Chapter 1

INTRODUCTION

Does the ecological basis of a society change over time? How does change occur? And how does change affect other aspects of the society? Should these questions be a subject of historical inquiry? Obviously no one today will answer this question in the negative. But have historians given sufficient attention to these issues? If we look at the range of historical questions taken up for inquiries we find that ecological issues have been neglected. How a society collects its fuel and fodder, grazes its cattle, uses forests to supplement its subsistence economy, taps its water resources, deals with flood, drought and famines, and copes with increasing or declining fertility of the soil are questions important for us to understand; they are no less significant than the study of land relations, taxation, labour supply, class conflicts and political power. So we need to widen the areas of our historical inquiry. Ecological changes have often long term consequences for a society. In modern India the ecological transformation in the last two centuries has been dramatic. Unfortunately, the historiography of modern India has neglected this history.

However, this neglect of the study of the ecological basis of society by historians is not universal. The Annales historians like Marc Bloch, Fernand
Brandel have studied the importance of nature in human history.\(^1\) Ecological factors appear in their studies largely as constraining forces.\(^2\) They do not see an interaction with nature as possible cause of ecological change, a theme which is of central concern to the environmental historians in the United States. Environmental history as a distinct field has emerged in America in the 1970s.\(^3\)

Various important monographs have been written on the impact of the capitalist system and European colonization on the ecology of the United States. In an interesting study Donald Worster discusses the dust storms of the 1930s in the Great Plain of America. The capitalist agriculture which emphasised increased productivity and unrestricted mechanization and modernization created circumstances for adoption of a single highly profitable crop. Different crops were replaced by wheat, reducing bio-diversity and resulting in what he called 'wheat deserts'. This disturbed the 'self-propelling dynamic system of nature' leading to 

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the dust storms.⁴ On the ecological impact of the European colonization of America and other continents there is a fine study by Alfred Crosby. In a fascinating account Crosby talks of a 'biological imperialism' through which the Europeans imposed their weeds, animals and diseases on the lands of 'demographic take over' (countries where Europeans triumphed demographically). This thoroughly transformed the ecosystem of the 'New World'. He argues that the role of plants, animals and diseases which accompanied the migrating Europeans was as important as their superior weaponry in creating 'Neo-Europes'.⁵ However, Crosby is not entirely correct in suggesting that the Europeans could not alter the ecosystems of old civilizations like the Middle East, India and China. These old civilizations may not have been Europeanised but colonial intervention in altering the ecological basis of these societies was in no way insignificant.

With the growth of environmental history, some historians, particular, in the United States, have emphasized that the discipline needs to develop its own framework, concepts and method of analysis.⁶ One of the most well known exponent of environmental history in America is Donald Worster. Operating with the notion of 'modes of production' he considers the capitalist mode of production, centred on greed, as a watershed in environmental history. Outlining an


agenda for the environmental historians, Worster identifies three levels on which analysis could proceed. The first involves the discovery of the structure and the distribution of the natural environment in the past. The second level is the productive technology and its interaction with the environment. And the third level is the study of perceptions, ideologies, ethics, laws and myths of people through which they dialogue with nature. He advocates an integration of these levels.  

Richard White criticizes this model by arguing that this is a hierarchical model with a base (natural history), a structure (mode of production) and a super-structure (culture and ideology) and can be misunderstood as a blueprint of a 'vulgar Marxist line'. He particularly criticizes the separation of culture as a distinct realm, a super structure. For White culture cannot be separated from its material aspects. Fearing that Worster's model will lead to a simple determinism, White suggests a focus on the problem of change, and rejects the notion of a stable environmental ideal in the past.  

