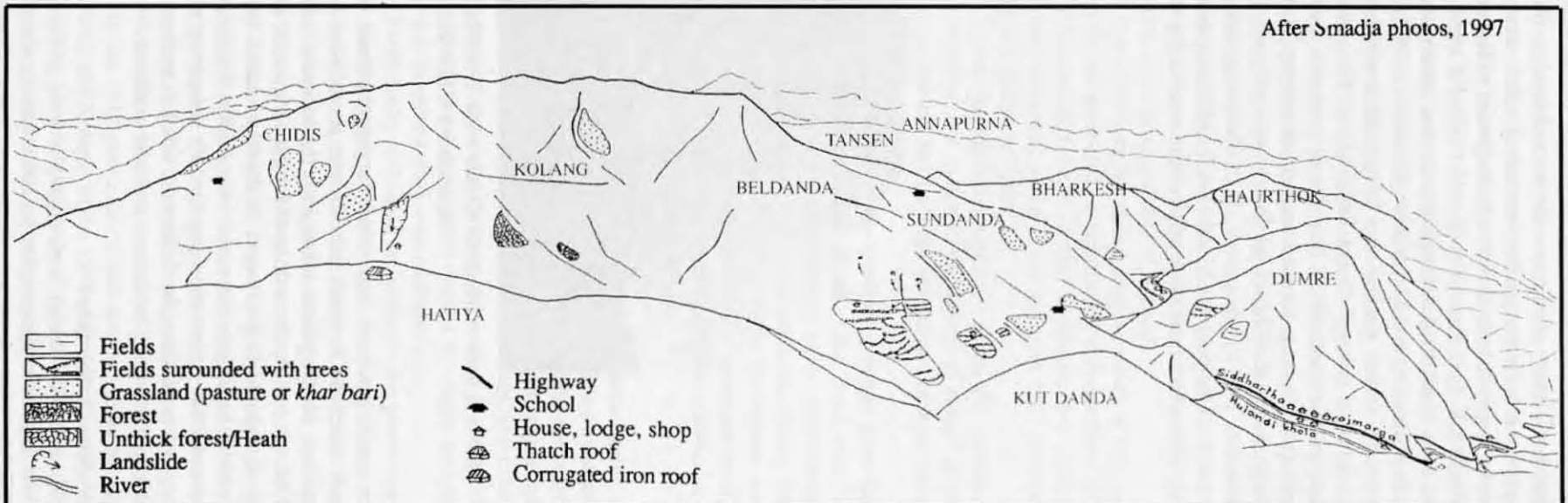
Photos taken by Smadja, from the Masyam ridge (Palpa district, West Nepal), looking northward, November 1997.

Main differences in the landscape between 1922-32 and 1997 in some villages southward of Tansen (West Nepal)
 (Save bocage which concern the whole cultivated area)

After Morris and Northey photos, 1922-1932



After Smadja photos, 1997



the Royal Geographical Society and have decided within the framework of the programme "History and Future of Landscapes in the Himalaya"⁷, to conduct pluridisciplinary studies on the use of land in this region. An economy student conducted a first survey related to private trees on farms in the hamlet of Kolang (Masyam V. D.C.)⁸ in 1996 (Bruslé 1997). He spent a few days in the field accompanied by two anthropologists, P. Ramirez and M. Lecomte-Tilouine. In 1997 an agronomy student worked on a "diagnostic analysis of the agrarian system" in the Koldanda V. D.C. near Masyam (Bernard 1997). In order to complete these studies with surveys on land use, soil, toponymy, geomorphology, etc., Monique Fort and I returned in December 1997 to Masyam V. D.C.. Following in the footsteps of Northey and Morris, we found the approximate sites where their photographs were taken and took

from the route leading from Hatiya to Tansen. The mountain sides shown in the photos are primarily exposed to the south. The foregrounds of the two regroup a large part of the Masyam V.D.C.. The fields of Hatiya and Kut Danda appear at first on benches above which the photos were taken. Opposite them, the flanks of a hill approximately 4 km in length rise from 800 to 1500 meters in altitude, and include from west to east the hamlets of Chidis, Kolang and Beldanda. The hill comes to an end to the east, outside the boundary of Masyam, at the spur of Sundanda in the V.D.C. of Thelga. The Hulandi Khola flows at its foot. East of the river, the hill of Dumre village with its distinctly rounded crest can be seen. The wooded summits of Bharke-sh and Chaurthok emerge to the north-east. We can only compare these images in the foreground as the backgrounds showing the town of Tansen, among



