Rural Landscape Change:

Landscape Practices, Values and Meanings

The Case of Jagatpur VDC, Chitwan

Nepal

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Abstract

In Nepal the nature conservation practices started during 1970s and the establishment of the Royal Chitwan National Park laid the foundation stone. Though the nature conservation practices in Nepal have undergone changes to date, from purely protective to participatory conservation at the landscape level, the rural people around the conservation areas in general have faced complicated problems due to the restriction on the use of natural resources and the encroachment and threat of wild animals on their agricultural fields, human lives and domestic animals. In this context the present study explores rural landscape change in Jagatpur VDC after the implementation of the Royal Chitwan National Park. The main focus of this study was to look at how the rural landscape practices and the landscape values and meanings have changed over time and space, changing the rural landscape. The subjects were the traditional people and the migrants who were purposively selected using snowball sampling. Data triangulation i.e. structured open ended interviews, informal conversational interviews, observation and photography, were applied to collect the qualitative information.

The study shows that rural landscape, as an objective as well as subjective expression of the human cultures on the surface of the earth, has undergone considerable changes after the implementation of the Royal Chitwan National Park. The majority of the farmers have negative attitudes towards these changes. The study reveals that rural landscape practices are interrelated and have undergone changes with varying intensity, which has resulted in changing relationships between human beings and landscape with changing resource utilization. The study shows changes in landscape values and meanings with varying socio-spatial dimensions. It also reveals that landscape values and meanings are interrelated and have a close relationship with landscape practices determining the changes in rural landscape. The result emphasizes the importance of values and meanings to understand the intricate relationship between human beings and the landscape. Finally the study suggests the importance of the cultural landscape concept in the nature conservation practice in Nepal.

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Introduction

1.1 Introduction

The present study concerns rural landscape change occurring after the implementation of the Royal Chitwan National Park (RCNP) in Jagatpur, one of the 37 Village Development Committees (VDC) located in the buffer zone of the RCNP. The history of protected areas in Nepal began with the establishment of the RCNP. Like other developing countries Nepal too has mainly adopted the North American approach to protected area management, based on strict nature conservation and exclusion of human interaction and dependency. In Nepal, natural resource conservation in the past has been undertaken through the establishment of protected area without taking into serious consideration the needs and aspirations of the adjoining communities (PCP, 2002). As a result conflict between the nature conservation authority and local people is apparent in these areas. After the implementation of the RCNP many national parks and the wildlife conservation have been established. At present there are 9 national parks and 3 wildlife reserves, which together cover around 18% of the country's total area (PCP, 2002).

The eradication of malaria in the late 1950s and the government's introduction of the Rapti Valley Development Project led this valley to become one of the major destinations for migrants from the hilly region of the country. Before these projects were launched this area was known as the 'Death Valley' among the people living in hilly region, due to the widespread occurrence of malaria. It was a landscape of fear, evoking 'topophobia', i.e. repulsion towards place (Tuan, 1974). People's conceptions of this place slowly changed over time and in-migration slowly increased after the eradication of malaria. Subtropical climate, flat land, the abundant fertile land and forest resources were the major impetuses attracting in-migrants.

The RCNP was established in 1973, and the rationale behind it was to protect and manage the flora and fauna of Chitwan valley from being overdepleted by the growing population. The RCNP is popular for conserving flagship wildlife, e.g. one horned rhinos, tigers, leopards, elephants, sloth bears etc. When the RCNP was established people started to face various interrelated problems. One the one hand human intervention of any kind was entirely prohibited without understanding the roles of different elements of nature, e.g. forest

and river, in local people's everyday life. On the other hand increasing numbers of wild animals pose a threat to human beings and domestic animals in the surrounding areas. Furthermore, the encroachment of wild animals on the agricultural activities has increased over time. This has ultimately resulted in changed rural practices and hence changed meanings and the values placed on different elements of the landscape (cultural landscape).

In this study landscape is studied by taking a humanistic approach, in which landscape is considered not only as objective but also as subjective. Landscape comprises both physical forms and cultural symbols, meanings and values. The study attempts to look at how the cultural landscape changes over time and space in the study area after the implementation of the RCNP. Rural landscape practices play a major role in shaping the rural landscape and also illustrate the resource utilization patterns of the rural population. Hence the study tries to explore how the rural landscape practices have changed over time, in space and in relation to people vis-à-vis the changes in the natural resource utilization pattern after the implementation of the RCNP. Furthermore, the study explores how landscape values and meanings have changed due to landscape change. Landscape values and meanings are not intrinsic to landscape; hence an attempt will be made to study how human beings attribute values and meanings to landscape and how these changes over time, space and among groups of people. Further this study tries to find out the link between the rural landscape practices and the landscape values and meanings and it further tries to find out the relationship between different values attributed to the landscape.

1.2 Statement of the Problem

Chitwan (valley) is one of the inner *terai* (plain, one of the physiographic regions of Nepal that lies in the southern part of the country) districts of Nepal. This valley does not have a long history as a suitable place for human inhabitation. It was mostly inhabited by the traditional people, who had managed to become immune to malaria by indigenous healing practices. In this study I have used the term 'traditional people' to indicate the group of people who have been living in this area before the Government introduced this valley (Chitwan) as a human inhabitable area[1]. These people mainly include the Darai, the Tharu and the Bote. These people were engaged in traditional subsistence agriculture, animal husbandry and fishing and used forest resources for their subsistence and had managed rural

[1] This valley was officially introduced by the government as human inhabitable area only after the eradication of malaria during 1950s.

landscape. I have used the term 'traditional practices' to indicate those practices that have existed among these people for a long time without being influenced by new techniques.

The population in Chitwan valley has grown rapidly ever since the eradication of malaria during the 1950s. Keeping in view the increasing demands on natural resources by the increasing population and its potential threat in deteriorating natural resources, the government of Nepal introduced the National Park and Wild Life Conservation Act in 1973. In the same year the Royal Chitwan National Park was established. Setting aside land in Chitwan for a national park was, entirely from an ecological and conservational point of view. However, the decision to place a large area under protection, because of environmental considerations, is at odds with the economically motivated decision to develop the region infrastructurally and to open it up to migrants from the hills (Müller-Böker, 1999). After its establishment local people, both traditional people and in-migrants, were restricted in their use of the forest resources and the Rapti River, which they had long been using to sustain their livelihood. This Act of Government consequently affected the lifeworld[2] of the people and ultimately the rural landscape. In addition, a growing number of wild animals in the wake of their protection and their effects in loss of life, livestock and on crops have contributed to a sharpening of the conflict between the park authority and the local people (Mishra, 1982; Jnawali, 1989; Nepal and Weber, 1993; Müller-Böker, 1999).

Studies have revealed that the closer the villages to the RCPN, the larger are the problems and the conflict. Jagatpur is one of the many VDCs that share a common boundary with the RCNP. Hence the people living in this area have been facing various consequences from the NP. Thus this study of the effects of the RCNP on the local people living in Jagatpur will illustrate the extent of the effects and their consequences in the adjacent areas. The roles of forest and river were indispensable in their daily lives, but this was not recognized by the government while making and implementing the policy. With the implementation of the RCNP, major changes in rural landscape practices started because of the restrictions imposed on the use of various forest resources and the river. In addition the effect from the wild animals has boosted in changing the rural landscape practices. Changes in rural landscape practices affect the values and meanings attached to the landscape and the resource utilization pattern. Hence it is important to explore the rural landscape practices of the local people. The study area is a home for both the traditional people and the migrants and hence there may be

[2] According to the *Dictionary of Human Geography*, lifeworld is the culturally defined spatio-temporal setting or horizon of everyday life; lifeworld encompasses the totality of an individual person's direct involvement with the places and environment experienced in ordinary life (Cosgrove, 2000).

varied landscape practices and landscape values and meanings attributed to the landscape. Thus this area provides a context in order to look at how different people experience the landscape and how the effects of the same factor have different results among different groups and individuals within the group.

1.3 Objectives

The general objective of this study is to investigate rural landscape change in the study area after the implementation of the RCNP. The specific objectives are as follows:

1. To find out how the implementation of the Royal Chitwan National Park has brought about changes in the rural landscape over time and space in the study area.
2. To study how the local people have responded to landscape change brought about by the implementation of the RCNP.

1.3.1 Research Questions

In the present study I have tried to answer the following research questions to fulfill the basic objectives of the study. The main research questions are:

1. What changes have occurred in the landscape and to what extent are they related to the implementation of the RCNP?
2. Are there any changes in rural landscape practices?
3. Are there any changes in landscape values and meanings due to landscape change?
4. What are the local people's attitudes towards rural landscape change?

1.4 Rationale of the Study

Much literature can be found about protected areas in Nepal, about park and people relationship, and park and people conflicts, e.g. Mishra, 1982; Jnawali, 1989; Sharma, 1991; Nepal and Weber, 1993; Sætre, 1993; Jnawali, 1994; Pradhan, 1995; Müller-Böker, 1999. Several studies have been conducted on park and people conflicts in the RCNP. In most of them, the effects of the NP on human beings and the effects of human beings on the NP have been dealt with quantitatively. The extent of effects on either side is simply calculated using different statistical methods. For example encroachment of wildlife on crops is mostly studied in terms of the spatial extent of the damage and the monetary value of the damage. Its consequences in changing the rural landscape practices and the meanings and values of landscape, which may further bring changes in rural landscape, are rarely been mentioned in this literature. Furthermore the effects of the national park on local people are studied

considering the local people as a single group, which does not explore the totality of the situation prevailing in this area, which is the home for different cultural groups. Hence this study tries to explore how the effects of the same factor have different results among different groups and individuals within the group. Changes in the rural landscape are directly related with the subsistence, socioeconomic well-being, and cultural aspects of the local people and ultimately the nature conservation. Hence this study is an attempt to study not only the physical changes brought about by the implementation of the NP but also the changes that have taken place on the psychological level among the local people, which is vital in order to understand the rural landscape.

Landscape study has gained popularity across the natural and social science domains. The concept of cultural landscape has become a major object of interest in planning, conservation, recreation, agricultural science and the humanities. This concept is still new in these fields in Nepal. Although there have been several studies of the land-use changes, environment, mountain ecology, agriculture, and rural and urban settlements etc. the concepts of landscape has rarely been introduced in the discipline of geography. In this context my personal purpose in conducting this study is to introduce landscape study to the discipline of geography in Nepal. It is expected that this study will be an asset for the geographers in Nepal (teachers and students) wanting to explore and analyze geographical phenomena from the landscape perspective.

Last but not the least, in the present context when the concept of cultural landscape in international conservation has come to the fore after the World Heritage guidelines have allowed for the designation of cultural landscape as protected area in 1992 (Jones, 2003), the findings of this study may be useful for both the nature conservation administration, which seeks to preserve and manage both natural and cultural landscape and for the rural landscape planners in Nepal.

1.5 Structure of the Study

This thesis consists of seven major chapters.

Chapter one, *introduction,* describes the background of the study, with statement of the problem, major objectives of the study, research questions and the rationale of the study.

Chapter two, *theoretical framework,* presents different theories and concepts useful to help explain the findings of the study. The chapter starts with an introduction to the origin of the term landscape, followed by a presentation of the historical development of landscape study in Geography. Furthermore the concept cultural landscape is dealt in detail and its

implications for conservation and World Heritage Site management are discussed. Concepts of the values and meanings of landscape are introduced in order to understand how human beings attribute values to the landscape and how these change as the landscape changes. Moreover, the concepts of place and space are described in relation to landscape change. In addition, the main concepts of Anthony Gidden's structuraton theory such as structure, actions, and human agency are briefly explained in order to indicate the importance of structure and agency in landscape study. Theories of landscape study, landscape change, and explanation of landscape are dealt in detail.

In chapter three, *research methodology*, the methodological approaches applied are described. This chapter introduces various aspects, including the selection of type of research type based on the research questions; research design; selection of the data collection methods and their strengths and weaknesses; choosing sample size; sample technique, the rational behind the sample technique, and the advantages and disadvantages of the sample technique. This chapter also includes my field experiences. Finally issues of validity and reliability of this study are discussed.

Chapter four, *study area*, has two sections. In the first section a brief discussion on geographical conditions of Nepal and Chitwan Valley are presented. Information on the Rapti Valley Development Project and the malaria eradication program is presented in order to contextualize the population growth in this valley. A brief discussion of protected areas in Nepal and the history of the RCNP is also provided. Furthermore changing approaches to conservation in Nepal are also touched upon. In the second section the specific study area is introduced. This section presents the geographical situation of the study area, its people, which include traditional people and migrants, the distribution of their settlement, and their economic base.

Chapter five, *rural landscape practices*, starts with a brief introduction to the rural landscape practices. This chapter presents the major landscape practices of the local people in a historical perspective, examining the resource utilization pattern before and after the implementation of the NP and its context among local people. To study the impact of the NP on landscape practices, information is presented in chronological order, i.e. before and after the implementation of the NP. Furthermore, this chapter deals with local people's attitudes regarding changing landscape practices.

Chapter six, *landscape values and meanings*, presents the landscape values and meanings associated with the study area and their changes over time due to the implementation of the NP. This chapter tries to explore how individuals and groups

(including the conservation authority) derive meanings and attribute values to landscape. It also focuses on how landscape practices and landscape values are interrelated. Further this chapter focuses on views of local people regarding changing landscape values and analyzes how the changing values attached to the landscape affect the local people's everyday life and ultimately the rural landscape. This chapter also deals with changing landscape and changing space and place.

Chapter seven, *conclusion*, presents the major findings of the study. It also includes a section on future research possibilities, where I have reflected on my personal experience of this research and presented future possibilities of landscape research in connection with conservation practices in Nepal.

Chapter Two
Theoretical Framework

2.1 Introduction

Theory plays a vital role in conducting scientific studies and generating ideas and knowledge. It is a framework that guides a researcher in a proper way to achieve the destined goal in a scientific way. Hence theory is the heart of any research. There is nothing to research without theories. Maxwell (1996) gives an example of the biologist Heinrich and his associates who once conducted a systematic research on ant lions, small insects that trap ants in pits they have dug. He got a surprise to discover that his results were different from those published by other researchers. Redoing his experiments to find out discrepancies, he found that he and his fellow researchers had been led astray by an unexamined assumption they had made about the ant lions' time frame: their observations had not been long enough to detect some key aspects of these insects' behaviour. Hence Heinrich (1984) concluded that "even carefully collected results can be misleading if the underlying context of assumptions is wrong" (p. 151). For this reason, the conceptual context of the study - the system of concepts, assumptions, expectations, beliefs, and theories that supports and informs the research - is a key part of the research design. This context, or a diagrammatic representation of it, is often called a conceptual framework (Miles and Huberman, 1994; Maxwell, 1996). The most important thing to understand about one's conceptual context is that it is a formulation of what one thinks is going on with the phenomena one is studying - a tentative theory of what is happening and why. The function of this theory is to inform the rest of the research design - to help to asses ones purposes, develop and select realistic and relevant research questions and methods, and identify potential validity threats to conclusion (Maxwell, 1996). Maxwell (ibid.) emphasises that the conceptual context is a theory that is sometimes called the theoretical framework for the study.

According to Silverman (2000, pp.39-40)

> "Theory must be appropriate to the research questions in which one is interested. Indeed, rather than being a constraint, a theory should generate a series of directions for ones research".

Silverman (ibid.) further emphasises that theory provides both a framework for critically understanding phenomena and a basis for considering how what is unknown might be

organized. Hence in this section I will discuss appropriate theories and concepts to understand, explore and analyse the cultural landscape (rural landscape), and changes in the landscape over time in the study area. In this chapter I will briefly describe the origin of the term landscape. The development of landscape studies in geography and how the concept has changed in the discipline of geography over time will be described in a historical context. I will discuss the varied definitions given to the term cultural landscape. The cultural landscape concept in connection with World Heritage Sites will also be briefly touched upon. Definitions of landscape value and meanings, their types, and how they change will be discussed. Concepts of place and space are discussed in order to examine the relationship between landscape, place and space. Theory of landscape studies and landscape change has been discussed, e.g. processes of landscape change given by Jones (1988) are discussed. Likewise approaches to landscape studies proposed by Jones (1991) are presented. Lastly Anthony Glidden's structuration theory is briefly discussed in order to explore how the structures (NP rules and regulations and social structures) can determine change in rural landscape.

2.2 Origin of the Term "Landscape"

The origin of the word "landscape" can be traced to Anglo-Saxon, in which it meant simply a tract of land, but it seems to have gone out of use until it was revived around 1600 by Dutch painters to refer to the pictorial representation of a scene either as a subject in its own right or as the background to a portrait (Relph 1981). Jackson (1984) in his book *Discovering the Vernacular Landscape*, has presented the term 'landscape' as a compound word, and its components belong to the ancient Indo-European idiom, brought out of Asia by migrating peoples thousands of years ago, to become the basis of almost all modern European languages: Latin or Celtic or Germanic or Slavic or Greek. He further adds that the word was undoubtedly introduced into Britain some time after the 5th century AD by the Angles and Saxons and Jutes and Danes and other groups of Germanic speech. Olwig (1996) indicated that the word "Landschaft" has an ancient origin in Germanic-speaking nations of Northern Europe. He maintained that the historical and geographical context reveal that "Landschaft" was much more than "a restricted piece of land". Rather it contained meanings of great importance to the construction of personal, political and place identity at the time landscape entered the English language. Landscape soon came to designate the view or prospect itself as well as the painting, and by the middle of the eighteen century seems to have been an essential term in the working vocabulary of poets, artists, gardeners and gentlemen (Jackson,

1984). When the paintings were imported from Germanic speaking nations to England, where the equivalent term, landscape, had become obsolete, the term was assumed to apply to a type of painting, rather than to a particular subject matter – a territory of land. These paintings, in turn, provided the inspiration for form of garden design, the landscape garden, in which the garden is conceived of as a series of more or less framed views of scenes (Olwig, 1993). Eventually in the course of the 18th century, the term landscape received its modern meaning – which now applies to virtually all human languages – as "a portion of land that the eye can conceive in a single view; vista, prospect" - that is, a portion of land viewed as if it were seen from the vantage point of a landscape painter, as scenery. It is at this point that the term landscape becomes virtually synonymous with the modern meaning of nature in which it is defined as scenery (ibid.).

It can be summarize here that though the idea of landscape was widely prevalent in the works of poets and artists during 16th to 19th century, etymologically the word belongs to ancient time. It is only from the end of the 19th century and onwards that there has been any technical or academic discussion of the meaning of landscape as a concept.

2.3 Development of Landscape in Geography

Landscape study in geography was first introduced by German geographers. According to Dickinson (1939) "it was in the late 1890s, German geographer Otto Schlüter focused his attention on landscape as the subject matter of investigation regarding Landschaft as a unit in which perceptible phenomena (natural or human), having spatial significance, form a distinct association" (cited in Palka, 1995, p.65). The emphasis on landscape as a basis for geographic inquiry was subsequently adopted by French geographers and later by American geographers and British geographers.

Landscape studies were introduced into American geography in the 1920s by Carl Sauer, especially by his article "the morphology of landscape". Sauer, influenced by German geographers such as Otto Schlüter and the Landschaft School, reacted against the environmental determinism of his day by arguing that it was collective human transformation of natural landscapes that produced what he called "cultural landscapes" (Morin, 2003). Carl O. Sauer established the Berkeley School of landscape geography, which constituted a contrasting pole to Midwestern spatial science geography. The intellectual foundation of Sauer's notion of landscape came from European geography's emphasis on humans working through the medium of culture as active agents of environmental transformation. Rowntree (1996) argues that:

> "Though Sauer's "Morphology" influenced American geography by reinforcing the drift away from environmental determinism and by integrating more methodologically advanced European thought into the discipline this redefinition of geography as the study of landscape morphology proved to have serious practical and methodological problems" (p.130).

Rowntree (ibid.) further indicated that Sauer's notion that each landscape study should begin with an undisturbed or natural landscape that served or reference mark for subsequent changes was mostly rejected.

Hartshorne reacted strongly to Sauer's 1925 landscape agenda by calling into question the term's validity and applicability to scientific geography because of the subjective implications of studying "scenery". Many American geographers accepted this critique and as a result, the term cultural landscape became suspect among those involved with the postwar quantitative and theoretical revolution (Rowntree, 1996, p. 133).

Hartshorne's critique paved the way for the "geography as a spatial science" school and positivism[3].

Hartshorne (1962) strongly rejected Sauer's idea of cultural landscape. He argued that the

> "Term landscape is too ambiguous to provide a logical foundation for geographic study. Moreover, the term is redundant with area, which adequately expresses the spatial concept in English. He further argued, because landscape refers only to the surface of the land, it is literally a superficial phenomenon, and a field of science that concentrated on landscape would itself be superficial" (Rowntree, 1996, p. 132).

Mid-twentieth century landscape studies in geography were greatly influenced by the English historian W. G. Hoskins (1955), who argued for detailed studies of landscape history (1955) and American landscape researcher, J. B. Jackson (Morin, 2003). It is difficult to understand the concept of cultural landscape without understanding the immense influence of J. B. Jackson. Since 1950s he has been involved in studying the vernacular[4] American landscape. He was interested in studying a series of vernacular landscapes of a particularly pure type in the Pueblo Indian communities of the southwest United States. By 'pure' he

[3] Positivism is a school of thought, which argues that by carefully and objectively collecting data regarding social phenomena, we can determine laws to predict and explain human behavior in terms of cause and effect. Positivists reject normative and metaphysical questions that can not be measured scientifically (Kitchin and Tate, 2000).

[4] The word 'Vernacular' has been derived from the Latin 'verna' meaning a slave born in the house of his or her master, and by extension in classical times it meant a native, one whose existence was confined to a village or estate and who was devoted to routine work. A vernacular culture implies a way of life ruled by tradition and custom, entirely remote from the larger world of politics and law: a way of life where identity derived not from permanent possession of land but from membership in a group or super-family (Jackson, 1984).

means untouched by the modern way of life. According to him a vernacular landscape reveals a distinct way of defining and handling time and space. Unlike Sauer, Jackson was not particularly concerned with ecological consequences. Instead his agenda was (and still is) understanding how common people shape their lived-in surroundings. He believes it becomes difficult to comprehend vernacular landscape unless and until it is perceived as the organization of space. Hence to understand the vernacular landscape we should raise questions such as who owns or uses the spaces, how they were created and how they change. Jackson was founder of the popular Landscape Magazine, published for 17 years beginning in 1951.

During the 1960s humanistic geography emerged as a reaction to "geography as spatial science" and started to use the cultural landscape concept as a major vehicle for analysing the ties between culture and environment. The alternative to positivism was a return to the pre-positivistic scientific method, which emphasises the characteristics of man as a thinking being, as opposed to the inanimate subject matter of the natural sciences. Humanistic approaches such as phenomenology and idealism were proposed, which investigate the worlds in which men live and act rather than impose hypothetical worlds on their actions, as with the positivist method (Johnston, 1987). During the postwar period between 1950 and 1970 the concept of landscape was viewed in two distinct ways. The first emphasised the visible and material details of landscape, while the second stressed cultural perception, visual preferences, and emotions.

In the first approach landscapes were conceptualised as a tangible expression of material culture, with descriptive weight placed on documenting environmental arrangements such as home types, field patterns etc. The focus of the second approach differs considerably from the first in which the focus was to understand how people cognized and responded to their environment. This foundation for landscape studies emerged in the postwar decades, and placed its emphasis on how people and groups perceive and feel about their environments. Though Jackson was interested in these questions, they were raised to explicit levels by landscape studies in the 1960s. These were shaped by two currents; one was primarily intuitive and interpretative, the other empirical and behavioural (Palka, 1995).

The Interpretation of Ordinary Landscapes edited by Donald Meinig (1979b) was published in 1979, which includes the works of popular landscape geographers at that period including himself and J. B. Jackson, Pierce Lewis, David Lowenthal, Marwyn Samuels, David Sopher and Yi-Fu Tuan.

> "This collection demonstrated both the continued interest in 'ordinary' everyday landscape in Anglophone cultural geography, as well as how landscapes reveal social and personal tastes, aspirations and ideologies. The Interpretation of Ordinary Landscapes also demonstrated the use of one of landscape studies' most enduring and ultimately contentious metaphors that of 'reading' and interpreting landscapes as 'texts'. Just as a book (text) is made up of words and sentences arranged in a particular order with meanings that we read, so landscape has elements arranged in particular order that we can translate into language, grasp meaning and 'read'" (Morin, 2003, p. 322).

The concept of landscape as a clue to culture and as an expression of human values and practices emerged during 1970s. From this perspective landscape can be understood as a cultural artefact that is as valuable and informative as literature, art or architecture. The clearest explicit summary of this way of considering landscape as a clue to culture is a paper by the American geographer Peirce Lewis on 'Axioms of the Landscape' (1979). His argument is that all landscapes, no matter how ordinary, have cultural meaning and that this meaning can be apprehended by reading landscapes as though they are books. Lewis maintains that human landscapes represent a considerable investment of time, effort, money and emotions, that they look as they do for a reason, and they will not be changed unless there is better reason to do so. He further claims that nearly all items in human landscapes reflect culture in some way. There are almost no exceptions. Furthermore, most items in the human landscape are no more and no less important than other items – in terms of their role as clues to culture. To Meinig (1979a), landscapes themselves could be read as collective social ideologies and processes: symbols of the values, governing ideas, and underlying philosophies of a culture. In the same vein, Tuan (1979) argues that landscape, like culture, is elusive and difficult to describe in a phrase. Landscape, likewise, is not subsidiary clues to an integrated image. Landscape is such an image, a construct of the mind and of feeling.

Cosgrove (1985) understands landscape not as a material expression of a particular relationship between a society and an environment, observable in the field by the observable by the objective gaze of the geographer, but rather as a concept which makes sense of a particular relationship between society and land.

> "In 1987, a paper by Cosgrove and Jackson herald 'new directions' in cultural geography. It marked the development of a rich and subtle literature in which, among the other things, the concept of 'landscape' has undergone a major critique. Central to its argument is the visibility of the landscape idea" (Rose, 1992, p. 334).

Landscape according to Cosgrove (1989a) is a 'way of seeing', a way of composing and harmonising the external world into a 'scene', a visual unity. Landscape is thus intimately linked with a new way of seeing the world rationally-ordered, designed and harmonious.

By the last two decades of the twentieth century, the textual metaphor helped usher in a number of new questions related not just to what landscape is about but how landscape mediates social relations. Informed by critical social theory, geographers first challenged the assumption of their predecessors that cultural groups 'collectively' produced landscapes and 'read' them in the same way. Instead they insisted on acknowledging the patterns and processes of hierarchical social organisation responsible for the morphological features observed. Thus landscape studies began to focus on the unequal power relations, social, political and cultural – involved in producing landscapes and (in turn) social difference, by both historical and contemporary actors (Morin, 2003). Olwig (1996) suggests that landscape need not be understood as being either territory or scenery; it can also be conceived as a nexus of community, justice, nature, and environmental equity, a contested territory that is as pertinent today as it was when the term entered the modern English language at the end of the sixteen century.

As early as the 1950s the studies of symbolic landscape were certainly not absent in the landscape studies, this is evident in the studies of typical home types of a region. Neither were urban studies completely absent in older work. What changed was the sensibility and the political interest researchers brought to these topics in the 1980s and 1990s. Studies of landscape were infused with strong evaluations of the politics of class, gender, race, ethnicity, and eventually sexuality. Social contestation, rather than the invisible working of culture, was put at the forefront of landscape analysis (Mitchell, 1996).

To conclude, approaches to landscape from the past to the present falls in two categories and for simplicity Cosgrove (2003) calls one of these *ecological* and the other *semiotic*. He uses these terms in a loose sense rather than scientific and technical ones. He states that

> "An ecological landscape discourse focuses on the complex interaction of natural processes (geomorphological, climatic, biological, vegetational, etc.) shaping characteristic land areas, and extending its concerns to the ways that human activities interact with these natural processes. A semiotic approach to landscape on the other hand is skeptical of scientific claims to represent mimetically real processes shaping the world around us. It lays scholarly emphasis more on the context and processes through which cultural meanings are invested into and change a world whose 'nature' is known only through human cognition and representation, and is thus always symbolically mediated" (Cosgrove, 2003, p. 15).

