

**FORESTRY AND THE SOCIO-ECOLOGICAL HISTORY OF A
COLONY: IMPACT OF THE CHANGING PATTERN OF FOREST
RESOURCE USE IN THE ANDAMAN ISLANDS, 1880-1947**

*Dissertation Submitted to Jawaharlal Nehru University in
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MASTER OF PHILOSOPHY



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15th July 2005

CERTIFICATE

Certified that the Dissertation entitled “Forestry and the Socio-Ecological History of a Colony: Impact of the Changing Pattern of Forest Resource Use in the Andaman Islands, 1880-1947” submitted by Krishnakumar M.V in partial fulfilment of the requirement for the award of the Degree of **Master of Philosophy**, in Modern Indian History, has not been previously considered for the award of any degree either in this university or any other university. To the best of our knowledge, this is a bonafide work.

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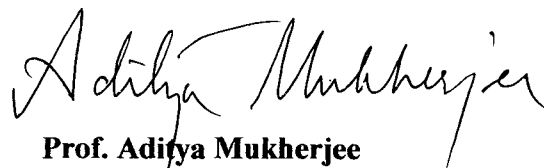


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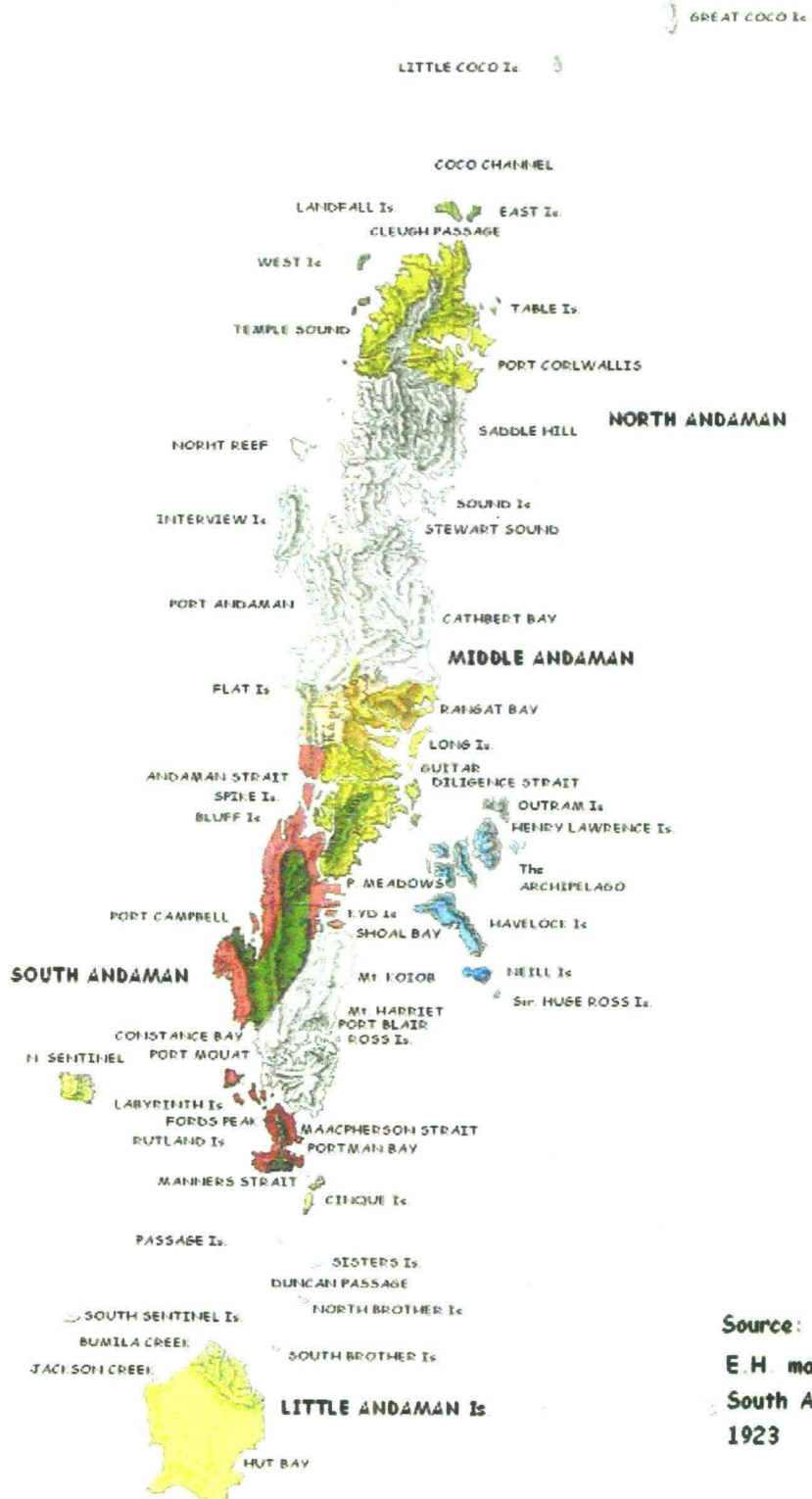


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ANDAMAN ISLANDS



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Contents

List of Tables

Acknowledgement

Chapter 1: Introduction	
1.1 Stating the Problem	1
1.2 Placing Forests in the Recent Literature	5
1.3 Major Objectives	10
1.4 Representing the Andamans	16
1.5 Organization of the Study	20
Chapter 2: Colonial Forestry&Environment: The Changing Pattern of Forest Resource use in Andaman Islands, 1880-1947.	24
2.1 Introduction	25
2.2 Environment&Forests	26
2.3 Colonial Occupation and the Development of Forest Department	30
2.4 Lease of the Whole North and Middle Andaman Forests	41
2.5 Organization of the Forest Department	44
2.6 Means of Exploitation	47
2.7 The Objectives of Forestry in the Andamans	53
2.8 Plantations	56
2.9 Forest Reserves	58
2.10 Emergence of Occupational Groups	61
2.11 Conclusion	62
Chapter 3: Human Adaptation to Environment and the Traditional Pattern of Forest Resource Use in the Andamans.	64
3.1 Introduction	64
3.2 What is Environment?	64
3.3 What is Mode of Resource Use	66
3.4 Geographical Peculiarities	67
3.5 Composition of Society	68
3.6 Division of Tribe	70
3.7 Aspects of Economy and Technology	72
3.8 Aspects of Social Organisation and Ideology	78
3.9 Conclusion	81
Chapter 4: The Struggle for Existence: An Analysis of Andamanese' Resistance to British Colonialism.	82
4.1 Introduction	82
4.2 Nature of Resistance	83
4.3 Results of the Contacts with 'Civilization'	90
4.4 Causes of Decline	96
Chapter 5: Concluding Remarks.	103
Bibliography	111

