

**NATURAL RESOURCE MANAGEMENT PAPER SERIES**

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**SOCIOCULTURAL AND LEGAL ARRANGEMENTS  
FOR GRAZING ON PUBLIC LAND:**

**Case Study of Bahadurganj**

**Bimal Prasad Dhungel**

**HMG-USAID-GTZ-IDRC-FORD-WINROCK PROJECT  
STRENGTHENING INSTITUTIONAL CAPACITY IN THE  
FOOD AND AGRICULTURAL SECTOR IN NEPAL**

## FOREWORD

This Natural Resource Management Paper Series is funded through the project, "Strengthening Institutional Capacity in the Food and Agricultural Sector in Nepal," a cooperative effort by the Ministry of Agriculture (MOA) of His Majesty's Government of Nepal and the Winrock International Institute for Agricultural Development. This project has been made possible by substantial financial support from the U.S. Agency for International Development (USAID), the German Agency for Technical Cooperation (GTZ), the Canadian International Development Research Centre (IDRC), and the Ford Foundation.

One of the most important activities of this project is funding for problem-oriented research by young professional staff of agricultural agencies of the MOA and related institutions, as well as by concerned individuals in the private sector. This research is carried out with the active professional assistance of the Winrock staff.

The purpose of this Natural Resource Management Paper Series is to make the results of the research activities related to natural resources available to a larger audience, and to acquaint younger staff and students with advanced methods of research and statistical analysis. It is also hoped that publication of the Series will stimulate discussion among policymakers and thereby assist in the formulation of policies which are suitable to the development of Nepal's agriculture.

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SOCIOCULTURAL AND LEGAL ARRANGEMENTS FOR  
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Bimal Prasad Dhungel\*

INTRODUCTION

The interdependence of crop farming and animal husbandry has been an important feature of the Nepalese rural economy, particularly in the Tarai. Animal husbandry supplements crop farming by providing draught power (oxen) and manure. Due to increasing population pressure more and more land is being cultivated, resulting in a severe reduction in grazing land. Despite this, the livestock population is also increasing which may be because of the interdependence between these competing yet complementary activities. The indispensability of cattle in providing draught power and manure for agriculture has forced each farm family to keep animals. A tremendous increase in the number of farm families over the last 20 years has led to an absolute increase in livestock numbers.

Grazing land in the Tarai has decreased also because of a change in relative profitability of crop farming and animal husbandry. Farmers have expanded onto Aailani (public grazing land, where property rights have not yet been defined), owing to impractical and insufficient legal control. Farm grazing, that used to occur for at least four months every winter, has given way to winter wheat cultivation. Field bunds have been thinned and trimmed so they just serve as demarcation between plots and barriers for the paddy water and no longer provide grazing.

There have been attempts to preserve public land--roadsides, river banks and uncultivated non-personal land--which had been extensively defined as common grazing areas by various laws. All land that is not registered by an individual is public land. In the "Muluki Ain" there is an arrangement to preserve such land. Punishment of individuals who attempt to bring such land under private use has been laid down, but it is no deterrent. The law states that the encroacher will be fined five times the land tax on the encroached area up to a maximum of NRs.50.

Individually owned land allotted for religious purposes is often used for grazing. Mun-chharne is the practice of donating family land for public grazing when an elderly person dies. There is a lack of documentation of this philanthropic practice but religious arrangement of public grazing is of greater significance the more important animal husbandry is. Demand for cultivated land has put pressure on such land and this social practice of land allotment is declining.

Because of the growing demand for land resources it is important that policy makers understand local grazing practices in the Tarai. To develop better strategies for environmentally sound pasture management, documentation and analysis of the legal and social arrangements which govern existing use and management of public grazing areas are needed.

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## Objectives

The objectives of this study are to document and analyze grazing, fallow and other public land-related legal arrangements in Nepal and to examine the degree of adherence to them in local communities. Specifically the study:

- documents and analyzes existing legal arrangements related to public land, especially public pasture;
- determines the importance of pasture as a source of feed/fodder;
- documents social and cultural arrangements for grazing and public pasture management; and
- suggests measures to improve grazing management of public land.