2.4 Cultural Landscape

The term cultural landscape is much younger than the term landscape. Geographers have used the concept of cultural landscape for many years, and the content of this concept has changed during time (Hanssen, 1989). The term 'cultural landscape' is compounded of two words, 'cultural' and 'landscape'. The term was developed in Germany. It was first used by F. Ratzel in 1895 in Germany. He classified landscape into two categories i.e. *Kulturlandschaft*: landscape modified by human activity and *Naturlandschaft*: original natural landscape. The term passed into the English-language literature through the influence of the North American Geographer Carl O. Sauer (Jones and Daugstad, 1997). Sauer (1925) defined cultural landscape as successively altered and fashioned by human through their activities (Cosgrove, 1989b). According to Sauer (1925) cultural landscape expresses the work of human beings. There may be a succession of cultural landscape with a succession of cultures. As the culture of human beings undergoes changes or the previous culture may be replaced with the new one so does the cultural landscape. To measure the changes it is necessary to trace back to the natural condition of the landscape. This division line is essential to trace the cultural expression upon the natural landscape. Figure 1 represents how human beings through their culture create cultural landscape over time, according to Sauer (1925).

He believes that the human being as a distinct agent leaves a distinct imprint in nature. This imprint is the cultural landscape, which is the geographic area in the final meaning. Landscape is characterised by the forms created by human beings. Sauer further explains that Geography is not concerned with customs or beliefs of man but with man's record upon the landscape. Cultural landscape is the end product of cultural activities upon the nature. He has presented how culture over time acting upon the nature creates different forms, which constitute cultural landscape.

Geographers and ethnologists used the concept cultural landscape in the Nordic countries in the interwar period (Jones 2003, p. 21). From the 1960s, the term "cultural landscape" became increasingly adopted in other disciplines and entered the terminology of environmental management (Jones ibid.).

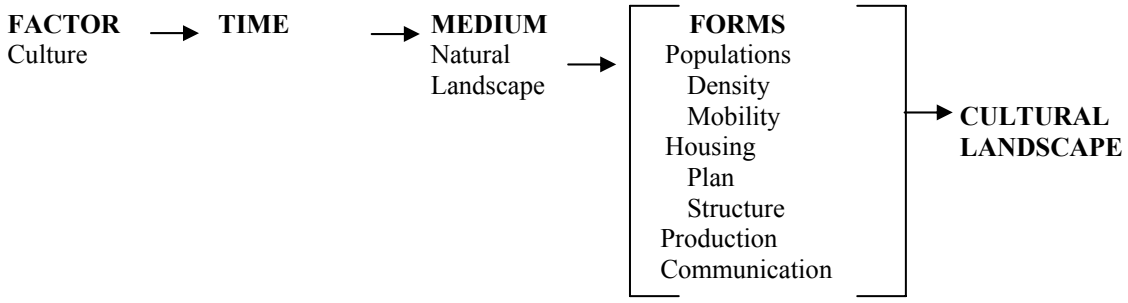

Figure 1: Diagrammatic representation of the morphology of the cultural landscape
Source: Sauer, 1925

Landscape is often considered as 'nature'. Nature is frequently regarded as 'wild' or as 'uncultivated'. "Wilderness" is an uncultivated state of a place of region (Hanssen, 1998). By nature Hanssen (ibid.) indicates the original concept of Naturladschaft of F. Ratzel. However, as soon as wilderness is invaded by humans, it has become 'cultured'. The traditional definition used by many geographers is 'landscape modified by (formed) or influenced by human activity' (Jones, 1995). The concept has mostly been used in describing different types of landscapes and selecting elements to be mapped (Hansen, 1998). Regarding the, transformation of the natural landscape in to cultural landscape by human beings, Jones, (1979, p. 9) writes:

> "In most inhabitable regions, the natural landscape has been modified to greater or lesser extent by human activity and become a cultural landscape; in this sense, the natural landscape has been replaced by the cultural landscape, which is thus the same as the total landscape. Recognizing this, geographers have tended in practice to use the concepts natural and cultural landscape in the 'vertical' dimension, with the natural components underlying the human or cultural components."

Jones further writes,

> "The concepts of natural and cultural landscape cannot be separated completely; they are abstractions, which serve to distinguish between man's and nature's roles in landscape formation".

Cultural landscape according to Jones (1991) needs to be understood not only as the physical traces of human resource use over time, but also as a set of human beliefs and conceptions covering the landscape. As the manifestation of cultural processes, cultural landscape expresses the relationship between material practice and cultural production. Greider and Garkovich (1994) also emphasise the importance of culture for landscape. They

believe that the landscapes are the symbolic environments created by human acts of conferring meaning to nature and the environment, of giving the environment definition and form from a particular angle of vision and through a special filter of values and beliefs. Every landscape is a symbolic environment. These landscapes reflect our self-definitions that are grounded in culture. Monk (1992) also emphasises that the material landscapes express the class, race or ethnicity of human beings. She further adds that the quality of the material landscapes convey to us impressions of affluence or poverty, diversity or homogeneity, and feelings of familiarity, comfort or anxiety. This further emphasises that the landscape should not be studied only as a set of physical artefacts but we should also focus on the message that the landscape intends to convey.

Some scholars focus on land use and its pattern while defining rural landscape. For example Zaizhi (2000) believes that land use and land use patterns integrate both the natural and human-development environments and, therefore, provide a good focus for studies of the rural landscape. Similarly Burgess and Sharper (1981) define the rural landscape as a mosaic of natural and human managed land uses of varying size, shape and arrangement. These definitions mainly focus on the physical aspect of the landscape, which is a classical concept of cultural landscape. Humanistic approaches have overtaken this concept of cultural landscape.

> "Humanistic approaches in geography have brought to the fore the study of landscape meanings, involving ways in which landscape are perceived, understood and mentally structured by different groups in society. The meanings that people give landscape are bound up with culture, and the vary act of naming gives shape to physical features of the landscape in people's cognition and communication" (Jones, 2003, p. 46).

Furthermore, Jones (ibid.) has discussed the perspective on landscape that emphasizes the cultural role of law and custom as the institutions whereby members of a community regulate their relations to each other in using the resources of their environment.

In this study I will present the rural landscape not only as a set of different components of the physical features but also their meanings, values and symbols attributed by human beings with different cultural backgrounds when interacting with them over time.

2.5 The Cultural Landscape Concept in Conservation and World Heritage

The concept of cultural landscape in international conservation has come to the fore after the World Heritage guidelines have allowed for the designation of cultural landscape as protected

areas in 1992. This indicates the popularity as well as the importance of the concept cultural landscape in the present day conservation practices when it is difficult to allocate a portion of earth's surface for nature conservation without considering the role of humans. Jones (2003) in his discussion of the book C*ultural Landscape of Universal Value*, edited by Von Droste, Plachter and Rössler (1995), argues "The protection of designated 'cultural landscapes' is intended to overcome the lack of success of the World Heritage Convention of 1972 to avoid the designation of natural and cultural heritage separately from one another" (Jones, 2003, p. 40). According to Jones (ibid.) Plachter and Rössler (1995) "criticize the aim 'to preserve or reconstruct single, unique objects at some clearly defined phase of their existence' as reflecting a museum-like attitude that excluded dynamic processes and context. Cultural objects were perceived independently of their cultural context and landscape environment; natural areas were similarly separated from their surrounding context, including human activities." Human influence was considered as devaluing the nature under nature conservation.

The revised guidelines of 1992 consider cultural landscape as reflecting 'the combined works of nature and man' (Jones, 2003). The guidelines further explain:

'Cultural landscapes are illustrative of the evolution of human society and settlement over time, under the influence of the physical constrains and / or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal. They should be selected on the basis of both of their outstanding universal value and of their representativity in terms of a clearly defined geo-cultural region and also for their capacity to illustrate the essential and distinct cultural elements of such regions (Plachter and Rössler, 1995, p. 15, quoted in Jones, 2003, pp. 39-40).

The guidelines also identify five categories of cultural landscape (Jones, ibid. pp. 40-41). They are:

1 Clearly defined landscapes designed and created intentionally by man, i.e. garden and park landscapes.

2 Organically evolved landscapes that result from an initial economic, social, administrative, and / or religious imperative and have developed their present form by association with and in response to their natural environment. They include:

A. Relict (or fossil) landscapes where evolutionary processes came to an end at some time in the past, their distinguishing processes still being visible in material form;

B. Continuing landscapes that retain "an active social role in contemporary society closely associated with the traditional way of life, and in which the evolutionary process is still in progress".

3 Associative cultural landscapes where "powerful religious, artistic or cultural associations" relate to natural elements rather than material culture evidence, "which may be insignificant or even absent" (Von Droste et al. 1995, pp. 431-432 cited in Jones, ibid., pp. 40-41)

Based on the guidelines Tongariro National Park in New Zealand (in 1993) became the first site to be recognized as a cultural landscape worthy of World Heritage status. This spectacular volcanic region is sacred to the Maori people – it binds them to their past and figures powerfully in their system of myths, beliefs and legends (Aitchinson, 1996). In 1994 Uluru-Kata Tjuta National Park in Australia was also inscribed as a cultural landscape on World Heritage List, as having particular significance for the indigenous people (Rössler 1995, p. 48).

According to Jones (2003, pp. 46-47) "cultural landscape" has gained a renaissance as a new category of protected landscape. The protection of such landscapes implicates methods of identification, assessment, selection, legal designation and monitoring. The purpose of the new category of protected landscape is specifically to integrate nature and culture, which previously have largely been treated as separate categories in conservation (ibid.).

The concept of cultural landscape in nature conservation is very useful in the present study in order to understand how the conservation authority has included the values and meanings of human beings in nature conservation in the international arena. In Nepal, the conservation practices are still protective. Even though it has already introduced participatory conservation approaches, people's interactions are mainly limited to the buffer zone and they are not allowed to use the resources from the protected areas in regular basis. This situation contextualizes how human beings are considered in nature conservation in Nepal.

2.6 Values and Meaning of Landscape

According to The Dictionary of Human Geography values are a set of beliefs and ideas, which inform assessments (evaluations) of worthiness. Values are socially specific; they derive from the concepts that we use to legitimate society (Johnston et al., 2000). For instance Ariansen (1997) believes that value is an inescapably intentional concept. It presupposes a direction or it loses its meaning. Value is always value for or value in relation to. So value cannot simply inhere, as if it were a property like having a positive or negative electric

charge. Hence value is not intrinsic. Jones (1993) believes that landscape values, which are associated with the landscape, are not intrinsic to the landscape. Values lie within people or groups of people. Thus landscape values depend on perceptions of the way in which landscape can serve or satisfy the needs and desires of people or groups of people. Regarding intrinsic value Callicot (1993), according to Ariansen (1997), writes that something is intrinsically valuable if it is valuable in and for itself - if its value is not derived from its utility, but is independent of any use or function it may have in relation to something or some one else. In classical philosophical terminology, an intrinsically valuable entity is said to be an end-in-itself not just a means to another ends. It is only the human being according to Regan (1980/1993) who has a certain kind of value 'inherent value'. Each human has a value logically independent of whether he/she is valued by anyone else. The kind of value property attributable to them is not exclusively instrumental. Humans have values not just so long as they are good for something. They have value distinctly for their utility and skill (Ariansen, 1997).

Like value meaning is also not inherent in the objects it is the human being who attaches meanings to them. Crotty (1998) writes "meaning is not discovered but constructed. Meaning does not inhere in the objects, merely waiting for someone to come upon it. Meanings are constructed by human being as they engage with the world they are interpreting" (quoted in Merriam & Associates, 2002, p. 37).

Human beings use the landscape as per their needs and wants and consequently add values and meaning to landscape. Landscape values and meanings in turn mirror who the actors are and how the landscape has been utilized. Change in landscape practices leads to change in values and meanings which, in turn result in change in landscape and vice versa. Regarding landscape values and meanings, Lowenthal (1986, p.1) believes that:

> "Landscape meanings and values vary from place to place and from epoch to epoch in ways that are little understood and seldom compared; we do not know even which landscape attachments are universal and which are specific to a particular time or place. So how landscapes are identified and thought about; what symbolic meanings and physical properties they embody; how purpose, intensity, duration, realism, novelty, or impending loss affects our landscape experience - these are questions of immense importance".

Landscapes are not only a matter of morphology but they also carry meanings, which are interpreted differently by different people from different walk of life. According to Greider and Garkovich (1994, p. 1)

> "Every river is more than just one river. Every rock is more than just one rock. Why does a real estate developer look across an open field and see comfortable suburban ranch homes nested in quiet cul-de-sacs, while the farmer envisions endless rows of waving wheat and a hunter sees a five-point buck cautiously grazing in preparation for the coming winter? The open field is the same physical thing, but it carries multiple symbolic meanings that emanate from the values by which people define themselves. The real estate developer, the farmer and the hunter are definitions who people are, and the natural environment - the physical entity of the open field - is transformed symbolically to reflect these definitions. These symbolic meanings and definitions are sociocultural phenomena, not physical phenomena, and they transform the open field in to a symbolic landscape".

These symbols and meanings according to Berger and Luckman (1967) are social constructions and they result from ongoing negotiations in a cultural context. Atkins et al. (1998) maintains that even the most humble, innocuous-looking landscape carries with it cultural meaning, sometimes clearly visible but often in a sort of code that is absorbed by local inhabitants at a subconscious level. According to Duncan and Duncan (1988), at the subconscious level, landscape influences us on a day-to-day basis. Like an electric fire it radiates comfort towards us, and we bask in the familiarity almost without noticing it. This is because of a subtle inculcation of ideas and feelings that go together to make up culture.

According to Hanssen (1998) human activities give the landscape a certain meaning, not only the meaning interpreted from visual sight, but it becomes a part of ourselves. This meaning is impossible to separate from how we use the landscape. This is what Greider and Garkovich (1994) believe. According to them human beings through their socio-cultural phenomena transfer the physical environment into landscape, which is a reflection of how people define themselves.

Maslow (1954) has identified a variety of human needs that include physiological needs, such as nourishment, water, sex, protection against cold, heat, pain and discomfort, and psychological needs, such as security, social contact, self-assertion and self-realisation. These needs are in part fulfilled by a landscape. In this context Jones (1993) writes that the landscape can be seen as both a material and non-material resource. Landscape can help to satisfy material needs by providing sources of food, drink, shelter and other raw materials. Landscape can also help satisfy emotional needs.

Thus Jones (ibid.) recognizes various types of values associated with landscape, for example economic value, amenity value and security value. The rate of change in these

values is not similar e.g. economic value may change rapidly whereas aesthetic, recreational, orientation, identity and religious values change slowly.

These three major types of values associated with landscape i.e. economic values, amenity values and security values, have their own sub-divisions. Jones (1993) has classified economic values into three sub category, i.e. subsistence, market, and utilitarian ecological value. According to Jones (ibid.) the subsistence value of landscape is especially relevant to developing countries where the majority of population are directly dependant on the landscape for their subsistence without going through the market.

Market value of the landscape is related to the relevancy of landscape for business enterprises, as well as the market possibility of products from landscape. Favourable markets may lead to rapid landscape change. He argues that economic activities such as plantation agriculture, mining, tourism etc. bring rapid change in landscape. Such change may affect detrimentally the original character of landscape. There is always a competition between different economic activities, in which process weaker ones gives way to stronger ones, for example agriculture tends to give way to stronger economic interests such as hydro-electric power development, industry, housing etc.

Utilitarian ecological value is one aspect of the ecological value of the landscape for humans. Here consideration is taken of the long-term utility of the landscape as an economic resource. The argument for the conservation of landscape is its potential long-term usefulness. This argument emphasises the issue of sustainability.

Landscape not only fulfils material needs but also the non-material or non-economic needs of human being, such characteristics of landscape are known as amenity value of landscape. Such values of landscape according to Jones (1993) cannot be bought or sold on a market. Under amenity values four categories are distinguished i.e. what is often called “intrinsic” ecological value, scientific and educational value, esthetical and recreational value, and orientational and identity value.

Unlike utilitarian ecological value, intrinsic ecological value of landscape is based on an idea that is has intrinsic value in itself. For example the maintenance of biodiversity is considered an intrinsic value in itself, independent of its long-term utilitarian value for human beings. Likewise landscape can be a source of information for teaching and research. Both the natural and cultural landscape can function as an archive. Furthermore, landscape can be a source of inspiration and recreation. The influence of landscape can be observed in literary writings, paintings, landscape photography and filming. Landscape beauty is an obvious source of attraction in recreation. In addition, landscape is an element in the ability of people

to orient themselves. By this Jones (ibid.) indicates both the importance of landscape elements as landmarks and as an element in people's cultural identity and sense of place.

Two types of security values are identified i.e. defence value and demarcation value. According to Jones (ibid.) certain landscapes have especial characteristics e.g. location, distinct visibility, that have implications for defence and demarcation respectively. In this study I am interested in using the concept of security value of the landscape not to look at its appropriateness for defence and demarcation, but to look at how the sense of security among the people has been affected by the NP.

From the above mentioned statements and definitions it can be inferred that the values and meanings are not intrinsic to the landscape, but rather they are phenomena created by humans through their cultural practices. Thus the same landscape is perceived or treated differently by different people or cultural groups and they in turn ascribe different values and meanings on it. Values and meanings ascribed by local people may not be aware to an outsider. These values and meanings of landscape change as the relationship between humans and landscape change overtime. It is also evident that the landscape values can be classified based on its ability to fulfil human needs. Different values may be in competition among themselves. In this study I will focus on how people attribute values and meanings to landscape. In addition I will try to use the typology provided by Jones to study the landscape values and their changes over time.

2.7 Concepts of Place and Space

Place is our principal geographical tool. For Sack (2001), place does not mean the location of things in place, though places like everything else have locations. Rather place refers to the countless areas of space that we have bounded and controlled. These humanly constructed places range in scale from a room to a continent and support the innumerable projects we undertake. We create and use places as tools because they provide a means for us to undertake projects, and in so doing, places add to the nature of the projects (ibid). Prince (1961) writes that knowledge of place is an indispensable link in the chain of knowledge (cited in Relph, 1976). "Locality", "region", "landscape", "territory", "area", and "place" have become keywords for empirical and theoretical study. And it is not only in human geography that these terms constitute foci for inquiry (Adams et al. 2001). Walter (1988) emphasised that place should not be considered as physical, spatial attributes. Place should rather be defined as the location of experience, the container of shapes, power, feelings and

meanings (cited in Holt-Jensen, 1999). For Peet (1998) place refers to 'locales' in which people find themselves, live, have experiences, interpret, and find meaning

According to Sack (1997) the concept of place is fundamental since it serves as a unit of analysis for integrating natural and social science concepts of the environment. Place integrate/unite the realms of meaning, nature, and social relations (ibid.). Based on the relationship between these realms Sack (ibid.) has identified two types of places, i.e. primary and secondary places. He used the term secondary place to indicate the distribution of certain things in space.

> "This place does not differentiate between things in space and things in space that are present because the place itself is exerting a force, constraining or controlling these things, and altering distributions and interactions (ibid. p. 32)".

Sack further explains, when place is more than just a distribution of things on space, and has power to influence, control its distribution of things than it is a primary place.
"Primary places involve human actions and interactions and have the capacity to change things (ibid. p. 32)". The author illustrates how secondary place change into primary place using en example of forest and marsh. He explains, the forest and the marsh remain secondary places as long as they remain aloof from human attention, but as they draw human attraction, they could turn into primary places.

Hence time is essential in place-making. Thus Tuan (1974) believes that engineers create localities but time is needed to create place. Places are locations in which people have long memories, reaching back beyond the indelible impression of their own individual childhoods to the common lores of bygone generations (ibid.). Place also has a discursive and symbolic meaning. When space appears thoroughly familiar to us, it has become a place that is to say that place is space to which meaning is ascribed (Werlen and Brennan, 1993). Thus it is the human beings who create places while interacting with space. Hanssen (1998) believes that people are connected to places, and their existence is dependent on their orientation towards these places. Humans meet the places with their bodies, and not only with their minds and eyes. She further adds that we posses the place and make it ours through our existence and action. In turn the place posses us and influences our actions and behaviour. Man's movements from one place to another create places in the landscape, and the landscape is full of places.

Space is often regarded as fundamental for geography. According to Sack (1997) space is real. All of the places we experience are in this universal physical space. The author further states that

> "The objects and events of the universe and the world have location and extension in this space. Trees, grass, mountains, and soil occur in it and extend through it. We speak about the location and distribution of these events, and we describe them as covering a particular area or region" (p. 31).

For Relph (1976) space provides the context for places but derives its meaning from particular places. According to Werlen (1993) space is a frame of reference for the physical components of actions and a grammalogue for problems and possibilities related to the performance of action in the physical world. Hence it can be concluded that place and space are interdependent.

To summarize, place is not only a physical thing, rather it is a space both absolute and relative where meanings are ascribed by human beings, having diverse culture, values, beliefs and traditions, over time. Place is not static, but like human beings it grows, gets matured and may diminish over time in situations. Places combine realms of meaning, nature and social relation and various places give totality of landscape. Space provides the context for the creation of place. Hence the changes observed in space may be reflected in place.

The study area has been a home for traditional people since the distance past, whose lifeworld was composed of land, river, and forest and the activities related with them. If the village was their home then the land, river and forest were the courtyard that gave the meaning of home. Migrants are the dominant (in terms of population size and their socio-economic condition) group of people living in this area. They through their actions included the landscape in their every day life and ascribed meanings and values to it. Following the establishment of the RCNP their everyday life[5] was disturbed. As a result the horizon of local people's lifeworld was shrunk resulting in the destruction of places. Hence in this study I have attempted to analyse and interpret how local people create places and how they change over time due to landscape change after the implementation of the national park.

[5] This is simply the fundamental reality which creates, maintains and transforms every one of us as self-aware and self-conscious individuals. It is therefore the world of experience which, through our self-awareness, we see as being both under our own control and shaped and even determined by forces and events outside of that control. It is not static but is rather a dynamic process (Eyles, 1989).

2.8 Theory of Landscape Study and Landscape Change

The description and analysis of landscape changes through space and time is a fundamental part of geographical enquiry and landscape research. According to Antrop (1998) landscapes are dynamic features which evolve almost continuously. These changes are seen and evaluated by man as improvement or deterioration of the previous or existing state. Thus judgement is based on particular viewpoint, as a result the same change may be perceived differently by different people. Landscape dynamics refers to a process of landscape evolution, tracing the relationship between humankind and the natural environment (Wood and Handley, 2001). Changes observed in the landscape according to Jones (1991) may be both long-term and short-term, both natural and cultural. Cultural landscape transformation represents the point of interaction between the core concerns of the natural and social sciences involved in landscape research (Nüsser, 2001).

According to Jones (1991) there are three basic approaches to the study of landscape (table 1). Landscape is treated differently in each of these approaches. Jones argued for landscape as intersubjective understanding.

Table 1: Three approaches to the study of Landscape

	Scientific (1st)	**Applied (2nd)**	**Humanistic (3rd)**
Landscape regarded as	Objective	Objective but value laden	Subjective
View of Landscape reality	Is	Ought to be	A way of seeing
Landscape comprises	Everything visible	Selected elements	Symbols

Source: Jones, 1991

In the first approach, landscape is regarded as something objective, a set of physical forms that can be objectively registered. Here landscape is considered as a combination of natural and man-made features that are distinct on the earth surface; in other words landscape comprises everything that is visible. This approach is dominant in a natural scientific paradigm with strong positivistic tradition. As the definition of the landscape is very general in this approach it raises the question, how can ‘everything’ be studied? This is major

drawback of this approach but is tackled by dividing the landscape into different spheres, which are dealt by different disciplines with particular concepts and methods.

In the applied approach, the landscape is regarded as a value laden reality, a reality consisting of objectively registrable physical forms, but where attention is focussed on special natural or cultural elements that are considered as especially valuable, particularly if they are threatened with destruction or change. The underlying idea is that within the objective reality of landscape there are certain things that have a special right to existence. This is the landscape as 'it ought to be'. In this approach landscape is considered as elements on the earth's surface with special values i.e. historical places, religious places, ancient monuments, traditional land uses, natural environment with rich ecological importance etc.

In the humanistic approach, the landscape is regarded as something subjective, a mental conception of reality. The underlying idea is that the landscape is 'a way of seeing'. The manner in which landscape is perceived is dependent on individual experience and socially conditioned expectation. In this approach landscape is considered to have different symbols ascribed by individuals and groups. This approach to landscape study was developed during the 1970s (discussed in previous section). This approach emphasises human values, traditions, beliefs, and perceptions to be vital in creation, maintenance and change of landscape. Landscape is considered not only as a physical artifact of natural and human processes, but also the values, meanings and the ideology beneath the visible things and these values and meanings of landscape provide the clue of who the creators are. For Jones (2003, p. 46) "the meanings that people give landscape are bound up with culture, and the very act of naming gives shape to physical features of the landscape in people's cognition and communication".

The major research questions of this study are to look at the changes in the landscape through the change in rural landscape practices and the meanings and values attaches to the landscape. As the cultural landscape encompasses values and meanings of individuals and groups of people they should be studied by a humanistic approach. Hence in this study I have decided to use a humanistic approach.

2.8.1 Landscape Change

Regarding the study of landscape change Jones (1988) argues that the processes of change can be fully elucidated by using a combination of methods and explanations at different

geographical levels. According to him there are three modes of explanation i.e. intentional, functional and structural (Fig. 2). Each of these modes of explanation is related to particular types of question and to particular methodological approach. The three modes of explanation, requiring examination of intention (motives), function (mechanism), and structure (context), are complementary. It is necessary to combine all three in order to explain fuller the forms and patterns of the cultural landscape. We must, of course, accept that the individual researcher may focus his or her research project on only one of these modes. However, it is also essential for the researcher that while using one mode he or she must always keep in his/her mind the other modes of explanation [e.g. the NP, economic factors and social structure are structural forces in the present study].

These modes of explanation can be represented as a triangle. The three sides represent the three modes of explanation and the associated geographical scales (micro, meso and macro). At the corners are phenomena which appear to provide a link between them: the individual actor as the link between intention and function; production as a link between function and structure; and ideology as the link between structure and intention (ibid.).

Aasbø (1997) points out that there is currently an increasing interest within geographical research in the intentional mode. There is a tendency to push this perspective further towards the study of identity and meaning in the cultural landscape. She further argues that insiders (e.g. farmers using the landscape) and outsiders (e.g. environmental planners and tourists) have conflicting perspectives on the identity and meaning contained within a cultural landscape which might lead to misleading and antagonistic policies (cited in Holt-Jensen, 1999). Holt-Jensen argues that the intentional mode of explanation has become popular these days where landscape is no more understand only as physical expressions of natural and human processes on earth's surface.

In the present study I will try to focus all these modes of explanations. These three modes work as complementary and supplementary to each other. Effects of the RCNP on changing landscape practices and landscape values and meanings vis-à-vis changing the rural landscape requires all modes of explanation.

2.8.1.1 Intentional-Humanistic Explanation (Phenomenology)

The basic features of the humanistic approaches is their focus on the individual as a thinking being, as a human, rather than as a dehumanized responder to stimuli in some mechanical

way, which is how some feel people are presented in the positivist and structuralist social sciences.

Phenomenology is a philosophy of science based on the foundation that all knowledge is subjective. It seeks to analyse and identify the basic features of subjective knowledge, not only to provide an understanding of the individual but also in the practical sense of 'making life itself more significant' (Spiegelberg, 1976 cited in Johnston, 1986, p.62).

Jones (1988) emphasises that this approach is best at micro level. So I am interested to use this approach since this study is conducted at household level. This mode of explanation not only emphasises the values, meanings and symbols of cultural groups but it also emphasises on individuals within the group, who as a thinking being create, maintain and react to the landscape. So views of individuals are also important while studying cultural landscape.

2.8.1.2 Functional Analysis

This methodological approach is concerned with how the different elements of the cultural landscape function in relation to one another. It is also concerned with mechanisms of change (Jones, ibid.). Jones in his study used three conceptual models to describe the functioning of the cultural landscape. They are: resource use, annual work cycle, and the schematic presentation of social and economic relationships. In my research I will look at the landscape practices of the local people, which include resource use and annual work cycle (agricultural) and their changing scenario over time. Study of changing landscape practices can help identify the changing relationship between human beings and different components of cultural landscape as well as changing resource utilization pattern. It also reveals the way in which people attach meaning and values on different elements of landscape. To explore these aspects I am combining functional mode of explanation with intentional mode of explanation.

2.8.1.3 Structural analysis and Explanation

The third methodological approach relates the evaluations and actions of individuals as well as aggregated functional systems to underlying structural forces. At the macro-level, the social, economic and technological environment, or context, provides a set of constraints on individual responses and activities at the local level as well as on the functioning of systems at the intermediate level (Jones, 1988).