William Cronon has offered the most powerful criticism of Worster. Worster's emphasis on the mode of production, according to Cronon, leads to a focus on material dimensions at the cost of culture. Cronon argues that historians should focus on 'relationships' instead of modes of production. He prefers the


term `consumption relation' to `relation of production'. Cronon complains that too often the environmental historians romanticise nature (and traditional societies) as unchanging, and argues that we cannot simply label as capitalist or modern all forces for ecosystematic changes and as traditional or natural all forces for stability. Cronon also finds the holistic approach of Worster problematic since it overlooks conflicts and differences within groups.9

Worster's emphasis on modes of production and the simple history of their transformation, and his stress on agro-ecological history at the cost of other themes, thus appears problematic. Worster's framework has its origin in his study of capitalist farming introduced in the US by the colonizers. Perhaps due to this he is able to see a sharp break and a simple shift from one mode to another. In many other countries change was slow and complex. In India, many modes have coexisted; conversion of forest lands to agriculture has a long history,10 and many products gathered in the tropical forests had been items of long distance trade long before the advent of the Europeans.11 In this sense Pyne is correct in questioning Worster's emphasis on ecological equilibrium, and in

arguing that human exploitation of nature has a long history—it appears wherever
humans exist.¹² Thus there is a need to study changing human interaction with
nature in all civilizations and in all periods. But change has definitely been most
rapid in the last few centuries and no one can deny the role of capitalism in this proc-

ess.

Environmental history in America has neglected some of the issues which
are important from the point of view of the developing countries. Curtailment of
rights of various communities in forests thereby disrupting their resource use
pattern, deforestation due to arable expansion, plantation, fuel requirement,
commercial felling, problems of population explosion, drought, famine, flood, soil
erosion etc., are some of the issues which are of concern to the environmental
historians in the developing countries.¹³

In this context the role of colonialism in deforestation has been well
brought out in a book edited by John F. Richards and Richard P. Tucker.¹⁴ This
collection of articles explores the causes of deforestation and its consequences in
the continents of Asia, Africa, Europe and America. Deforestation is seen primari-

¹². Stephen J. Pyne, "Firestick History", in The Journal of
¹³. For an agenda on environmental history in India see Guha,
"Writing Environmental History in India", Studies in History,
vol. 9, 1 (1993), pp. 119-29; Arnold and Guha, "Introduction" in
Arnold and Guha, op. cit.
¹⁴. John F. Richards and Richard P. Tucker (eds.), World Defores-
tation in the Twentieth Century (London, Durham, 1988).
ly in terms of the interaction between globally dominant western capital and regional markets responding to the opportunities for profit. Commercial exploitation of timber, plantation industry, etc., are found to be the main causes of deforestation. However, there is only one essay in this volume on India which covers deforestation in the U.P. hills and Assam. In this article Richard Tucker tends to assume that the Forest Department conserved forest and exploited them only scientifically while people destroyed forests. He has based his argument on the poor condition of the civil forests without examining the proper causes of deterioration. Were not the reserves over exploited for commerce while the increasing population was compelled to meet their expanding demand from a contracting area of civil forests? Tucker uncritically accepts the conservation rhetoric of the foresters. In the following chapters I have sought to analyze the nature of such rhetoric.\(^{15}\)

In India the ecological aspect has been largely ignored in historical writings. Ramachandra Guha and Madhav Gadgil have attempted to bridge this gap by proposing a perspective for the study of ecological history of India. They start by proposing a general theory of ecological history which discusses the levels of prudence and profligacy in different modes of resource use. It is followed by an ecological interpretation of pre-modern Indian history. Finally the book recounts the dislocations caused by the colonial intervention in the ecological basis of Indian society. Forests were appropriated by the state which

\(^{15}\) Tucker, "The British Empire and India's Forest Resources: The Timberlands of Assam and Kumaun, 1914-1950", in Ibid., pp. 91-111.
intensified competing claims on the commons and gave rise to popular resistance and social conflicts.\textsuperscript{16} No doubt such a broad interpretation of Indian history would be problematic without detailed regional studies. The authors themselves agree that "ultimately, the ecological history of India must be constructed around detailed regional studies, sharply bounded in time and space".\textsuperscript{17}

