Colonialism, Development, and the Environment

Railways and Deforestation in British India, 1860–1884

Pallavi V. Das
Colonialism, Development, and the Environment
This page intentionally left blank
Colonialism, Development, and the Environment
Railways and Deforestation in British India, 1860–1884

Pallavi V. Das
COLONIALISM, DEVELOPMENT, AND THE ENVIRONMENT
Copyright © Pallavi V. Das, 2015.
Foreword © Ian Kerr, 2015.
Softcover reprint of the hardcover 1st edition 2015 978-1-137-49456-6
All rights reserved.
Chapter 4 was previously published as “Hugh Cleghorn and Forest Conservancy in India,” in Environment and History, vol. 11:1 (2005), 55–82. Reproduced courtesy of White Horse Press.
First published in 2015 by PALGRAVE MACMILLAN® in the United States—a division of St. Martin’s Press LLC, 175 Fifth Avenue, New York, NY 10010.
Where this book is distributed in the UK, Europe and the rest of the world, this is by Palgrave Macmillan, a division of Macmillan Publishers Limited, registered in England, company number 785998, of Houndmills, Basingstoke, Hampshire RG21 6XS.
Palgrave Macmillan is the global academic imprint of the above companies and has companies and representatives throughout the world.
Palgrave® and Macmillan® are registered trademarks in the United States, the United Kingdom, Europe and other countries.
DOI 10.1007/978-1-137-49458-0
Library of Congress Cataloging-in-Publication Data
Das, Pallavi V.
Colonialism, development, and the environment : railways and deforestation in British India, 1860–1884 / Pallavi V. Das.
160 pages cm
Summary: “This book focuses on the colonial encounter between Britain and India in the field of economic development, including scientific/technological changes, and the environmental impact of this encounter on India. Through the institutions of the colonial state, Das argues, the metropole (Britain) initiated economic development strategies in the colony (India) in order to efficiently extract resources from it. While colonial encounters have been seen by scholars more or less in economic and political terms, what is largely missing is the fact that the metropole’s economic development strategies had definite ecological consequences for the colony. This book aims to fill that gap with an examination of how the railways led to deforestation in colonial India. The deforestation, in turn, put at risk the entire project of railway expansion. This led to state implementation of forest conservation. Conservation, however, was also an economic-developmental project whose main aim was to maintain timber supplies for the railways rather than care for ecological concerns. Thus the history of colonialism has both economic (and political) as well as ecological dimensions”— Provided by publisher.
Includes bibliographical references and index.
HE3298.D37 2015
385.0954’09034—dc23 2015025519
A catalogue record of the book is available from the British Library.
Design by SPi Global.
First edition: September 2015
10 9 8 7 6 5 4 3 2 1
For Baba and Maa
In gratitude
This page intentionally left blank
# Contents

List of Tables ix
Foreword xi
Acknowledgments xv
Maps xvii

Introduction 1

1 Railways and Development in Colonial India 17
2 Railways’ Sleeper Demand and Deforestation 49
3 The Forests and Railway Fuel Supply 71
4 Hugh Cleghorn and Forest Conservation in India 93

Conclusion 117

Notes 125

Bibliography 163

Index 179
This page intentionally left blank
List of Tables

1.1  Investment in Railways in the Punjab (in rupees) 34
1.2  Railway Expansion in the Punjab, 1860–84 (in miles) 38
2.1  Deodar Timber Felled and Supplied to Railways from the Hill Forests of the Chenab River Valley (1861–63) 59
This page intentionally left blank
Dr. Pallavi Das has given us an important and pioneering study that integrates aspects of environmental and colonial history through a specific examination of railway-driven deforestation in the Punjab Province of British India. Railways were and remain at the infrastructural centre of India. Railway construction on the Indian sub-continent began in 1850 and construction and reconstruction has gone on continually ever since. The soon-to-be completed Kashmir Railway is a major example of current construction. The first section of operating line officially opened in April 1853. By 1900 the rail network exceeded 23,000 route miles, the world’s fourth longest, operated by 338,041 permanent employees along which over 165 million passengers and some 42 million net tons of goods were carried in the reporting year 1899-1900. Jump forward to the second decade of the twenty-first century and Indian Railways, now a mammoth state-owned and state-operated system, has a route mileage exceeding 40,000 miles and 1.4 million permanent employees. Roughly one billion passengers travel by train on an annual basis, as do some 950 million tonnes of revenue earning freight traffic. 7000 plus passenger trains operate every day.

These impressive statistics highlight the transportation dimensions of the ways in which the railways were and are central to India and the lives of its inhabitants. Indeed, some historians have gone so far as to pose the question, “No Railways, No India”? But India did have railways, indeed it was an early entrant into the railway age, so regardless of the analytical benefits of pursuing that counterfactual, historians need to describe and to analyze the actual consequences of over one-hundred and fifty years of railway building and operation in South Asia. This
history, of course, was until 1947 a colonial history so any understanding of India’s railway past has to be informed by the fact of British rule. Clearly, the British introduced railways to India to facilitate colonial rule—militarily and administratively—and to benefit the Anglo-Indian commercial connection.