In this study one major structure, i.e. the national park rules and regulations, is considered as a major factor of landscape change. However, other structures such as economic factors

(local level) and the social structures are also considered while studying the landscape practices and landscape values and meanings.

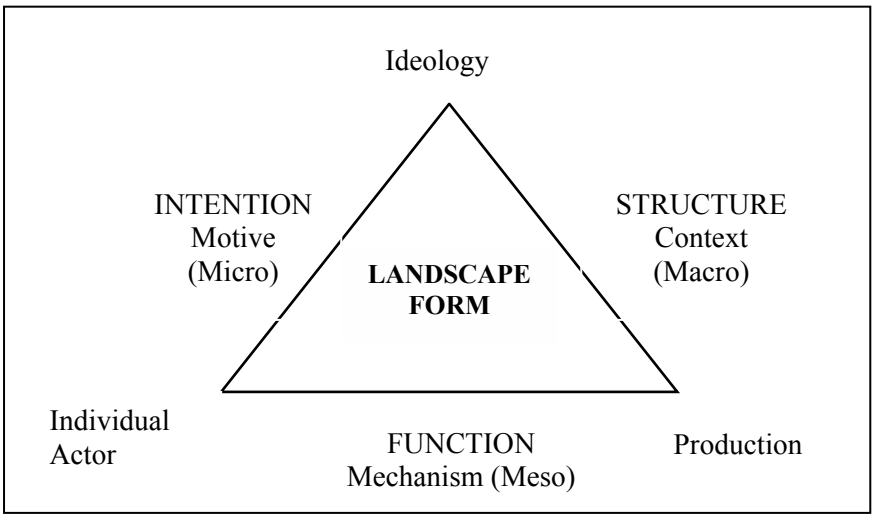

Figure 2: Relationship between factors contributing to explanation of the cultural landscape. Source: Jones (1988)

2.9 Structuration Theory

Structuration theory is an outcome in response to the two extreme views that prevailed until 1980s. One was the Structural Determinism (structure/condition has primacy over action) and the other Voluntarism/humanistic tradition (actors are independent of any constraints). Among other authors, the British sociologist Anthony Giddens' influence remains most prominent in human Geography. His structuration theory tries to put an end to each of these empire-building endeavours. According to Giddens (1984), the basic domain of study of social sciences, according to the theory of structuration, is neither the experience of the individual actor, nor the existence of any form of societal totality, but social practices ordered across space and time. Giddens tried to develop an ontology of human society and to consider the implications of this theorizing for the analysis of societal institutions (Holt-Jensen, 1999, 125).

2.9.1 Structure and Action

Structures are sets of rules (constraints) and resources (capacities or possibilities), which exist only as memory traces, the organic basis of human knowledgeability, and as instantiated in action (Giddens, 1984). Individuals are born into societies that entrap them within social structures, which both constrain and also enable them (ibid.). Structure should be understood

as rules and resources for action. There are rules for the constitution of meaning and rules for the sanctioning of social conduct. These rules can be either informal – as social norms – or formal – as laws and bureaucratic regulations (Holt-Jensen, 1999, 126). According to this theory society structures the interactions of individuals and the interactions of individuals in turn may reproduce social rules. We follow such rules consciously or unconsciously, depending on the degree to which they are self-evident to us (ibid.) Resources may be regarded as either allocative or authoritative. Allocative resources control material relations (the economy) both in private and public sphere. Authoritative resources control people both privately (domestic abuse) and in public (politics).

For Giddens, human action occurs as a "durée", a continuous flow of conduct, as does cognition, rather than as a series of isolated actions with specific intentions or aims. For the most part motives supply overall plans or programs, within which a range of conduct is enacted. Much of our day–to–day conduct is not directly motivated. Unconscious motivation is a significant feature of human conduct (Giddens, 1984). Giddens considers that the social actions always take place within a framework – an empirical connection.

In relation to the present study, the concepts of structures and actions are used in generating ideas to investigate factors controlling the rural practices as well as underlying reasons of valuing the landscape.

Chapter Three
Research Methodology

3.1 Introduction

This chapter is designed to introduce various aspects, which include selection of research approach based on the research questions; research design, selection of the data collection methods and their strengths and weakness, methods of data analysis; choosing a sample size; technique and the rational behind the sample technique, the advantages and disadvantages of the sample technique. This chapter also includes my field experiences. Finally issues of validity and reliability of this study have been discussed.

3.2 Research Methodology

Methodology is a coherent set of rules and procedures, which can be used to investigate a phenomenon or situation (Kitchin and Tate 2000). Methodology encompasses theory and is not directly operational like method (Mikkelsen, 1995). According to Shurmer-Smith (2002, p. 95), methodology is not just a matter of practicalities and techniques; it is a matter of marrying up theory with practices (the -'ology' of method). She further emphasises that when one adopts a particular theoretical position, some methods will suggest themselves and others become inappropriate, for both theoretical and practical reasons. Methodology sets the rules for research, and must be in accordance with the chosen theoretical framework. Methods are not neutral tools for scientists, but are chosen as a logical outcome of theoretical discussion and the chosen approach (Hanssen, 1989).

3.3 Types of Research Methods

The research question is the focus of any research, which determines the types of research methods. The research questions, which I have raised, are of qualitative nature. Hence I have used qualitative methods in this research. According Mikkelsen (1995) research methods have been defined as tools to be used for answering specific questions and for solving different scientific or practical problems. It is the substance of the matter, the questions to be answered, that must guide the selection of methods not vice versa. Methods should not become straitjackets. According to Kitchin and Tate (2000) data generation and analysis are not divorced and both need to be considered carefully before starting research.

3.3.1 Qualitative research

Any type of research that produces findings not arrived at by statistical means or other means of quantification is known as qualitative research. This can refer to research about persons' lives, lived experiences, behavior, emotions and feelings as well as about organizational functioning etc (Strauss and Corbin, 1990). There are many valid reasons for doing qualitative research. One reason is preference and/or experience of the researcher. Another reason and more valid one for choosing qualitative methods is the nature of the research problem, for example, research that attempts to understand the meaning or nature of experience of person (ibid).

Maxwell (1996) emphasises that quantitative and qualitative methods are not simply different ways of doing the same thing. Instead, they have different strength and logics and are often best used to address different questions and purposes. The strengths of qualitative research derive primarily from its inductive approach, its focus on specific situations or people, and its emphasis on words rather than numbers (ibid).

According to Maxwell (ibid) there are five major purposes for which qualitative studies are especially suitable:

1 Understanding the meaning
2 Understanding the particular context
3 Identifying unanticipated phenomena and influences, and generating new grounded theories about these.
4 Understanding the process by which events and actions take place.
5 Developing causal explanation.

Highlighting the importance of qualitative methodologies, Limb and Dwyer (2001) emphasise that qualitative methodologies do not start with the assumption that there is a pre-existing world that can be known, or measured, but instead see the social world as always being constructed through the interaction of culture, economic, social and political processes. It is to understand lived experience and reflect on and interpret the understandings and shared meanings of people's everyday social worlds and realities. Qualitative methodologies seek subjective understanding of social realities rather than statistical description or generalizable prediction. Patton (1980) explains qualitative research as an effort to understand situations in their uniqueness as part of a particular context and the interactions there.

The questions we ask will always to some extent determine the answer we find. And the type of answer we derive is always the product of which methods we apply. The research questions, which focus on the rural landscape practices and the values and meanings attached to the landscape and their changes over time vis-à-vis the landscape change due to the implementation of the RCNP, require in-depth analysis. It is essential to understand the contexts under which people attribute meanings and how they changes over time, space and between the groups and individuals and hence understanding the lived experiences of the people is must in this study. The depth and breadth of these questions cannot be answered with quantitative methods. Hence I have chosen qualitative method to answer these questions.

3.4 The Purpose: A Typology

Purpose is the controlling force in research. Decisions about design, measurement, analysis, and reporting, all flow from purpose. Therefore the first step in a research process is clarifying purpose (Patton, 1990). Patton (ibid.) has provided a typology of research purposes with 5 major types:

1 Basic research: to contribute to fundamental knowledge and theory
2 Applied research: to illuminate a societal concern
3 Summative evaluation: to determine program effectiveness
4 Formative evaluation: to improve a program and
5 Action research: to solve a specific problem

The purpose of basic research is knowledge for the sake of knowledge. Researchers engaged in basic research want to understand how the world operates. They are interested in investigating a phenomenon to get at the nature of reality with regard to that phenomenon. The basic researcher's purpose is to understand and explain.

The present study is basic research aiming to understand and explain the basic causes of landscape changes resulting in changes in the rural landscape practices and the meanings and values attached to it and to explain them. It is believed that the findings of this study will add a new dimension in the study of rural landscape.

3.5 Research Design

Research design is like a philosophy of life; no one is without one, but some people are more aware of theirs than others, and thus able to make more informed and consistent decisions (Maxwell, 1996). Yin (1994), states that every type of empirical research has an implicit, if not explicit, research design. Design in qualitative research is an iterative process that involves "tacking" back and forth between the different components of the design, assessing the implications of purposes, theory, research questions, methods, and validity threats for one another (Greertz, 1976).

Research design is an underlying structure and interconnection of the components of the study and the implications of each component for the others. Maxwell (1996) has presented a model of research design (Fig. 3), which consists of five components and these can be characterized by the issues that each is intended to address.

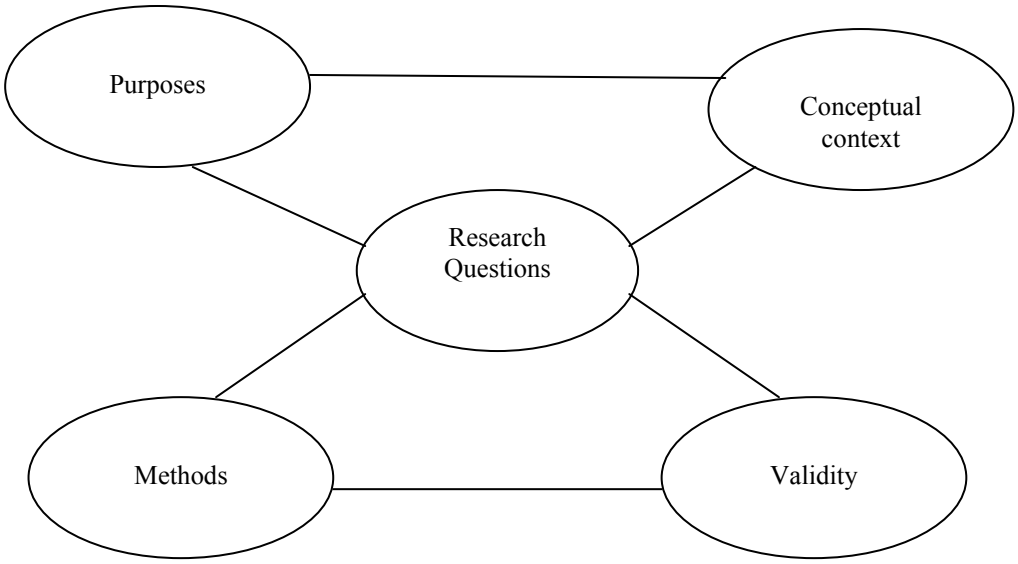

Figure3: An interactive model of research design. Adopted from Maxwell, 1996

The present study has been designed after the model provided by Maxwell. In the centre of his design is the research questions, which connect the two halves of the design. The upper half is related to theoretical aspects whereas the lower half is concerned with the practical aspects.

3.6 Nature of Data and Data Production Methods

This study is based on both primary and secondary data. Data production methods are primarily determined by the kinds of questions to be answered as well as the type of research to be conducted.

3.6.1 Methods of Primary Data Production

In this research I have used the triangulation method to collect primary data. Combining different methods is known as data triangulation. Primary data was produced by a month-long field work in the study area.

Triangulation is the general principle of collecting information from diverse range of individuals and settings, using a variety of methods (Denzin, 1970 in Maxwell, 1996). This method according to Maxwell (1996) will reduce the risk of systematic biases or limitations of a specific method, which will be reflected in the conclusion. It allows the researcher to gain a better assessment of the validity and generality of the explanations that he/she develops. Patton (1990) considers triangulation as an important way of strengthening a study design, which implies using several kinds of methods or data, including both qualitative and quantitative approaches. Denzin (1978, cited in Patton, 1990) has identified four basic types of triangulation:

1 Data triangulation: use of variety of data sources in a study
2 Investigator triangulation: use of several different researchers and investigators
3 Theory triangulation: the use of multiple perspective to interpret a single set of data
4 Methodological triangulation: the use of multiple methods to study a single problem or program.

In the present study data triangulation has been applied. I have used different methods to collect the primary data, i.e. interviews (Standardized open-ended interviews, informal conversational interviews), observation as well as photographs.

3.6.1.1 Interviews

The interview is probably the most commonly used qualitative technique. It allows the researcher to produce a rich and varied data set in an informal setting (Kitchin & Tate, 2000). The types of interviews used and the way in which the interviews are conducted depend on the research questions and method (Gubrium & Holstein, 1997). Patton (1990) has provided four basic types of interview strategies:

1 Informal conversational interview
2 Interview guide approach
3 Standardized open-ended interview and
4 Closed fixed response interview

I have chosen standardized open-ended interviews and informal conversational interviews in my study.

3.6.1.1.1 Standardized open-ended interview

Standardized open-ended interview increases the comparability of responses since every respondent answer the same sets of questions. It also reduces possible bias from researcher while interviewing many respondents. Though questions are standardized, respondents are free to express themselves on the related topics. As Kitchin & Tate (2000) mentioned time was essence in my field study, standardized open ended interview proved to be a suitable method.

It has some limitations: it allows little flexibility in relating the interviews to particular individuals and circumstances. It may also reduce the naturalness of the interview as it consists of standardized wording.

Interviews were standardized to collect information regarding rural practices including land holding, agriculture, animal husbandry, fishing, and use of forest resources; values and meaning attached to landscape and their change over time.

3.6.1.1.2 Informal Conversational Interview

An informal conversational interview is generally considered to lack any formal structure. In this type of method the interviewee can talk about any issues in any way. The unstructured format allows respondents to talk about a topic within their own 'frame of reference' and thus provides a greater understanding of the interviewees' point of view (Kitchin and Tate, 2000). Informal conversational interview was conducted with the chairman of the Kerunga User Committee (KUC) and the Secretary of the Jagatpur VDC. During the field survey I got to know about KUC, which is a responsible body of the PPP/PCP (Park and People Program/Participatory Conservation Program) at the local level to conduct various programs. He has been working as a chairman since the inception of the PPP in the year 1995 and hence he has lots of experiences, which were important for my study. After a few days of the field survey I found it essential to conduct an interview with him to know more about the program as well as to cross check the information provided by the local people about the effects of the NP in the lives of the local people. I decided to conduct an informal conversational interview, because I did not want to confine him within the periphery of my structured interview. Moreover I wanted the interview to be more like a continuous conversation so that I could listen more from him than interrupt him by asking questions.

During the interview various topics ranging from the establishment of KUC, its spatial coverage, and its role and responsibilities, his personal experiences to the views of local people, problems people are facing in this area from the NP, compassion policy etc. were covered.

An interview with the secretary was related with the general information of the study area, park-people problems, relationship of the VDC with the national park authority etc.

3.6.1.2 Observation

Observation is an inductive method of data generation (Kitchin and Tate, 2000). Kitchin and Tate (2000) refer to Wolcott (1995), who suggests that the difference between interviewing and observation is that in observation one watch as events unfold whereas with interviews 'one gets noisy'. Interviews are self-reports of experiences, opinions and feelings, whereas observation relies on the observer's ability to interpret what is happening and why. Kitchin and Tate (2000) refer also to Frankfort-Nichanias and Nachmias (1996), who claim directness as the major advantage of observation. Rather than asking people about their views and feelings, you watch what they do and listen to what they say. This directness provides a degree of validity as it concentrates upon what people really do as opposed to what they say they will.

There are two sorts of observation: straight observation and participatory observation. In straight observation the researcher is a visible and detached observer of a situation, whereas in participatory observation the researcher seeks to observe the events and the behaviour of people by taking part in the activity themselves. Observation can be divided into overt: when researcher does not attempt to conceal fact of observation and covert types: when researcher does not reveal that the groups or events are being observed (Kitchin and Tate (2000).

However, it should always be kept in mind that seeing is not believing. When looking at the same scene or object, different people will see different things. What people "see" is highly dependent on their interests, biases, and backgrounds. Our culture shapes what we see, our early childhood socialization forms how we look at the world, and our value systems tell us how to interpret what passes before our eyes (Patton, 2002). Patton (ibid.) emphasises that the scientific inquiry using observational methods requires disciplined training and rigorous preparation.

In this study I have used a direct overt observation method to collect the information. Observation was useful to collect the information regarding the rural practices, use of forest resources by the local people, use of community forest, settlement pattern, distribution of

settlements of traditional and immigrant communities, house types, and crop damage by wild animals. The information is used for contextualising the situation in the study area and as a tool for crosschecking the information provided by the local people.

3.6.1.3 Photographs

Photographs may be used as an independent way of making data to record a setting or scene, to record directly "how much" or "how many" or to provide illustrations. Researchers' photographs may serve as data in historical studies or in life history studies or they may provide background as a part of the ongoing data collection scene (Morse & Richards, 2002). A picture would be worth a mountain of words, which is why qualitative fieldwork increasingly includes photography (Patton, 2002). Photographs are a useful research tool, for the camera enables researchers to see without fatigue (since) that last exposure is just as detailed as the first (Merriam and Associates, 2002). It serves as mnemonic devices for researchers; while researchers are involved with data analysis and writing of findings, photographs can jog their memory allowing access to detail that they may otherwise have been unable to recall (Fetterman, 1989).

Regardless of its usefulness, photography may provide false impression to the viewer if the researcher is not aware of the context while producing photographs. The issues such as who takes photographs, when and where they are taken, under which circumstances they are taken must be considered while producing them and using them as research tools.

If a picture is to be regarded as "true" then the circumstances of its production and the conditions we wish to draw from it must be taken in to account (Ball & Smith, 1992). Patton (2002) believes that this excerpt aim at offering a sense of the physical environment more than it offers a literal description because unless one has been there or seen pictures, the landscape is outside ordinary experience.

In this study various photographs taken by myself during the field survey have been used to visualise the situations such as to illustrate the link between the local people and national park forest, images of crop damage by wild animals, housing materials used by local people, settlement pattern and so on. It helped me to strengthen my interpretation very much.

3.7 Secondary data

Secondary data plays an important role in research right from the initial stage of research design to the data analysis stage. The information derived from secondary data can be very

much helpful in contextualizing the study. In the present study I have used secondary information from various sources, which I have classified as literary sources and spatial data.

3.7.1 Literary sources and documents

Data on population has been used to look at population growth in Chitwan Valley in general and the socio-economic characteristics of population in the study area in specific. Newsletters, annual reports and other official publications of National Park, Park and People Program, Participatory Conservation Program; National Park Act have been used as a background information on conservation practices in Nepal in general and Chitwan Valley in particular. They are very useful for contextualising the situation of the present study. Furthermore, the information is used to support the analysis of the study. Information on weather conditions (temperature, precipitation and humidity) for the study area was collected from the Department of Hydrology and Meteorology, Kathmandu, for the year 2001 and 2002, whereas the overall geographical condition of the Chitwan valley has been described based on the information available in books and articles. Other related literature such as published and unpublished reports, books, and journals have been widely used to accomplish this study.

3.7.2 Spatial Data

A topographical map for 1994 at scale 1:25,000 has been used to prepare various maps of the study area to obtain a clear overview of the study area. Maps have been created using ArcView GIS 3.2a.

3.8 Sampling

Whenever one has a choice about where and when to observe, who to talk to, or what information sources to focus on, one is faced with a sampling decision. Even a single case study involves a choice of this case rather than others, as well as requiring sampling decisions within the case itself (Maxwell, 1996). For instance Miles and Huberman (1994) mentioned that one cannot study everyone everywhere doing everything. One's choices - where to look at or whom to talk with, where, when, about what, and why – all place limits on the conclusions one can draw, and on how confident one and others feel about them.

Thus sampling is the most essential for the researcher for the completion of the study in the required time frame and within the available resources. In this study I have chosen a sample from the traditional and migrant communities living in the study area for interview.

3.8.1 Purposeful Sampling

Perhaps nothing better captures the difference between quantitative and qualitative methods than the different logics that undergrid sampling approaches (Patton 1990). In both qualitative and quantitative research it is usual that only a subgroup of people or phenomena associated with a case is actually studied. The size of this group is more relevant in quantitative research where representativeness is important. In qualitative research, however, the sample is not to be representative since the "emphasis is usually upon an analysis of meaning in specific context" (Robinson, 1998, p. 409, cited in Bradshaw and Stratford, 2000 pp. 44-45).

Quantitative research design generally considers only two types of sampling: probability sampling and convenience sampling (Light et al., 1990 cited in Maxwell 1996). In probability sampling, each member of the population has a known, non-zero probability of being chosen, allowing statistical generalization from the sample to the population of interest. They further argue that "probability samples area paragon of high-quality research" a view that is wide spread. As a result, any sampling strategy other than simple or stratified random sampling has been seen as convenience sampling and is strongly discouraged.

For qualitative research, this view ignores the fact that most sampling in qualitative research is both neither probability sampling nor convenience sampling but falls into third category, purposeful sampling (Patton, 1990). It is also called a criterion-based selection. Miles & Huberman (1994) maintain the same that the qualitative sample tends to be purposive, rather than random. This is the strategy in which particular settings, persons, or events area selected deliberately in order to provide important information that cannot be obtained as well from other choices. Patton (1990) emphasizes that the logic and power of purposeful sampling lie in selecting information-rich cases for study in depth. Information-rich cases are those from which one can learn a great deal about issues of central importance to the purpose of the research.

Selecting those times, settings, and individuals that can provide the information that is needed in order to answer research questions is the most important consideration in

qualitative sampling decisions (Maxwell 1996). There are at least four possible goals for purposeful sampling (ibid.). The first is achieving typicality of the settings, individuals, or activities selected. The second goal that purposeful sampling can achieve is the opposite of the first, to adequately capture the heterogeneity in the population. The third possible goal is to select your sample to examine deliberately cases that are critical for the theories that one began the study with, or that one has subsequently developed.

The fourth goal in purposeful sampling can be to establish particular comparisons to illuminate the reasons for differences between settings or individuals. Although such comparisons are less common in qualitative research than in other approaches, the use of controlled comparison has a long and respected history in anthropology and is common in multi-case qualitative studies (Maxwell 1996).

I am more concerned with times, settings and the individuals who have rich information rather than the quantity of the people. Hence I have used a purposeful sampling to achieve the above mentioned goals. I have employed snowballing/chain sampling in my research.

3.8.2 Sample Size

Patton (1990) suggests that there are no rules for sample size in qualitative inquiry. Sample size depends on what one wants to know, the purpose of the inquiry, what is at stake, what will be useful, what will have credibility, and what can be done with the available time and resources. Patton (ibid.) maintains that the validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capacities of the researcher than with sample size.

Qualitative researchers normally work with small samples of people, nested in their context and studied in-depth, unlike quantitative researchers, who aim for large numbers of context-stripped cases and seek statistical significance (Miles and Huberman, 1994). Sample size is determined by various interrelated factors; among them are time, money, available resources, spatial context, purpose of the study and the type of research. In this study I have chosen samples from the traditional people and the migrants. Since this is a qualitative research and I was more concerned with the quality of the data my sample was small.

Altogether I had 28 interviews that include respondents from both the traditional (8 respondents) and migrant (20 respondents) communities. Although the respondents from the migrants include both the early migrants (14 respondents) and the late migrants (migrated

after the implementation of the RCNP, 6 respondents) most of the analysis of the migrant community is based on the information provided by the early migrants. The choice was made because the early migrants arrived before the implementation of the RCNP

3.8.3 Chain/Snowball Sampling

This is an approach for locating information-rich key informants or critical cases. The process begins by asking well-situated people: who knows a lot about..? Who should one talk to? By asking a number of people who else to talk with, the snowball gets bigger and bigger as one accumulate new information-rich cases. In most programs of systems, a few key names or incidents are mentioned repeatedly. Those people or events recommended as valuable by a member of different informants take on special importance. The chain of recommended informants will typically diverge initially as many possible sources are recommended, and then converge as a few key names get mentioned over and over (Patton, 1990). Snowball sampling may simply be defined as a technique for finding research subjects. One subject gives the researcher the name of another subject, who in turn provides the name of a third, and so on (Vogt, 1999 cited in Atkinson and Flint, 2001). Flowerdew & Martin (1997) claim that the term snowball describes using one contact to help you recruit another contact, who in turn can put the researcher in touch with someone else. The initial contact may be a friend, relative, neighbor or someone from a social group or formal organization. As the term implies, through this method, recruiting gains momentum or 'snowballs' as the researcher builds up layers of contacts.

Snowball sampling can be placed within a wider set of link-tracing methodologies (Spreen, 1992) which seek to take advantage of the social networks of identified respondents to provide a researcher with an ever-expanding set of potential contacts (Thomson, 1997). This process is based on the assumption that a 'bond' or 'link' exists between the initial sample and others in the same target population, allowing a series of referrals to be made within a circle of acquaintance (Berg, 1988 cited in Atkinson and Flint, 2001).

Snowball sampling can be applied for two primary purposes. Firstly and most easily, it can be used as an 'informal' method to reach a target population. If the aim of a study is primarily explorative, qualitative and descriptive, then snowball sampling offers practical advantages (Hendricks et al., 1992). Snowball sampling is used most frequently to conduct qualitative research, primarily through interviews. Secondly, snowball sampling may be applied as a more formal methodology for making inferences about a population of

individuals who have been difficult to enumerate through the use of descending methods such as household surveys (Snijders, 1992 cited in Atkinson and Flint, 2001).

I conducted the snowball sampling in two different groups of people, i.e. traditional and migrants. I searched for old people in both communities and early migrants (migrated before 1973) who could provide me with rich information about the changing landscape in the study area since the 1950s/1960s, well before the implementation of the royal Chitwan National Park. Some late migrants (migrated after 1973) were also selected. It was pretty easy to find the respondents from the traditional peoples because their settlements are distributed in certain locations and I had previous experience of this. For respondents from the migrants, I met two old migrants on my first visit to the study area, whom I told the reason why I was there. We had conversation for about two hours and it was very useful for me not only to find other respondents' address but also to gain information about the study area. The major advantages of this method I encountered during my field visit were the respondent's response. Respondents felt secure and at the same time proud as I mentioned their names and some background information and the way I got this information. It proved to be effective in developing rapport. Another advantage was related to time, as it proved to be most effective. It was quite easy and instant to get to respondents' house. I also took some samples from the new migrants to know their views concerning the national park and on the different elements of the landscape. I managed to locate their houses on my map with the help of the initial informants. Data available from the Central Bureau of Statistics does not include information in detail so that it could be use for sampling.

Snowball samples have a number of deficiencies and the most common are as follows: snowball samples will be biased towards the inclusion of individuals with inter-relationships, and therefore will over emphasize cohesiveness in social networks (Griffiths et al, 1993) and will miss 'isolate' who are not connected to any network that the researcher has tapped into (Van Meter, 1990). Griffiths et al. (1993) believe that snowball samples are both time consuming and labor intensive especially in some groups where individuals are highly atomized and isolated whose social networks are relatively impaired. In the context of the present study this situation did not occur, because my target was to get respondents from traditional people and migrants communities. Since, traditional people live in compact settlements and have very good social network this method proved to be very effective. It was very easy and instant to get access to the target elements. I could have faced problems among the migrants' communities because they consist of diverse cast and ethnic groups and have

different geographical origins. I eliminate this potential source of error by finding out the major settlements of different groups first and than snowballing there. As the settlements are located in clusters it was easy to get respondents because social relation among the rural communities of Nepal is very strong.

3.9 Field Experience

The rainy season in Nepal is busiest season for farmers because on the one hand they are busy harvesting maize and on the other they are busy in field preparation for paddy cultivation. Almost all, young adults and old (who can work), leave for their fields early in the morning and though they come back for lunch at midday they keep themselves busy in household activities. They normally came back home in late evening. Small children, old and disabled people are left at home. Even if the farmers finish their work in their own farm most of the farmers works as agricultural labour in the rural areas making it difficult for the researcher to find the respondents easily at home.