1. North-west of Masyam, Chidis ward. Photo taken by Northey from the Masyam ridge, looking northward. November 1922. © Royal Geographical Society, London.

new ones. We were thus able to compare photos 65 years later, and 75 years later for one photo taken by Northey. All the photos taken from the Masyam ridge by Morris and Northey and used for the comparison are not reproduced in this paper. In those presented here contrasts have been increased with Adobe Photoshop software. The information provided by comparing the images was validated by fieldwork, which is indispensable to interpreting landscapes and their evolution.

The Area Photographed

Morris' and Northey's photographs were probably taken from a small promontory 1300 meters in altitude above the Masyam bazaar, Hatiya, and some of them,

others, are difficult to make out.

We are in the foothills of the Mahabharat, a subtropical monsoon environment. Mean average annual temperatures are around 20°C. Precipitation is on average 1600 mm per year. Eighty to ninety percent of it falls during the monsoon, from June to September, season during which the rains can be very violent, more than 100 millimetres in 24 hours. For example, on September 7, 1959, 409.2 mm of rain was recorded in Tansen; on September 29, 1981, 288 mm. In addition, there is recurrent seismicity throughout the country and strongly altered rocky material. All of this contributes to the formation of the great density of easily moveable alterites.

This area of Tansen is chiefly inhabited by Magar. It was a preferred area for recruiting Gurkha soldiers during the nineteenth century. The small town of Tansen was itself an important garrison and commercial centre on the much used trade route between India and the north of the country. Until 1968 it was accessible by the footpath used by Morris and Northey who passed through Hatiya bazaar in Masyam. Since then, travellers take the road crossing the valley floor.

Settlement in this region was nevertheless apparently late. During the reign of Mukunda Sen in Palpa in the sixteenth century, the hamlet of Kolang was only a garden producing flowers for royal ceremonies. In 1804 according to the report of a Nepalese informant in service to the British army, the route leading from Masyam to Tansen "ran through forests of saul trees, and there were no villages on the way, but many huts and small patches of cultivation, and everywhere abundance of excellent water" (Scott in *Military History of Nepal*, 1824, p. 34). A few lines further in the same text "the mountainous and woody nature of the district of Palpa" are mentioned. The mountain side of Kolang only began to be cleared on a large scale and colonised in the middle of the nineteenth century⁹ (Lecomte-Tilouine, Bruslé, Smadja). In 1997 the total population of Masyam was 5392 and population density was 193 residents per square kilometre. Density is approximately the same for all Palpa District and for the adjacent districts of Gulmi and Argha Kanci; it is among the highest in the country. In the wards of Kolang (including Beldanda) and Chidis, which can be seen in these photos, the population is respectively 854 and 633. The few demographic surveys undertaken at Kolang suggest that the population has multiplied about four times between the beginning of the century and today.

Photos of Yesterday and Today

When in 1961, or 29 years after his last visit, Morris again passed through Masyam, this time moving about freely, he wrote, "This was the very place in which I had camped some thirty years or so before, and it seemed in no way to have changed." (Morris, 1963). Thirty-six years later in 1997, comparison of photos shows that the changes as a whole are moderate. Nevertheless, some new features in the landscape show that there have been important transformations in the lifestyle of the populations in this region. Permanence and change discernible in the photos are in all cases most instructive. Above all, they prompt us not to rely on interpretations often too rapidly made and to be more cautious.