## METHODOLOGY

### Analytical Framework

A problem-oriented method of study has been adopted. Therefore, this report is both descriptive and speculative.

To meet the first objective, an extensive review of past and present acts and laws covering use of public land has been conducted. An attempt has been made to put the legal development in a historical perspective. Laws and acts affecting public grazing land from the reign of King Prithvinarayan Shah in the 18th century have been analyzed.

The objectives related to sociocultural arrangements and the determination of the relative importance of public land at the farm level have been approached through primary sources.

A checklist and household questionnaires were used to solicit information on the present social system of grazing. The elderly in the local community, religious trustees and village panchayat authorities were approached with the checklist. The household questionnaire was used to gain information on the importance of public grazing land as a supplier of animal feed and fodder. It covered agricultural landholding patterns, number and composition of livestock, daily feed/ fodder requirements by season, seasonal availability of fodder/grass, grazing management and the means of payment for facilities. The interpretation of the collected data has been presented in a section devoted to survey findings, and indicates the present importance of public grazing in the context of animal husbandry in the Tarai.

### Area and Household Selection

A village panchayat in Mabottari district in the central Tarai was chosen as a case study. Consultation with the District Land Record Office (DLRO) in Jaleswar revealed that Bahadurganj Village Panchayat had a relatively large area of public pasture: 1968 cadastral survey findings estimate 315 bigha (one bigha equals 1.68 acres). Until 1969 Bahadurganj Village Panchayat was located in the northern part of the district, and had relatively easy access to forest land, although now

this is nearly gone. At the time of forest nationalization the area was closed to the local people. Bahadurganj has now been annexed into three newly formed panchayats--Maisthan, Gouribas and Bardibash but to facilitate documentation of changes in animal husbandry over time, all old wards have been included in the survey. Three households from each of nine wards were interviewed using a prestructured questionnaire. They were randomly chosen from a list of households in the records of the old village panchayat available at three new village panchayat offices.

The field survey was carried out in November/December (post-harvest period), a time when livestock are grazed rather than stall-fed. This provided an opportunity to observe most public land grazing practices.

### FIELD SURVEY FINDINGS

#### Land and Livestock Holdings

Mahottari is a district in the central Tarai. Local people are farmers with an average operational holding of 3.07 bigha, supplemented by a few animals. Animal herds are composed of cows (three), buffaloes (one/two) oxen (two) and goats (two). A sample of 30 farm families interviewed provides an estimate of livestock holdings (Table 1).

Table 1. Land and Livestock Holdings

No. of Households	Average Land Area (bigha)	Average Livestock Holding			
		Cow	Buffalo	Oxen	Goat
4	0.93	2	-	1	1
4	1.62	3	2	2	2
6	2.63	2	1	1	1
11	3.60	5	1	3	2
2	5.00	1	2	4	2
3	6.53	2	3	3	5

Source: Field Survey

There is no distinct correlation between the size of operational holdings and animal herds, but a pattern is noticeable with cows and buffaloes. As operational holdings increase, the number of cows increases up to 3-4 bigha of land holding and then it declines. The reverse is true with buffaloes. Cows are raised for manure. The number of cows thus increases with an increase in size of holdings up to an economic limit, beyond which it becomes more profitable to use chemical fertilizers. Buffaloes are regarded more as cash earning animals. Keeping them is also expensive. Farmers with larger land holdings are likely to be in a better financial position to keep more buffaloes.

The number of oxen is roughly proportional to the size of land holding which is logical due to the major use of oxen for draught power. Goats are distributed equally among all villagers, regardless of size of holding. However, these generalizations must be considered in light of the small number of households in each class available for research.

The survey suggests that changes in livestock numbers per household has influenced the holding pattern among different classes (Table 2).