Although it was easy to get to the respondents' home with the help of snowballing method, it was really difficult to meet the respondents at the scheduled time due to their busy activities during this period. For example, I had an appointment with the chairman of Kerunga User committee at 16:00 pm at his home, but when I got there, he was not present. His family told me that he was busy in the field (located far from his home) for paddy cultivation. And it was quite difficult to get him to arrange another appointment. After 3 days I met him in his office and scheduled another meeting at 6:30 am at his home according to his available time, though it was quite difficult for me to get there at that time. I managed to get there as our scheduled time but unfortunately he was not present at home once again. This time he was busy finding a tractor to prepare his field for paddy cultivation. He arrived almost an hour later than the scheduled time. This kind of incident is very common during this season, so the researcher must be prepared to accept such situations.

Even if the respondent is at home he/she is never free. He/she keeps him/herself busy in post-harvest processing. And interviewing people in their fields is not only difficult but also impractical during this season.

3.10 Validity and Reliability

Since all good studies aim to be valid and reliable (Kitchin & Tate, 2000) the researcher should show his/her audience the procedures he/she used to ensure that the methods were reliable and conclusions valid (Silverman, 2000). Validity concerns the soundness, legitimacy and relevance of a research theory and its investigation. For an idea or theory to be tested or become an accepted proposition, its theoretical and practical aspects must fulfill basic validity requirements (Russ and Schenkman, 1980; Kitchin and Tate, 2000). Validity is another word for truth (Hammersley 1990; Silverman, 2000). There are a number of different validity issues that one needs to consider when conducting study. In general, these can be classified into validity that relates to theoretical or practical issues. Types of validity relating to theory concern the integrity of the theoretical constructs and ideas that support and provide the foundations for empirical research. Types of validity relating to practice concern the soundness of the research strategies used in the empirical investigation and the integrity of the conclusions that can be drawn from a study (Kitchin and Tate 2000). According to Kitchin and Tate (ibid.) it is necessary to have marriage between theory and methodology for research to be philosophically sound.

Reliability refers to the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions (Hammersley, 1990 in Silverman, 2000). According to Gall et al. (1996), reliability refers to the extent to which other researchers would arrive at similar results if they studied the same case using exactly the same procedures as the first researcher. It refers to repeatability or consistency of findings.

Maxwell (1996) has provided a checklist for validity tests. Among them, triangulation is one of the methods to maintain the validity of the study. In this study I have used a data triangulation method, which helped me to reduce the risk of systematic biases due to a specific method. Data collection methods such as interviews, observation and photographs have been used to support and check one another's validity.

Information relating to the crop damage by wild animals was verified by observation and has been captured in photographs. For instance I observed a plot of maize ready to harvest and a plot of paddy seedling ready to transplant being damaged by rhinos. It really helped me to cross check the information I got through interview regarding the crop damage in the study area. Information collected through the interviews on the use of different forest resources by the local people was also supported by observation and photographs. Since this study tries to

study two different groups in the same area it provides a chance to cross-check the information provided by one group with the others. Hence the data triangulation method proved to be very fruitful during the field visit. I therefore believe that the information I have collected provides a valid context for analyzing the research questions I have raised.

Furthermore the information provided by the local people regarding the problems related to the national park has been verified through the information provided by the chairman of Kerunga User Committee and the VDC secretary. For instance a respondent had provided information that his animal had been raided by tiger and he had not been able to get the support from the national park administration since long and now he is no more interested to get it. This information was cross-checked with the Chairman of Kerunga User Committee, because this organization is responsible for that activity. When I raised this issue with the chairman he explained the payments procedure of compensation and people's attitude towards national park due to this. I also had an opportunity to know about an incident that occurred during that period in the Kasara Market area. He mentioned that local people have misused the compensation provided from the national park. A villager's goat was raided by a tiger and the victim of that event claimed money worth 50 kg, which according to the chairman was not possible. The chairman further added that such activity creates a gulf between national park administration and the local people. As a researcher I looked at this situation as the outcome of the compensation procedure as well as lack of proper monitoring system of the national park administration.

Moreover, the sampling method I applied proved to be useful to remove a possible psychological gap between the interview and the interviewee. The snowballing method provided me an opportunity to obtain background information about the respondents before they were interviewed, which proved to be very important to develop a rapport. Hence it is believed that this approach would minimize the errors and improve the trustworthiness of the information collected and the findings derived based on the information. Based on the nature of the research questions I have used the qualitative method. Moreover, snowballing methods provided me with opportunities to meet with the information-rich people. Hence I believe the information I have collected is reliable as well as rich.

Chapter Four
Study Area

4.1 Introduction

This chapter consists two sections. In the first section a brief geographical description of Nepal and the Chitwan Valley is presented. Information on the Rapti valley development project and the malaria eradication program is presented in order to contextualize the population growth in this valley. A brief discussion of protected areas in Nepal and the history of the RCNP are also provided. Furthermore, changing approaches to conservation in Nepal are touched upon. In the second section the specific study area is introduced. This section presents the geographical situation of the study area, its people, which include both, the traditional people and migrants, the distribution of their settlement, and their economic base.

4.2 A Brief Introduction to Nepal and Chitwan Valley

Nepal is located between the People's Republic of China to the north and the Republic of India to the south, east and west; and lies on the Mid-Himalayan Mountain section of Asia. It extends from 26º22' N to 30º 27' N latitudes and 80º4' E to 88º12' E longitudes. The kingdom is a small landlocked country. On an average, it extends 885 km from east to west and has an average width of 193 km from north to south. Within this short breadth the land experiences dramatic change in the altitude. It starts from around 60 m above the sea level in the southern *terai* and reaches to the highest peak of the world (8848 m) in its northern part. It has a total land area of 147,181 square kilometres. Based on the physiographic condition Nepal is generally divided into three major physiographic regions i.e. the Mountain, the Hill and the *Terai (plain)*.

Terai region, situated in the southern part of the country stretches from East to West throughout the country. This is the northern portion of the Indo-Gangatic alluvial plain. *Terai* falls under the subtropical climatic zone. Based on the geographical condition, *Terai* can further be sub-divided into three distinct geographical regions i.e. the Inner *terai*, *Bhabar* and the *Terai* Plain. Inner *terai* denotes the plain land between Mahabharat in the north and Chure Range in the south. Chitwan is one of the inner *terai* Districts of Nepal. The altitude of this spindle-shaped valley varies from 110-665 m (Pandey, 1999). *Bhabar* zone lies between the

Inner *terai* and the *Terai* plain. *Terai* plain extends from the Nepal-India border in the south to the base of the Churia Hills in the north. The width varies from 10-50 km and forms a nearly continuous belt from east to west with exceptions along Chitwan and Dang valleys they are interrupted by Churia hills.

4.3 Malaria Eradication

The Nepalese government with the assistance of the United States adopted a malaria eradication program in Nepal on 10 April 1954. The rational for action in this field was based on the high incidence of malaria in the potentially most productive farm area, the *Terai*. If malaria could be reduced, energies previously sapped by it could be turned to growing large crops. The elimination of this hated disease would pay substantial political as well as economic dividends. At the prompting of the United States Operations Mission (USOM), the government of Nepal established an insect-born disease Control bureau in August 1954 (Mihaly, 1965, 38-41). After the introduction and success of this program wider publicity was given on the malaria eradication in different areas of hill region of Nepal to encourage the people to migrate to the Terai (Ojha, 1983).

4.4 The Rapti Valley Development Project

The Nepalese government's resettlement policy began in the middle of the 1950s. Many farmers in the hill region lost their land from the heavy flooding and landslides in the monsoon summer of 1953/54. Relocating these farmers in the Chitwan valley was one viable option (Müller-Böker, 1999). The USOM determined to open up the valley for settlement shortly after severe floods swept Nepal in 1954, and flood relief funds totaling US $2 million were added to the aid appropriation. The reasons for caring out this project were compelling. The Rapti bordered on crowded, land hungry regions of Nepal. Flat and virgin land provided opportunity or carry out the project which helped develop human settlements and agricultural land extension to offer land to the landless. Moreover, because the Rapti lay near the main road from Kathmandu to the Indian border, markets were available and a cash economy could be introduced (Mihaly, 1965). The planned settlement phase commenced in 1956 with the implementation of the Rapti Valley Development program.

The Rapti project was only partially successful in achieving its objectives. Very few flood victims and landless Hill people sought land allotment in the project. The opportunity was mostly exploited by the elite group in Kathmandu, both government service and outside, who realized the future potentials of this region. By 1961, 5233 families had been allotted 27,000

hectares of land but only 10350 hectares were actually brought under cultivation (Ojha, 1983). This project introduced this valley as a human inhabitable area among the people living in the hill region of the kingdom. This was the major period when the people from the hill region started to move into this valley.

These programs ultimately provided opportunities for people living in densely populated hill region of the country to find new destination for settlement and economic activities. Before this period no one from the hill region dared to come to this valley because of the wide spread occurrence of malaria.

4.5 Population Growth in Chitwan

The statistics of population growth for Chitwan are available since 1920. Population growth during 1920s was less than the required growth rate that is needed to stabilize the population in this area. This was mainly due to the low life expectancy, because the life expectancy for 1952/54 was only 28 year for Nepal. After the Rapti Valley Development Project and the malaria Eradication Program in 1950s the population growth took place in dramatic way reaching the maximum of 10.5% during the period of 1952-1961 (Müller-Böker, 1999) (Table 2). These programs introduced this valley to the land hunger of the hills of Nepal. Pressure on agricultural land and the natural resources around the settled areas increased as the population swelled. Drastic change in the forest cover was a major threat to the ecosystem of this area as a result concept of protected area was conceived.

Table 2: Population change in Chitwan

Chitwan					**Nepal**	
Year	Area in sq. km	Inhabitants	Inhabitants per sq. km.	Growth rate	Growth rate	Life expectancy in year
1920	-	20520	-	1.2	1.1	-
1940	-	26239	-	4.1	2.5	-
1952/54	2292	42724	19	6.0	1.3	28
1961	2510	67963	27	10.5	2.1	41
1971	2510	183644	73	3.5	2.6	49
1981	2218	259571	117	3.5	2.1	56
1991	2218	354488	160	3.2	2.24	
2001	2218	472048	213			58.64 *

Source: Müller-Böker, 1999, p. 43,

Population Census 2001 * (http://www.maps.com/reference/geoshelf/factbook/nepal.html)

4.6 Protected Area in Nepal

The history of protected area in Nepal stems with the establishment of the RCNP. Like other developing countries Nepal too has mainly adopted the North American approach to protected area management (although in recent years there seem to have been changes in the approaches where people and their culture are recognized as vital aspects for conservation). This approach is based on strict nature conservation and exclusion of human interaction and dependency. In this traditional protected area concept the concern for the rural populations and their livelihood has been generally missed. The Protected Areas (PAs) in Nepal include national parks, wildlife reserves, hunting reserves, conservation areas and watershed management and five buffer zones covering an area of 26,666 sq. km, i.e. 18.11 % of the total area of the country (Fig. 4). Shares of protected area categories are as follows: national parks covering 38.04 % of the total PAs, wildlife reserves 4.10 %, hunting reserves 4.97 %, conservation areas 42.48 % and buffer zones 10.41 %. Forest types of the mid-hill are poorly represented in protected area system but middle hills are most diversified in terms of biodiversity. Out of 118 ecosystems identified in different physiographic zones in Nepal, 80 ecosystems are represented in the present protected areas (http://www.biodiv-nepal.gov.np/nbub.html).

4.6.1 Implementation of the Royal Chitwan National Park

During the Rana regime before 1950s Chitwan was administered as a private hunting reserve. The first modern conservation effort in Chitwan was the formation in the late 1950s of a 130 man Gaida Gasti (Gaida = Rhino, Gasti = patrol) from Forest Territorial Service recruits to protect the rhino, an effort that met with limited success. The area comprising the Tikauli forest - from Rapti River to the foothills of the Mahabharata – extending over an area of 175 sq km was declared Mahendra Mriga Kunj (Mahendra Deer Park) by the late King Mahendra in 1959. Also in 1963, his late Magesty King Mahendra created a rhino sanctuary in the area south of Rapti River. In 1970, His late Magesty King Mahendra approved the establishment of RCNP south of the Rapti River. In, 1971, park boundaries were delineated to include 546 km^2, and development of park facility begun. The area was gazetted as the country's first national park in 1973 it was accomplished by His late Magesty King Birendra. Royal Chitwan National Park is Nepal's first national park (Fig. 4). RCNP has long been one of the country's treasures of natural wonders. The park is situated in south central Nepal, covering 932 sq. km. in the subtropical lowlands of inner Terai. In 1978/79, the park was enlarged to its present size i.e. 932 km^2. Recognizing its unique ecosystems of international significance,

UNESCO declared RCNP a World Heritage Site in 1984. In 1996, an area of 750 sq. km surrounding the park was declared a buffer zone which consists of forest and private lands (http://www.biodiv-nepal.gov.np/nbub.html).

The major characteristic features of the RCNP are: unique *terai* and inner *terai* ecosystem; renowned for endangered one horned rhinos; presence of ox-bow lakes; flood plains of Rapti, Reu and Narayani rivers, Bikram Baba hermitage and Tharu culture. The major floras include sal and its associates, sisoo, khair, simal, bhelur, shir pine, saccharum species, imperata species. The major fauna are rhinos, tigers, wild elephants, gaurs, ghariyals, marsh muggers, gengetic dolphins, monitor lizards, four horned antelopes, pythons, sloth bears, Bengal floricans, giant hornbills, lesser floricans and black strokes.

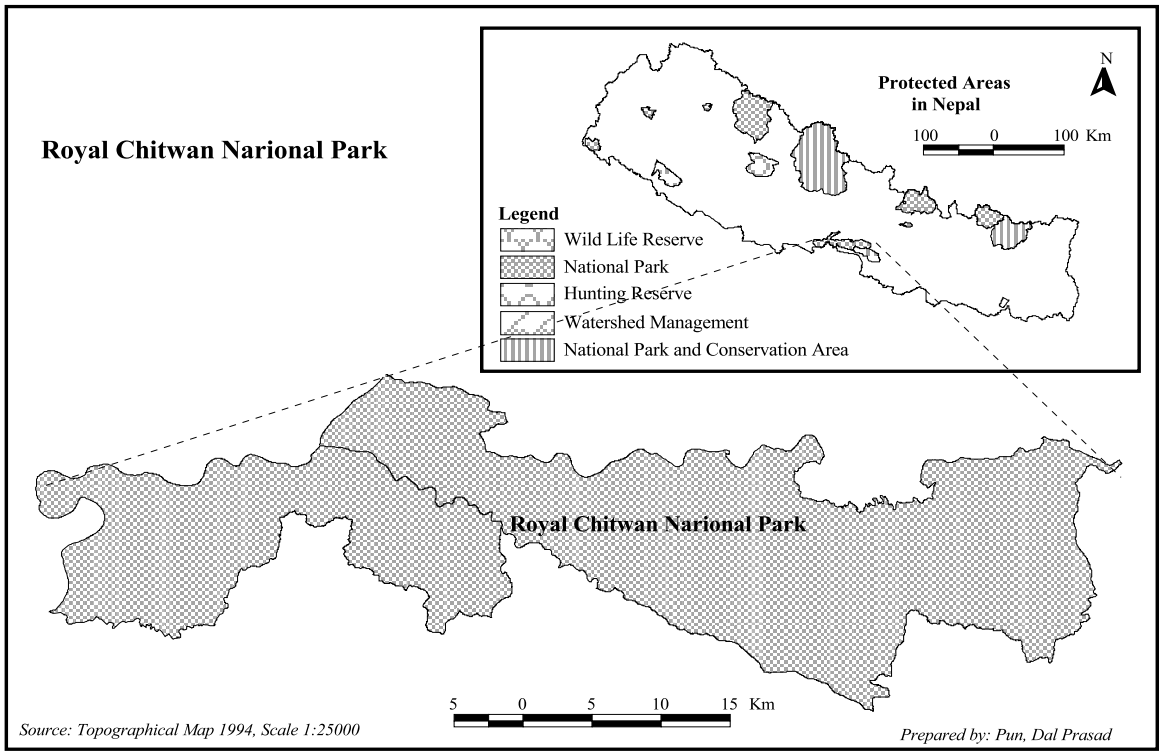

Figure 4: Protected areas in Nepal

4.6.2 Park and People Program (PPP)/Participatory Conservation Program (PCP)

The Department of National Park and Wildlife Conservation has been implementing the Park and People Program in seven protected area of Nepal with the primary objective to fulfill its twin objectives – socioeconomic well being of the buffer zone and biodiversity conservation of parks/reserves and their surroundings (HMG/DNPWC, 1999).

In Nepal, natural resource conservation in the past was undertaken through the establishment of protected area without taking into serious consideration the needs and

aspirations of the adjoining communities. The system worked when there were fewer people dependent on the resources of the protected areas. However, with the steady rise in population, natural habitats outside the protected areas are being converted into agricultural lands at an alarming pace. Even remote mountain valleys, home to unique species of flora and fauna, have not been spared from biological degeneration.

Therefore, realizing the urgent need to integrate biodiversity conservation concerns into Nepal's development agenda vis-à-vis the sustainable use of natural resources, his Majesty's Government of Nepal initiated a Park People Program with the financial and technical assistance of United Nations Development Programme (UNDP) since the beginning of 1995 (HMG/DNPWC, 1999). With the objective of conserving biodiversity by improving socio-economic conditions and the natural resource base in the buffer zone of seven protected areas through the community-based biodiversity conservation initiatives, the ground work for the implementation of the buffer zone programme has been laid down including the flow of 30-50% of the park revenue for conservation and development initiatives in the buffer zone (HMG/PPP/UNDP, 2001). The Department of National Park and Wildlife Conservation (DNPWC) has been implementing the Participatory Conservation Program (PCP) with the technical and financial support of the UNDP since 2002 in seven protected areas of Nepal. The PCP is a follow up to the Park and People Program (PPP), a pilot project implemented by the DPNWC with the UNDP assistance from 1995-2001. The National Park siphons 30-50% of its revenue to its Buffer Zone Communities through the User Committees (UC). The financial support, which is subject to change with revenue collection from the RCNP, must be allocated in the following sectors:

1	Conservation program	30%
2	Community development	30%
3	Income generating and skill development program	20%
4	Conservation education program	10%
5	Administrative expenses	10%

There are 37 VDCs in the buffer zone of the RCNP, which covers approximately 750 sq. km. Out of the total of 425 settlements inside the buffer zone 348 settlements are covered by the PPP/PCP program to date, consisting of 16,435 households out of the total households of 42,590. The total population living inside the buffer zone of RCNP is 242,000 out of which 92,989 people have been covered by this program (HMG/PPP/UNDP, 2000).

4.6.3 Terai Arc Landscape (TAL) Conservation beyond the boundaries

Conservation practices in Nepal have undergone changes ever since the establishment of the protected areas in Nepal. Now the concept of conservation at landscape level has entered in Nepal. The Terai Arc Landscape is an example of this. TAL spread across more than 49,500 sq km along the outer foothill of the Himalayas from Bagmati River (Nepal) in the east to Yamuna River (India) in the west (Fig. 5). The goal of the program is to conserve the biodiversity, soil and watersheds of the Terai and churia hills in order to ensure the ecological, economic and socio-cultural integrity of the region (www.5tigers.org/STF/Reports/WWF/TALProgressReportFY02.pdf). The Terai Arc Landscape (TAL) Program is being jointly implemented by the Department of Forests (DOF), the Department of National Parks and Wildlife Conservation (DNPWC) and the World Wildlife Fund (WWF) Nepal Program in collaboration with the local communities and NGOs since 2001. Both DNPWC and DoF have deputed their staff as Project Managers for the respective TAL project components. The TAL Program encompasses one of the most biologically diverse habitats on the earth and is a part of the Terai Duar Savannah and Grasslands ecoregion. With the government's efforts and initiation, programs like restoring and maintaining critical forest corridors and bottlenecks connecting 11 protected areas in Nepal and India have begun with local people's participation. The vision of TAL is stretched to fifty to hundred years' biodiversity conservation. Giving persistence to its long-term vision is another important factor of the TAL program. On 8 August 2002, two major grant agreements were signed with DOF and DNPWC to continue second year TAL activities. The agreement ensures WWF's endeavor towards biodiversity conservation and sustainable community development in TAL. TAL Program is geared to preserving the remaining forests as well as regenerating the natural resources of the country (www.wwfnepal.org.np/tal.htm). Regarding the importance of the TAL Dr. Chandra Gurung argues that corridors and a landscape approaches are important to avoid inbreeding depression of especially rhino and tigers (Helle, 2003).

Though this program sounds very fruitful, in a country like Nepal where vast majority of people are still dependent on agriculture, land is the main limiting factor. Furthermore, there are still lots to do to solve the park-people conflicts created by already existing protected areas. In such a situation TAL program seems to add more and complicated problems. Dr. Gurung admits that “there are big coordination challenges in the years ahead, for example, the Department of Livestock has a plan to promote goat farming in the *Terai*, but with too many goats, there will not be much left of the TAL corridors (Helle, ibid.).” his argument

indicates that the wildlife conservation is more important than rural landscape practice on which local people are based.

Regarding the ambitious TAL program the Professor Per Wegge, from the Department of Biology and Nature Conservation of the Agriculture University of Norway, argues that it could be on the expense of the poor local people, and he further suggests for the practice which best suites for Nepal. According to him, WWF and USA are using Nepal as a guinea pig with their gigantic landscape conservation experiment, instead of trying out the concept at home. He further argues that why such program is not done much in USA, Canada or Norway, where protected areas can be connected with corridors without millions of people living there (Helle, ibid.).

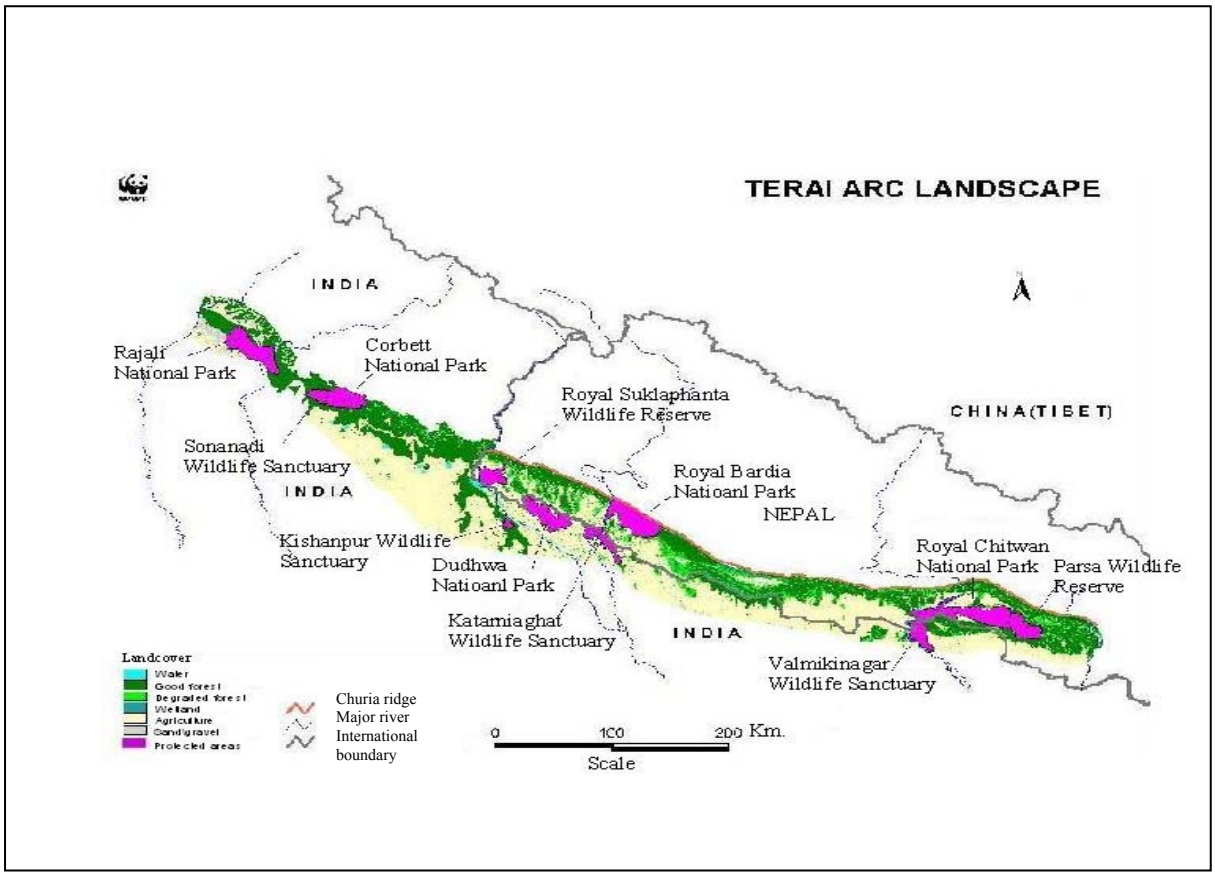

Figure 5: Terai Arc Landscape

Source: WWF, Nepal

4.7 Jagatpur an Overview

Jagatpur Village Development Committee (VDC) is located in the far southwestern part of Chitwan District (Fig. 6). The name Jagatpur is a combination of two Nepali words, namely *Jagat* meaning entire and *pur* meaning to drown. It connotes to the geographical condition of

the study area. It is believed that once this area was a river course and was entirely drowned. Later the Rapti River shifted to the south and the area became habitable. In the year 2059 B.S. (2002), a huge flood occurred that drowned almost the entire area between Kerunga stream and the Rapti River.

Extended between 27º32'N to 27º35'N latitude and 84º15'E to 84°º20'E longitude, Jagatpur VDC covers 1820 ha of land. The adjoining VDCs are Sukranagar in the west and North West, Parbatipur in the north and Patihani in the east. The whole southern part is bounded by the national park boundary, i.e. Rapti River[6]. It is one of the 37 VDCs covered by the buffer Zone of Royal Chitwan National Park and considered to be one of the highly effected areas from the national park animals. All the wards[7] are included in the buffer zone though they are not equally affected.

In general this VDC comprises two distinct topographies i.e. low land in the southern part between Kerunga stream and Rapti River with a minimum altitude of 164 m, and the other *Tar* (upland, predominantly dry land not suitable for paddy cultivation) in the whole of northern and western part of the VDC, having maximum altitude of 178 m above sea level. The area between Kerunga and Rapti River can further be classified as wetland and dry land. The climate of this area is sub-tropical monsoon type with an annual total rainfall almost always exceeding 2000 mm. More than 90% of the total rainfall occurs in rainy season from middle of the March to September. It receives highest rainfall in July and the lowest in December.

The average annual temperature is 24.5ºC. April is the hottest and driest month with maximum average temp of around 35ºC and January is the coldest month with a minimum average around 8ºC. In general relative humidity is high throughout the year except for March and April when Relative Humidity may goes down as low as 50%. After April Relative Humidity continuously increases with some exception and reach to its highest to 99/100% in January. The weather report for this region is recorded at the nearest weather station located Rampur, at 27º37'N latitude and 84º35'E longitudes at an elevation of 256 m above sea level.

[6] Rapti River is considered as a boundary of national park in this region.
[7] Ward is a smallest political unit of VDC and there are nine wards in a VDC.