Permanence and Change of Mountain Sides

• An unchanged overall structure

Between 1922-32 and 1997, no change appeared in the overall structure of landscapes. Today, as at the beginning of the century, there is a mosaic of cultivated land on the crests of rather convex slopes and more or less dense woods or forests on steeper slopes. Mountain sides are patterned with sloping, rocky land reserved

for pasture or *khar bari* (meadows of Gramineae used for thatch roofing or for animal fodder).

Hence, at the beginning of century, the forest was already residual and not very dense. Since then, small parts of the forest have disappeared to leave space today for unirrigated fields as in the lower part of Beldanda¹⁰ (more recently colonised than the hamlets around it), or for pasture lands, as in Chidis and under the spur of Sundanda. However, there has been no massive deforestation but rather a "nibbling" on the fringe. Cultivated fields at the beginning of the century have also been abandoned: in Sundanda sloping fields cultivated in 1922 have returned to heathland; below Kolang the forest has recolonised the fields which were cultivated in 1932. The forests on the hills of Barkesh and Chaurthok, of which the upper parts are sacred woods, do not seem to have evolved except the lower third of the mountain side of Barkesh.

East of Kolang forest degradation, which at first sight could be attributed to significant deforestation, after investigation reveals in fact a catastrophic climatic event, a tornado, which in the spring of 1983 destroyed a great number of trees.

Today, forests are completely protected, regenerate themselves, and except in the advent of natural phenomena, should not undergo important changes in the years to come.

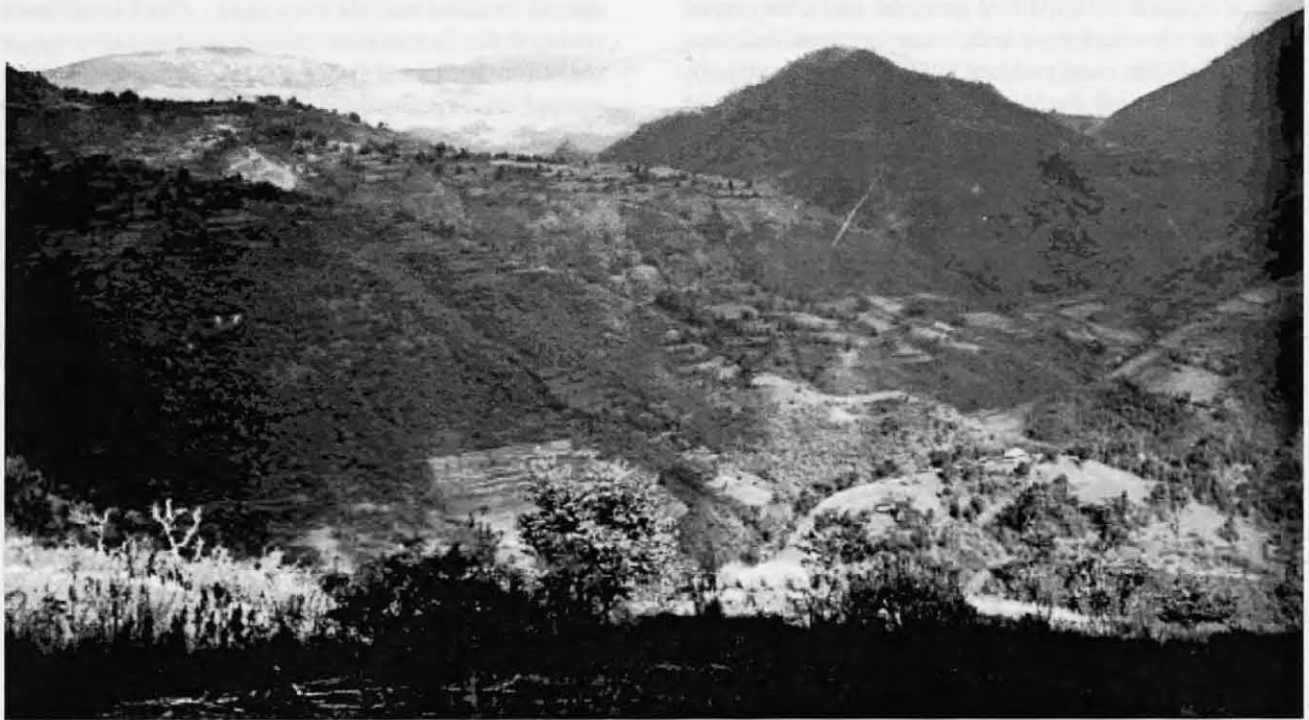
Neither *khar bari* nor grazing grounds have been converted into cultivated fields. Like "bald spots" on mountain sides, these communal lands, nevertheless, play an important role in farm economy. Since 1987 throughout Masyam V.D.C., fodder Gramineae have been tested on the *khar bari*; their seeds are sold in Kumalthar (a centre of agricultural innovation) or in other villages.