Table 2. Changes in Livestock Holding (percent)

Holding Area (bigha)	Cow		Buffalo		Oxen		Goat	
	Second/First*	Second/First*	Second/First	Second/First	Second/First	Second/First	Second/First	Second/First
0 - 1	-22	-40	-100	-79	+33	0	-76	-23
1 - 2	-25	-60	+100	0	+50	+100	-66	0
2 - 3	-22	-70	+ 25	-55	-16	0	-50	0
3 - 4	-10	+26	+ 40	0	0	+ 29	-86	- 5
4 - 5	-50	0	- 33	+50	0	+ 33	-50	0
5 +	-79	-37	+400	0	-58	+ 40	-80	- 4

\* First Decade: 1961-71; Second Decade: 1971-81

Source: Field Survey

There has been a general decline in per family livestock holdings. The cow population has decreased in the last decade in all landholding categories but this change is greater among larger landholders. The number of buffaloes has increased in the last decade, particularly in families with over five bigha of land. Buffaloes are more easily stall-fed and the substantial decrease in availability of grazing land--both private and public--may have caused the shift from cows to buffaloes. The rate of substitution between cow and buffalo was higher among bigger farmers because of the higher cost of stall-feeding buffaloes.

The oxen population increased between 1961 and 1971 but fell in the last decade. Subdivision of holdings through inheritance may have resulted in relatively more oxen per unit of holding among smaller holders. However, the decline (80 percent) in the goat population has superseded all others over the last decade. Massive deterioration of the forest, an important source of goat feed, was probably the main cause.

There has been a net decline in the size of livestock holding per family in Bahadurganj. The downward trend is most pronounced with goats, followed by cows and oxen. Goats live mainly on leaves. Forest deterioration, government imposed grazing restrictions and the need to use all available land for crop cultivation have all contributed to this trend.

#### Farming Practices

As all over Nepal, arable land in the survey area is classified into two types, known in the Tarai as dhanhar (wet land) and bhit (dry land). Rice is grown on dhanhar and maize on bhit. Cropping intensity on dhanhar is much higher than on bhit. A higher cropping intensity on small landholdings indicates a greater dependency on land and a higher number of people available to work in the fields. Cropping intensity on bhit is higher among larger landholders because they now grow maize for the green fodder leaves which are fed to buffaloes. Cropping intensity on dhanhar and bhit land by size of landholding is given in Table 3.

The cropping intensity figures are clear evidence of the existence of fallow on both types of land during the dry months. However, the extent of fallow depends equally on the duration of a crop. Although there are fallow areas for animal grazing, the distribution of crops over the months exposes farmers to a greater risk of crop damage.

Paddy, wheat and maize are the main sources of hay for the animals. The survey provides an estimate of crop residue production (Table 4).

The animals are fed on grass, fodder, hay and occasionally oil cake and paddy husks. The daily feed requirement by type of animal and by season is given in Table 5.

The quantity of grass collected from different sources varies by season. In summer 60 percent comes from cropland and 40 percent from bunds; in winter 60 percent of from croplands, 20 percent from bunds, and 20 percent from harvested land. In the past, farmers could find extra grass on public land if needed, but it is non-existent now.

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Table 3. Cropping Intensity (percent)

Holding (bigha)	Cropping Intensity in		Total	
	Cropping in:	Dhanhar		Bhit
0 - 1		200	--*	200
1 - 2		200	100	144
2 - 3		177	97	141
3 - 4		183	128	143
4 - 5		170	--*	170
5 +		157	225	173

\* Sample respondents in this category have no bhit land.

Source: Field Survey

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Table 4. Hay Production per Bigha by Crop and Season (Bundles)

Crop	Winter	Summer	Annual Total
Paddy	50	-	50
Wheat	-	11	11
Maize	15	10	25
Total Hay Production	65	21	86

Source: Field Survey

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Table 5. Daily Feed Requirement by Type of Animal and Season (Bundles)

Feed		Cow	Buffalo	Oxen	Goat
Grass:	Summer	0.50	1.00	0.50	-
	Winter	0.25	1.00	0.25	-
Fodder:	Summer	-	-	-	0.10
	Winter	-	-	-	0.10
Hay:	Summer	0.50	0.50	0.50	-
	Winter	0.50	0.50	0.50	-

Source: Field Survey

## Animal Grazing Practices

All big animals--cows, buffaloes and oxen--are taken out for grazing in all seasons every day. Cattle are taken out in the afternoon until dusk, and the buffaloes in the morning. About 30 animals graze on one bigha. Grazing intensity has increased over the last decade but not by much because of the decline in number of livestock per family.