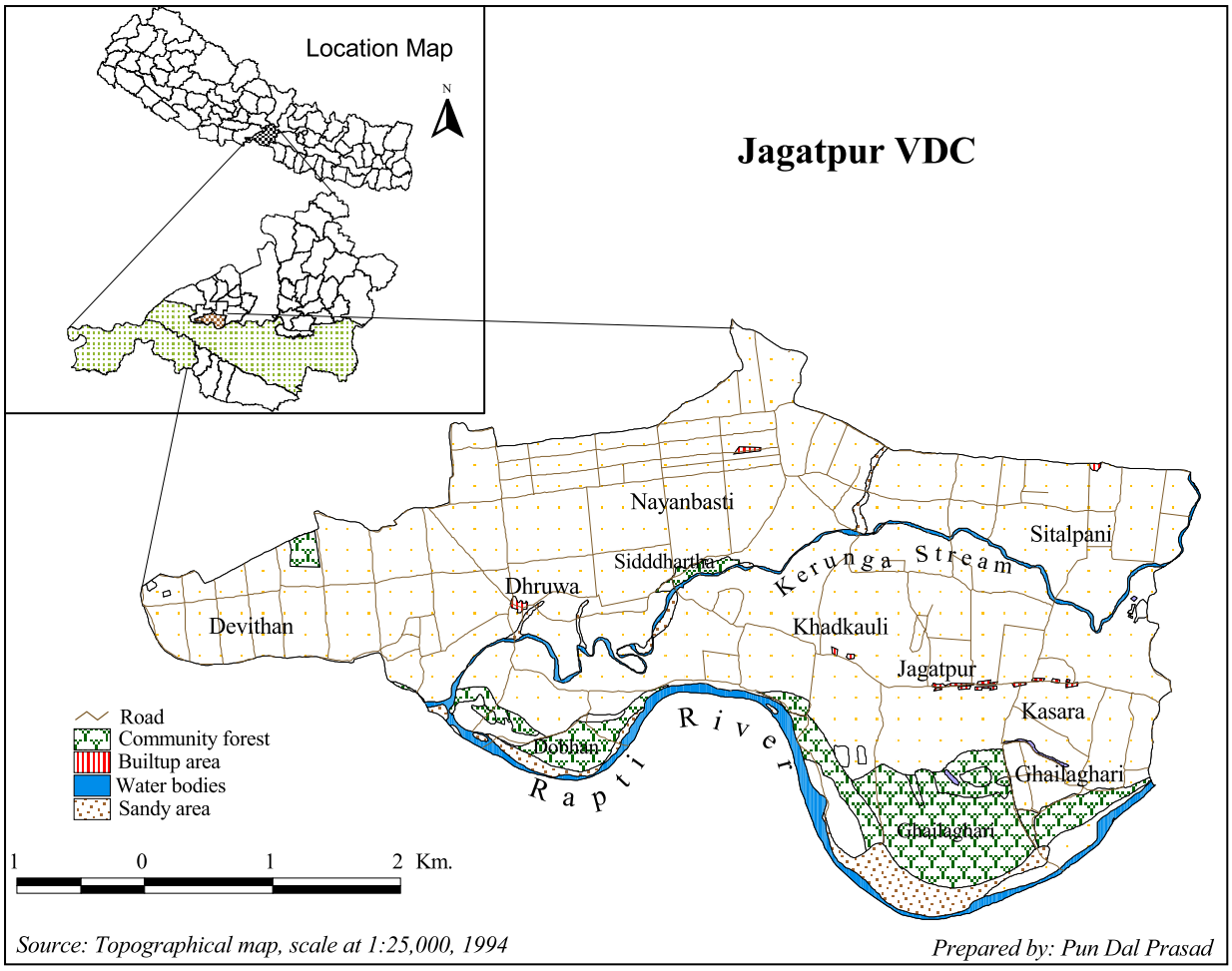

Figure 6: Study Area

4.7.1 Jagatpur as Gateway

Jagatpur enjoys its relative location as a gateway to the National Park headquarters that lies across the Rapti River inside the National Park, which has sown a seed of hope among the local people for future prosperity in the tourism industry. Beyond the National Parks lie some VDCs of Chitwan District, which are linked to the District headquarters by a seasonal passable road that goes via Jagatpur, which has further opened up the possibility of market development in this area. This road is problematic for both national park management and the local people. A bridge has been built over the Rapti River and it was opened since 2002, but unfortunately public transportation is not allowed to use the bridge by the national park management. This has created a conflict between the local people and the national park management. During the dry season public vehicles cross the river directly but in the rainy season it is impossible so people use the bridge to cross the River. Before, people used boats to cross the River.

It also functions as a gateway to the *Bikram Baba* temple situated inside the national park forest, which is popular for its wish yielding capacity. Tens of thousands of people visit this temple every year in April during *Chaite Dasain* (one of the major Hindu festivals).

4.7.2 People of Jagatpur

Before 1950s this area was sparsely populated by Darai, Tharu and Bote, the traditional Terai people. At present these people are in a minority in terms of population size. They consist of 10.8% of the total population (population census, 2001). Darai is the major traditional people living in this are since long. They believed that they are also in-migrants who migrated in this area some hundreds of years back from a place known as Damauli in Tanahun district. Darai have striking cultural and physical similarities to the Tharus and inhibit neighboring region in the Terai forest and inner valleys. They might belong to the group of aboriginal races inhabiting other more or less secluded regions of India (Bista, 1976). In their appearance, attitude and behavior they are not much different from Tharus. They are very dark and seemingly bony, yet display great health strength. Like Tharus they are considered to have developed immunity against malaria. They are more dependent fishing and less on forest game and farming (ibid.). Almost all the respondents reported to have sold their land in their life time for various households' needs and none of them have added a new piece of land on their parental property, which proves their socio-economic condition. Darais in Jagatpur are settled in Tandi (dry land area).

Tharus are another traditional people in Jagatpur. They are among the oldest groups to inhibit the Terai. Most of the large compact Tharu settlements are found in tropical malarial areas, infested with wild animals. They are by tradition peasant farmers (Bista, 1976). Rice is the major staple food of Tharus so they prefer to live near wetland areas. Filchner (1951) has mentioned malaria as the fearful scourge of humans in the Terai, particularly during the monsoon. The author characterizes the whole of the Terai as "Nepal's hell of fever''. He concludes that the indigenous population of the Rapti Valley are said to be immune to the serious form of Terai malaria (cited in Müller-Böker, 1999, 27).

Botes are another traditional people in this area with very little population of 156 (population census, 2001). They are traditionally involved in canoeing and considered themselves as fishermen. They have been living along the Rapti River without having permanent agricultural lands. At present they are living in Ghailaghari, a settlement near the Rapti River.

Like other areas of Rapti Valley Jagatpur VDC has been settled mostly by in-migrants. More than 90% of the total population is in-migrants (HMG, 2001). The history of immigration of

hill and other Terai people in this area does not go far back. It started after the implementation of the Rapti Valley Development Program coupled with malaria eradication during 1950s. Ever since 1950s this area has been receiving people from various parts of the country having diverse socio-cultural background. During the initial time migrants mostly settled in the southern and north eastern part of the VDC.

There was another major event of immigration during 1978 (2035 B.S.), when Jagatpur received more than 500 households in its whole of the western part clearing the hardwood Sal forest. Previously these people were living in the forest area of Makawanpur District, adjacent to Chitwan District. They were displaced from their previous place by the government and provided them land in compensation. The place where these people are living is now known as *Nayan Basti* meaning new settlement. People resettled in this area had to face very hard time because this area is located in upland. This area was newly deforested and the land was very dry with low agricultural value. Many children lost their lives and many domestic animals died. Local people believe that it was due to sudden change in the geographic condition mostly in climatic condition. Many people returned back to their previous place because they could not adapt with new environment.

Due to the continuous flow of migrants the land previously (before 1950s) known as the home land of traditional Terai people has now been turned into the home of multilingual and multicultural people. At present people in Jagatpur have 11 different mother tongues and 5 religions, with a majority of Hindus followed by Buddhists (population Census, 2001). Almost all the in-migrants have their origin in the hill region of the country. During the field survey it was found that their origins are Kaski, Gorkha, Lamjung, Tanahun, and Syanja Districts in Gandaki Zone; Parbat and Baglung Districts in Dhawalagiri Zone; Bahktapur, Dhading and Lalitpur District in Bagmati Zone; and Gulmi and Arghakhanci in Lumbini Zone. Makawanpur District is another major source of immigrants to this area (Fig. 7).

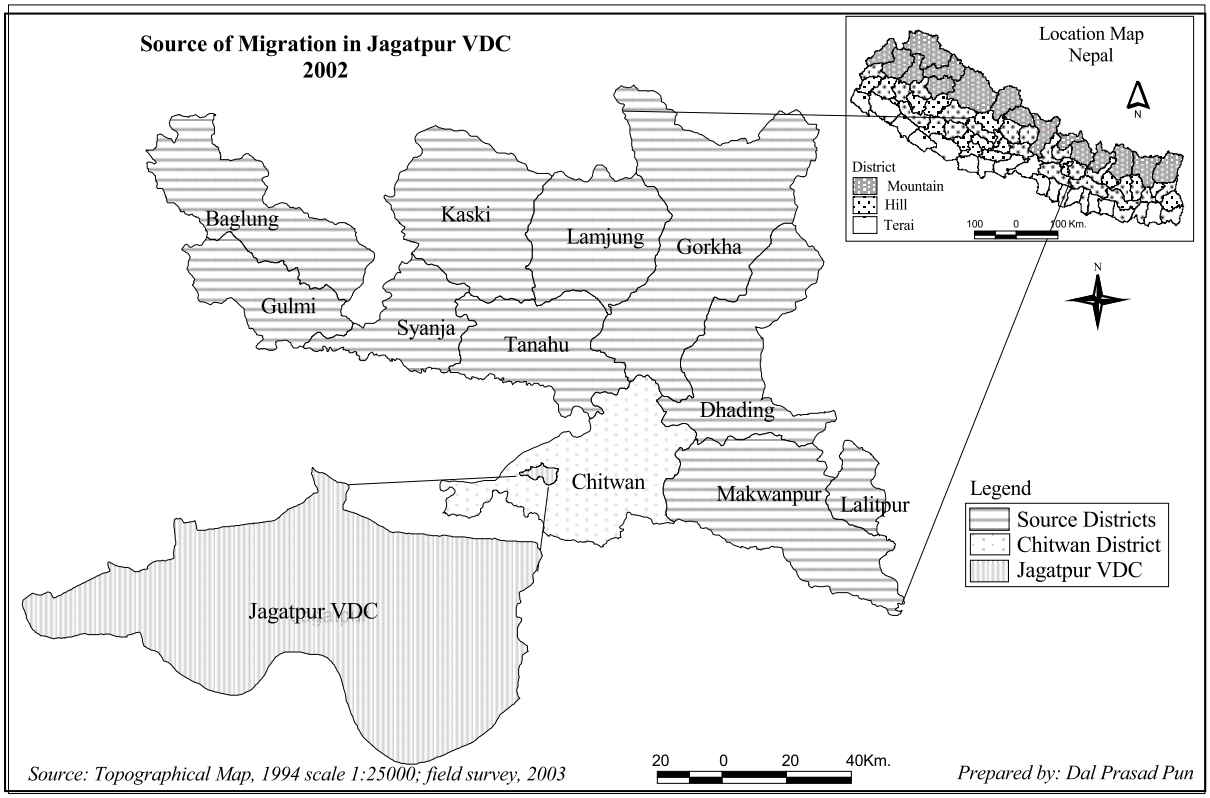

Figure 7: Sources of migration in the study area

4.7.3 Economic Base

Most of the people of Jagatpur are farmers having small holding per household i.e. 0.85 ha per household (DNPWC/PPP, 2000). More than 90% of the total households are still having agriculture land, livestock and poultry and only 7.34% of the households have none of them. 75% of the total households raise livestock, which further reveals the characteristics of subsistence farming. There are two major cropping patterns based on the topographies i.e. paddy as a major crop in wetland and maize in dry land. With increasing population the pressure on agricultural land has been increased from 3.24 person per ha in 1981 to 5.47 person per ha in 2001, which has further increased the number of poor farmers (ibid.). Only 26 % of households are engaged in non agricultural economic activities (Table 3) (Population census, 2001). This population is engaged in agricultural activities too.

Table 3: Households in Jagatpur operating small scale non-agricultural economic activity by type

Total households		Households with non-agricultural activity	Households not having non-agricultural activity	Total households with non-agricultural activity	Types of activities				
					Manufa-cturing	Trade/ business	Transport	Service	others
2042		535	1507	535	23	118	8	148	238
%	100	26.2	73.8	100	4.3	22.0	1.5	27.7	44.5

Source: Population Census, 2001

4.7.4 Distribution of Settlements

In general there are two distinct types of settlements, those of traditional people and those of migrants. Their settlements are compact and cover very small area. There are three major areas, i.e. Jagatpur, Khadkauli, and Ghailaghari, where traditional people's settlements are located. The migrants' settlements can further be classified as old and new based on their development. The previous one was developed before the implementation the Royal Chitwan National Park and the later after the implementation of the NP in 1978. The early migrants' settlements are distributed mainly (with some exceptions) south of the Kerunga stream and the north-east part of the VDC, whereas the new settlements are located north of Kerunga stream in the entire west and north-west part of the VDC (Fig. 8).

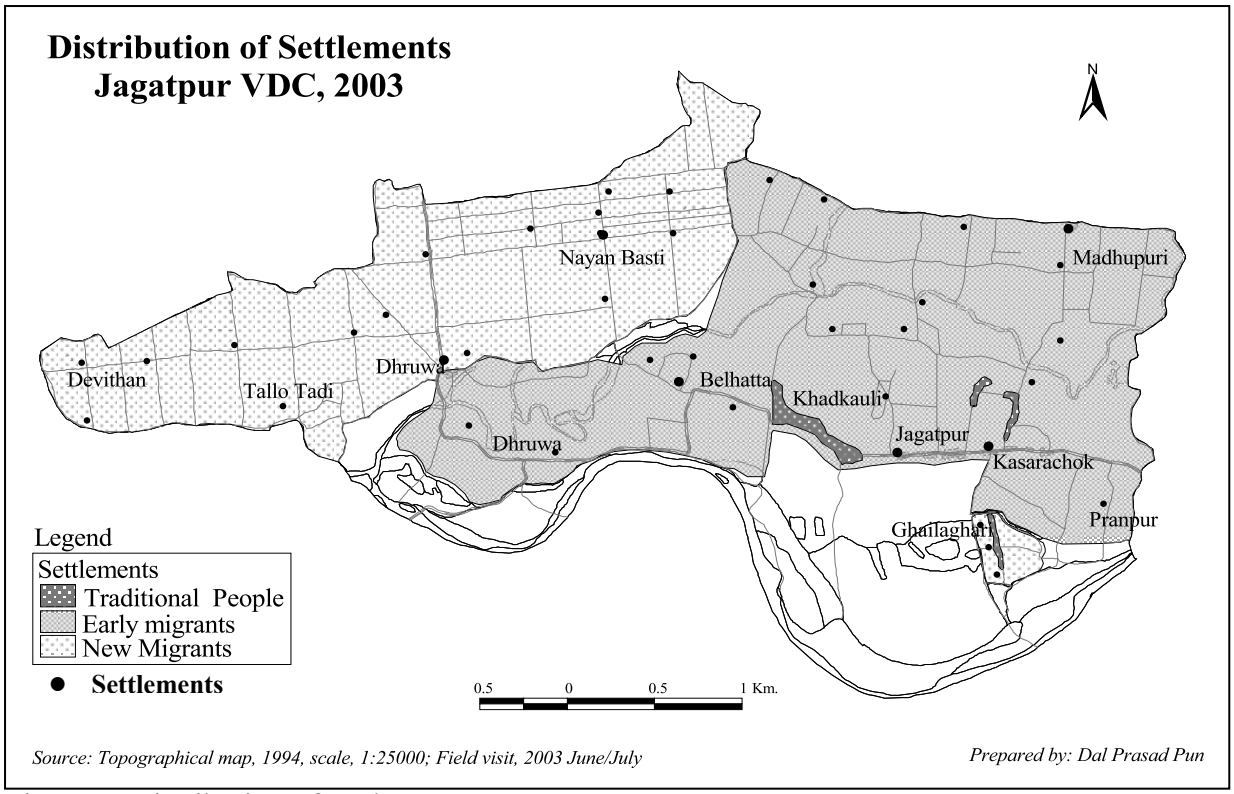

Figure 8: Distribution of settlements

4.7.5 Kerunga User Committee

Previously there were 37 user committee in the RCNP but in the year 2002 this number was brought down to 21 after the RCNP/PCP carried out an exercise to develop standard criteria in revising and reconstituting the UCs required by a provision laid down in the Buffer Zone Management Guidelines (DPNWC/PCP, 2002). The Kerunga User Committee (KUC) is one

of them; previously it covered only the Jagatpur VDC but since 2002 it also covers areas of Sukranagar, an adjacent VDC in the west of Jagatpur.

According to the chairman of KUC, they are receiving 500 thousands rupees every year to perform different programs (see under PPP/PCP Programs). He told that the community development programs are more important. Programs like road construction, school maintenance, bridge building, canal management, river embankment etc. Programs such as income generation and skill development are not effective. For example, a 15 day skill development programs were organized in the past, but they were less effective as the trainee do not get professional skill to pursue their own occupation. In addition lack of after-training support also causes ineffectiveness of these programs. He further added that the national park rules and regulation have weakened the local people living in the periphery, e.g. lack of proper compensation policy for animal caused damage (human life, domestic animals and crops) has hampered the aimed relationship between local people and the national park. Lack of awareness among the local people also causes the ineffective implementation of programs. He further added that though the program is useful to some extent reducing the park-people conflict; the problem of wild animals in local people's lives is still the major issue in this area.

4.7.6 Community Forest

Management of community forest in the buffer zone is one of the objectives of the PCP program. Under this program the local people have managed 3 community forests in the study area viz. Siddhartha community forest (less than 10 ha), Dobhan community forest (around 50 ha) and Ghailaghari community forest (around 150 ha) (Fig. 6, p.57). The forest user groups have been formed under the KUC. According to the chairman of KUC these forests are not handed over yet to the forest user groups by the RCNP, but the process will take place very soon in future. These forests mainly consist of *sissoo* trees (*Delbergia sissoo*). Siddhartha and Dobhan community forests are quite young so the locals have not started to use the resources. In addition the area coverage of these forests is too small to meet the needs of people living in ward no 5, 6, 7, 8, and 9 of the VDC. The Ghailaghari community forest is the oldest and biggest one. According to the local people the plantation was done during the 1980s. People have started to use this forest for fodder, firewood and seasonal wild vegetables. During my field survey this forest was opened for grazing for 15 days. According to the local people this forest temporarily reduces the pressure of fodder requirement and firewood. People from Druwa, Belhatta, Khadkauli, Gaucharan, Kasara chock, Pranpur,

Ghailaghari, Sitalpani, and Madhipuri (located in ward no 1, 2, 3, and 4) are getting benefit from this forest. In addition this forest controls the soil erosion in agricultural land from the Rapti River and it has also created a temporary habitat for wild animals. Furthermore this forest has been used as a place for recreation (see chapter V and VI under use of forest resources and the values and meanings associated with forest for different aspects of this forest). The KUC chairman believes that the pressure on RCNP forest has been reduced by Kerunga community forest.

Chapter Five
Rural Landscape Practices

5.1 Introduction

Rural landscape practices include those practices, which directly link rural population with landscape, i.e. agriculture, animal husbandry, use of forest, fishing, and which are the basis to sustain their lives. In this chapter I will present the major landscape practices of the local people in historical perspective, which will help shed light on the resource utilization pattern before and after the implementation of NP and its context among local people. To look at the impact of the NP on local people's practices I have tried to present the information in chronological order, i.e. before and after the implementation of the NP. I will also deal with local people's attitudes regarding changing landscape practices.

5.2 Agriculture

Although the agriculture in the study area in general includes both intensive subsistence farming and commercial, the majority of the people are involved in subsistence farming. Intensive subsistence farming is a major characteristic of third world countries, where pressure on land is very high. Intensive cultivation of the land is necessary to meet the household food demand. According to the 2001 population census, more than 90% of the population is dependent on agriculture in the study area. During the field survey all the respondents were found to be involved in subsistence farming in the study area. Agricultural activity in the study area in general can be divided in to two major types based on types of land resource, i.e. dryland and wetland. There are two major temporal cropping patterns: one is rice based cropping pattern in wetland (i.e. rice as major crop followed by others) and the other maize based cropping pattern in dryland (maize as major crop followed by others). To a large extent the choice of crop, cropping intensity and production are influenced by the types of land. Almost all respondents have both dryland and wetland. Crop damage by wild animals is common in the study area, which has created lots of problems in agricultural activities. According to local people different crops are damaged by different animals. For example: wheat, maize, rice, mustard, lentils, pulse, peas etc. are damaged by rhino; millet by deer; and turmeric and ginger by wild boar (Plates 1 & 2). According to the local people some preventive infrastructure such as wire fences and bio-fences (fence made with trees) were constructed to prevent crop damage and illegal grazing, which to some extent helped

reduce crop damage. But due to lack of proper management all the fences have been destroyed and the problem remains the same.

Plate 1: Maize damaged by rhino.
Source: Pun, field survey, 2003

Plate 2: Paddy seedling damaged by rhino.
Source: Pun, field survey, 2003

5.2.1 Traditional People in Agriculture

Traditional people have been living in this area as subsistence farmers since they settled here. Unlike migrants they were never involved in intensive farming so as to make profit out of their products in the past. They used to grow a single crop i.e. rice, in wetland, and double crops, i.e. maize and mustard in, dryland. The rest of the time they left their land fallow. The simple reason behind that was the low man-land ratio. There was significant virgin land around them so that agriculture was often shifting, though the settlements of these people have remained in the same area since the distant past. Produce from the land was sufficient to maintain their livelihood. These people never measured their agricultural products in the past. Subsistence was the only criterion for whether to bring more land under cultivation or not. According to the respondents they used to harvest only paddy not the plant, they left the plant in the fields because they did not make hay as there was sufficient fodder around them.

As this valley was introduced as a destination for migrants, pressure on land in Chitwan Valley in general and in the study area specifically increased continuously. This resulted in an increase in pressure on agriculture land among the traditional people. There are several reasons for this. One was continuous population increase due to continuous in-migration, which resulted in a loss of virgin land around them on which to expand their agriculture land. A second reason is land transactions with migrants. During the field survey it was found that all the households among the traditional people have sold some portion of their land (in some cases their entire land) to migrants in their life time for domestic reasons (i.e. medical treatment, domestic expenses etc.). None of them has ever bought land in their lifetime.

This continuous pressure on agricultural land compelled them to intensify their agricultural activities by growing more crops on their land. In addition to the previous crops they started to grow maize, wheat, pulse beans and peas in the wetland and oil seed in dryland. Increase in the cropping intensity as a response to the situation helped meet the food demand. Unfortunately this situation did not remain favorable for them for long. They started to have food security problems in the years following the establishment of the RCNP. This was related to two major aspects: one was the restriction on the use of forest resources for both human beings and domestic animals, and the other one was an increase in the number of wild animals due to protection. The RCNP had distinct effects on their agricultural activities; these were production, productivity and crop diversity. Production is directly related to the crop damage done by wild animals from the national park forest. The productivity of land is related to the agricultural input. Formerly manure was the single dominant fertilizer in the field. As the grazing of the animals was restricted inside the Park Forest, animal husbandry was almost abandoned by these people, resulting in low production of farm manure, which ultimately affected productivity of their land. Productivity is also related to the encroachment of wild animals on crops. Crops are damaged by wild animals and the farmers do not get any compensation. As a result farmers have become less attentive in their agricultural activity, which in turn affect the productivity. Affect on the crop diversity is another major issue. Due to regular and severe encroachment of wild animals on certain crops such as wheat and millet (cereal), beans, pulse, turmeric, ginger (cash crops) etc. people have stopped growing these crops. Table 4 and 5 presents an overview of the cropping calendar among the traditional people. Some young farmers have never attempted to grow these crops in their life time. Crop damage is common throughout the year but most severe in the winter crops.

At present two major crops, i.e. rice and maize, are grown in wetland and three major crops, i.e. maize, mustard, rice, are grown in dryland. Rice cultivation in dryland is a new practice. This has been possible due to underground water irrigation, but this has not been practiced in all households because of its cost. Likewise, cultivation of mustard is not popular due to its marginal productivity (people grow mustard only in small portion of their land for household purpose) whereas cultivation of peas and pulse was found only in one household. This case was an exception among the traditional people. Further, this respondent was the only one, who stated having not only food sufficiency but also some stock to sell on the market. He reports:

> *"I have 2 bigha and 3 katha (nearly 1.5 ha) of land. I grow sufficient crops from my field. I even sell some of them like rice and maize. I do not have much problem from*

wild animals in my fields as my fields are located just behind the Kasara market and surrounded by settlements, which work as a barrier to animals. So there has been little change in my agricultural activities due to effects of the NP. But people living in other area have problems. At present I grow four crops i.e. rice, maize, pulse and beans in wetland and four crops in dryland i.e. maize, rice, mustard and pulse."

This statement clearly reveals that location of agricultural land plays a major role in agricultural practices in the study area, and subsistence from the field is possible if fields are not affected by animals. Location in this context indicates the issue of crop protection from wild animals.

Table 4: Cropping calendar in wetland among traditional people

Crops	Months											
	Baisakh	Jesth	Asad	Shrawan	Bhadra	Aswin	Kartik	Marg	Poush	Magh	Falgun	Chaitra
	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Rice			*	***	***	***	**					
Maize	***	***	***	*								**
Pulse							**	***	***	***	*	
Peas							**	***	***	***	*	
Wheat							++	+++	+++	+++	+	

Source: field survey, 2003

Table 5: Cropping calendar in dryland among traditional people

Crops	Months											
	Baisakh	Jesth	Asad	Shrawan	Bhadra	Aswin	Kartik	Marg	Poush	Magh	Falgun	Chaitra
	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Maize	***	***	**								**	***
Rice				***	***	***	***					
Mustard							*	***	***	***	*	
Pulse							*	***	***	***	*	

Source: field survey, 2003

Note: *** Major crop at present, *** crops rarely grown due to the effect of wild animals

+++ Crop not grown at present due to the effect of wild animals

Number of *, + signs indicate time; 3 signs = a whole month, 2 signs = 2/3 of a month and 1 sign = 1/3 of a month approximately and this is applicable to all Tables on cropping calendar.

To conclude, it can be said that there have been changes in cropping intensity over time. Agricultural activities were prosperous during the late 1960s and the 1970s, when these people were using their land intensively and they were self sufficient from their agricultural products. Although cropping intensity in dryland has increased, it is not widely practiced at present and it is not able to fulfil the food requirement because of its low productivity. Had it

been possible to cultivate varieties of crop in wetland people would not have suffered from food security problem.

5.2.2 Migrants in Agriculture

Unlike traditional people early migrants were involved in intensive agricultural activity right after they settled in this area during 1950s and early 1960s. Agriculture was the major source of attraction for these people. Virgin land offered them ample opportunities to optimize their agricultural activities. Triple cropping in wetland and double cropping in dryland were common ever since they settled in this area. Cropping intensity was high among the migrants compared to traditional people.

Rice, maize, wheat, peas, pulse and buck wheat were the most common crops in wetland in the past, whereas maize, mustard, lentils, millet and upland paddy were common in dryland. For migrants this area was very desirable for agricultural activities. Within a short period of time they succeeded in their agricultural activities, in a sense that most of them bought agricultural land with the income generated by agricultural products. Agriculture was not only for subsistence but also for economic prosperity. Agriculture did not proved to be sustainable once the National Park was established. Like traditional people these people also faced similar problems from NP. The place once renowned for agriculture slowly started to face problems with varying intensity. Migrants' settlements are scattered all over the study area so the problem associated with wild animals in their land varies among them and so does the agricultural activity.

A number of successful stories related with agricultural activities can be heard among the early migrants in the study area.

A respondent (who lives near the NP), aged 72, migrated to this place in 1962 along with friends in search of agricultural land and to raise animals. He recalls his first experience of his paddy harvest:

> "*When I harvested my paddy for the first time, it was really a wonderful experience. My relatives who had come from my previous place to see us, when they saw the heap of paddy harvest they were really surprised and appreciated my endeavor and were really proud of my decision to migrate to this place.''*

Another old migrant, aged 70, who saw himself as purely a farmer, migrated to this place in 1963 in search of agriculture land and a place for animal husbandry. Before he migrated to the area he made a pre-visit and spent the whole year in 1962 to explore the possibility of

agriculture and animal husbandry. He again came back in 1963 to buy agricultural land but it was quite hard to get; finally he met with the local landlord named Hari Kumar Shrestha, who managed 2 bighas (Bigha is a land measurement unit; most common in terai region of Nepal, 1 hectare is equivalent to around 1.5 bighas) of land for him. He bought 2 bighas of land that cost 500 Rs in 1963. After he bought land he brought all his family to the area. He feels proud to express his story of success in his occupation:

> "*I acquired 2 bighas of land when I first migrated to this area in 2019 B.S. (1963). I bought 2 more bighas of land in 2022 B.S. (1966). This process still continued and I again bought 2 bighas more in 2027 B.S. (1971). It was not the end of my progress story of land extension. It continued and in 2030 (1974) I added another 2 bighas of land to my previous land. So within a decade I succeeded to add 6 bighas of land with income generated mostly from agriculture. I used to grow 200 muris of rice per year. My purpose of migrating to this place became fulfilled.*
>
> *But the situation has turned now. Agriculture has become a difficult task for us. We are always worried about crop damage by wild animals. We also do not have sufficient manure to enrich our soils. Soil fertility is decreasing day by day and the use of chemical fertilizer is not as good as manure. We are in a situation where we cannot manage large herds of animals to produce manure and as a result we do not have good harvests. Now we have a problem of subsistence from our fields. Pulse, peas and wheat are economically more benefiting crops for farmers but unfortunately it is impossible to cultivate these crops in most of the wetland near the NP Forest due to the problem of wild animals."*

This kind of story can be heard among the early migrants whose main aim was to acquire virgin and fertile agriculture land and cultivate it. These statements reveal that the agricultural value of this area was the focus of attraction for the hill people. These experiences of old people are the reality of the agricultural activities in the past. It also reveals how the agricultural activities have changed over time.