List of Tables

Table 2.1	Amount of Padouk Collected by the Government Agency (1900-1918)	34
Table 2.2	Felling of Timber Trees in the Andaman Islands by the Government Agency From 1880 to 1940.	36
Table 2.3	Statistics Showing the Average Daily Labour, No. of Elephants and the Distance of the Tramlines used by the Government Agency for the Extraction of Forest Produces from 1890-1900	48
Table 2.4	Revenue and Expenditure of the Forest department in the Andaman Islands From 1884-1935.	54
Table 2.5	Area of Reserved Forests, Protected Forests, Un-classed Forests and Leased Forests 1937-38 (A Class)	60
Table 3.1	The Composition of Andaman Society	69
Table 4.1	Population Figures of the Andaman NegrITOS During 1858-1951.	91
Table 4.2	Growth of Population in the Andaman Islands During the Period 1881-1951.	98
Table 4.3	Estimate of the Cleared Forests in the Initial Years of the Establishment of the Forest Department in The Andaman Islands for Agriculture.	100

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INTRODUCTION

Stating the Problem

The establishment and the development of forestry in Andaman Islands had a direct relationship with the British colonialism, which, along with the other radical changes in traditional economy and society, completely transformed the basic patterns of the forest resource use and the entire system of forest management. It created a new system of forest resource management with the help of newly amended colonial laws by introducing the plantation industry and thus made great socio-economic as well as cultural changes in the traditional structure. This new form of forest management and the new laws were primarily concerned with the extraction of timber and other forest produces along with the collection of revenues from the forest land. The changing patterns of the proprietary rights of the forests with the intervention of the colonisers were also destructive in character. The forest policies of those times, whether they were scientific or unscientific, clearly led to great destruction of the basic ecological pattern of the Andaman Islands.

Until about fifteen centuries ago the relationship of humans with the forests was primarily one of interdependence¹. Trees were felled for food and aromatic woods, and in drier zones to burn in a process of shifting cultivation, but population pressures were low enough for routine regeneration². The colonial phase is perceived as a period of serious ecological disruption, the consequences of which are neither well known nor to any great extent studied³. The proposed study will examine the kind of ecological changes which occurred in Andaman Islands as a result of the colonial occupation with the establishment of the penal settlement; and the basic ideas and agendas of the colonial forest policy.

¹ A Reid, 'Humans and Forests in Pre-colonial Southeast Asia', in Richard H Grove, Vinita Damodaran, Satpal Sangwan(Eds.) *Nature and the Orient*, New Delhi, 1998, p.106.

² Ibid.

³ M Buchy, 'British Colonial Forest Policy in South India: An Unscientific or Unadapted Policy?', in Richard H Grove, Vinita Damodaran, Satpal Sangwan(Eds.) *Nature and the Orient*, New Delhi, 1998, p.636.

Forests rival oceans in their influence on the biosphere. Forests perform a variety of functions such as, stabilizing land, controlling flows of water, modulating local climate, providing the major reservoir of land bio-diversity, and supplying fibre and food for people. In fact, the forests play an essential role in the function of the biosphere as a whole⁴. For most of recorded history forests have been recognized not only as a source of personal succour, even wealth, but also as a communal resource, a source of water, game, land, fuel and timber for all⁵. There was a time when forests were plentiful, human population small and man's need for timber, firewood and other forest produce modest. Then came the industrial revolution, expanding human population, increasing demands on timber for ships in the navy, and later for railways. Forests started being cut down for timber needs, for providing residential and industrial complexes, for iron-ore smelting and the like, and the fear of timber famine led to need for protecting forests and regulating their felling in such a way that forests would continue to yield timber and other forest produce to sustain human needs. This marked the beginning of forest management⁶.

Scientific forest management, as we know today, had its beginnings centred in the concern for protection and conservation of trees and forests and this was to have a profound influence on the course of evolving forest management. Prohibitory regulations took different direction in different countries. In some countries like India and Canada, most of the commercially important forests were taken over and put under state control; whereas, the USA, Sweden and Japan, considerable areas of forests continued to be in private hands with various mechanisms evolved for some kinds of overseeing of their management by the governments⁷.

The history of the British rule in Andaman Islands began in 1789 when Lord Cornwallis, the then Governor General of India thought of colonising these islands. On

⁴ K Ramakrishna and G M Woodwell, (ed.), *World Forests for the Future: Their Use and Conservation*, Newhaven and London, 1993, p.xi.

⁵ Ibid, p.1

⁶ E.G. Hallsworth, (ed.), *Socio-Economic Effects and Constraints in Tropical Forest Management*, New York, 1982, p.191.

⁷ Ibid

the basis of the survey reports of Lieut. Archibald Blair and Lieut. Colebrook, the first settlement was started at Chatham Island. However, this settlement was abandoned in 1796 because of the unhealthy conditions of the island. Later, on the eve of the first war of independence in 1857, the British started a new penal settlement at Port Blair under the supervision of J.P Walker.

The report of the Forest Survey of India shows that 92.2% of the total geographic area of Andaman and Nicobar Islands is under forest cover⁸. The existence of the unique resources, which is quite evident from its rich biological diversity, and pristine environment of these islands were clearly identified by the colonial masters from the very beginning of their regime there. These forests contained rare mangrove species, cane and bamboo species, non-timber forest produces, thatching leaves, resin and gums, tan and dyes, etc. With the establishment of the Forest Department, the colonial forest officers began to directly extracted the valuable timber species for their own purposes in the islands and even exported to the mother country.

The very nature of the colonial forest policies was that it was dictated by the market imperative. The most important and, at the same time, the most crucial thing is how these policies affected the indigenous population of these islands. Before the advent of the British, these indigenous people were the sole authority of these forests. However, the colonial policies were entirely different from the traditional pattern of the resource use.

The second half of nineteenth century marked an important watershed in the history of Andaman forests. The creation of a Governmental forest service in Andaman Islands in the early 1880s set in motion a programme to change the systems of forest management and recast them in the colonial mould. The Andaman forestry dates back to 1883, however, at that time there was not any regular working plan and the harvesting of timber confined to a few species only like, Padouk, Pyenmah, koko, etc.

⁸ *Andaman and Nicobar Islands: Forests and Environment*, Department of Environment and Forests, Andaman and Nicobar Administration, 2001.

‘Scientific’ management of the forest started here with the preparation of first working plan by F.H.Todd in 1906 but due to pressure for extra timber the prescription of this working plan could not be adhered to⁹. This was followed by the working plans prepared by Banington in 1914, H.S Dean in 1935, Chengappa from 1936 to 1939, etc¹⁰. But due to various socio-political reasons, prescriptions of these working plans were not implemented. Chatham Saw Mill, Asia’s largest saw mill was started in the same year of the establishment of the forest department. From this only we can get a clear picture of the basic agendas of the forest department.