• Eroded land under control

Over the centuries, the massive hills characterising the landscapes of this region have been sculpted by significant gullying and landslides; today, they are scarred over and colonised by vegetation, but the topography still clearly attests to these events. Thus, the hollow shape and the deep thalweg separating Kolang from Beldanda must have been caused by major gullying which happened about two centuries ago.

Vivid marks of erosion are scarce in the photos taken at the beginning of the century. Some gullying can nevertheless be noted in the forest of Beldanda. Since then new damage has appeared and the 1997 photograph shows a field taken back from the forest after 1932; it is covered with debris from this gully erosion. In cultivating land below an unquestionably fragile although forested area, the villagers risk losing their harvest. However, for the moment, damage resulting from erosion has been minor.

In the 1922 photo, an eroded area is visible between Chidis and Kolang. In the 1997 photo this area is covered with *khar bari* and a small forest in the lower part. Two important areas of gullying appeared after 1932. One is located south-west of Kolang, at the site called



2. East of Masyam, Beldanda and Sundanda wards. Photo taken by Morris from the Masyam ridge, looking northward. November 1932. © Royal Geographical Society, London.

Swami dhara. In 1932 a few groves of trees covered this area although some fields had already been set out. Recent photos show that the bosquets have been preserved, but a landslide has carried away both trees and fields. The villagers date it as 1972. The other gullying in the northern part of Chidis, at Raskuti pokhara recuts an old erosion scar in the area which had not been cultivated; it dates from 1962.

The phenomenon of erosion, like massive gullying, is an integral part of these landscapes, but they seem widely inherent in the physical conditions of the Himalayan environment. The norm is 4 to 5 micro-seisms per week, several seisms of a magnitude above 5 per century, and particularly devastating monsoons at least once each decade. During the years separating the different photos, from 1932 to 1997, this region, like the rest of the country, experienced seisms measuring above 5 on the Richter scale in 1934, 1954, 1966... as well as particularly violent monsoons in 1959, 1961, 1970, 1975, 1981, 1991, 1993 and 1995. Taking into account population density and environmental constraints, the apparent stability of mountain sides rather than their degradation is surprising.

The area is fragile and the populations are aware of this. The complex mosaic of the landscapes, which as a whole have been preserved even if there have been some changes, corroborate this fact. Any extension of cultivated land can only occur to the detriment of an already precarious equilibrium, which seems controlled

up to the present. As a matter of fact, the villagers questioned do not think that there are any erosion problems at Masyam.

Whatever the case for many years, evolution has not concerned so much deforestation and taking over new land as intensification and diversification. This is what we can see if we move in and take a closer look at the landscape.

Permanence and Change in the Cultivated Sector

• The permanence of sloping fields

In the 1997 photos as in those of 1932 or 1922, unirrigated fields are sloping and form vast plots of land. They are in contrast with the finely ribboned, terraced land which we imagine in traditional images of rural Nepal. This landscape of sloping fields is typical of the districts of Palpa, Gulmi (for the south), Argha Khanci, Pyuthan and Salyan. The old photos corroborate the hypothesis that such land was cultivated from the beginning without the construction of terraces (Smadja, 1993 and 1995).