A respondent aged 50, who lives in Sitalpani, located in the north east of the VDC and quite far from the NP, does not have much problem in his agricultural activities from wild animals. He expresses:

> "*I have 3 bighas of land (2 ha), which includes both wetlands and dryland. I grow rice, wheat, pulse and maize in wetlands and lentils and grass in dryland. I used to grow mustard in dryland but I left it about ten years ago due to its marginal*

production. Agriculture is not that difficult in this area compared to the areas near the NP. I also have a problem from wild animals especially rhinos during the winter in the wheat crop, but it is not so severe, which is why I have not stopped growing it. But people living near the NP have stopped growing wheat long ago."

This is a typical situation that prevails among the residents who lives at quite a distance from the NP. This statement shows the possibility of agricultural activities in the absence of the effects of wild animals, which is not available for the people living near the NP.

Table 6: Cropping calendar in wetland among migrants

Crops	Months											
	Baisakh	Jesth	Asad	Shrawan	Bhadra	Aswin	Kartik	Marg	Poush	Magh	Falgun	Chaitra
	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Rice			*	***	***	***	**					
Maize	***	***	***	*								***
Mustard							***	***	***	***	**	
Pulse							***	***	***	***	**	
Wheat							***	***	***	***	**	
Buckwheat							+++	+++	+++	+++	+	
Peas							+++	+++	+++	+++	+	

Source: field survey

Note: *** Major crop at present, *** crops rarely grown due to the effects of wild animals

+++ crops not grown at present due to the effects of wild animals

Table 6 presents the changing crop calendar among the migrants in wetland. Rice and Maize are major crops, which are common in all households although the productivity has decreased according to respondents. Cultivation of pulse mustard and wheat is very rare and place specific, whereas the buck wheat is no longer cultivated due to the problem of wild animal. Table 7 shows that the cropping intensity is high in dryland compared to wetland, but the production is low compared to wetland according to the local people.

In response to the question on the extent of the problem of wild animals for crops, some respondents (who live near the national park or who have land near NP) said that some farmers have started to abandon their land and other grow crops without giving them proper attention.

Table 7: Cropping calendar in dryland among migrants

Crops	Months											
	Baisakh	Jesth	Asad	Shrawan	Bhadra	Aswin	Kartik	Marg	Poush	Magh	Falgun	Chaitra
	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Maize	***	***	***								***	***
Rice				***	***	***	***	***				
Mustard							***	***	***	***	***	
Pulse							***	***	***	***	***	
Lentils							***	***	***	***	***	
Grass	***	***	***	***	***	***	***	***	***	***	***	***
Millet					+++	+++	+++	+++				
Dry Paddy	++	+++	+++	++ +	+							

Source: field survey

Note: *** Major crop at present, *** crops rarely grown due to the effects of wild animals

+++ crops not grown at present, +++ crop not grown due to the effects of wild animals

To summarize, agricultural activities in the study area are influenced by the local topography. In addition the impact of wild animals on the agricultural activities is more apparent compared with earlier. The effects of wild animals is directly related to the distance of land from the NP forest (i.e. crop damage is inversely proportionate to the distance from the forest), type of crops (i.e. some crops are severely affected than others) and the location of the land irrespective of the distance from the forest (i.e. some areas are safe from the effects of wild animals though they are near from the NP because they are surrounded by the settlements that works as a barrier for animals). Thus there is spatial variation in the effect on agricultural activities and hence on the individual's view on agriculture.

Availability of wetlands and possibility of rice cultivation was major pull factor for early migrants. Cropping intensity and crop production in general have decreased in the wetland, whereas the cropping intensity in the dryland has increased in both communities especially among the migrants. People have stopped growing economically more benefiting crops like wheat, pulse, pulse, and mustard. They have started to cultivate rice using underground irrigation, which is a new practice in this area. According to the local people this practice is not older than 10 years. But there are still many farmers who can not afford underground water irrigation. Even if the cropping intensity in the dryland has increased the productivity is less compared to that of wetland. As a result people who suffer from wild animals in their fields have a food deficiency problem in general. It is also evident from the study that the changes in agricultural activities do not have a clear-cut boundary but they have rather gradually changed over time.

5.3 Animal Husbandry

Animal husbandry constitutes a major component of the traditional subsistence farming system in general, and this is also evident in the study area. Animal husbandry has been common in both traditional and migrant communities ever since they were settled here, although there has been considerable change in animal husbandry since the establishment of the RCNP, most significantly in the number of livestock and their composition, which has a direct effect on agricultural activity of this area. Plate 3 shows different elements of the cultural landscape on which the everyday life of the local people were depended in the past. They include Kerunga stream, agricultural fields, and the National Park Forest including Chure Range. Rapti River, which is not visible in the Plate, lies between the agricultural fields and the National Park Forest. Rapti River was a major source for animals' drinking water. At present their agricultural activities are confined to this side of the Ripti River, i.e. agricultural fields and the Kerunga Stream. During the field survey it was found that all the respondents have managed either one or another animal for various purposes, most importantly for manure. Although both communities have been involved in animal husbandry its role has been different between these groups. Looking at the present situation of animal husbandry alone cannot reveal the value of this area for animal husbandry in the past and its role in the socio-economic condition of the local people. Analysis of the animal husbandry in a historical perspective can shed light on the everyday life of these people in a temporal context.

Plate 3: Southward view from Dhruba, Jagatpur including Kerunga stream, paddy fields, National Park forest and Chure hill in the far south.
Source: Pun, field survey, 2003

5.3.1 Traditional People and Animal Husbandry

Animal husbandry among the traditional people was not for market economic benefits but rather for social status and subsistence. The number of animals was a symbol of their prosperity in the society and as a result animal husbandry was extensively practiced. Cows and oxen were the most common animals whereas sheep were kept in some households only. Oxen were used as draught animals, ploughing the field, and cows were used for milk and reproduction of calves. Animal husbandry was entirely managed by grazing in government forest. Daily movement of these people into the forest was mostly related with animal husbandry, although they used the forest for various other purposes, which I will discuss in later sections. The majority of young people spent the daytime in the forest. Entering the forest with animals after their meal and coming back home in the evening constituted the major component of their everyday life. They visited as far as Chure range in the south along with their animals in the past. Through their actions in everyday life the forest became an integral part of their life.

A traditional old man (around 60), remembers his father's time when there used to be very large herds of animals. He told that,

> *"Cows and oxen were (and still are) common among traditional people due to their fodder requirement whereas water buffaloes were (still are) common among the migrants due to its economic value. Fodder requirement of cows and oxen are far less compared to the water buffaloes and the traditional people do not prefer to collect the grasses rather they prefer to graze their animals."*

He further stated,

> *"We had around 16-18 oxen, 80-90 cows before the implementation of the RCNP and they were entirely managed by foraging in the government forest. We used to visit the forest daily and reached up to Chure hill, that lies in the south, and is 2 hours walking distance from here. It was how our days were passing. Actually I enjoyed it in the forest more than at home. It was a meeting point for all friends. I used to spend whole the day time in the Jungle.*
>
> *Suddenly when RCNP was established and we were notified about the restriction on using forest resources, we were shocked. We had no choice other than to see our animals dying starved. We normally didn't sell our animals. Even if some did it was really difficult in very short time. This activity restricted us in the practice of our traditional occupation. There were no other opportunities around so we just remain idle.*

At present I have a cow, 2 calves and a yoke of oxen. They are managed by stall-fed and grazing in the community forest which temporarily reduces the pressure on fodder requirements."

This story of a respondent is typical of the story of traditional people. There are certain aspects in this story. They are changes of animal husbandry from large herds to small herds, change in everyday life, and change in grazing place; finally they still have a problem of fodder even if they have small herds.

Animal husbandry no longer remains as a symbol of prosperity among these people and it no longer supports for subsistence. At present animal husbandry is done on a very small scale, which according to them is not sufficient to supply manure to their fields. Cow and oxen are still common but some people have started to keep buffalo and goats too. They are managed both by stall-fed and grazing. Normally they graze their animals around the homesteads and the open fields. Grazing in community forest and fodder collection are new practices in this area, which temporarily reduces pressure on fodder requirement. Table 8 clearly reveals that there has been considerable change in animal husbandry.

Table 8: Animal husbandry among traditional people: number of animals kept by different respondents

Animals	Resp. 1		Resp. 2		Resp.3		Resp.4		Resp.5		Resp.6		Resp.7		Resp.8	
	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then
Cow	1	9	4	18	-	14	9	30	2	25	3	25	2	85	2	12
Oxen	2	4	-	4	2	6	2	10	-	8	2	8	2	18	2	12
Goat	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-
Sheep	-	-	5	-	-	-	-	-	-	25	-	25	-	-	-	-
Buffalo	1	-	-	-	2	-	1	-	1	-	-	-	-	-	-	-
Cow Calves	8	-	-	-	-	-	2	-	-	-	1	-	2	-	-	-
Buff Calves	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-

Source: field survey, 2003

Note: Then: Before the implementation of the NP, Now: After the implementation of the NP

5.3.2 Migrants and Animal Husbandry

There is not a single household among migrants without animals. Unlike traditional people the number of animals was a source of market economic benefit for early migrants, which was one of the major reasons for settling in this place. As a result buffalo was the main animal. According to Müller-Böker (1999), water buffalo, which is the most important source

of milk in Nepal, was seldom kept on traditional people's farms. Their *pahariya* (migrants) neighbors, on the other hand, did not have any problem with intensive farm of breeding buffaloes.

Apart from buffaloes they kept cows, goat, buff bull, and oxen. They managed their animals mostly by grazing in the forest, but hay making and fodder collection were also common among them. Müller-Böker (ibid.) further stated that the migrants from hills retained painstaking and labor-intensive forms of animal husbandry in the low lands. They exploit the resources of their own farm and those of the forests and grasslands. This is ecologically dubious behavior, but on the level of operations it is doubtless a successful way to proceed. Her statements seem supported by the statements given by the migrants.

> *"Grazing land, grass/fodder, timber/wood, firewood, agricultural land, climate, flat land and its relative location near by the Rapti River were the major attractions of this area. I came here for agricultural land and animal husbandry ''*
>
> *"I bought 2 bighas of land with the income generated by animal husbandry, especially by water buffaloes''*

These are some of the statements given by the early migrants. The first one reveals why they migrated to this place and what were the major pull factors. The second indicates how they were successful in improving their economic status by animal husbandry.

An old migrant, around 70, got to know about land distribution through the government notice on "Rapti Valley Land Sale and Distribution". Then he together with friends and relatives applied for land and migrated here in 1960. Initially he got 2 bighas of land, in the following years he added 2 more bighas of land with the income generated mostly by animal husbandry. He strongly voices that he came here to raise animals. He expresses his experience of animal husbandry in his life time like this:

> "*I used to keep 35 water buffaloes, 35 cows and oxen and around 40 goats. It was my main purpose to settle in this area; actually I came here to raise animals. I bought 2 bighas of land with the income generated by animal husbandry especially by water buffaloes. It was like my dream came true.*
>
> *Our bad days arrived as the government established the Royal Chitawan National Park and restricted us to use the forest, which had been an integral part of our lives, for grazing our animals and so many other things. It was not only difficult but next to impossible to manage such a large herd of animals on our own premises. So I decided to move with the animals to a new place where there were grazing lands available. In*

2032 Jestah I moved to Ramnagar a place located near the district headquarters east from here, where I hired a piece of land to keep animals. It was my misfortune that a disease called "Mate'' spread. I sold a few of the animals to a merchant from Narayangard market but could not collect the money. Within 6 months almost all the animals were dead due to "Mate". After 6 months I came back home with a cow. Since then I do not prefer to keep large herds. At present I have 2 water buffaloes kept for milk and compost. They are mostly stall-fed."

His coping strategy (though it was not successful) to tackle the situational confusion arising from the implementation of the RCNP underpins two major aspects of that time. The first is the role of animals in the prevailing economic structure and the second one is the strong purpose of settling in this place. He is the one who, among the migrants, used to keep the largest herds before the implementation of the RCNP. It also reveals the fact that there has been considerable change in the animals' number and the purpose to keep them.

At present the largest herd found among the early migrants consists of 1 cow, 2 buffalo bull, 3 buffaloes, 2 buff calves and 3 goats, whereas in the past (before RCNP) it comprised 15 cows and 13 buffaloes (Table 9 respondent 9). Almost all the respondents reported to have a problem of fodder, except those who keep only 1 buffalo or who have sufficient wetlands to produce hay for animals. This information is clearly supported by the report from DPNWC/PPP, 2000 (Table 10). This is why some respondents responded that they take their animals into the NP forest, though it is illegal. Hay is the basic fodder for animals in the Terai in general and in the study area specifically. According to the respondents this area is no longer suitable for managing large herds of animals due to the lack of fodder and grazing land; as a result this area previously known as one of the best places for animal husbandry, has lost its value among this people. At present none of the respondent gains market economic benefit from animal husbandry.

Another problem for the animal husbandry in this area is from wildlife, i.e. tigers and leopards. Previous studies also reveal that the livestock killing by carnivores is common in the periphery of the NP. The predators are normally tigers and leopards that predate on cattle, buffaloes, goats and sheep.

According to the local people incidents of animal raids by wild animals are common in this area. Local people do not get enough compensation for such incidents. They receive only 25% of the total value of animals and the payment normally takes a very long time.

Table 9: Animal husbandry among migrants (early migrants): number of animals kept by different respondents

Resp.	1		2		3		4		5		6		7		8		9		10		11		12		13		14	
Animals	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then	Now	Then
Buff	3	-	2	35	3	7	3	9	3	15	1	7	1	15	4	10	5	13	2	2	2	5	-	3	-	-	3	5
Buff bull	2	-	-	-	-	-	-	-	-	-	2	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-
Goat	3	-	-	40	2	2	-	12	2	-	-	-	3	-	3	-	3	-	-	3	-	-	-	-	-	-	2	15
Cow	-	22	-	35	2	7	-	16	-	-	-	-	-	-	-	14	1	15	-	-	-	-	-	-	-	-	-	5
Ox	-	-	-	-	-	4	-	4	-	-	-	-	-	-	-	6	-	-	-	2	-	-	2	2	-	-	2	2

Source: field survey, 2003

Note: Then: Before the implementation of the NP, Now: After the implementation of the NP

For instance a respondent of Druba faced this problem. He reported that his goat was raided by a tiger. He petitioned the NP through the Kerunga User Committee for compensation but he could not receive the compensation even after a year. So he just forgot the event and has no more hopes and expectations of getting compensation.

This is a common incident, and that is why local people either think it better to sell the meat of dead animals (e.g. goat, buff bull) rather than to ask for compensation, or they increase the value of animals when asking for compensation. A respondent (late migrants) gives as an example:

> "*If my buff bull, that cost 8,000 Rs, is raided by tiger, if I complain I will get 2,000 from the NP as a rule. But it will take such a long time that I may not be interested to get it. So it is better to sell the meat, which may be worth far more than the compensation amount.*"

According to the chairman of the Kerunga User Committee, a goat was raided by a tiger in the village during my field visit. The owner of the goat complained that the goat weighed 50 kg., which normally is not possible. These activities of the local people are indications of their dissatisfaction towards the NP rules and regulations. It is also evident that local people have been discouraged from their rural practices.

To summarize, animal husbandry in the past was widely practiced for various purposes i.e. subsistence, symbol of social prosperity, draught animals, as an integral part of agriculture and market economic benefits etc. Implementation of the RCNP brought about changes in this practice. These changes do not show spatial variations in the study area. At present animal husbandry is practiced on a small scale in both communities, and does not fulfil the above mentioned purpose of animal husbandry.

5.4 Use of Forest

Analysis of the use of forest can help identify the socio-economic condition of the people. Moreover it can reveal the fact that how the other practices are interrelated with the forest resource use. The majority of the population is still dependent on agriculture in Nepal in general and in the study area in particular and the agricultural system is widely dependent on forest resource use. Apart from the maintenance of the agricultural system, use of forest in the agrarian communities plays a direct role in providing various resource for subsistence (i.e. needs ranging from timber to non-timber resources), which reveals the intricate relationship between forest and human beings.

After the implementation of the RCNP all the activities inside the forest were restricted without considering the magnitude of the role of resources in local people's everyday lives. Until 1978 the NP forest was completely close for any kind of activities. Because of their genuine needs, villagers have been permitted to enter the park since 1978 each year to collect grass for building materials. As mentioned in the article 1 of the RCPN regulation of 1973, people are allowed to use the forest for a period of a week to collect the essential building materials, which include *khar* and *khadai* (grass and canes) (HMG, 2000). According to Mishra (1982), most houses in Chitwan were roofed with thatch grass and the canes of tall elephant grass had traditionally been used to construct walls and partitions outside and inside the house, as well as for handicrafts grass cutting was most essential.

Grass cutting is one of the methods of grassland management in the park according to the forest officer and has become one of the promising methods of mitigating the conflict between the local people and the park management. Mishra (ibid.) emphasises grass cutting as the most powerful public relation tool for the national park. Though the grass cutting period is mentioned as being a week, according to the information provided by the forest officer at RCNP the period for grass cutting activity has been changed since it was started. It was for a month in the initial year but in the following years it was reduced to 15 days. It was again reduced to 7 days and from some years ago it is opened only for 3 days due to the

security reason (due to prevailing insurgency situation in the country). According to the local people a 3 day grass cutting period is not sufficient to fulfil their basic needs. They said the period must be extended, otherwise it does not mean anything for them; if not only the people who illegally collect firewood and timber will benefit from this. According to the local people they have problems obtaining basic forest products i.e. firewood, fodder, and timber. This fact is revealed in the report produced by Department of National Park and Wildlife Conservation/Park and People Program (DPNWC/PPP, 2000), which shows that there is vast gulf between demand and supply of essential forest products in the study area (Table 10).

Table 10: Demand and supply of forest products (tons)

Products	Demand	Supply	Balance
Timber	1178.8	61.9	-1116.9
Fuelwood	8037.0	507.2	-7529.8
Foliage	1928.9	16.1	-1912.2

Source: DPNWC/PPP, 2000

5.4.1 Forest and Traditional people

Forest had provided the major sources for subsistence for traditional people living in this area since time immemorial. These people depended on forest to satisfy their needs, ranging from daily household needs like firewood, fodder, vegetables, fruits, etc. to long term needs like timber and constructional materials. Use of forest was entirely for subsistence either directly of indirectly. These people used to collect different resources at different periods of the year. Collection of various herbs was unique among the traditional people, which was not common among the migrants. This technique of this people made them able to survive in this malarial zone before malaria was eradicated. Table 11 presents the temporal pattern of resource utilization in the forest among the traditional people and migrants. This is represented in Fig. 9 (p. 82).

In fact these people never thought of the forest as a separate entity of their lives. Forest was an integral part of their lifeworld. These people used to visit the forest for one or another purpose throughout most of the year. These people found meaning in the forest. Forest was more than just a forest for them; it was like a home and source of various resources for subsistence. In other words it was a place where they found meaning in their everyday lives.
A traditional man, around 60, expresses his feelings as follows:

> *"I used to visit the forest almost all around the year. It was like a meeting place for all the friends and relatives. I used to spend the whole day time in the forest area. I*

enjoyed being in the forest more than I did at home. Actually it was my next home. I was never scared to visit the forest. I used to visit the Chure Range to graze my cattle, which takes 2 hours walk from here. It was impossible to think of living our lives without the forest in the existing agro-economic system. I mean the extensive animal husbandry and agriculture were not possible without the forest.

When the RCNP was implemented our daily activities were restricted, I just felt like some parts of my body had been separated. We had to confine ourselves within the periphery of this VDC. Actually I felt like a chained dog or a bird put in a cage."

Table 11: Forest resources utilization calendar before and after the NP's implementation

Activities	Months											
	Baisakh	Jesth	Asad	Srawan	Bhadra	Aswin	Kartik	Marg	Poush	Magh	Falgun	Chaitra
	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
Fire wood collection	--	--	**	**	**	**	**	--	--	--	--	--
Timber collection	**	**	**	**	**	**	**	--	--	--	--	**
Grazing	--	--	**	**	**	**	--	--	--	--	--	--
Thatching material	**	**	**	**	**	**	**	**	**	++	**	**
Canes for fencing and house walls	**	**	**	**	**	**	**	**	**	++	**	**
Vegetables	--	**	--	**	**	**	**	**	**	**	**	--
Herbs	--	--	--	--	--	--	--	--	--	--	--	--
Rope	**	--	**	**	**	**	**	**	**	**	**	**
Materials for mattress	**	**	--	--	**	**	**	**	**	**	**	**

Source: field survey, 2003

Note: -- indicates resource use in the past, ** resources not used,
++ Continuation at present (during grass cutting season)

This statement of an old man is an expression of people who have lost hope, who have been living in this area since their ancestral time and for whom the forest was not only the reservoir of resources for subsistence but also the place of social interaction and the source of happiness where they spent almost half of their life time. It also indicates how their activities associated with forest were restricted without considering their basic needs.

Another traditional woman, around 50, expresses her experience like this:

"We used to visit forest and spend the whole day for firewood, thatching material, rope, grazing, fruit, green leaves, vegetables etc. We collected vegetables like Neuro, Mushroom, Kurilo (Asparagus), Karkalo etc. We had managed our daily vegetable needs entirely from the forest. It was really nice to visit the forest, we used to sing and dance. We enjoyed listening to the chirping of the birds. Without the forest our daily activities were really meaningless. One of our main activities was animal husbandry, which was entirely dependent on grazing in the forest.

The NP restricted all our activities inside the forest. It was like bad dream. We, especially women were really confined within the surrounding of VDC."

This statement indicates traditional women's interaction with the forest and their intimate relationship with the forest in the past. Her statement also reveals that the role of the forest was dominant in their lives. Finally it also shows that women's mobility was affected by the NP rules apart from its other aspects.

Plates 4 and 5: Changing dependency on forest resources for construction materials among traditional people. Grass roofs are slowly being replaced by corrugated galvanized iron sheets and walls made with bamboo and canes covered with soil, mixed with cow dung, are being replaced by cement and brick. However, the use of forest resources for walls and thatching is still dominant. (Source: Pun, field survey, 2003)

Table 11 clearly depicts the changing use of forest resources by the local people. It showed that the role of the forest in local people's lives has changed drastically over the period of time. As indicated in Table 11, the National Park forest is opened for local people only once a year during the grass cutting season. They collect thatching materials and canes during this period. The NP regulation for forest use has altered people's practices related with forest, which ultimately leads to far-reaching and interconnected consequences in agriculture and animal husbandry.

During the field study it is found that almost all traditional people are living in houses made from forest resources as shown in Plate 4. This is a typical house of traditional people. It is an indication of their relationship with the forest. It is not easy to make this kind of houses due to lack of adequate forest resources. This is evident in Plate 5, which shows some changes in the use of constructional material. Firewood is still the major source of energy among the traditional people, which they obtain from various sources like community forest,

agricultural residues, and trees in private land and drift wood from Rapti River. The NP forest no longer provides firewood.

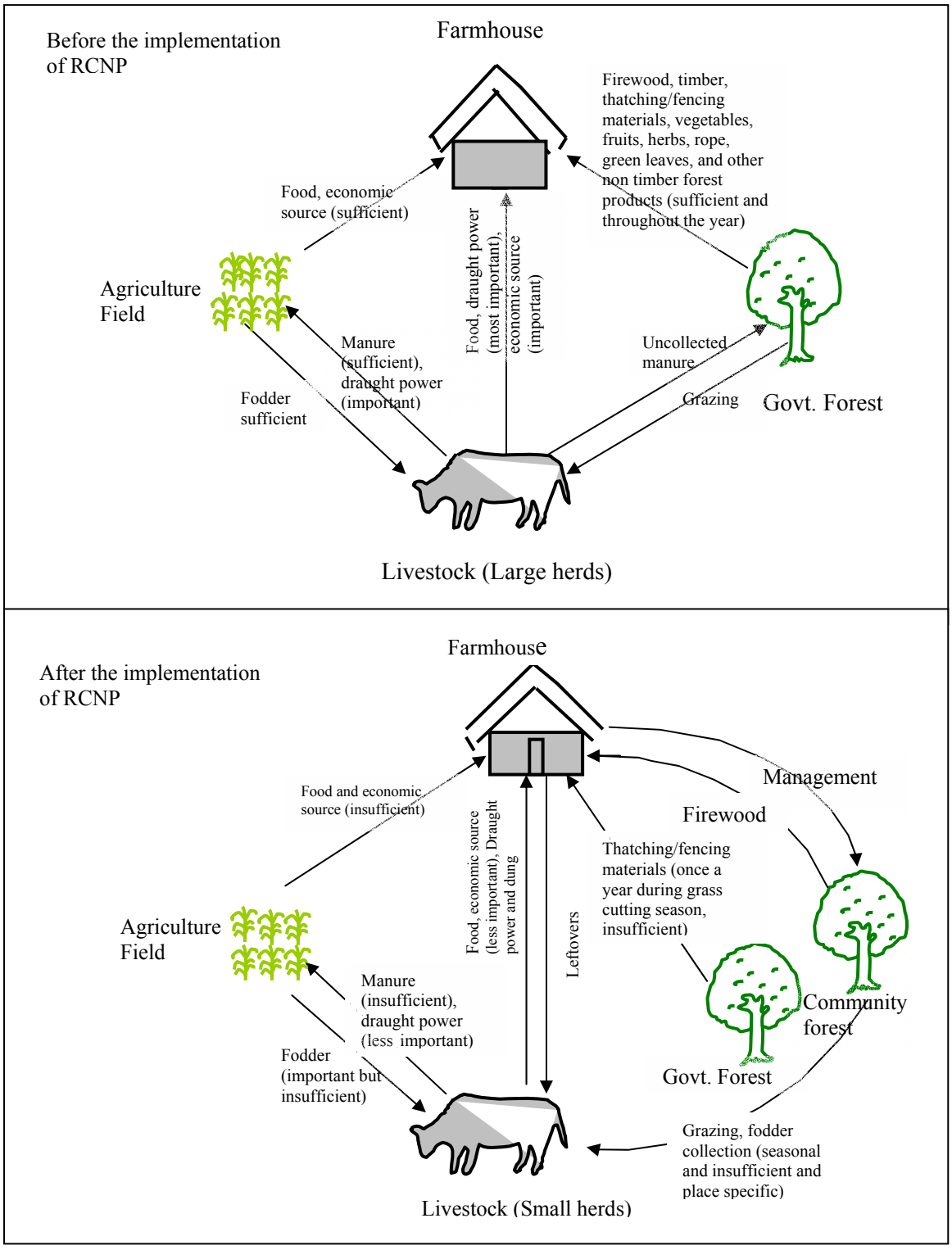

Figure 9: The changing role of government forest in local people's lives before and after the implementation of the RCNP

5.4.2 Early Migrants and the Forest

For the early migrants the forest was one of the major attractions, which provided them opportunities to continue their rural practices even after they left their previous places. Forest was a wide space where they saw the possibility of economic prosperity. These people include this forest in their everyday lifeworld in the following years as they practiced their rural activities. They derived meaning out of the space. The forest became part of their lives, and sowed the seed of economic prosperity. Their stories of success in agricultural activities and animal husbandry are directly linked with the forest. They cannot talk about their successes without talking about the forest. Unlike traditional people, these people were involved in the animal business; producing and selling buff calves was common among them. Thus forest as grazing land was not only for subsistence but also for their economic benefit through animal husbandry. Utilization of forest resources among the migrants was similar to that of traditional people except for the use some non timber forest products like collection of herbs, wild vegetables, fruits, materials for fishing instruments etc. The forest resource utilization calendar was the same because these people learnt to use forest resources from the traditional people.