Some of those consequences have been more extensively studied than others. Studies of railway labour, both for construction and for the operating lines, have been published. The economic consequences of railway operation have long been the object of sophisticated and detailed investigation so we know a good deal about topics as diverse as a railway-driven, improved integration of pan-Indian markets in food grains to estimates of the extent to which railways increased agricultural income across the 235 districts into which most of British India was divided, 1870-1930. The roles the railways played in the creation and sustenance of the Indian nation and/or forms of regional identity, has interested other scholars while yet others have examined the ways in which the railways entered India’s cultural domain and became represented in a variety of visual, textual and aural media.

However, and it is a major caveat, the environmental consequences of railway construction and operation have been little studied despite a clear recognition by contemporary observers from the 1850s onwards that the railways had significant, negative environmental impacts. Even in the late 20th century the building of the 471-mile Konkan Railway along the narrow, coastal littoral of Western India below the Western Ghats raised environmental concerns.

In short, a topic of great importance has been neglected. A few articles have been published and some description of the environmental consequences of the railroads appears in works that do not have the railways as their main focus. Book-length studies that place the environmental consequences of the railways at the centre of the research and analysis do not exist—or at least did not exist until Dr. Pallavi Das provided this excellent study of Colonialism, Development, and the Environment: Railways and Deforestation in British India, 1860-1884.
This is a most welcome study that provides much more than a narrow account of railways and deforestation in the Punjab over a twenty-four year period. A strength of the book is its contextualization of the environmental consequences of the railways both with respect to causes and outcomes. Dr. Das describes the developmental goals of the colonial state that led first to the project of railways for India and then to the protection of that project when it became evident to some colonial authorities that railway-driven deforestation was threatening the supply of wood for sleepers and fuel needed to keep the railways going. Particularly interesting in this regard is chapter five where we find an account of the influential role played by one colonial scientist, Dr. Hugh Cleghorn, in developing a recognition of the causes of deforestation and to the establishment of a program of forest conservancy designed to safeguard the developmental projects of the colonial state.

I hope that this book will be followed by others in which Dr. Das will extend her research to cover other aspects of the contextualized, environmental history of India’s colonial and post-colonial railways so that a well-rounded understanding of the positive and negative features of this important subject can be incorporated into the history of the making of modern India.

Ian Kerr
University of Manitoba
This page intentionally left blank
This book and some of its ideas took a material form at the Ohio State University, Columbus, where as a doctoral student I was exposed to high-quality scholarly works not only in history but also in human geography. I will always remain grateful to the professors who taught me there, including Professors Stephen Dale and Claire Robertson.

It was Ramachandra Guha’s *The Unquiet Woods* that sparked my interest in environmental history.

I am grateful to the following people for helping me with my archival research and data collection: Research Room staff of the National Archives of India, New Delhi; the staff of the provincial archives in India namely the Punjab Archives, Haryana Archives and Himachal Pradesh Archives; the librarians of the Railway Museum and of the Ministry of Railways (Railway Board), New Delhi; and the staff of the Special Collections at the University of Edinburgh, the University of St. Andrews and the Royal Botanic Gardens Library, Edinburgh.

I am grateful to my colleagues in the history department at Lakehead University for providing an intellectually conducive atmosphere for writing this book and to Patrick Schmidt at Lakehead for providing research assistance.

I would not have ventured to write this book without the encouragement of my husband, Raju, who not only engaged in stimulating discussions but also patiently read and commented on earlier drafts of this book. Also, I am grateful to him for just being there. I thank my children, Prakriti and Samya, for putting up with my long hours of work while writing this book.

I dedicate this book to my parents for instilling in me the love of nature and of books.
Maps
Map 1  British India (Courtesy of the Digital South Asia Library, http://dsal.uchicago.edu).
Introduction

The Problem and the Context

Human activities have modified the earth and its environment to such an extent that scientists are debating whether the term “Anthropocene” should be used to describe the geological epoch we live in. Among the human modifications to the environment, it is deforestation, arguably, that has affected more of the earth’s surface than any other single activity. It is, therefore, not surprising that there are numerous studies on the causes of deforestation in several countries, including India.

India, which once boasted a great wealth of natural resources, is now facing the problem of resource scarcity in the form of depleted forests. Presently, forests cover only about 21 percent of the total area in India.

A great deal of India’s deforestation can be traced to the colonial period. It is also important to study the ecological impacts of colonialism such as deforestation because these colonial empires were the forerunners of contemporary globalization.

One of the most important causes of deforestation in India was the building and expansion of the railways, promoted by the colonial state, which was an arm of the British state. To what extent and how the expansion of railways—between 1860 and 1884—led to deforestation at the all-India level and at the provincial level, specifically in the Punjab, is the problem that this book addresses. This was a period of high imperialism and an era of early globalization when India was becoming increasingly tied to the world economy. In addition, I examine the colonial state’s response to deforestation.