A comparison of the photos reminds us to be wary of over-hasty judgements. In 1997 isolated, sloping fields in the middle of forests, such as those located on the mountain side of Dumre, are not as may be thought at first sight, parcels recently reclaimed from the forest, i.e., slash and burn fields. The same fields were already present at the beginning of the century.

More generally, when they are mentioned in literatu-

re, sloping fields are considered as marginal, or an intermediary step of four or five years between clearing the land and definitive transformation into terraces. These photos show that after 60 years, the sloping fields still have the same shape.

- Establishing a real bocage

These sloping fields—which correspond to those called “rideaux” [curtains] in France—were delimited at the beginning of the century by a few trees, bushes and grasses forming a small talus; at the time, they already roughly outlined a bocage landscape. Trees in the fields perhaps already conveyed the scarcity of wood in an area where forests had been intensely exploited during the last century. Today the bocage is typical of this region. Indeed, if landscape structure has changed very little during 60 years with regard to mountain sides, an important modification *has* occurred in cultivated areas: the forest has slightly receded but there are many more trees around the fields to the point of hiding in places the houses and the crops. Thus, many areas seem more wooded today than at the beginning of the century, except paddy fields which remain treeless¹¹.

These observations relative to a few mountain sides can be confirmed on a national scale where since the 1980s, trees have become increasingly numerous in cultivated sectors. Their fodder, timber and firewood production replaces that which in the past came from trees in the forests. Morris’ and Northey’s photos show that this process had already begun in the region of Tansen in the 1920s. Today, in Kolang, there are on average 425 private trees per farm (the average surface area of a farm is 1.21 ha), and some farmers have more than 800 (Bruslé 1997). The trees, carefully selected according to their use and their pruning calendar, show great diversity. In addition to trees furnishing timber and firewood, more than 50 species of fodder trees have been counted per farm.

The detailed examination of different photos shows that nowadays some parcels are separated by a new row of trees in order to break the slope, while for others, the talus with trees has been done away with in order to enlarge the cultivated surface. But overall, the changes are moderate and the general shape of the fields has been maintained.

In the cultivated area, terraced paddy fields and sloping fields surrounded by trees thus make up another mosaic which overlaps on the more general mosaic of mountain sides referred to above.

- Crop diversity

A new mosaic, on the scale of the plots themselves, appears in the 1997 photos, as the crops are so varied. At the beginning of the century, rice, wheat, finger millet, maize and buckwheat were grown; today, on the same field and at the same time, up to eight different crops can be seen: mustard (*tori*), Indian rape (*sarsiung*), buckwheat (*mitho phapar*), ginger (*aduwa*), tumeric (*beswar*), tubers (*pindalu*), beans (*simi*), and coriander (*dhaniya*). In December 1997 they formed a remarkable coloured patchwork which could not but

strike observers. Morris and Northey, who travelled in the region in the same season, make no mention of it in their brief written descriptions, nor is it discernible in their photos either. This is because there was less crop variety at the beginning of the century as confirmed by farmer surveys.

Indicators, agents of change

The establishment of the bocage and crop diversity are phenomena which originated or developed in connection with major upheavals in society; the road and the school which appear in the 1997 landscape are two important indicators.