Migrants are more integrated in the monetary economy compared to the traditional people. At present the majority of these people live in concrete buildings, and those that do not have mostly roofed their houses with corrugated galvanized iron sheets. This shows that their requirement of forest resources (thatching grass and canes) is less compared to the traditional people. Firewood is still the major source of energy for cooking though they also use various other sources of energy such as LP gas, kerosene, bio-gas etc. People specially living in ward no. 1, 2, 3 and 4 (see chapter four) have been obtaining their firewood requirement from the Ghailaghari community forest for the last few years, before this they also had problem obtaining firewood. People living in other areas have more problems obtaining firewood.

5.4.3 Late Migrants and the Forest

For late migrants the forest was just a space on the other side of the Rapti River, which did not give any meaning to their every day lives. It was already apart from the local system. It never became an integral part of their place. It was merely a physical space without any possibility for their economic activities. Like other people they also use the forest only in the grass cutting season. However these people also illegally enter the forest to collect firewood for their subsistence. They are compelled to do this because most of them do not have a good economic condition to purchase firewood.

5.5 Fishing in Rapti River

Rapti River, located in the southern part of the VDC, makes a common boundary for the VDC and the National Park, and demarcates the extent of human activities. It is one of the major aspects of the landscape of this area, which has been interpreted differently by different groups of people. It was an integral part of local peoples' everyday life in one or another way. But now it has become an integral part of the National Park. The use of the Rapti River was also restricted with the inception of RCNP. The use of Rapti River differs among different groups and so does its value. Fishing is the most important human activity associated with Rapti River and it is entirely associated with traditional people.

5.5.1 Traditional People and Fishing

Fishing was practiced by the traditional groups in this area, but was restricted after the inception of the National Park. Rapti River played an important role in traditional peoples' lives. It is a good source of food especially for fish. The Bote, Darai and Tharu people claim themselves to be traditional fishermen. The Bote claim they are purely fishermen. These traditional people since their ancestral time had been using Rapti River as a place for fishing. Fish is the major component of food among all traditional people.

These people used to spend their evening time almost regularly for fishing in the Rapti River. Rapti River was an integral part of their lives and directly linked with their food habit. Rapti River provided opportunities for these people to practice and sustain their traditional way of lives.

Implementation of the RCNP disturbed the harmony between traditional people and Rapti River as it restricted the fishing right of these people. Their traditional way of fishing was environmentally friendly, unlike the technique used by migrants (Plate 6). Restrictions on fishing detached these people from their place, which sowed a seed of conflict between these people and the national park management. They lost an important aspect of their everyday life world. This hampered not only their daily activities and food habit but also led to deterioration in the traditional fishing skill of these people, which is the distinct characteristic among these people.

Fishing rights were reestablished after six years but only for one traditional group i.e. the Bote and it was restricted for 8 months from *Bhadra* to *Chaitra* (August to March). The Darai and Tharu, though earlier heavily dependent on fishing were not given fishing rights. But according to the RCNP Regulation 2030 B.S. (1973) the Bote, Darai, Tharu and Kumal, who traditionally undertook fishing to sustain their lives, are entitled to have annual fishing license

in nominal cost i.e. 50 Rs. (Nepalese Currency). But the Tharus and Darai have never questioned about it because they are poor, uneducated, and unaware of the NP rules and regulations and the concerned authority never thought it necessary. There is no written argument as to why these people are not given the fishing right, though they are legally entitled to have it. This situation raises the issue of local people's participation in nature conservation through their socio-economic well being.

An old traditional man, around 50, born and grown up in Jagatpur recalls his past activities in Rapti River and expressed his experiences:

> *"We are traditional people and we used to catch fish in Rapti River the whole year. Fish is a major component of our food and we used to serve it daily and the Rapti was the main source. It was the place where we spent our evening and night time with friends and relatives.*
>
> *Following the implementation of RCNP fishing was restricted. We felt like somebody chained us inside our home. We had to adjust our food habit, which was very difficult. As an alternative we started to fish in Kerunga stream but there is not enough fish. Migrants who do not have fishing skill use poison and electric shock to catch fish, which has further worsened the situation* [Plate 6]. *Now we seldom take fish in our meal, we cannot afford fish. Rapti River is no more for us."*

Plate 6: Fish caught by migrants by using electric shock. This has led to deterioration in the fish resource available in the Kerunga stream because when electric shock is used all the fish whether small or big are killed. Source: Pun, field survey, 2002

This story reflects a typical situation of the Darai and Tharu of Jagatpur. It is evident from the above mentioned quotation that fishing was very important for traditional people and the

use of Rapti was customary. The use of Rapti in the past and present shows distinct change in its value. The Rapti River is the same object but its importance has changed among the traditional people over time as their practice in it is restricted. At present these people have no activities in Rapti River. It is no more theirs. They have been separated from their night lifeworld.

Unlike the Tharu and Darai, the Bote are still involving in fishing practice legally. A Bote, 50, who has been involving in fishing throughout his life, expresses his experience as follows:

> *"I received a fishing license in around 1978. We were allowed to fish in Rapti during August – March. The rest of the year we used to fish illegally though it was not so easy. We (the Bote) used to supply fish for the National Park's crocodile breeding centre. There was abundant fish in the River then. It was pretty easy for subsistence; we even earned some money from it. Fish is the major component of food among us, which we used to take regularly. The situation has changed now, migrants use poison for fishing, which has reduced fish resources. So it has become difficult to manage daily food from Rapti River. Moreover the National Park staffs harass us by threatening and taking our fish. So it as become difficult to maintain a livelihood by fishing. The new generation is not interested in fishing due to these problems. So our traditional fishing skill is deteriorating day by day".*

His statement reveals that Rapti is still a part of their (Bote) life though its importance has been reduced over time. It can be inferred from the above statement that even if Bote have fishing rights they are no longer interested in this activity due to lack of adequate fish in the river and the problem of NP staffs.

In general traditional people used, and some are still using, the Rapti River for food as their custom. It is the NP rules that restricted them

5.5.2 Rapti River and Migrants

The use of Rapti River by migrants differs from that of traditional people and hence the meaning attached to it. Most of the early migrants in this area consisted of people from Brahmins and Chhetri castes, who normally do not serve fish as their meal. For instance the following statement from an old migrant (living near the Rapti River) may illustrate this:

> *"I am Brahmin, so I do not serve fish in my meal. So, I never viewed Rapti as a source of food. It is not an important aspect in my daily life. I wish there is no Rapti River, because it is destroying our agricultural land."*

The above statement clarifies the typical situation of the Brahmin and Chhetry communities. The social structure prevented them from practicing fishing.

Even though people other than Brahmin and Chhetri castes serve fishes in their meal, lack of fishing technique and swimming skills restricted them to use the River as potential source of food in the past. The migrants used the Rapti River in their everyday life mostly with connection with animal husbandry, using the river as a place for animals' drinking water. When animal grazing was restricted inside the NP, people ceased to use the river. It was no more important in their lives. Restriction of fishing did not hamper their daily activities. They perceived Rapti as a potential source of irrigation, which may bring changes in their rural practices. At present these people do not use Ratpi River.

Late migrants consist of ethnic groups i.e. Tamang, Magar, Newar, Damai, Danuwar, and Praja. By the time the late migrants settled in this area the use of Rapti for fishing had already been restricted. So they never attached any meaning to it. According to the respondents fishing was not common in their previous place so they do not have fishing techniques (so they use other techniques, which are ecologically harmful, Plate 6) as there was no big river like the Rapti so they fear to play in big rivers. Since these people mostly live in upland (dryland) area, like the early migrants they perceive Rapti as a potential source of irrigation to increase the productivity of their land.

It can be concluded here that there are certain aspects that restricted migrants to consider Rapti as a source of food. The first is the social structure, second their fishing knowledge and the final one is the bureaucratic rules and regulations (NP rules).

5.6 Tourism

Although tourism is normally not considered as a rural landscape practice, I have included it in this section because this practice is directly related with the components of cultural landscape and, has brought new values to the rural landscape and may bring about changes in the rural landscape.

The history of the tourism industry in Chitwan date back to before the implementation of the RCNP. In 1965 when the first safari hotel "Tiger Tops" was established in the southwestern part of Chitwan. Tourism is primarily associated with Chitwan, the jungle, the

tiger and the elephant. After the implementation of the national park many other luxury and medium class hotels have been established both inside and outside the national park (Müller-Böker, 1999). At present there are five luxury hotels and lodges inside the national park: Tiger Top, Tharu Village, Chitwan Jungle Lodge, Machan Wildlife Resort and Tiger Temple. These hotels are granted a park concession, for which royalties must be paid. A number of moderate by priced hotels and lodges have sprung up around Sauraha. There are around 50 hotels in Sauraha (ibid.). Sauraha is the most visited tourist place in Chitwan, which is located in the north-eastern part of the National Park. Elephant safari, elephant polo, jungle safari, game drive, canoeing, elephant breeding centre, crocodile breeding centre, and traditional (Tharu) culture are the major attractions of the RCNP. The number of tourists visiting the national park has increased dramatically since its inception. In 1974 it received less than 500 visitors. In 1996 the number reached to 84,000, which comprised nearly 25% of the total tourists visiting Nepal in that year (ibid.).

The relative location of this VDC has opened up some opportunities for the local people, which on a small scale has compensated for the problems created by the national park. One of the major opportunities opened up by the NP is the possibility of increased future tourism. Traditional people are economically and educationally weaker than the migrants so they do not see any possibility of their well being through tourism. Migrants living in areas other than Kasara market and the way to NP also view that they will not be benefited more from the tourism, because of the limited opportunities that is going to be opened for the local people.

The tourism industry is not flourishing at present in this area but people (mostly migrants) especially those living in the Kasara market (Plate 7) and Ghailaghari areas (Plate 8) (on the way to national park), have a very strong believe that tourism is the only future bread winner of this place. This belief among the local people was the main factor that determined the market value of land in this area before 2002 flood. Apart from the Jagatpur's relative location, the management of community forest (Plate 9) in the village has boosted the possibility of tourism. According to the local people the community forest has created a temporary habitat for wild animals such as rhinos and deer, which may be a good source of tourist attraction. They see a future possibility for ecotourism safaris in the community forest, which has been successfully implemented in other community forests around the RCNP i.e. Baghmara, Kumrose Community forest (since 1990s) and Dipyapuri community forest since 2000 (PPP, 2002). People, who see a future in tourism, believe that they can provide similar facilities which are available in other tourist areas around the NP. Although the report from

DNPWC/PPP (2000) reveals the fact that very few people are engaged in tourism in this area, a future possibility of tourism can be envisaged.

Plate 7: Newly established restaurants on the way to the RCNP. Source: Pun, field survey, 2003

Plate 8: Settlements on the way to the RCNP. Source: Pun, field survey, 2003

Tourist facilities are in the initial stage of being developed in this area. At present there are only a few hotels, lodges and restaurants of local standard in the Kasara Market area. The people involved in this activity are entirely migrants. The possibility of tourism has boosted the market value of the landscape, which is most evident in the Kasara market area (Plate 7) and along the way to NP (Plate 8). This practice may bring rapid structural and environmental changes in landscape in the future.

All the houses shown in (Plate 8) were drowned in the 2002 flood. This area is no more suitable for agricultural activities due to regular damage of land by flooding and crop damage by wild animals. As a result nobody likes to buy land in this area for agricultural purposes. However, the people are still living in this area. According to the local people some of them are not able to leave this place for economic reasons but the majority of them are living there in the hope of a future possibility in the tourist industry. This is the best area for tourism due to its location. Many people from the big cities have bought land in this area from a future business point of view. Unfortunately this area was badly affected by 2002 flood, which resulted in a decrease in the market price of the landscape. According to the local people it will take time to gain its previous value but it will be entirely based on tourism industry, not on agriculture.

As the location plays an important role in any economic activity, the landscape value associated with tourism industry in the study area is also place specific. Except the people of Kasara market and Ghailaghari people living in other areas do not see any possibility of being benefited from the tourism industry. So the landscape change associated with the tourism seems to be place specific.

Plate 9: A community forest in Ghailaghari, Jagatpur. Source: Pun, field survey, 2003

5.7 Conclusion

Based on the analysis it can be concluded that the rural practices show the influence of a number of different factors, e.g. structure (social structure and NP rules and regulations), knowledge of individuals, encroachment of wild animals, and the flooding. The study reveals the fact that there have been considerable changes in the rural landscape practices of the local people since the inception of the National Park. Changes in agricultural activities, animal husbandry, fishing, and forest resource use are apparent. Changes in these practices have resulted in a change in the relationship between human beings and the components of the landscape. Animal husbandry has experienced a dramatic change but agriculture has shown a gradual change over time. It is evident from the analysis that the rural practices are interrelated; change in one practice has far-reaching effects on the other. Changes in practices and their effects do not have similar spatial and social dimensions. For example, changes of practices are more apparent near the NP, and restriction on fishing affects only the traditional people. Moreover the effects vary between traditional and migrants' communities. Traditional people have faced more problems as they are socio-economically weaker than the migrants and they have been entirely involved in subsistence practices. Change in rural landscape practice is directly related with issues of subsistence and socio-economic prosperity of the local people. Furthermore the study has shown that the NP has opened up an opportunity for the tourist industry, which may become an economically strong practice in the future. This may bring changes in the study area, although these will be people-and place-specific. The study also showed that in some places the weaker practices (i.e. subsistence agriculture) give way to the stronger practice (market economy i.e. tourism). It also reveals the fact that the landscape, which has lost its importance for one form of practice, may be important for another practice.

Chapter Six
Landscape Values and Meanings

6.1 Introduction

This chapter presents the landscape values and meanings associated with the study area and their changes over time due to the implementation of the NP. Keeping in view that the values associated with the landscape are not intrinsic, this chapter tries to explore how individuals and groups (including conservation administration) derive meanings and attribute values to landscape. It also focuses on how landscape practices and landscape values are interrelated. Furthermore this chapter focuses on views of local people on changing landscape values and analyzes how the changing values attached to the landscape affect the local people's everyday life and ultimately the rural landscape. This chapter also deals with changing landscape and changing space and place. Analysis in this chapter is based on the information collected through interviews, observation, and photographs as well as available secondary information.

6.2 Values and Meanings Associated with Agricultural Land

Agricultural land is the major element of landscape in the study area. This land has been used for different purposes by different groups of people, thereby giving/ascribing different values to it. Based on the agricultural activities among the traditional people, it can be concluded that they were entirely dependent on the land for subsistence. In the case of early migrants land has been more than just for subsistence; they used it for market economic benefit by cultivating crops that gave a surplus.

The implementation of the NP has affected the agricultural activities of the local people in one way or the other, thereby affecting the economic value of the land. Effects of the NP show a distinct relationship between changes in agricultural activities and:

- Distance of land from National Park Forest: Crop damage in general is directly proportionate to the distance froth from the NP, though the intensity varies in different crops.
- Relative location of the land: Here I have used the term relative location to indicate the location of land that makes it safe from the encroachment of wild animal, irrespective of the distance from the NP.
- Groups of people: Traditional people and migrants

There is a spatial variation of subsistence value and its change over time irrespective of the cultural groups. It is evident that the tract of land nearest the NP has marginal subsistence value because of the severe encroachment of wild animals on crops, whereas areas that are quite far from the NP and have minimal encroachment of wild animals still have good subsistence value. In the study area there are some areas that are located just behind the Kasara market and are surrounded by other settlements, and hence the problem of animals for crops is minimal. Hence the farmers are producing sufficient crops for subsistence as well as for the market economy. It can be inferred from this that, if the encroachment of wild animals is controlled, the local people will continue to plough their lands. In other words the subsistence and market values of the landscape will still be high. Hence in the present context agriculture seems to be more sustainable way of managing rural landscape, which supports majority of the population.

Cropping intensity not only indicates how people add value to landscape but also reveals the relationship between human being and the landscape. The study showed that the more crops the people grow the stronger the economic value of land. Decrease in cropping intensity (in wetlands) and the sign of abandonment of agriculture activities near the NP show an increasing distance between the farmers and the land, because agriculture is the connector between the farmers and the land. This indicates decrease in economic values of land. Olwig (1993) mentions that culture in agriculture is fundamental to our concept of culture in general. This concept of culture, in turn, expresses the creative "natural" principal which gives birth to landscape. Landscape is an expression of the continuation of such culture. The abandonment of agricultural landscape is, thus, in a basic sense, the abandonment of our culture (ibid.).

Analysis of the rural landscape practices showed that the changes in agricultural activities, and hence the value associated with them are not similar between traditional people and the migrants. For traditional people land has always been the source of subsistence. So the establishment of the NP has an effect on the subsistence value of the landscape. But for migrants the land was not only for subsistence but also for their economic prosperity, and therefore they cultivated their land intensively. Thus for migrants the NP has affected both the subsistence and market values of the landscape. Analysis of the results also reveals that the intensity of practice has decreased more among the migrants than among traditional people.

The study showed that the cropping intensity has decreased in wetlands and increased in dryland. Decrease in the cropping intensity in wetland is the outcome of the encroachment of

wild animals, whereas increase in cropping intensity in dryland is to compensate the food deficit caused by the wild animals in wetland and thereby also indirectly a result of the encroachment. This shows that the value of wetland has decreased whereas the value of dryland has increased. Cultivation of rice using underground irrigation is an example of an increase in cropping intensity in dryland. However, in general the overall subsistence and market values of the landscape have decreased as the valuable crops (i.e. pulse, peas, wheat, mustard etc.) cannot be grown and the production in dryland cannot substitute for the crops that could have been grown in wetlands.

Apart from the subsistence and market values of landscape through agriculture, the NP has a direct effect on sale value (market) of land. According to the local people a hectare of land (wetlands) where encroachment of wild life is minimal costs around Rs. 1,500,000, whereas the same size of land near the NP may cost only around Rs. 1,000,000. Calculation of the cost of land is based on the land price value before the 2002 flood; hence this value does not include the effect of flooding. The NP has also increased the sale value of land. This is place and people specific. Kasara market area and the area along the way to the NP show the increase in this value due to possible future value. According to the local people at Ghailaghari (on the way to the NP) the cost of a hectare of land was Rs. 3,000,000. But this value of the land was affected by the flood. This value of land is mostly related to migrants.

It can be summarized that the effect of the NP on the sale value of land shows the variation over space and people. Sale value shows the relationship with subsistence and market values. It is also evident that the sale value of land is determined by the possibility of different practices. For example, agricultural activities can add comparatively less value than tourist activity.

Late migrants were resettled by the government in this area; so their movement to this area was not related to any kind of value of the landscape. This place was very dry and not suitable for agricultural activities in the past. They went through the worst situation during the initial stage of their settlement in this area. However, today due to their continuous endeavor they have made this place suitable for different agricultural activities, though they have problem of wild animals. So, for these people the economic values (subsistence, market) of their land have increased since began to live in this place. But they also believe that they may have benefited more from their land if they did not have the problem of wild animals. For example they have stopped the cultivation of millet due to the problem of wild animals, especially deer.

To conclude, economic values of land showed changes after the implementation of the NP, which vary over space and between groups. Subsistence and market values of land through agricultural activities has decreased near the NP. While traditional people have experienced decrease in subsistence value, migrants experienced decreased in both subsistence and market values. Tourism has increased the market value of land, but this is also place - and people-specific. It is also evident that the landscape values are related with landscape practices. The same land may gain different values under different practices and the level of similar value may vary under different practices. Therefore the values attached to landscape should be analyzed from various perspectives to obtain better understanding on how people attach value and how they perceive it to be valuable.

In view of the question of place attachment the respondents were asked a question: what were the major elements of landscape that attracted them to settle down in this area? All the respondents among the traditional people responded that it is their ancestral home so they are living here. In response to the question whether they have ever thought of leaving this place due to the problems they have faced from the NP and the Rapti flood, no one responded that he/she has ever thought of migrating from this place. The following interview extracts express why they do not want to migrate from this place.

> *"No! Never! Our forefathers lived in this place. I was born and grown up here. So I never think of migrating from this place. It is good to die in our ancestral place than to leave this place".*

Another respondent spoke like this:

> *"No! Where to go? How can we think of migrating from this place? We never thought of it and we will never think of it in future too. Even our forefather never mentioned of migrating from this place. Flooding was common even in the past as our forefather mentioned. Although, we have problem of wild animals, we are some how managing our livelihood.*
>
> *This place has been our home since our ancestral time. Everything is here so we can not leave this place".*

When he was asked to elaborate what he means by everything, he said:

> *"Everything means our home and land, our relatives, our society and most importantly our history".*

These statements made by the traditional people illustrate the fact that it is their history of settlement in this area among the other elements of landscape that make them live here even if they have problems of subsistence. It also reveals that attachment of people to place due to their history overweighs the attachment developed by any other elements of landscape. Jones (1993) has termed this as an identity value. According to him a historical environment which has developed gradually over time will often give a more unique character to a place. And people are attached more to such an environment, which constitutes culturally selected elements over the long period of time. Hence the identity value of landscape seems more essential than other kinds of values. When the same question was asked among the early migrants (what were the major elements of landscape that attracted them to settle down in this area?), it was found that all the early migrants settled in this area for agricultue, animal husbandry, and easy availablility of forest products like firewood and timber. When they said that this area was favorable for animal husbandry and agriculture, they unconsciously included the forest and Rapti River as an integral part of this place, without which their other practices were not possible.

When they were asked a question whether they have ever thought of migrating from this place? All the respondents (area between Kerunga and Rapti River), who are purely farmers and not living in the market area and the area suitable for tourism industry, reported that they are ready to leave this place at once if they get alternatives. The basic reasons were the threats from flooding and animals' encroachment on the agricultural fields. The flood threats the agriculture, through land degradation (by erosion and silting) and flooding of crops. They reported that this area is no longer suitable for agricultural purposes. This phenomenon is an evident of the lacking landscape value for farmers living in this area. It also reveals that their attachment to this place is weaker than that of traditional people. For these people subsistence and economic values of the landscape are the connectors between human beings and the landscape. As the connectors lose their values the relationship between people and landscape has also been altered.

People living in the upland area, including the late migrants, quite far from the NP, still see land subsistence as a major element of attachment, although they lack attachment to forest and the river. That is why they are not willing to leave this place. But the situation among the people who seek their future in the tourist industry shows their attachment more to forest, river and national park (which may be the major attractions to the tourists) than to the agricultural land, though they have not fully exploited opportunities provided by these elements. They are seeking economic benefits from the landscape through commercial

activities rather than subsistence; hence market value makes them attached to this place. Here it can be inferred that it is only the economic benefits of landscape through the tourism industry that make them live here. So it is questionable whether they will be attached to this place if the tourism industry does not flourish in future.

The presentation of the migrants' views showed that there has been change in a number of elements of place attachment. Previously land, forest and the river were the major attractions but at present for the majority of people the land is an element to which they are attached, but the attachment to land varies over space.

6.3 Values and Meanings Associated with the Forest

For traditional people the forest provided the basis for their existence in this valley, in a sense that it was the availability of different herbal plants in the forest that made them able to withstand the deadly disease malaria. Apart from this the forest was the major element of rural landscape in the past upon which they depended for their subsistence directly or indirectly through agriculture and animal husbandry. (See the discussion of the importance of the forest to different rural landscape practices in chapter five.)

For early migrants forest was one of the major elements of landscape that attracted them to this place. They saw an immense possibility of subsistence (timber and non-timber products) as well as economic benefits in the forest from animal husbandry. Due to lack of adequate fodder in private and communal places, animal husbandry has declined in such a way that economic benefit from it is almost impossible. Furthermore this has also resulted in a decrease in the production of manure to support surplus food production from their fields. For the late migrants forest did not provide any opportunities. According to them they got to know about the grass cutting in the NP only after a long time. Hence forest was just a forest for them.

At present local people collect *Khar* and *Khadai* (grass and canes) only once in a year, which is not sufficient to meet their needs. Firewood is still the most dominant source of energy (see chapter V), but its production in private and community forest is not able to fulfill people's needs, and people are not allowed to collect wood of any kind from the NP forest. Referring to this situation a respondent expressed it as follows:

> *"The NP administration has preserved the forest. The forest is dense now and it looks nice too. But what is the use of this forest? We are not allowed to collect dead wood and braches of trees. Trees die and decay in the forest but we are here suffering from*

a firewood problem. Is this a rational way of conservation? Forest is not for people, it is for wild animals only".

This statement of a local person suggests that the conservationists have succeeded in preserving the forest by keeping the needy people aside from their needs. The questions raised by him are an indication of the rationale behind the management practice, but also reveal a lack of awareness among the people. Because, according to the NP, dead trees and rotten wood also support the NP ecosystem. The final sentence of the quotation relates the issue of local people's involvement in the conservation practice. Finally it reveals the value of the forest among the local people.

Apart from its economic values (subsistence and market), the forest was a place for recreation for both groups of people. It was a place where people met and enjoyed their day time. But recreation was related with animal husbandry and other forest related activities. Hence the restriction on forest resulted in the loss of this value.

Forest has also been a home for the Bikram Baba, a long established hermitage. Previously this place was a religious place for traditional people. This place is popular for its wish yielding power. These people used to visit this place to wish good health for themselves and for their animals. The most believed power of Bikram Baba is its power to bless a childless couple with a child. This place is visited during the period between new moon and full moon in the month of Chaitra (March/April).

In the years following their settlement, migrants also got to know about its power through traditional people. Hence it was during the late 1970s and early 1980s that migrants also started to visit this place, but the number of visitors was very few. Now people from different parts of the country visit this place. According to the local people the number of visitors to this place has swelled dramatically during the last decade. Local people reported that the NP has advertised this place nationwide. According to the VDC secretary more than 100 thousand people visited this place in the year 2002. Visitors come for purely religious or recreational purposes or for both. But according to the local people the number of visitors for recreation dominates. The VDC is earning a good amount of money from the visitors once a year.

Regarding religious value (identity) there is a mixed response among the traditional people. Some believe that due to the increase in visitors (new groups) this place has become dirty; hence the god has shifted to a new place. Others believe that Bikram Baba still has the same power.

Although there is a mixed response concerning the value of Bikram Baba among the local people, it has become popular among vast numbers of people across the country. Hence the identity value of this place has increased over time due to religious and recreational values. However, it took a long time to become popular among the migrants and new groups. Jones (1993) suggests that the religious value changes more slowly than other values of landscape.

The view of the conservation authority differs from that of local people. The conservation authority claims that it has achieved great success in the conservation and management of rich biological diversity, which is evident as this park was designated as a World Heritage Site in 1984. The number of rhino has reached more than 500 in the RCNP (Table 12). The increase in the number of rhinos and its potential threat to human beings is one example. There are several other animals that are very dangerous to people living around the NP; among them wild elephants, tigers, leopards, wild boars and sloth bears are common. As the number of wild animals increases the threat to local people and their animals, and the encroachment on crops increases. The increase in their number is one of the problems of management for the NP, which requires more and more suitable habitats. In the present situation, where the park is surrounded by the human habitation, the extension of the animals' habitats outside the NP boundaries would have immense social impact.

Dr. Chandra Gurung representing WWF US/Nepal claims:

> *"We want to secure both the bio-diversity and sustainable communities for the local people. The populations of animals are growing too fast for the protected area to sustain. Today we have the choice either killing animals or expand their habitat"* (Quoted in Helle, 2003).

Table 12: Estimated population of rhinos in the RCNP

Year and source	Population	Annual growth rate
Before 1950s	About 1000	NA
1962 estimated	60-80	NA
1973 estimated	80	NA
1975 estimated (Laurie, 1978)	270-310	2-6%
1988 estimated (Dinerestein and Price, 1991)	Minimum 358	2.8%
1994 census (DNPWC/KMTNC/ITNC,1995)	446-466	3.7%
2000 census (DNPWC, 2000)	544	--

Source: Draft Management Plan, RCNP, cited in A Quarterly Bulletin of Park People Program, Volume 5, Number 1, June, 2000

The concept of community forest in the buffer zone and the recent concept of TAL (see chapter IV) have been implemented as the alternatives to such problem. Creating habitat for

overpopulated wild animals outside the boundaries of the NP is the major objective of these programs. Increase in the number of wild animals is a symbol of success for the conservationists but for the local people it is indicates as increasing threat to human beings, domestic animals and agricultural activities. A statement given by a respondent may be helpful to understand the situation of threat by wild animals to human beings.

> *"It is difficult to move in the morning and in the night time, especially during the winter season, where due to thick fog it is really difficult to see around. It is not uncommon to see rhinos around in this area, but in the past there were few and they used to be scared of human beings but now their behavior have changed. They attack as they encounter human beings.*
> *They move here and there in our fields and homesteads. So it is their place during the night and the morning".*

This showed the change in security value of the landscape from being previously known as 'heaven' for local people to a threatening one. This is termed as 'landscape of fear' by Tuan (1980). He used the term 'topophobia' to indicate that a place that might be seen as threatening. Topophobia is repulsion towards place (Tuan, 1974).