The penal settlement and the establishment of the forest department entirely changed the basic pattern of the forest resource use in the Andamans. The indigenous system of the resource flows in a very limited territory gave way to international capitalist policies. Now the government started to export the valuable timber woods to European countries. This ultimately led to the over exploitation of the forest resources with the introduction of tramlines. The British started the plantations of the valuable woods in the Andaman forests for the exportation. Most of the forest policies that applied in the Andamans were same as that of the other colonies, with a little difference. In India, the British were very critique of the shifting cultivation. The main aim was to create as much as possible revenue from the Indian forests, but in Andamans they appreciated the Taungya Cultivation, another form of shifting cultivation. However, the most important episode in these was the contacts with the indigenous population by the foreigners. It had disastrous effects on this population. The Great Andamanese, the friendly tribes of the Andaman Islands, with whom the British maintained better contacts, were the victims of the civilisation in the forms of bad habits and new forms of diseases. Now these groups were under the threat of depopulation.

⁹ Ibid.

¹⁰ Ibid.

Placing Forests in the Recent Literature

The root cause of the ongoing disaster of deforestation lies in the radical transformation of the social systems of resource use that took place under the British regime¹¹. Gadgil, in his article on deforestation, mainly concentrated on the various systems of resource use. According to him, two major social systems of resource use prevailed in pre-British India: the hunter-gatherer shifting cultivator societies and the larger tribal societies. He argues that the flow of material was largely restricted within the territories so that the tribal population has a real stake in the security of the resource base of their territory and evolved a number of cultural traditions to ensure its sustenance. The ability of a tribe to hold its own would have depended on the health of the resource base of its territory and promoted the evolution of traditions of prudent resource use. However, the basic nature of the colonial regime itself was entirely different from that of these indigenous systems of resource use. He cites Munro, who in 1838, complained that 'the teak forests were thrown open to all who wish to cut...They cut indiscriminately all that comes in their way; any range of forests...depriving future generations of the benefit that they now enjoy'. According to him, this was the first period of accelerated deforestation in India.

Ramachandra Guha and Madhav Gadgil argues that India has been facing an acute natural resource crisis in recent years. As a result, there are shortages of prey for hunters and fishermen, of land for shifting cultivators, of grazing for pastoralists, of fuel, fodder and manure for subsistence plough agriculturists, of power and water for cash crop agriculturists, and of power, water and raw materials for industry¹². According to them, these shortages have generated a variety of conflicts and collusions as different segments of Indian society exercised competing claims over scarce resources. They state that the imperatives of colonial forestry were essentially commercial and its operations were dictated more by the commercial and strategic utility of different species than by broader social or environmental considerations. The

¹¹ M Gadgil, 'Deforestation: Problems and Prospects', in Ajay S Rawat(Ed.), *History of Forestry in India*, , New Delhi, 1991, p.15.

¹² R Guha and M Gadgil, 'State Forestry and Social Conflict in British India', *Past and Present*, No.123, 1989.

main aims of the new department were the production of large commercial timber and the generation of revenue. By bringing about an escalation in the intensity of resource exploitation and control, state forestry sharply undermined the ecological basis of subsistence cultivation, hunting and gathering.

The colonial state also radically redefined the property rights, imposing on the forest a system of management whose priorities sharply conflicted with earlier systems of local use and control. Guha and Gadgil discusses the impact of these policies on the hunting-gatherer population in the Indian sub-continent. The state reservation of forests sharply affected the subsistence activities of these communities, each of them numbering a few hundred and with population densities calculated at square miles per person rather than persons per square mile. While the new law restricted small scale hunting by tribal peoples, they facilitated more organised shikar expeditions by the British. These new colonial forest policies even led to the decline of the artisanal industry by restricting access to traditional sources of raw materials, for example bamboo and silk industry. Quoting E.P Thompson they argue that, if the customary use of the forest rested on a moral economy of provision, scientific forestry rested squarely on a political economy of profit. They observed that the recurrent conflicts were a consequence of the struggle for existence between the villagers and the forest department; the former to live, the latter to show a surplus and what the department looks on as efficient forest management. They argued that in the earlier situation village communities had control over management and disposal of forests and uncultivated lands. Demands by dominant land holders and rulers were limited, and never approached the scale they did in the subsequent period of colonial rule.

Guha further opined that writing environmental history requires taking the ecological infra-structure into account. He further adds that 'while the ecological infrastructure powerfully conditions the evolution and direction of social life, human intervention itself tries to reshape the natural environment in its own image'¹³.

¹³ R Guha, *The Unquiet Woods: The Ecological Base of Peasant Resistance in the Himalayas*, Delhi, 1989.

Marlene Buchy, in *British Colonial Forest Policy in South India: An Unscientific or Unadapted Policy?* states that the colonial phase is perceived as a period of serious ecological disruption¹⁴. According to him, the over exploitation of tropical forest resources for the supply of the mother countries and the development of the colonies can perhaps explain, to some extent, contemporary deficiencies and imbalances of now independent countries. By quoting Crosby, he says that ecological imperialism is a process which, in the course of contacts with the New World during the Great Discoveries, has modified eco systems, not by direct appropriation of natural resources and their exploitation, but rather through the introduction of viruses and diseases previously unknown to the local human and animal population, as well as through the introduction of an entire range of plants and animals which won inter-specific fights over the local species. He argues that the foresters were for a very long time more concerned with trees than the forest, or with the elements rather than the system.

By analysing the forestry in Burma, Raymond L Bryant developed a new outlook for the studying of Forests¹⁵. He examined the political processes that have governed the fate of forests in Burma. He addresses these questions through an analysis of the politics of forest management in Burma between 1824 and 1994. He says that the issue of forest use can only be fully understood in relation to the political processes which conditions forest access. This process had far reaching implications for state and society. The creation of reserved forests, and the complex rules regarding their access and use, the emergence of a prosperous timber industry, and a sizeable forest bureaucracy, heralded major changes in the way that forests were used.

K. Sivaramakrishnan examines the interface between natural conditions and different political regimes in his masterpiece work on environmental history¹⁶. This work

¹⁴ M Buchy, 'British Colonial Forest Policy in South India: An Unscientific or Unadapted Policy?', in Richard H Grove, Vinita Damodaran, Satpal Sangwa (Eds.) *Nature and the Orient*, New Delhi, 1998, p.636.

¹⁵ R L Bryant, *The Political Ecology of Forestry in Burma, 1824-1994*, Delhi, 1997.