- Siddhartha Rajmarga

In the 1997 photos, a road on the valley floor, the Siddhartha Rajmarga, can be seen; since 1968 it has linked Butwal and Pokhara. Its construction has had major consequences. Before this date, merchandise was carried on the backs of men or mules over the long distances between Butwal and Baglung, and it was an important economic activity in the region. At the beginning of the century, according to Bernard (1997), it mobilised 75 % of the active population for nearly 15 days each month and up to 25 days during the monsoon months. This activity was thus in competition with agriculture and animal husbandry¹². The establishment of a bus service on the new route has led to the disappearance of portage. To a great extent the inhabitants of the region then returned to their land to try to increase the revenues from their farms; the result was agricultural intensification and diversification. Because of the road, the surplus could be sold in the market at Butwal. Spice-dealing, especially ginger and tumeric, has developed. Winter wheat has been cultivated more systematically. The fallow period has become shorter. Since then, more manure, and hence animals to produce it, and fodder to feed the animals have become necessary. These changes have gone hand in hand with the suppression of common land which existed in some areas. Trees (especially fodder trees) growing along the borders of the fields have been able to regenerate more easily. The network of hedges has become denser and fodder crops on the *khar bari* have multiplied. This tendency has become still more accentuated since 1992 with the establishment of milk collection which could scarcely be envisaged without road transport. Milk is stored in a refrigeration centre in Biurtung along the road, then transported by lorry to Butwal. This innovation has led to an increase in the number of animals (buffaloes and cows) on farms and to the planting of more and more fodder trees to feed them.

Population movements continue but have taken other forms. Migrations are not so much seasonal as annual with a view to securing employment, often unskilled, in India or in other countries, especially those in the Persian Gulf. The statistics of Masyam V.D.C. indicate that in 60% of families, at least one person migrates temporarily to look for work in a foreign country. The few permanent migrations mentioned are those of weal-

thy peasants attracted to a lifestyle they judge more comfortable in the city or in a bazaar, where they run a hotel, a restaurant, or a boutique. They then sell their land and homes.

• Schools

In the 1997 photos, another symbol and agent of change appears in the landscape—the school. One of them can be clearly distinguished on the spur of Beldanda. The spread of schooling since the 1960s has had important repercussions on people's thinking. With regard to agriculture, a young work force responsible, among other things, for watching and feeding the herds, has been removed from agricultural tasks. Keeping animals in sheds and the increase of fodder trees near the farms partially resolves this problem as before and after school the children still cut the fodder necessary for the animals, but they stay close to their homes. Nevertheless, education presents the problem of keeping youth on farms which require a large work force to secure the equilibrium of these fragile environments. To maintain the stability of these environments, depopulation is undoubtedly more to be feared than strong demographic pressure.

Changes in Habitat

The comparison of photos does not show the many houses constructed after 1932 as they are hidden by the bocage hedges. However, new structures appear on the lower part of the mountain sides which used to be malarial and thus completely uninhabited. Villagers cultivated land there during the day and went back up to their homes at night. A WHO malaria eradication programme began in 1952 after the opening up of the borders and permitted the settlement of the valley floors.

The construction of the road also played a role in and expanded this process. In 1932 there was no dwelling along the Hulandi khola. By 1997 several population centres had developed at the foot of the hills, one of which is the Dumre bazaar where 50 % of the population is originally from Masyam. This phenomenon of migrating populations along the fringes of major routes corresponds to a general movement throughout the country.

It should be noted that in 1932, roofing was primarily thatch, although in Morris' photo, one of the houses in Kut Danda already has a sheet metal roof. Because of its cost (purchase and carriage) and the necessary cash flow, corrugated iron was confined to the villages of the Terai closer to the Indian border at the beginning of the century. It is much more common today, but a great number of thatch roofs still remain in this region.

Changes without Environmental Degradation

A comparison of the photos taken by Morris and Northey with those taken in 1997 proves that there have been no major upheavals in the landscape south of Tansen since the beginning of the century. However, the landscape has become more complex: the mosaic has become more marked, subdivided into a multitude of

sub-units on each farm. Some speak of "sustainable" development or of a "sustainable" means of farming land; these methods have probably been found by villagers in this region through diversity, expressed at different scales of analysis: the mountain side, the plot of land, the hedge.

The area was already widely cultivated at the beginning of the century. Sloping fields—up to now considered as ephemeral or marginal have turned out to be perennial and represent the norm in this region. The beginning of bocage in the 1930s already undoubtedly met the population's needs. It only became denser to cope with protection of forests or the limitation of the work force which resulted from, among other factors, the schooling of children. The school and the road, in facilitating the diffusion of new ideas, have been among the driving forces for change. Since a few years ago, village committees have taken responsibility for these changes; the management of natural resources is increasingly being thought out and controlled. Thus, current changes, despite demographic growth, do not themselves cause environmental damage. In contrast, they seem to contribute to greater stability of the mountain sides, because of the strict protection of forests and a denser network of hedges.

