

CHAPTER CONTENTS

Chapter and Section Title

Chapter 1: Introduction	1
1.1 Introduction	1
1.1.1 Resource need of rural poor	2
1.1.2 Statutory & Incentive-based CPR Management Systems	5
1.1.3 Growth of natural resource economics	9
1.2 A Review of the Literature	11
1.2.1 Literature on Natural Resource Economics	11
1.2.2. Literature on Common Property Resources	18
1.3 The Research Problem	22
1.3.1 Forests in the Himalaya	24
1.3.2 Subsistence Agriculture & CPRs in the Himalaya	24
1.4 Research Hypotheses for the Study	26
1.4.1 Hypotheses relating to the Development Impact on Forests	26
1.4.2 Hypotheses relating to Forest Resource Markets	28
1.4.3 Hypotheses on Policy-related Issues	28
1.4.4 Hypotheses relating to CPRs & Participatory RMS Systems	29
1.5 Objective of the study	30
1.6 Structure and Methodology of the Study	31
Chapter 2: The Role of Property Rights in the Traditional Subsistence System	34
2.1. Importance of Natural Resource in Rural Livelihood: A Theoretical Overview	34
2.2. Access to Natural Resources and Livelihood Security of the Poor	37
2.2.1 Quantitative vs. Qualitative Assessment of Economic Well-Being	37
2.3. Emergence of Property Rights.	40
2.3.1 Protection of Property Rights	40
2.3.2 What constitutes Property Rights?	41
2.3.3 Economics of Property Rights	43
2.4 Property Rights and its Dynamics	44

2.4.1 Dimensions of Property Rights	47
2.5 Property rights and natural resource exploitation	48
2.6 Property Rights Regimes	50
2.6.1 Open Access	50
2.6.2 State Property Regime (<i>res publicae</i>)	50
2.6.3. Private Property Regime (<i>res privatae</i>)	51
2.6.4. Common Property Regime (<i>res communes</i>)	52
2.7 Discourses in Property Rights: A Brief Overview	53
2.7.1 Ethical Foundation of Property Rights	55
2.8. Market based Natural Resource Management and Property Rights	56
2.8.1 Community Property Rights and Natural Resource Management	58
2.8.2 Property rights in Forests – A Digression	62
2.9 Dilemma in Common Property Resource Management	63
2.10 Natural Resource Management and Game Theory	65
2.10.1 Collective Action and Prisoner’s Dilemma Game	66
2.11 Are CPRs doomed to fail?	67
2.11.1 The Case for CPR	68
2.11.2 How to ensure that CPR works?	72
CHAPTER 3: Impact of State Forestry & Settlement on Forest CPRs	79
3.1 Approaches in Forestry	79
3.2 Rent Capture and its Implication in Forestry Practises	80
3.3 State Ownership of Forestlands and its Implications for Resource Use	81
3.4. MSY and the Optimal Rotation	82
3.4.1 Land Rent Theory of Forestry and Optimal Rotation	83
3.4.2 Optimal Rotation Age under Single Harvest: Fisher’s Version	85
3.4.3 Optimal Rotation Age under Single Stand Continuous Forestry: The Faustmann Principle	86
3.4.4 Implication of Faustmann’s Rotation Age for State Forestry	89
3.5 Issues in Forest Valuation	90
3.6 Forestry beyond Faustmann	91
3.6.1 Non-Timber Benefits and Forestry: The Hartman’s Optimal Rotation Age	93
3.7 NTFP and Forestry	95
3.8 Land-Use Decision: Forests Agriculture Trade-off	96