¹⁶ K. Sivaramakrishnan, *Modern Forests: Statemaking and Environmental Change in Colonial Eastern India*, Delhi, 1999.

offered a comprehensive history of the changing culture of forestry and politics in Bengal. He mainly looks at various institutional cultures of colonial governance combined with patterns of environmental change to shape the forestry development in Bengal in particular and India in general. He examined the colonial forestry in three guises, first as a set of material technologies imposed on trees, grasses and wild animals; second as a legal regime aimed at appropriation and monopoly in the extraction of natural rents; and third, as a system of rational knowledge that, ironically became the site of a struggle among technocrats who vied for professional recognition at the upper levels of bureaucracy. He authentically demonstrated that in all these three levels, colonial forestry failed to garner respect or authority. By giving much importance to the state formation or state making, he contends that through conflict and cooperation between a differentiated society and a heterogeneous colonial state in the making, rural social relations and colonial power were mutually transformed in Bengal. According to him, colonialism was very much about the appropriation of space by the creation of the state forms that emphasised territorial forms of control. Pertaining to the impact of colonial knowledge, he argues at length that it has two broad features. In the first place, it was creating 'Others' through stereotypes developed to characterise colonised cultures. The second was spatialising, which entailed de-territorialisation and re-territorialisation of the colonised people and their landscape, a reordering of social and ecological relations.

Subrata Palit argues that Indian forester's main goal was to strengthen government control over resources to ensure their continued commercial availability¹⁷. He states that as the states' authority extended, it undermined the traditional community rights and indigenous use-systems. Since emphasis was primarily placed on a narrow range of timber species, non timber forests products were considered of secondary importance. Conventional forestry viewed the activities of resident communities as biotic interference that must be minimised, if not altogether eliminated to protect forest resources. Colonial objectives which aimed at maximising government revenues or

¹⁷ S Palit, 'Indian Forest Department in Transition', in Mark Poffenberger, Betsy Mc Gean, *Village voices, Forest Choices: Joint Forest Management in India*, Delhi, 1996.

protecting forests by excluding local users no longer responded to national or local priorities.

Solon L Barraclough and Krishna B Ghimire try to find out the social dynamics of deforestation in the developing countries¹⁸. They say that the present epoch of accelerating deforestation commenced some 500 years ago with European commercial and military penetration into the Far East, Africa and the Americas because of the development of the so-called capitalist system in Europe; and this dynamic system of socio-political, economic and financial relations has evolved into a dominant world system influencing every society on earth. They argue that a brief review of how a few major forested areas were cleared in tropical regions since the early sixteenth century illustrates why deforestation process have to be analysed in their global context as well as in their local, regional and national levels.

With the example of Gorakhpur District Meena Bhargava, in her work, *State, Society and Ecology*, discussed the ecology and forests, people, their history and culture, economic growth and development, social change and thereby the changing political traditions¹⁹. She states that to consolidate the commercial and strategic advantages acquired from social and economic change, the company added to its agenda the issues of forests and forestry in Gorakhpur. The aims of the company were clear: adequate and profitable supply of timber, tree felling and expansion of cultivation.

Richard Grove contends that deforestation had assumed significant proportions before the advent of colonialism²⁰. He also argues that initiatives for state control of forests in Sindh anticipated colonial conservation. Changes in the colonial era were thus a culmination of trends that had their roots in pre-colonial society. By talking about the English and Dutch East India companies in relation to colonial environmental crisis, the British and the forests of the eastern Caribbean, and state conservationism in India

¹⁸ S L Barraclough and K B Ghimire, *Forests and Livelihoods: The Social Dynamics of deforestation in Developing Countries*, Britain, 1995.

¹⁹ M Bhargava, *State, Society and Ecology: Gorakhpur in Transition 1750-1830*, Delhi, 1999.

²⁰ R H Grove, *Green Imperialism: Colonial Expansion, Tropical Island Edens and the Origins of Environmentalism, 1600-1860*, Delhi, 1995.

between the late eighteenth century and the Mutiny, he tries to analyse the multiple meanings of the “Edenic” both in Europe and the newly discovered non-European world between 1600 and the mid- nineteenth century.

Major Objectives

Even though the culture and society in the Andaman Islands was entirely different from that of mainland India and other Asian countries, one can use the methods of the above scholars for a better understanding of the working and impact of the forest policies in the Andaman Islands. The main objective of this study is to prepare a historical overview of the changing pattern of forest resource use in the Andaman Islands with the introduction of a Forest Department in 1883. For the better understanding of the different strategies and trajectories, the foresters used for the complete management of these forests, one has to find out the primary objectives of the Colonial Forest Department in the Andamans. However, at the same time, it is very important to note that the Forest department is considered merely as an agency through which the forest resource use pattern is changed. This study is mainly concentrated on the changes in the pattern of forest resource use and their effects on the indigenous society of the Andaman Islands and their environment than the history of forestry in the Andamans islands. For this one will have to make a special focus on the basic nature of the human/nature interaction within the pre-colonial and colonial regimes with reference to the introduction of penal settlement and the development of forest department in the Andaman Islands. This study also analyses the impact of Colonial Forest Policies and mass destruction of the forests along with the introduction of civilisation on the indigenous population and environment. The establishment of the penal settlement and associated pattern of forest resource use, economy, etc. ultimately led to strict resistance from some of the indigenous populations in the Andamans. This study further makes an analysis of the nature, structure, and organisation of the grass root level struggles that occurred in these Islands with the interference of the colonisers with special reference to the Jarawa Community, against the colonisers.

The colonial forestry, a watershed in the history of Andaman forests, entirely transformed and revolutionised the traditional pattern of forest resource use in the Andaman Islands. One will have to find out the basic changes in the pattern of resource use in the indigenous population as well as the colonial master. The study mainly focussing the basic changes that occurred with the implementation of the colonial forest policies in the Andaman forests and their environment. The associated research questions for the fulfilment of these issues are the following. What were the characteristics of technology, such as sources of energy, material used, and the knowledge base relating to the resource use within the forest community and among the colonial foresters? What were the aspects of economy, such as the spatial scale of resource flows and mode of resource acquisition? What were the aspects of social organisations, such as the size of social group, the division of labour, and the mechanism of control over access to resources? What were the aspects of ideology, including broad perceptions of the man nature relationship, as well as the specific practices promoting resource conservation and destruction? Thus, the key theme in this study is the impact of new resource use pattern in the Andaman Islands associated with the development of colonial forest department.

The Andamans have been able to maintain considerably their pristine culture in its purest form. Although, the Negrito race was exterminated elsewhere in South-East Asia, the Andamanese have preserved the Negrito culture of the past ages without any material change. Their archaic cultural level give us an organically complete, complex and typical sequence of manners, of immense, if not mysterious antiquity showing extremely clear Asiatic connections with people that are already a race by themselves²¹. They still represent truly one of the oldest races existing on the face of the earth of which they are the last pure remnant.