Comparing photos is hence very instructive and should be encouraged in other areas of Nepal. They only take us back to the first decades of the century, but at least they have the value of pushing back the limits of the 1950s, a misleading reference point which up to now has prevailed in analyses of landscape evolution.

How fortunate we are that the sky cleared a few minutes before the departure of Northey and Morris in December 1932...

Acknowledgements

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Notes :

1 "A Journey towards Palpa" is the title given by Northey to Chapter XIV of *The Gurkhas: Their manners, customs and country*, written by Northey and Morris in 1928.

2 Masyam is also the spelling of Massiang in the quoted texts.

3 With regard to such surveys, Tanner (1891) wrote : "The difficulties of this class of survey are pretty equally divided between those inherent to the operation and to unfavourable atmospheric conditions. Cloud, mist, dust-haze, and smoke-haze obscure the distant ranges for, perhaps, nine days out of ten throughout the year, and the observer has to exercise the utmost patience when waiting for the few clear periods during which he can distinguish those remote features which it is his duty to lay down by accurate observation with his instruments."

4 Data on eastern Nepal was collected beginning with the Everest expeditions of 1921-24.

5 "Owing to the fact that Nepal is closed to European travellers, it has not been possible for us to give a detailed descrip-

tion of the interior of the country. His Highness did, however, as a special favour, very kindly permit us to visit certain portions of the country on the eastern and western borders, and from these journeys we were enabled to gain a good general idea of what the rest of the country is like. (Northey & Morris 1928). "Some years after my first visit to Kathmandu I was asked by the Government of India to write a handbook about Gurkhas. By this time I had got to know the Maharaja well and I wrote and told him that I could not do this job properly without seeing for myself what the interior of the country was like. To my surprise he replied that he had given orders for me to be allowed to go to Massiang. This is a high ridge beyond the Terai, and although it is no more than twenty or thirty miles inside Nepal it affords a glimpse of a large part of the western part of the country. By coincidence I ended my journey in 1961 along this very track and it will therefore be more appropriately described later in this book. But at the time no other European had been allowed to see even this little of the interior." (Morris 1963).

6 "Unfortunately, it was quite early in the morning - a few minutes after dawn to be exact - when a clear view was finally obtained, and even then only for a very few minutes. Hence, although the snows themselves stood out clearly in the early morning sun, the hills in the foreground and middle distance were in deep shadow, thereby making it impossible to obtain a photograph in which both the snows and the rest of the landscape could be clearly seen." (Northey 1937).

7 This programme, which I coordinate, is part of the activities of UPR 299 of the CNRS. About 20 researchers from different disciplines participate. In studying the relationship of Himalayan societies (Nepal and Ladakh) to their natural environment—the way land is used and resources are managed over time—this programme aims at better understanding the landscapes observed today, their transformations and their eventual environmental problems in this area of the world.

8 V.D.C. : Village Development Committee.

9 The most complete family genealogy of the Aslami Magar, the majority group of Kolang, took into account eight generations (of about 20 years each) installed in Kolang (Lecomte-Tilouine).

10 If one takes into consideration that theoretically no new land has been cleared since the establishment of the cadastre in 1975, these fields were thus created between 1933 and 1975. The slight extension of cleared land between the dates of the different photos shows that the establishment of the cadastre in 1975 was not solely responsible for the limitation of the phenomenon.

11 Their roots cannot tolerate irrigation water and the shadows from their foliage would be particularly troublesome for growing rice. For further information on the spatial distribution of trees in the fields, cf. Gilmour 1988; Carter 1992; Smadja 1995.

12 Was the resulting lack of a work force to cultivate the land the origin for developing sloping rather than terraced fields? This is possible but cannot be proved with current research.

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