Animals are grazed on different land according to season. Roadsides and public land (most preferred) are used from June through September, bunds (third preference) from September through December, and harvested fields (second preference) from December through June.

Although roadsides and public lands are most preferred, grazing is confined to three months during the monsoon. Private fallow land provides grazing for the longest period, but this is not related to the amount of grass available. Grazing on bunds is not done in herds. Individual animals, mainly buffaloes, are allowed to graze there but under strict control. The existing grazing pattern has not changed in the last two decades.

A boy is usually hired to supervise the grazing animals, unless a family member is available. Collective supervision of farmers' animals was not seen. The current wage for this work is either NRs.650 per year with food and clothing or NRs.1200 with no extra benefits.

## Social Grazing Arrangements

The traditional practice of Nun-chharne has died out. The older respondents remembered it until 25 years ago. All respondents said this was due to the unavailability of traditional public agricultural land. Until a decade ago, public grazing was socially permitted in others' fallow fields. Now individual farmers prefer to plant crops and they prevent others from trespassing onto their land. Some crops are planted for the fodder they produce for the animals. Maize and millet are grown on bhiti and varieties of legumes are grown on the bunds.

## ANALYSIS OF FINDINGS

### Legal Analysis

Procedural Aspects: The Government Concerned Case Act 1960 aimed to protect government interests and by implication individuals from certain offenses. Clauses concerning government land cultivation were added as appendices. According to these clauses, the government itself has to act as petitioner in any cases of encroachment by individuals upon this land. The role of an individual is limited to informant and to witness.

No such provisions have been made for public land. The Land Act 1962 defined government land and public land separately. There are no formal procedures to protect public land against encroachment although several private petitions related to public land encroachment have been filed at the District Court.

Section 20 of the Land Act 1968 clearly states that individuals who encroach upon prohibited public land and government land shall be pun-

ished, but in the absence of legal provisions regarding who is responsible and should appeal, the act is rarely enforced. The Land Revenue Act 1977 has similar drawbacks.

In summary, although there appears to be sufficient legal protection for public land, there are some loopholes that complicate effective enforcement of those laws.

There have been various local arrangements since ancient times that prohibit cultivation of public pasture land. Then as population increases put pressure on land, modern cultivation methods were introduced allowing more intensive cropping, and communication systems developed opening new markets, demand for cultivable land far exceeded supply and land prices went up sharply. Therefore, despite local and government laws against it, trespassing on pasture land often occurred. Legal provisions clearly needed improvement. In their absence this encroachment of public pasture land continued unabated, intensifying the problems of grazing an increasing livestock population.

Past legislation never made public pasture land protection a priority. An act nationalizing Kharka land (pasture land also used as temporary enclosures for cattle herds) was passed in 1974 but so far it has been effective only in three hill districts in the Bagmati Zone--Kabre-palanchok, Sindhupalchok and Rasuwa. In the Tarai plots of unowned land, wasteland and barren land are still being used for grazing.

The 1964 Lands Act defined public and government land separately. Pasture land was included in the definition of public land. Pasture was unowned land or wasteland, yet in cadastral surveys the plots were termed public because individual ownership was lacking. However, the Land Administration Act 1967 and Land Revenue Act 1979 recognized the encroachment of such land as an offense, and the possibility of converting it into private land. Privatization of such land flourished at the time when the Zamindari system was dismantled. Land was administered at that time by Zamindars (landlords) and Patwaris (bookkeepers) of respective villages. Title transfers made by them were officially recognized. When land surveys were conducted and areas demarcated according to ownership, the administration was sometimes conducted simultaneously by the Land Administration Office and the Land Revenue Office. As a result, it was hard for these offices to check if the private land being registered was originally public land that had simply been occupied. Also, an individual could file an information report about the encroachment of public land but was not eligible to sue directly in court. Added to that were departmental circulars asking the offices not to institute legal suits over land in the districts where cadastral surveys had already been conducted. Village panchayats lacked requisite political and legal power although they were supposed to administer at the local level. The Village Panchayat Activities Regulation has been effective since 1963 but classification of panchayat land only began in 1979. During the interim period of confusion, the legal and illegal encroachment of pasture land reached its peak.