There are hardly any literature on the environment and forest in the Andaman Islands, though there is an abundance of the same in the Indian sub continent. Even though

²¹ *Census Report of Andaman and Nicobar Islands*, 1901, p.96.

these islands were situated very close to India, Burma and Far East, they remained untouched by these great civilisations. The Andaman were untouched by any other civilisations except the Malays until the second half of 18th century, when the British came and established their first settlement there. It is very difficult to find a complete and accurate account of the Andaman Islands. Practically all that has been written about them are scattered government reports and a few books that have been published at widely separated intervals, so that their history is more or less shrouded in mystery. A great change occurred in the history of Andaman Islands during the second half of 19th century. First, this was relating to the administration of these islands by the British and second, relating to the emergence of literature on these islands. After the establishment of the penal settlement in Port Blair, one can notice the development of anthropological studies among this archipelago. The pioneering scholars behind this research in Andaman were Col. E.H. Man, Mr. Radcliff Brown, etc., their works on Andaman represented a new tradition of writing, gave more importance to the ethnographic analysis and researches as against early accounts. E.H. Man's masterpiece on Andaman Islands, 'On the Aboriginal Inhabitants on the Andaman Islands' (1883), 'Andaman Islands and their Inhabitants' (1885); Radcliff Brown's 'The Religion of Andaman Islands' (1909), 'The Andaman Islands: A Study in Social Anthropology' (1922), etc., belongs to this new tradition of writing regarding the history of Andaman Islands. Along with these writings, the accounts of other British administrators like Richard Temple, F.J. Mouat, etc. and the survey reports of Blair, Ritchie, Moosom, etc. also provide ample information on Andamans, their inhabitant, geography, culture, etc.

There is only a very limited literature on the Andamans before the coming of the British to these islands. The existing pre-colonial accounts are in the form of travelogues. India had a brisk trade relation with Greece, Egypt, China, etc. from time immemorial. Owing to the antiquity of these trade routes, a few ancient writers mentioned these islands in their travelogues. Claudius Ptolemy, a second century geographer of Roman Empire mentioned these islands in his work titled 'Geography'. The so-called maps of Ptolemy in the Second century shows the same Andaman sea as

an island of cannibals and the island of good fortune. According to him the people of these islands go naked and are cannibals²². He also mentioned the names of two islands called 'Bazakata' and 'Agtho diamonos', which have been identified by Yule with Great and Little Andaman²³. The famous Buddhist monk of seventh century China, I Tsing, refers to the Andaman as 'Andaban' and describes the inhabitants as man-eaters²⁴. Marco Polo, the famous Venetian traveller, who passed by the Andamans in 1290, mentions that the Andaman is a very long island and the people who inhabit those islands were without a king. He says that men of these islands have heads, teeth and eyes like dogs, which ate persons of other race²⁵. Friar Odoric, in 1322, also called the Andamanese as dog faced and cannibals²⁶. Nocolo Conti, in 1440, visited the islands called Andamania, which he explains to mean the Island of Gold. He also explained that the inhabitants of these islands tear the strangers into pieces and devour them²⁷. Master Ceaser Frederick made the most interesting descriptions about the Andaman in 1569 in his work *Eihteen Years of Indian Observation*. According to him '...they(the Andamanese) call their people savage or wild because they eat one another; also these islands have war with one another,... and so eat one another, for they have small baroques, and with them they take one another, so eat one another'²⁸.

The early pre-colonial writings exaggerated the real condition of the Andamans. The charge of cannibalism on the inhabitants of Andaman is entirely the product of false observation. The origin of such extra ordinary fable, it is difficult to give. There is not a single proof for this charge of cannibalism. A close observation of their customs and manners definitely proves that this charge against the people is palpably absurd. Their complete hostility towards the strangers who touched their shores became proverbial throughout Asia and Europe. All the notions about the ferocious nature of

²² M.V Portman, *History of Our Relations with the Andamanese*, Vol.1, 1899, p.50.

²³ Yule, *Translation of Marco Polo*, Vol.II, p.309.

²⁴ Sykes, *A History of Explorations*, p.30.

²⁵ Yule, *Translation of Marco Polo*, p. 309.

²⁶ L.P Mathur, *History of Andaman and Nicobar Islands*, p.8.

²⁷ M.V Portman, *History of Our Relations with the Andamanese*, p. 53.

²⁸ F.A.M Dass, *The Andaman Islands*, 1937, p.12.

Andamanese were subsequently proved to be based on hearsay and there was no element of truth in it.

It is said that in order to keep away others from these islands, the Malays exaggerated the real dangers encountered by them and spread such tales about the Andamanese. The Malays had relation with the Andamanese from time immemorial. They captured the inhabitants of Andaman as slaves and they had brisk slave trade with the outside world. The works on the Andaman both pre-colonial and the colonial say that the Andamanese were very hostile to strangers. This might be because of the reason that they treat every stranger as the Malays who land their country to capture and sell them as slaves. Most of these writers did not even visit these islands and the knowledge about these tribes was acquired from the contacts with neighbouring regions of Andaman Islands and these kinds of accounts flourished up to the second half of the eighteenth century.

With the colonial occupation started surveys and researches among the Andamanese. The British government had some definite purposes behind these surveys and studies, of which the primary one was administration, for the sake of which a friendly relationship with the inhabitants was necessary. The second objective was to save the mariners of the wrecked ship from the massacre at the hands of aborigines. And finally, it was necessary to protect the settlers from the attacks of Andamanese in order to maintain progress in the settlement. Also, the British government claimed that they wanted to bring the Andamanese, who had become British subjects from the 'low scales of civilisation' to the comforts and advantages of civilised life.

These objectives they achieved through the Andaman Homes. Through these Homes the British succeeded in establishing a working relation with all the Andamanese tribes except the Jarawas. The Andaman Homes functioned as a principal site for acculturation and ethnographic observation – a profoundly contradictory situation, inasmuch as they were designed to facilitate a transition to a state of civilisation, whereas the strategy behind ethnographic observation was to reconstruct essential

precontact representations of an isolated island people²⁹. Although the Homes created the necessary contextual stability needed for long term observation, they also continuously undermined the object of study³⁰. The actual effects of these Homes on the Andamanese race were disastrous. As a result of their contact with 'civilisation' through the Andaman Homes some of the friendly tribes except the Onges and Jarawas is steadily declining. Von Eicksedt, a German anthropologist who visited the Andaman in the beginning of 20th century states that the Andaman Homes were the door of death to the Andaman race³¹. The new system of clothing and shelter had very disastrous effects of the physique of Andaman race. These systems were totally against the basic nature of the race and it adversely affected their health in the time being, mainly in the form of pulmonary diseases. Even the diet given to them at the Home was scanty. The Andamanese were forced to live in a different manner at these homes from one to which they were accustomed. Several of them learned the vices of 'civilised' society like smoking of tobacco, drinking alcohol etc., which adversely affected their health.