3.8.1 Agriculture (Land Tenure) and Forests	98
3.9 Land Use Change in India (1950-2001)	100
3.9.1 Forest Settlements in India: Decline in Community Access to Forest Resources	
3.10 Shift in State Forestry: From Alienation to Participation	106
CHAPTER 4: Forest Policy & Evolution of the Community-Forest Relation in India	111
4.1 The Debate in Indian Forests History	111
4.2. Forestry in Ancient India (upto 1000 A.D.)	112
4.3. Forestry in Medieval India (1000 to 1700 A.D.)	113
4.4 Colonial Forest Policy	114
4.4.1 Early Colonial Forestry (1806-1865)	115
4.4.2 The Period of Forest Reservation (1865 – 1927)	116
4.4.3 Introduction of Scientific Forestry	120
4.4.4 Nineteenth Century Colonial Forestry (1927 – 1947)	121
4.4.5 Usurpation of rights under colonial forest policy	122
4.5 Impact of railway expansion on forests of India.	124
4.6 Post Colonial/Independence Forest Policy	125
4.6.1 Constitutional basis of Forests Legislation under Indian Constitution	127
4.7 1952 National Forest Policy	128
4.7.1 Wild Life Protection Act 1972	129
4.7.2 Report of the National Commission on Agriculture (NCA)-1976.	130
4.8 Forestry Practices between 1980 – 1988	131
4.9 From 1988 to 1996	132
4.10 Abrogation of Rights under Colonial Rule	133
4.10.1 Abrogation of Rights after Independence	134
4.11 Participatory Management: A New Paradigm	135
4.12 Period of Judicial Activism (1996 Onwards)	137
4.12.1 Conferment of Tenure Rights in Land	138
CHAPTER 5: Forests & Forest Settlements in the Himalayas	142
5.1 Ecological Significance of the Himalaya Forest	142
5.2 Dependence on Forests in the Himalaya	143
5.3 History of Human Settlement in Himalaya	144

5.4 Population Growth, Natural Resource Depletion and Usufructuary Rights	145
5.5 Population distribution, density and growth in the Himalaya	149
5.6 Forest Resources of the Himalaya	151
5.6.1 Forest Cover in the Himalaya	153
5.6.2 Trend in forest cover quality in the Himalaya	156
5.7 Rural livelihood needs and forest depletion in West Bengal	163
5.7.1 Production Forestry and Fuelwood Dependency in West Bengal	164
5.8 Conclusion	167
Chapter 6: Forest Communities & CPRs in the Hill Region	169
6.1 Introduction	169
6.1.1 Geographical Description and Position of the Darjeeling district.	169
6.1.2 Natural divisions of the district	170
6.1.3 Political History	170
6.2 Land use Pattern in the Hills of Darjeeling	173
6.2.1 Expansion of area under Tea in Darjeeling District	174
6.2.2 Land under Agriculture in Darjeeling Hills	176
6.3 Livestock Population in Darjeeling district	178
6.4 Land under forests in Darjeeling district	180
6.5 Population growth and its implication for resource use	184
6.6 Forest communities in the hills	186
6.7 Evolution of forestry in Lower Province	188
6.7.1 State Forestry in Darjeeling district	189
6.8.2 Formation of the Kurseong Forest Division	194
6.8.3 Formation of Kalimpong Forest Division	196
6.9 Status of grazing and usufructuary rights in forests of Darjeeling district	200
6.10 Availability of fuelwood and charcoal	201
6.11 Status of Forest Village	202
6.12 Joint Forest Management in the districts of North Bengal	202
CHAPTER 7: Forest Communities & CPRs in the Plain Region	205
7.1 Introduction	205
7.1.1 General history of Jalpaiguri Duars	205

7.1.2 Population in Jalpaiguri	206
7.2 Forest communities in Jalpaiguri	208
7.3 Land use in Jalpaiguri	209
7.4 Land tenure system in Western Duars under the British rule	212
7.4.1 Land under Tea	212
7.5 Forests in Jalpaiguri	213
7.6 History of forest management in Jalpaiguri district	216
7.6.1 Forest Management in Buxa Duar Division	221
7.6.2 Forests Plantations Experiments in Darjeeling and Jalpaiguri	223
7.6.3 Minor Forest Produce	223
7.7 The Microeconomics of Household Dependence on Forests: A Model	224
7.7.1 Selection of Survey sites and Description of Data	226
7.7.2 Available Livelihood Opportunities in the Forests Villages	228
7.7.3 People's perception about the impact of JFM	229
7.7.4 Regression result Interpretation and conclusion	230
7.8 Conclusion	232
CHAPTER 8: Review, Findings & Recommendations	
8.1 Critical Analysis of the Study	235
8.1.1 What ails forest management strategies in India?	238
8.1.2 Community rights in forest: A review	238
8.1.3 Successful community management of natural resources in the Himalayas	239
8.2 Research findings and recommendations	240
8.2.1 Research findings relating to the development impact on forests	240
8.2.2 Research findings related to policy issues	242
8.2.3 Research findings relating to CPRs & Participatory RMS Systems	244
8.2.4 Research findings relating to forest resource markets	245
8.3 Direction for future forests policy in India: A Prescription	246
8.4 Issues for further research	247
Bibliography	249
<i>Addendum</i>	<i>260</i>