This phenomenon is common in the buffer zone. Incidents of killing of people by wild animals such as tigers, sloth bears, rhinos, and wild elephants are often heard in the news. According to information provided by the Chairman of Kerunga User Committee, the NP provides nominal compensation for the victim or his/her family (Table 13) of animal-caused damage. According to him, the compensation amount may sometime be equivalent to the cost of a buffalo.

Table 13: Compensation from NP for animal-caused damage on human life

Normal injury	Rs. 2,000 (Appr. US $ 27)
Badly injured	Rs. 10,000 (Appr. US $ 135)
Death	Rs. 20,000 (Appr. US $ 270)

Note: Currency conversion is based on present value i.e. US $ 1 = Rs. 74

Penalties are severe if the villagers happen to kill the wild animals in their fields. For example, a villager who killed a deer in outrage outside the park boundaries got a seven year jail sentence (Helle, 2003). During my field survey I met a young man among traditional group who told that his father, who was accused of killing rhino, had been sentenced two

years previously. The compensation policy for animal-caused damage and the nature of punishment for mistakes by human beings are the indications of how the conservation authority value human beings and wild animals. In this context the Chairman of KUC expressed his view that the

"National Park rules and regulations have weakened the local people".

The community forest in the study area is an important element of the rural landscape. According to the local people the community forest is in itself very fruitful for local people. This forest as villagers see it has a number of different values. But the value of the community forest also varies among the local people. It provides firewood and fodder (on a seasonal basis) to a majority of villagers living in ward numbers 1, 2, 3 and 4 of the VDC. Hence it has subsistence value for these people. When it comes to the function of the community forest for the protection of agricultural land, this mostly covers people living in Ghailaghari, Pranpur, Jagatpur, Dhruwa, Khadkauli, and Beltandi. For these people it protects their base of subsistence (i.e. land, from being over eroded) from the Rapti River. Hence it carries utilitarian ecological value for them. Conservation of biodiversity is another aspect of this forest. Hence it also encompasses the intrinsic ecological value. Recreational value is another important aspect of this forest. This value is not limited to specific people or and places within the VDC but has wider importance, in a sense that visitors from different parts of the country enjoy the beauty of this forest.

However, this forest is not only for the people but it is an extension of the wild animals' habitat outside the park. This concept has become problematic for the local people. Farmers view this as an act of pushing their enemy closer to them. According to the local people wild animals, especially rhinos, have started to come in this forest. As the wild animals approach the village the threat to human beings and domestic animals, and the encroachment on crops have increased. This, according to the local people (except for those who are planning to get involved in the tourist industry), has a negative impact on the values created by the community forest, such as subsistence and economic value of agricultural land and security (sense of security) value of landscape.

According to the respondents, two women were killed by a rhino in the year 2001/2002, while they were collecting wild vegetables in the community forest. Hence, this forest in one way has become a source of fear for the local people. However, outsiders who use this forest just for recreation are not aware of such situation.

This situation raises the issue of the rationale behind adopting the approach by nature conservation administration to expand the wild animals' habitat in the community forest nearby the villages.

For nature conservationists wild animals in the community forest is as indication of their success in extending the wild animals' habitat, which releases animal pressure in the NP forest. They advocate the possibilities of this no matter what the extent of its effects on local people's livelihood. The people who are planning to involve themselves in tourism view the forest and the animals as a 'golden hen' (resources) for their economic prosperity. This does not mean that they are not suffered from wild animals in their agricultural activities. But as their view is that the future economic benefits may outweigh the problem they are facing now; the problem seems to be weaker than the possibilities. According to Giddens (1984), agents are not puppets but they are always conscious and unconscious interpreters between the real level and the empirical level. In the present case the empirical level seems to be stronger. It is also evident that many people who own the land along the way to the NP are from the big cities and their land is only for tourism activities. Hence for these people subsistence value of land does not have importance.

To summarize, forest was a connector between other rural practices, i.e. agriculture and animal husbandry. Subsistence and market values of the forest have decreased after the implementation of the NP and thereby led to decrease in recreational value among the local people. Identity value (religious) has increased, which temporarily increases the recreational and economic values of landscape. The introduction of the community forest has added economic and amenity values in the landscape. But the security value has decreased due to the threat of attack by wild animals on humans and domestic animal.

6.4 Value and Meaning Associated with the Rapti River

The Rapti River, which constitutes a major element of the landscape in the study area, carries different values and meanings for local people. Traditional people who had both the skill and social tradition of fishing had fully utilized the river for their subsistence and so they attached meaning and value to the Rapti River. The river constituted the major aspect of their nightscape/life. Their daily activities used to end by fishing in the Rapti River in the evening. Later the fishing practice of traditional people, except for the Bote, was restricted by national park rules and regulation. Hence, the subsistence value of the river for Darai and Tharu has been removed permanently. Whereas the Bote are still deriving subsistence from it, according

to them it has become difficult to satisfy their need from the river at present because of a decrease in fish resources and misbehaviour from the NP personnel.

A respondent from the traditional community stated that:

> *"Rapti was the place where we spent our evening and night time. All our friends and relatives used to gather and enjoy the fishing. It was an important aspect of our night life and was directly related with our food habit".*

This statement reveals that the Rapti was more than just a source of subsistence. In addition it was a place for recreation, social interaction and a part of their night life. Indicating the restriction on fishing the respondent further added that:

> *"Rapti is no more for us. They (the park administrations) have taken it from us, so they have to look after it. We do not bother about it. At present it has no meaning in our daily life. We no longer visit to Rapti River".*

This indicates how the restriction on practice led by structure (NP rules and regulation) can change the value of landscape. It is also evident from the above context that value is constructed by human beings as they engage with the world. It also shows the attitude of the nature conservation approach.

Apart from fishing, the Rapti was an integral part of animal husbandry in the past, providing a source of drinking water for large herds of animals. Both traditional and early migrants included this river through animal husbandry as a part of their everyday life. Since animal husbandry among the migrants was for both subsistence and market economy the river for them constituted economic values. For traditional people it was only for subsistence. Restriction on the use of natural resources inside the NP resulted in a dramatic change in animal husbandry; hence the movement of the people towards this place with their animals decreased and thereby also its importance to local people.

The Rapti was also a source of recreation for both groups. They used to play and meet with their friends when they took their animals there for drinking water and grazing along the bank and to the forest.

According to the local people they get nothing from the Rapti River at present but the threat of flooding. They reported that minor floods are common, but the floods in the early 1970s and in 2002 were devastating, taking many lives, including human beings and domestic animals, and destroying hundreds of hectares of agriculture land and infrastructure. So for local people it is a destroyer of the land resource, which leads to a decrease in the subsistence and economic value of the landscape. It is a destroyer of agriculture.

The following statement of an early migrant is an example of how the local people view the Rapti River at present.

> *"Rapti is just destroying the only source of our livelihood (land). How can we enjoy by just looking at beautiful scene, which is dangerous for our lives and agricultural land?"*

This statement reveals that landscape is not only the visual things; rather it contains human feelings, hopes and aspirations.

According to the late migrants they never used and are not using the Rapti River for any kind of benefit, so it has no meaning in their everyday life.

But the view of the conservation bureaucracy differs from that of local people. For them Rapti is an integral part of the NP, which maintains aquatic and flood plain habitats, which are important components of the NP ecosystem and home of the endangered one-horned rhinoceros. Rapti provides habitat for gavials (*Gaviaalis ganeticus),* one of the rarest and most endangered crocodile species in the world. The world-wide population is only two hundred, most of which (approximately 50) lived in Nepal (Maskey and Mishra, 1981/82, in Müller-Böker, 1999). So the Rapti and its floods are essential parts of the NP to maintain the ecosystem.

To conclude, the value associated with the Rapti varies with individuals and between groups. It also varies between the local people and the conservation administration. For early migrants it has changed from a source of subsistence (source of animals' drinking water) to a source of fear. However, the change among the traditional people is more apparent because they used the river as a source of drinking water for animals as well as for their food. Apart from this it has had a part in their life since they settled in this place. Hence it has changed from their friend to their foe. For the conservation administration there has been only positive change in the value associated with the Rapti.

6.5 Changing Landscape and Changing Space and Place

In this section I want to present how the change in the rural landscape due to the implementation of the NP has changed the concept of space and place. Space in general provides the context for places but derives its meaning from particular places. Space is vague, and does not have a distinct boundary. In this section I will use the concept of space in the context of changing territory of the everyday life of the local people. The territory of their everyday life (related to rural practices) included the land, the river and the forest in the past,

which has shrunk only to the land at present. Place on the other hand is a creation of the human being based on their cultural activities. Hence people create a number of different places out of the same space.

The forest and the river had been the places for traditional people for a long time, where they ascribed meaning and values through their activities; hence these were the primary places for them. For early migrants the forest was secondary place, which provided the context from where they could derive resources to practice their rural practices. As they used the forest for foraging their animals and other purposes, they also included the river as a supplementary element of their activity and attached meanings to them. Hence for these people the forest and river became the primary places.

For both groups the forest was a space, which constitutes a number of different places, for example, it was a place for firewood, place for grazing land, place for collecting wild edibles and herbs, and much more. Moreover it was a place for social interaction and place for recreation.

The NP restricted the movement of these people, which resulted in a shrinking of the territory of their practices. In other words the realm of nature (forest and river) was separated from their lives, which according to Sack (1992) is one of the three major realms that a place consists of. As this realm was separated the interaction between human beings and nature was changed and the meaning attached to it also started to change slowly, and ultimately the places within the space were destroyed. Hence the primary places of these people slip into the secondary places.

Whereas for the late migrants the forest and the river did not provide any context and hence they did not perceive these elements as a space, which they could include in their lives (where they could create places). For them the forest and the river were simply secondary places in the past and have remained the same till now. Hence there is no change in the concept of space and place among these people in relation to the forest and the river due to the implementation of the NP.

When the forest is viewed as a home of Bikram Baba, it has remained a primary place for both groups. Not only for these groups, but also for new migrants and people from other areas, the forest has become primary place through religious and recreational activities.

6.6 Conclusion

The study clearly showed that there have been changes regarding landscape values and meanings after the implementation of the NP. Changes in values and meanings are place-and

people- specific and the views on changes also vary between groups and individuals within groups. The study also showed that the values and meanings are not intrinsic characteristics of different elements of the landscape. It is human beings who use these elements according to their needs within their cultural and legal contexts and gives values and meanings to them. That is why values and meanings vary between the cultural groups and among individuals within the cultural groups. Hence it is not wise to speak about values and meanings of landscape just by looking at the visible characteristics of its elements. The study also revealed that there is a relationship between different values of landscape in the study area, for example, subsistence and market value, economic and identity value, recreational and market value, religious and identity value etc. This indicates that the different values accorded to landscape should be studied in connection with one another. Furthermore, structures enable and constrain human beings in their cultural activities and hence lead to changes in landscape values.

The study also showed that there is a relationship between landscape values and meanings and the landscape practices. As a result landscape values change as the landscape practices change over time under different contexts. Landscape practice may also vary with individuals and cultural groups so does the landscape value. Landscape practice is the main connector between human beings and the landscape, revealing whether people are part of the landscape or apart from it.

Apart from the effects of the National Park, landscape values in the study area are also determined by a natural process, i.e. flooding. However, its effect is limited to some areas between Rapti and Kerunga. Flooding has a far-reaching effect, which has brought about both visible and invisible changes in the study area. Visible change includes the destruction of buildings, roads, agricultural land by erosion and silting, while invisible change is related with human feelings associated with flood. It was found during the field survey that these varied between traditional people and migrants during the field survey.

The study revealed that the views on different components of the landscape vary with cultural groups. For example, the Rapti River is the same object in nature but it is interpreted differently by different groups. For traditional people is it a source of subsistence. On the other hand it was never a source of subsistence for early migrants. It was mostly a source for animals' drinking water, which was automatically detached as the NP restricted grazing of animals inside the forest. As the flooding in the Rapti is a common phenomenon, these people perceive it as a source of fear. Farmers living especially near the Rapti River are so scared that they are ready to leave this place if they get alternative opportunities. On the other

hand, the late migrants, who live in the upland areas, perceive it as a potential source of irrigation that may help increase crop production.

These situation support the statement given by Greider and Garkovich (1994:1)

> *"Every river is more than just one river. Every rock is more than just one rock……. meanings and definitions are sociocultural phenomena, not physical phenomena, and they transform the open field in to a symbolic landscape".*

Cultural groups transform the natural environment into landscapes through the use of different symbols that bestow different meanings on the physical objects or conditions. These symbols given by the people according to Brunch (1971) in Greider and Garkovich (1994, 6) are essential to understand relationship between human societies, nature and the environment. Market value of landscape due to tourism is place and people specific. So in the long run it may herald conflict between cultural groups and between individuals among cultural groups. Hence it is an issue for planners to seek out the proper ways to manage and distribute the resource so as to bring equal opportunities for sufferers.

Views on wild animals also vary between the people involved in different occupations. It is the enemy for farmers, which has created complex problems for agricultural activities. On the other hand people who seek their future in the tourist industry view it as source of economic benefit through its attraction for tourists. These people want wild animals in the community forest.

Landscape values and meanings are dynamic concepts not only in a sense that they change over time but also in a sense that they have competition between them. There is competition between different landscape values. The subsistence value of landscape has given way to the market value of landscape (added by the future possibility of the tourist industry). This is evident in areas that lie along the way to the national park. The subsistence value of landscape in this area is marginal as this area has suffered most from wild animals and the flooding of Rapti River. According to the respondents nobody will buy, or even take the land free of charge, in this area for agriculture. It is the market value that makes people attached to this place.

A respondent living in this area expresses,

> "*This area is most affected by wild animals and flooding. Local people always struggle to protect their crops from wildlife and fear the flood. This is why some people have abandoned their agricultural land in this area".*

Different views of people concerning different elements of landscape and different values of landscape support the main thesis of the landscape as a 'way of seeing', the school developed during the 1990s, where landscape is considered as being intimately linked with a way of seeing the world as rationally-ordered, designed and harmonious. However, ways of seeing in turns have affected the physical landscape, which is manifested in changing rural landscape practices e.g. agriculture.

Finally there has been a change in the concepts of space and place due to the change in the rural landscape. Forest and river have changed into the secondary places for traditional people and early migrants, whereas Bikram Baba has remained in the forest as a primary place for insiders and outsiders.

Chapter Seven
Conclusion

7.1 Conclusion

The main aim of the present study has been to explore and understand the rural landscape and its change over time as a response to and consequences of the effects of the RCNP in Jagatpur VDC inside the buffer zone. The study has found that the rural landscape has experienced considerable changes after the implementation of the RCNP. The study also documents changes in rural landscape practices and landscape values and meanings with varying socio-spatial dimensions. The majority of the local farmers are found to have a negative response towards the changes. Although the changes show influences of a number of different factors, the effect of the RCNP is the dominant in the study area.

Cultural landscape is the manifestation of human cultures on the earth's surface, and encompasses both the physical features fashioned out of nature as well as the meaning and values given to different elements of the landscape by human beings based on their cultures and different backgrounds. Hence the roles of the different elements of the landscape for human beings vary among individuals and cultural groups. This is evident in the study area and hence the change in the landscape is perceived differently among different cultural groups and the individuals within the cultural groups. For example the Rapti River is the same object but it was used differently by different groups and hence its values vary between them. This situation supports the argument made by Greider and Garkovich (1992) that the landscape is a symbolic environment created by human acts of conferring meaning to nature and the environment. When symbolizing the landscape human beings adopt different angles and use special filters for their values and beliefs.

The study revealed that there have been considerable changes in the rural landscape practices of the local people since the inception of the National Park. Changes in agricultural activities, animal husbandry, fishing, and forest resource use are apparent. Though the landscape practices showed the influence of a number of different factors, e.g. structure (social structure and NP rules and regulations), knowledge of individuals, encroachment of wild animals, and flooding, the effect of the NP remains the major one. Furthermore the study has also made clear that changes in rural practices are interrelated; change in one practice has far reaching effects on others. This is typical in rural areas of Nepal, hence rural landscape practices should be studied in relation to one another. Changes in practices and their effects

do not have similar spatial and social dimensions all over the study area. For example, changes of practices are more apparent nearer the NP, and restrictions on fishing have affected only the traditional people. Moreover the effects vary between traditional and migrant communities. Traditional people have faced more problems as they are socio-economically weaker than the migrants and they have been entirely involved in subsistence practices.

Change in rural landscape practice is directly related to issues of subsistence and socio-economic prosperity of the local people. Furthermore the study has shown that the NP has opened up an opportunity for the tourist industry, which may become an economically strong practice in the future. This may bring further changes in the study area, although these will be people and place specific. The study also showed that in some places the weaker practices (i.e. subsistence agriculture) give way to the stronger practice (market economy i.e. tourism). It also reveals that the landscape, which has lost its importance for one form of practice, may be important for another practice. Generally it can be concluded that changes in the practices also revealed the constraints and the opportunities over space, time and among human beings (groups and individuals).

It is evident from the study that landscape practice is the main connector between human beings and the landscape, which reveals whether people are part of the landscape or apart from it. Changes in the relationship between human beings and the different elements of the cultural landscape are the evidence of this. The relationship between human beings and the forest, the river and the land has changed over time as the practices have changed. This changing relation has resulted in changes in resource utilization patterns. For example, change in animal husbandry has resulted in change in the use of the forest and the river. Change in the relationship between human beings and the land showed a change in the intensity of the use of the land resource.

Concerning the study of landscape values and meanings the study confirmed that they are not intrinsic to the landscape but it is the human beings who use the landscape according to their needs and wants and consequently attribute values and meanings to landscape. That is why these vary between groups and among individuals. For example, the land, which is no longer favorable to the farmers, is viewed as valuable by the people who see a future for this area through the tourism. Hence values and meanings are purely within the human beings, which are manifested as they use the landscape. Hence they mirror who the actors are and how the landscape has been utilized. Furthermore they reveal the cultural and legal contexts under which the landscape is used. The changes in the values and meanings of different

elements of the landscape for individuals and groups, over time and space, showed that landscape should not be understood only as morphology created by human endeavor but also reflects meanings created and maintained by human beings. The study has demonstrated that the change in landscape practices has changed the values and meanings, which in turn has resulted in change in landscape. This situation supports Jones' (1991) argument that the landscape is not only physical traces of human resource use over time but also reflects human beliefs and values regarding the landscape. Hence both are essential to understand the cultural landscape. On the one hand human practices bring changes not only in the physical appearances of landscape but also in the landscape values. On the other hand landscape values also determine human practices, which again bring changes in the physical appearances of the landscape. The relationship between landscape practices and landscape values and meaning revealed the fact that landscapes values to a large extend have also been affected by the NP. Apart from the effects of the National Park, changes in landscape values in the study area also showed the evidence of natural processes i.e. floods. But their effect is limited to certain areas between the Rapti and the Kerunga. Floods have far-reaching effects, which have brought about both visible and invisible changes in the study area.

Furthermore the study of landscape values and meanings revealed answers to fundamental questions, for example: what makes people attached to landscape? And what will happen if the function of the connector between landscape and human being is changed? The study revealed that the traditional people are attached to the landscape because of its identity value rather than the economic values, whereas the migrants are attached to the landscape for its economic values. It is also apparent from the study that if there is considerable change in landscape values people will abandon the landscape. For example some farmers living near the NP and Rapti River have started to keep their land fallow and some have started to migrate. There are some cases where people are still living in the same landscape but without any attachment to the landscape (because they are thinking of migrating from this place) in cases where they have been compelled by the situation, such as poor economic condition. Hence the study of landscape values and meanings is also essential in order to understand the attachment of people to the landscape.

The study revealed that there have been considerable changes in landscape values and meanings after the implementation of the NP. Like the rural landscape practices changes observed in values and meanings are also place and people specific and similarly the views on changes also vary between groups and individuals among groups.

The study also found that views vary among different groups i.e. local people (traditional and migrants) and conservation authority, and among individuals concerning the change in the landscape. The different views of these groups and individuals reveal their backgrounds and their expectations of the landscape. Hence it is not wise to speak about values and meanings of landscape just by looking at the visible characteristics of its elements.

The study further showed that the landscape values and meanings are dynamic concepts, not only in a sense that they change over time but also in a sense that there is competition between different values of the landscape. Subsistence value of landscape has given way to market value (added by the future possibility of a tourist industry). This is evident in areas that lie along the way to the national park. The subsistence value of landscape in this area is marginal as this area has suffered from wild animals and the floods from the Rapti River. According to the respondents nobody will buy or even take the land free of charge in this area for agriculture. It is the market value for tourism that makes people attached to this place.

Considering which values of landscape are more important for the local people, it can be concluded that economic values (subsistence and market) of agricultural land through agricultural practices is more essential to the local people because it is directly related with the socio-economic condition of the majority of the local people. Although the situation among the traditional people revealed that identity value of the landscape make them attached to this place it can be inferred that if the landscape does not support their subsistence at all they will leave the land because they all are farmers and are dependent on land. Identity value of this place as a home of Bikram Baba is also important.

Last but not the least, it can be concluded that the cultural landscape as an objective as well as subjective expression of the human cultures on the surface of the earth has undergone considerable changes after the implementation of the RCNP. Although there are mixed responses concerning the changes in landscape, the majority of the people have negative responses and this group includes mostly the farmers. Hence it is very important for the nature conservation authority to include both, the physical changes as well as the values and meanings of the landscape when implementing and reviewing the effectiveness of the conservation programs.

7.2 Future Research Possibilities

This study was intended to investigate the issue of cultural landscape change after the implementation of the RCNP by taking one VDC in the buffer zone of the RCNP as an example. The numbers of respondents were few and selected purposively since the focus of

the study was to reflect the views and opinions of these people rather than generalizing about the issues. This study revealed the important aspects of the rural landscape that are typical in areas inside the buffer zone of the NP in Nepal.

In the present situation where more than 18 % of the country's land is under the protected areas and the majority of them are dedicated to protecting flagship wildlife, the issues of the existence of the local people must receive major attention. Though the nature conservation practices in Nepal have undergone changes since its inception in 1970s, from purely protective to participatory conservation at the landscape level, the rural people around the conservation areas in general have faced complicated problems due to the restriction on the use of natural resources and the encroachment and threat of wild animals on their agricultural fields, human lives and domestic animals. Inception of the Park and People Program in 1995 was to address these problems in Nepal. Recently the conservation authority is advocating the inclusion of the cultural landscape in the conservation practices in Nepal, which is increasingly getting more and more popular in the developed world where socio-cultural aspects of the conservation practices receive more importance than the conservation of wildlife. The methodology applied in this study was helpful to understand the cultural landscape and can be used to undertake a large scale study in the future to review the effectiveness of the conservation practices as well as to implement revised conservation practices in Nepal in general. Study of the changing landscape values and meanings after the implementation of the RCNP and the findings that have been derived can be useful to conduct the large scale study, which can help in better understanding the park-people relation as well in solving the park-people conflicts around the protected areas in Nepal. Furthermore, the approaches to understanding the basics of cultural landscape can be applied to find out the major elements of rural landscape planning in Nepal.

Lastly, I want to mention that the concept of cultural landscape not only as a physical expression of human resource use over time and space but also as a reflection of human beliefs and values is very useful since it is wide-ranging and multidisciplinary. I am highly motivated to use the cultural landscape concept in future research on landscape.

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Appendix I

Standardized open-ended interview (For the Traditional People and Migrants)

The purpose of this interview is strictly academic and will not be used for any other purposes. Respondents are assured that any response provided will be treated anonymously and confidentially and cannot be traced back to the respondent.

NB. All questions were asked in Nepali

Interviewee no:

Name:		Address:
Place of interview:	Date:	Time:
Setting:		
Family Size:	Family type:	Year of birth:
Place of birth:	Occupation:	

1 How long you have been living in this VDC? (go to question no. 4 for the traditional people)

2 Are you in-migrant? Yes ( ) No ( )
If yes, When? Where from? Why? With whom?

3 Had you been migrated to other places before you settled here? Yes: No:

4 If yes/no, why?

5 Why did you choose this area to settle down? (Place Identity)

6 Have you ever think of migrating from this area?
Yes ( ), when? Why?
No ( )

7 What are the major attractions of this area that made you live in this area at present?

<u>Rural Practices</u>

I. Land Holding

1 How much land do you own? Bigha: Kattha:

2 Types of land
Dry land: Bigha: Kattha:
Wetland: Bigha: Kattha:

3 How much land did you own 30 yrs before? Bigha……. Kattha ….
4 Types of land

Dry land: Bigha: Kattha:

Wetland: Bigha: Kattha:

5 Have you sold your land? If yes? Why? When? How much? To whom?

6 How is the economic value of land now? Cost…….?

7 What are the major aspects that determine the economic value of the land?

8 How was it then (before 30 yrs.)?

II. Agriculture (Crop pattern, intensity, selection)

1 What do you grow in wetland?

2 What do you grow in Dry land?

3 How many crops do you grow in a year? Single? Double? Triple?

4 Do you grow all of them for household consumption?

5 Are the crops grown from your field sufficient to meet your household's needs?

6 Do you sell your agricultural products? If yes what kind of products? And why?

7 Are the crops grown same as you grow before the implementation of the RCNP? (Before 30 years).

Yes: No:

8 If no what kinds of changes have taken place?

9 If there is any changes in this aspect, why that has happened?

10 What are the major changes in your agricultural activities after the implementation of RCNP?

III. Animal husbandry

1 Do you have domestic animals? Yes: No:

2 Do you have cow? Yes ( ) No ( ) if Yes how many? Why?

3 Do you have ox? Yes ( ) No ( ) if Yes how many? Why?

4 Do you have buffalos? Yes ( ) No ( ) if Yes how many? Why?

5 Do you have buff-bull? Yes ( ) No ( ) if Yes how many? Why?

6 Any other animals?

7 How do you manage them?

8 Do you have any problem in managing animals? If yes what kind problems do you have?

9 What kind of animals did you keep before the implementation of the RCNP?

10 How did you manage them?

11 How was it to manage the animals?

12 What happened to your animal husbandry after the implementation of the RCNP?

13 What did you do to solve the problem?

IV. Use of Forest Resources

1 Where do you derive the forest resources (E.g. firewood, timber, fodder) from?

2 Do you have problems to manage these resources?

3 Do you visit the national Park forest? How often? Why? Is there any specific time? If yes, when and why?

4 How would you feel to visit the forest?

5 Do you remember when the Royal Chitwan National Park was established?

6 How did you feel when you got the noticed that you are not allowed to visit/use forest resources any more?

7 What was your reaction towards the implementation of the RCNP?

8 What happened to your daily activities after the implementation of the RCNP?

9 How often did you visit the forest before the implementation on RCNP?

10 Why you used to visit the forest area?

11 What kind of forest resources you used to derive from the forest?

12 How far (in terms of time) would you visit in forest?

13 How long time you used to spend in the forest?

14 How important was the forest and why?

15 How this event affected your daily life? How would you feel to visit the forest?

16 What is your personal view towards forest?

17 What is your personal view towards RCNP?

18 What are the major changes you have observed in the locality during your lifetime?

V. Rapti River

1 Do you use Rapti River for any purposes? Yes: No:

2 If no, why?

3 If yes why? How often?

4 How important is the River in your life (at present)?

5 How was the situation before the implementation of the RCNP?

6 Did you use the Rapti River for any purpose before the implementation of the RCNP?

7 Yes: No: If yes/no, why?

8 How important was the river in your life?

9 What happened after the implementation of RCNP (after the restriction of fishing in the Rapti River)?

10 What kind of changes has occurred in the use of the Rapti River after the implementation of the RCNP?

11 What is your view towards the Rapti River at present?

VI. Religiously important Place

1 What do you know about Bikram Baba?

2 How did you know about it?

3 What is it popular for?

4 Do you believe in Bikram Baba?

5 How often do you visit the Bikram Baba? Why?

6 When did you first visit the Bikram Baba and why?

7 How important is Bikram Baba for Jagatpur VDC and its people?

8 How is Bikram BABA now?

9 How was it before the implementation of the RCNP?

10 What kinds of changes have occurred during this period?

11 Has your belief in the Bikram Baba changed over time?

12 Would you like to add anything else?

******Thank you for your kind cooperation and valuable information.******