The British government from the beginning of their settlement expressed their earnest desire to rescue these inhabitants from their 'barbaric conditions'. The main purpose behind these homes was to civilise this humanity from their 'barbaric stage' of civilisation. After the establishment of the penal settlement, the government states that 'all the precautions may be taken to protect the aboriginal inhabitants of the Andaman from these collisions with the convicts, which, it is only too probable will be provoked on both sides and which once commenced are so likely to end in the extermination of the weaker race'³².

²⁹ D Tomas, 'Tools of the Trade: The Production of Ethnographic Observations on the Andaman Islands, 1858-1922', in George Stocking (ed.) *The Colonial Situation*, 1991, pp. 82-3.

³⁰ Ibid.

³¹ *Census Report of Andaman and Nicobar Islands*, 1951, Appendix A, p. XLVI.

³² Home Department, Public Branch, No. 88, 6th August, 1858, National Archives of India (Hereafter NAI), New Delhi.

Representing the Andamans

The construction of human history as a whole is the prime objective of the anthropologists and their basic tasks are to learn as much as possible about the lives of the vanished people. Only a few scholars paid enough attention to the problems of reconstructing the unknown parts of the lives of primitive communities. In the Indian scene particularly perhaps no one has yet attempted comprehensive studies for reconstructing cultural history of vanished human group or of the primitive which are just on the verge of extinction. The basic problem is that such studies actually aim at unfolding the past human behaviour, and at the same time, attempted to provide answer to different sets of questions connected with the way of life of human groups which have no recorded history. It may be fair to point out at the very outset that the reconstruction of social structure, and also of cultural morals, is extremely complicated and not beyond controversy. The past way of life, the cultural traditions, the economy and the social structure of the Andamanese is a riddle to the social scientists even today.

However, the colonial accounts states that the cultural systems of the past society remained more or less unchanged from the distant past and must have been similar to that of the present, as both were very closely linked with the peculiar Andaman ecology. Colonial representation of Andaman Islands were based on these assumptions and did not account for the fact that social group are dynamic. The basic problem relating to the accounts of the Andaman is the ways in which knowledge was produced and the methods used for analysis. David Tomas, in his *Tools of the Trade*, states, '...the Andamanese were one of a relatively small number of peoples who offered living proof of some fundamental anthropological truth. At every step, that proof depended not only on dominant tendencies in anthropological theory back at the intellectual centre, but on the type of investigative methodology that could be marshalled at different stages of an evolving colonial situation. At each point, a dominant form of investigation was correlated with a characteristic mode of

communication and an articulated relationship of power and authority³³. Most of the early accounts of the Andaman Islands including that of the anthropological studies by E.H. Man were centred on Andaman Homes. The first Andaman Home was established under the directives of the then Superintendent of Port Blair, Lieut. Col. R.C. Tytler, in 1863. '...the directives of the Superintendent of Port Blair, Lieutenant Colonel T.C Tytler, indicate that it (Andaman Home) was also considered to be a master environment for the acculturation and management of indigenous activities. From its inception, the first home functioned as a system of entire pacification and foundation stone for civilising a people hitherto living in a perfectly barbarous state, replete with treachery, murder and every other savageness. There the Andamanese would see the superior comforts of civilisation compared to their miserable savage condition, and would learn to appreciate their now comfortable home and mode of living. But they were also held in customary as hostage for it undoubtedly secured the better behaviour of the inhospitable people towards our settlement; whereas their leaving us might injure and abolish all the good that has already been established, and might take years again to regain and recover were we to lose the great advantage we now hold and possess'³⁴.

Just as the individuals and groups who passed through the Homes transmitted the knowledge of colonial power and resources to the far reaches of the islands, so also they became the centre of an efficient system of ethnographic knowledge gathering, because one did not need to go into the field to generate a considerable body of information about the customs, habits and language of the Andamanese³⁵. Between 1863 and 1908 Andaman Homes thus functioned as a principal site for acculturation and ethnographic observation – a profoundly contradictory situation, in as much as they were designed to facilitate a transition to a state of civilisation, where as the strategy behind ethnographic observation, at this period, was to reconstruct essential pre contact representations of an isolated island people. Although the Homes created

³³ D Tomas, 'Tools of the Trade: The Production of Ethnographic Observations on the Andaman Islands, 1858-1922', in George Stocking (ed.) *The Colonial Situation*, 1991, p.76.

³⁴ Tytler quoted in M.V Portman, *History of our Relations with the Andamanese*, Vol.1, 1899.

³⁵ D Tomas, *Tools of the Trade*, p.82.

the necessary contextual stability needed for long term observation, they also continuously undermined the object of study. What was needed, therefore, in addition to a stable context, was a series of observational tools designed to frame and filter the object so as to restore it to a pristine precontact condition³⁶.

Much of the studies however, centred around these artificial civilised dwellings and the people who lived in those dwellings. In reality, the original conditions of their life style, culture, manners, etc., were entirely different in the Homes in contrast to that of the original habitations of the indigenous people. The main drawback of Man's studies is the generalisation of the Andaman community on the basis of the southern group of inhabitants. These representations of the inhabitants of the Andamans were done within the paradigm of colonial hegemony. The Andaman Home was a site fraught with the colonial power. The knowledge that was produced on the Andamans was the result of the unequal and uneven power sharing, and the self authorisation of cultural, economic, and militaristic hegemony. Edward Said asserts that '...the limitations of Orientalism is... the limitations that follow upon disregarding essentialising, and denuding the humanity of other culture, people or geographical regions'³⁷. The British were trying to dominate, restructure, and establish authority over the inhabitants of this archipelago and the whole lot of works produced on these communities were developed within this kind of atmosphere, where power played a major role. These studies attributed some muteness on these communities and the people were treated as a static entity. The possibility that the object of study, in this case the Andaman society or their culture in itself possess the ability, or , is in a position to challenge the hypothesis and notions put forth from the subject position, is not properly taken care of.

The labelling and registering of the so-called criminal tribes in colonial India is a particular striking example of the nexus of anthropology and administration. Risley described one group of inhabitants as 'habitual thieves', another as 'most treacherous

³⁶ Ibid.

³⁷ E W Said, 'Orientalism Reconsidered'. *Race and Class*, Vol. 27, No.2, 1985, p.199.

and aggressive of all the North-Eastern tribes', and a third as 'hunter, blackmailer and highway robber'³⁸. These kinds of statements emerged as a part of the Self/Other dichotomy, and within the discourse of Orientalism and Colonialism. The gaze of orientalism always viewed other cultures and people as inferior and uncivilised and try to civilise those cultures using power. The entire period of the orient's cultural, political and social history is considered as mere responses to the West. Understanding other people and their cultures, remain problematic in these discourses.