The Revenue Act 1977 has made provision that the illegal registration of public or government land as private will be cancelled if discovered. However, the Constitution and the Civil Rights Act 1959 guaranteed an individual's right to property which other laws may not invali-

date. There are no explicit provisions regarding the procedures for filing, investigating, judging or appealing cases. Thus there is little chance of implementing any available legal provisions.

More recent laws have reduced considerably the punishment for trespassing on unowned waste and public pasture land. Imprisonment has been abolished and the penalty fine lowered. Cases brought to court are civil rather than criminal, which also reduces the seriousness of encroachment in the minds of the villagers.

Consequently, the availability of pasture land to sustain the second largest occupation after agriculture, namely animal husbandry, continues to fall. This situation has greatly influenced the numbers in and composition of animal herds.

### Sociocultural Analysis

Public grazing practices have almost ceased in the study area. There were about 315 bighas of public grazing land there until the early 1960s. Now most of that is cultivated. Remaining areas have been demarcated as forest. Such complete deterioration has been made possible by numerous legal loopholes. As public grazing land has become a thing of the past, traditional sociocultural arrangements have ceased to be of practical significance. Animal grazing is thus confined to private land.

### Survey Results

A general decline in livestock numbers is evident in the study area as well as a distinct change in herd composition. Cows are significantly fewer in number than 20 years ago but the total herd size has not fallen to the same extent because of a simultaneous increase in the buffalo population. This is a result of declining grazing facilities. An added incentive is that buffalo-keeping is relatively more profitable. Goats live on leaves, the availability of which depends on forest accessibility. Several forest laws have significantly reduced the feed base for goats, resulting in an absolute decline in the number of goats being kept. The general increase in the number of oxen is the result of the Land Act 1964, which is responsible for the increase in small farmers who needed their own oxen-pair as draught power; the increase in oxen owned by small farmers compared to the decline among larger farmers over the last two decades supports this.

Grass, fodder and hay constitute animal feed. The hay requirement for the average livestock herd is met now for less than three months of the year. Animals other than goats are not given fodder. Cropland and bunds are the sole sources of grass during the summer. Twenty percent is collected from harvested fields during the winter.

### CONCLUSION AND RECOMMENDATIONS

The practice of grazing animals on public land has almost died out. Growing demand for food for the ever-increasing human population has led to a decline in public grazing land. Availability of seasonal fallow for grazing has also been affected by increased cropping intensity. A decline in grass availability on public land has induced individual farmers to prohibit others from grazing on their private fallow.

Because of numerous legal loopholes, legal provisions to protect public land from encroachment are ineffectual. In this way, HMG/N has frequently caused traditional grazing ground to disappear.

Social arrangements for public land grazing no longer exist in the study area. The reason is that there is no sizable public land which needs to be covered by such an arrangement. Most public land has been brought under private cultivation through illegal registration. This practice has almost received social recognition.

To prevent encroachment of pasture land and to encourage proper management, existing laws need improving and amending, and new legislation is required. A separate law is needed for pasture land, incorporating a provision that rectifies past encroachment. An arrangement must be made to allocate land for pasture in villages having no public land.

Existing laws should be publicized and local panchayat leaders should learn about land rights. For example, according to the Village Panchayat Act 1961, trees on the roadsides are the property of the concerned panchayat. If the panchayat grows the right kind of trees, fodder requirements may be partly met in this way. Junior Technicians and Technical Assistants should also be trained in these matters.

The provisions made in the Village Panchayat Act and Decentralization Act could be better used to develop public pasture if the following improvements are included. A cadastral survey in 1967 found unclaimed fallow land of 315 bighas being used as pasture. This area is now used to grow crops by private farmers, though it has not been registered. The panchayat should have full authority to register it as public land under the Land Revenue Act.

If illegally encroached land could be used as pasture, it should be made pasture land. If not, the panchayat should be authorized to charge compensation from those willing to register it in their names. The money could be used to obtain an appropriate plot of pasture land. A proper procedure should be established for the interaction among authorized agencies so that work is coordinated.

A pasture development project is functioning in Nepal at present, although its operation is limited to fodder production in hill districts. The project should be extended to cover pasture land ownership aspects and a wider geographical region.

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