Ramachandra Guha's \textit{The Unquiet Woods} in this sense is a significant contribution. In this pioneering work he discusses the evolution of colonial forestry and social and environmental dislocations caused by it in the Uttarakhand region. This state intervention gave rise to conflicts. He discusses with graphic detail the protest movements in defense of forest rights and establishes the linkage between the early protests and the Chipko movement.\textsuperscript{18} While this book gives a fascinating account of social protests some of the ecological consequences of colonial forestry are not fully explored. Thus while Guha noted the importance of factors like railway expansion, world wars, for deforestation,\textsuperscript{19} the contribution of these factors, and others like arable expansion, was not fully examined. The shift in the nature of deforestation from the early colonial period to the later colonial period is also not fully explored. While he indicates that mixed forests were

\begin{itemize}
  \item \textsuperscript{16} Gadgil and Guha, \textit{This Fissured Land}.
  \item \textsuperscript{17} \textit{Ibid.}, p.6.
  \item \textsuperscript{18} Guha, \textit{The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya} (Delhi, 1989).
  \item \textsuperscript{19} \textit{Ibid.}, pp. 37-8; 48.
\end{itemize}
converted into conifers, he neither fully develops the argument nor adequately examines its consequences.

A recent collection of essays on environmental history of South Asia covers a wide range of themes: colonial policies towards forests, pastures, harnessing of water resources, the problem of air pollution. Chetan Singh in his essay in this volume, shows how in Mughal north India ecological diversity sustained various groups other than the agrarian society. Increased consumption in urban centres led to the scarcity of forest produces like fuel wood, fodder, timber etc. This in the long term had the potential of transforming the ecology. In an excellent article Gadgil and Prabhakar trace the ecological change in the Nilgiri Hills in last two centuries with the help of maps drawn at different times during this period. They have shown how a relatively isolated area with localized resource flow was transformed into a well connected region with outside links and resource flow to a much larger domain. Atluri Murali has shown how commercial forestry transformed the ecological basis of the society in Andhra. Jacques Pouchepadass shows how the British considered shifting cultivation undesirable and curbed it. Neeladri Bhattacharya traces the changing patterns of pastoralism in Punjab under colonial rule. He examines social perceptions about nomadic pastoralists and shows how colonial notion of property led to nomadic pastoralists being classified as vagrants and criminals. David Hardiman analyzes how the system of small dam for irriga-

20. Ibid., p. 59.
tion disintegrated in the Sahyadris under colonial rule. The large irrigation system created by the colonial state in the Indus basin could not ensure proper distribution and efficient use of water due to local socio-cultural constraints argues David Gilmartin. Environmental consequences of large irrigation systems, like waterlogging, salinity and diseases, etc., are discussed in an interesting article by Elizabeth Whitcombe. Peter Reeves shows how colonial intervention in fishery which shifted control from landholders and fishers to lessees adversely affected inland fisheries. M.R. Anderson shows how control of air pollution in Calcutta opened the way for strong intervention and coercion by the colonial state. Mark Poffenberger accounts for the resurgence of community control of forest resources in West Bengal in recent times. This volume which covers a wide range of issues, opens up many areas for research in environmental history. However many other issues like, demographic change, arable expansion, soil erosion, change in soil productivity, drought, famine and climatic change, deforestation, changing vegetation composition, etc. are left out. The study of environmental history of modern India remains incomplete without a study of depleting forest cover which is surprisingly missing from this volume. Declining forest cover was the most apparent and significant consequence of colonial forestry. The impact of deforestation was wide ranging. It affected rainfall, climate, soil fertility, etc. And it led to droughts, famines, floods, etc. Deforestation affects a much larger area than the one in which it takes place. Ecological disturbances caused by deforestation were further complicated by deliberate attempts to change vegetational composition. The study of
long term consequences of this change, many of which are yet to be realised, is difficult and poses a challenge to historians, but atleast a beginning can be made by studying the nature of deforestation and change in vegetational composition. The present study is an attempt in this direction. This study seeks to explore all dimensions of colonial forestry.