The fundamental problem is how to reconcile one's identity and actualities of one's culture, society and history to the reality of other identities, cultures and peoples. The cultural identity and the morals of the Andamanese are entirely different from that of the British colonial administrators. Even though they used the modern anthropological methodologies, they themselves the product of colonialism and emerged as a part to study the colonised for administrative purposes. For example, Man discussed geographical features, theories of Andamanese racial origin, and the historical background to British occupation, including the Homes, Orphanages, and Penal Settlement in the monograph's introduction. However, the discussion did not successfully negotiate the disjuncture between colonial reality and the ethnographic dictates of a discipline centred in England. The acculturation and the social change that occurred as a part of colonialism were not investigated properly by any of these works. Edward Said revealed the main reasons for this kind of treatment towards the other societies in his much famous work entitled '*East Isn't East*'. He says that, '... the development and maintenance of every culture require the existence of another different and competing another alter ego. The constructing of identity – for identity, whether Orient or Oxidant, France or Britain, while obviously a repository of distinct collective expresses, is finally a construction which involves establishing opposites and others whose actuality is always subject of the continuous interpretation and reinterpretation of their differences from us. Each age and society recreates its other. Far from a static thing then identity of self or other is a much worked-over historical,

³⁸ L D Jenkins, 'Another 'People of India' Project: Colonial and National Anthropology', *The Journal of Asian Studies*, 62:4, November 2003, p.1150.

social, intellectual and political process that takes place as a contest involving individuals and institutions in all societies'³⁹.

The westerners viewed civilisation as a stage of technical and political development, and the civilised countries belonged to the category of the western stage of development. Then the question arises about attributes of development. Their mainstream developmental theories were also later severely criticised by the Marxists and Neo-Marxist scholars. The other term 'Barbarian' is disparaging term for foreigner, one not sharing a recognised culture or degree of polish with the speaker or writer employing the term. By using these criteria, the British colonial administrators attributed these titles to the indigenous society of the orient. On resolving the problems of knowing about other cultures, Said suggests a certain cautious path. He is of the opinion that such knowledge is possible when two conditions are met. First, one who studies another culture must feel that he/she is answerable to and in uncoersive contact with the culture of the people being studied. Secondly, since the knowledge about other cultures itself rests upon interpretation, and since no interpretation is complete without an interpretation of the situation, one who studies another culture should be conscious of the social and situational nature, rather than the context of the interpretation of the texts. There has been little attention paid on the study of colonialism to the culture of the colonised, which means they discarded the situational analysis from their study.

Organisation of the Study

This study is organised through a conglomerate of different perspectives like human ecological as well as political ecological perspective on the one hand and base superstructure as well as world system perspective on other. The crux of the study is the ecological changes as a result of the changing pattern of resource use with the introduction of the forest department. These changes occurred because of the modern kind of 'state making' in the Andaman Islands, thus politics played a major role in the

³⁹ E W Said, 'East Isn't East: The Impending End of the Age of Orientalism', *The Times of Literary Supplement*, No. 4792, 1995, p.3.

changes. 'The phrase political ecology combines the concerns of ecology and broadly defined political economy. Together this encompasses the constantly shifting dialectic between society and land based resources, and also within classes and groups within society itself'⁴⁰. This study is based on the assumption that the superstructure of the society, i.e. the culture, is developed by its particular ecology and immediate environment, so that the changes in the ecology are in turn reflected in the transformation of the cultural as well as economic practices.

The first chapter deals with the development of colonial forest department as an institution in the Andaman forests, and about the changing pattern of the system of forest management as against the indigenous population of these islands. This chapter starts with the description of the physiographic nature of the Andaman forests. With the establishment of the forest department, one can clearly identify the destruction of a large portion of the virgin tropical rain forests for the development of agriculture and for other construction works. Forest department now started the export of valuable forest products to other European countries and Americas. With these developments, the British introduced newer kinds of technologies like the tramways, telegraphs, portable saw mills, etc. The establishment of tramways ultimately led to the destruction of the forests for export as well as for domestic purposes. The professionally educated foresters and the imported labourers from Burma and mainland India entirely shattered the traditional pattern of human-nature relationships. This chapter explores the organisation of the forest department as an institution of management and analyses the various means the forest department applied for the maximum appropriation of the forests produces, both timber wood as well as minor produces. It also analyses the plantation economy and the formation of forest reserves. Thus the aim of this chapter is to explore the transition from traditional pattern of forest resources use to a 'scientific' forestry premised on state intervention. At the heart of such intervention was the Forest Department, created in 1883 to manage Andaman's 'commercial forests' scientifically.

TH-12169



⁴⁰ R L Bryant, *Political Ecology of Forestry in Burma*, Delhi, 1997, p.5.

The second chapter discusses the traditional pattern of forest resource use in the Andaman Islands. For the better understanding of these societies, this chapter made a detailed analysis of the composition of society, their immediate environment, economy, technology, mode of resource use, and social organisation and ideology. This chapter uses a human ecological perspective to understand the basic pattern of the forest resource use in the Andaman Islands in the pre-colonial period.

The third chapter analyses the reaction against the British colonial policies from the indigenous traditional population of the Andaman islanders. Though the British were very much successful in making friendly relations with majority of the indigenous population, through 'Gift-dropping' and through the notorious 'Andaman Homes', the Jarawa tribe of the South and Middle Andamans and some of the Onge Community became a nightmare to the newcomers. Along with the nature of the struggles of indigenous groups, this chapter tries to find out the impact of the colonial policies on the indigenous population and environment. And finally, the last chapter is the concluding remarks and findings.

In short, this study explores the nature and impacts of social and ecological changes that happened in this archipelago with the establishment of the penal settlement. Social change is an important factor for a full understanding of different topics such as the success or failure of different political systems, globalization, democratization, development and economic growth. The root question relates as to how and why social, economic and political systems developed and how they change over a period of time. Overall, change is a highly complex process which also involves many factors, such as demography, technology, availability of resources, politics, economics, and the interaction of these factors. The processes of social, political, economic and ecological change are very complex. Change may involve many different factors, and multiple processes operating concurrently. First, many coincidental, unique and random factors influence the change process. Take for instance geography, which have an impact on whether a civilization developed and develops in a great centre versus many smaller independent centres. At the same time, the presence or absence of a set of people in a

particular geographical unit may be one major determinants of the path a society takes. Accordingly, the way in which a society works and changes takes place differ from society to society, geography to geography and civilization to civilization. Consequently, the specific forms that a society takes, and the particular paths, for example of development, taken by different societies will not be the same among different societies. On the other hand, there are systematic and common processes which affect all societies. For example, successful development generally requires a basic degree of social mobilization, structural differentiation, development of free resources, specialization and diversity of social organization, and a stable and flexible political system. Social, political and economic changes can best be understood by combining the above mentioned factors in particular fashion in pinpointing a particular geography.

COLONIAL FORESTRY&ENVIRONMENT: THE CHANGING PATTERN OF FOREST RESOURCE IN ANDAMAN ISLANDS,1880-1947.