The colonial bureaucracy often held villagers responsible for deforestation. They were accused of felling forests for arable expansion, for fuel, timber and other requirements. To what extent was such a view correct? I examine the main factors responsible for deforestation in the hills of U.P. under colonial rule in chapter III.

Deforestation apart from causing other ecological disturbance, can also change the composition of forest in the long run. The composition of forests was also changed deliberately through silviculture practices: colonial forestry attempted to convert mixed forests into forests with commercially viable species. In chapter IV, I discuss how efforts were made to alter the composition of forest, and how the changed composition of forests affected the ecology of the region.

Commercial exploitation of forests and the conversion of mixed forests into reserves of valuable conifers were important components of colonial forestry. In chapter II, I examine the long history of scientific forestry. I seek to understand how the policy evolved, and was implemented, how the rights of people were regulated, redefined and curtailed, how the people reacted to the policy, and what shape did the policy finally take.
Colonial forestry affected the subsistence economy of the hill people. Commercial exploitation of forests required restriction of people's access to forests. Control over movements of cattle was also important. In chapter V, I examine the restrictions on grazing, lopping, grass cutting, etc.; and how these measures affected the different sections of society peasants, the Gujars & the Bhotiyas.

Restrictions on the access to forests affected the agrarian economy. The colonial state slowly strengthened its control over commons, and this made even arable expansion difficult, though this was initially encouraged. This crucially affected agrarian life in the hills. I examine the causes and consequences of this shift in policy in chapter VI. Why did colonial policy on the commons change? Why was there a shift in colonial policy with regards to arable expansion? What impact did these changes have on the agrarian economy and agrarian relations of the hills? These are the questions I address in chapter VI and VII.

This study thus is an attempt to explore all dimensions of colonial forestry and its impact on the ecology, economy and society of UP hills.

The area of this study is the U. P. hills. In the colonial period the forests of this region suffered a dramatic deforestation because of its rich pine forests and its proximity to the Great Gangetic plains. This disturbed the ecosystem of this region as well as that of the Gangetic plain. Most of the large rivers of the Gangetic plains which are important for its economy originate in the U.P. hills. Therefore the ecosystem of the U.P. hills has great significance for the Gangetic
plains. The U.P. hills, situated in the north-western part of the state, are bound by the Great Himalayas in the north, the U. P. plains in the south, Himachal Pradesh in the west and Nepal in the east. This area is presently constituted of eight districts: Almora, Nainital, Pithoragarh, Chamoli, Dehradun, Pauri, Tehri and Uttarkashi. The first three districts are in the Kumaun civil division and other five districts in the Garhwal civil division. In this hilly terrain lie some of the highest peaks of the country. These features distinguish this region from the adjacent plains, and at the same time they account for the diversity within the region itself. The elevation of the place conditions its climate, vegetation, rainfall, etc. and consequently its agriculture practices. Historically, this region was known as Kedarkhand in Puranas. Sankaracharya visited this region to establish his math at Badrinath. Since many Hindu pilgrim centres are located here, Hindus from all over India visit this region. Various tribes like the Khas, Kirat, Kunind, Yodhey, etc. ruled this region before Katyuris set up their rule around the middle of the first millennium. After the Katyuris the area was divided into small principalities only to be united by the Pawar dynasty in Garhwal and the Chand dynasty in Kumaun. Both these dynasties continued till the Gorkhas conquered Kumaun in 1790 and Garhwal in 1804. After the Anglo-Gorkha war in 1815 these regions came under the British (except the Tehri Kingdom which was carved out of Garhwal and handed over to a descendent of
the Garhwal Raja for his assistance to the British during the war). 22