“The chief object of forestry in India is to secure a permanent supply of timber and other forest produce for local consumption and for export trade”¹.

“... that the aim of the forest department in Andamans should be commercial, that is to produce sawn timber and the normal forest operations of regeneration and the like should take a back place”².

“We must realise that in Andaman, the head of the administration is a timber merchant, who, whilst controlling the operation of converting the raw material into saleable article, must advocate much of his energies to tapping the market. Nor has the chief officer had the time to control the work of the agent: he has been able to pay only one visit for the inspection of the stock in 4 years, and on that occasion found that large quantities of timber the property of government had melted”³.

“... the chief forest officer here is a timber merchant selling sawn timbers. He sells wholesale outside the Andamans to dealers but retail on the spot to Government Departments and individuals. Preparing timber for wholesale trade is easy work involving the sawing of scantlings of large and fair standard sizes: it produces revenue; the retail trade is uninviting, for, apart from not producing much revenue, it involves what is called “detail work” in the mill: it is unpopular because it means special arrangements, selection of special timber, cutting up into special sizes and wastages”⁴.

“...above all we want a Chief Forest Officer who will realise that his job is not forestry, but the timber trade”⁵.

¹ Department of Revenue and Agriculture, Forests (B), Proceedings September 1881, Nos. 30-32. (*Memorandum by Brandis on the present condition of Forests in British India*), NAI, New Delhi.

² Revenue and Agricultural Department, Forests, Proceedings January 1923 Nos.89/91(b).(Lieut. Col. H.C Beadon, C.I.E, I.A, Chief Commissioner, Andaman&Nicobar Islands.), NAI, New Delhi.

³ Department of Revenue and Agriculture, Forests, Proceedings January 1923, Nos.89/91, NAI, New Delhi.

⁴ Department of Revenue and Agriculture, Forests (B), January 1923, Nos.89/91. *Letter dated, PB, 21st November 1922, from Government House to J.Hullah, Esquire, I.C.S, Secretary to the Government of India*, NAI, New Delhi.

⁵ Department of Revenue and Agriculture, Forests (B), March 1922, No. 139. *Note by the chief Commissioner and the Inspector General of Forests, Andamans*, NAI, New Delhi.

Introduction

Environment is a broad concept encompassing the whole range of diverse surroundings in which one perceives experience and reacts to events and changes⁶. It is related to man's ability to adapt both physically and mentally to the continuing changes in the environment. There are various ways of degradation of the natural resources, but confining ourselves to the degradation of environment by faulty forest management one finds that all the components of environment, i.e., land, water and air have been adversely affected due to denudation or degradation of forests⁷.

The root cause of the ongoing disaster of deforestation lies in the radical transformation of the social system of resource use that took place under the British regime. The hallmark of this system is the use of state power to systematically undervalue biomass, and even more so biological diversity and organise its supply of forest produce to those in power at highly subsidised value⁸. The unscientific colonial forest policies worsened the environment in the colonies during the 19th and 20th centuries. As stated in the above, the forest policies were primarily aimed at the export trade of the valuable forest produces. The forest department has the power to affect the lives of virtually every inhabitant of indigenous population⁹. The colonial forest policies made a revolution in the realm of forest resource use and they adversely affected the environment and the indigenous population by the over exploitation of the natural resources. With the establishment of the Forest Department in the Andaman Islands in 1883, a great transformation occurred in the human-nature relationships. Before going into details of these changes, it is very important to understand the Environment of this Archipelago thoroughly.

⁶ M.D Upadhyaya, 'Historical Background of Forest Management and Environmental Degradation in India', in Ajay S Rawat(ed.) *History of Forestry in India*, New Delhi, 1991, p.125.

⁷ Ibid, p. 126.

⁸ M Gadgil, 'Deforestation: Problems and Prospects', in Ajay S Rawat(ed.) *History of Forestry in India*, pp.15-16.

⁹ M Gadgil and R Guha, *Ecology and Equity: the Use and Abuse of Nature in Contemporary India*, Delhi, 1995, p.148.

Environment & Forests

The archipelago comprises over 200 islands in the Bay of Bengal, and encompasses an area of about 6340 sq. miles¹⁰. Luxuriant forest covers the hilly terrain which reaches a maximum elevation of 731.5m. The climate is sub-tropical. The climate of Andaman much resembles that of Lower Burma, and the temperature throughout the year is very uniform¹¹. The forest on the southern and western shores presents a striking contrast to the jungle of the other islands, and bears witness to the strength of the south west monsoon¹². The slopes of the hills are scantily covered with grass, and on the lower grounds, amongst the starved and twisted trees, numerous dead branches show white against the scanty foliage of the other wind warped limbs. Below, the effect is stronger still, for the shrubs and bushes grow in rows running inland from the beach, so that one can walk up and down between them as in the lines of an artificial plantation¹³. The islands experience both the north east-monsoon (October to December) and the south-west monsoon (May to October)¹⁴. Moist deciduous forest covers the lower slopes of the hills up to an elevation of about 100 meters. Tropical evergreen forests clothe the parched and shallow soiled slopes of the high hills. Deciduous trees are common in this type of forest, some of the characteristic species belonging to the genus *Dipterocarpus*¹⁵. The most luxuriant forest is the giant evergreen found growing in the alluvial deep strips of land in the valleys, especially along the banks of larger streams or on the moist loamy fertile hills¹⁶. From the mangrove swamps, the hill rise more or less abruptly and reach various elevations from 200 feet to 1400 feet; but the more general elevation of the ridges is from 300 to 600 feet¹⁷. There are properly speaking no level lands; the entire surface on the island is hilly and the hills being intersected by valleys of varying width and fertility. The true Andaman forests are filled with evergreen trees, usually heavily laden with climbers, though considerable patches of

¹⁰ Z cooper, *Archeology and History: Early Settlements in the Andaman Islands*, New Delhi, 2002, p.5.

¹¹ E.H Man, *Aboriginal Inhabitants of the Andaman Islands*, Delhi, 1883, p.X.

¹² Kloss, Boden C, *Andaman and Nicobars*, 1902, p.37.

¹³ Ibid.

¹⁴ E.H Man, *Aboriginal Inhabitants of the Andaman Islands*, 1883, p.X

¹⁵ *Andaman and Nicobar Islands: Forests and Environment*, Department of Environment and Forests, Andaman and Nicobar Administration, 2001.

¹⁶ ibid

¹⁷ Hill, H.C, *Suggestions for the Administration and Working of the Forests in the Andaman Islands*, Calcutta, 1891, NAI, New Delhi.

deciduous forest, with occasional glades of bamboo, are to be met with¹⁸. Usually in the evergreen tracts the ridges are covered with small or stunted trees inextricably tangled with masses of creepers, the fine forests being confined to the slopes¹⁹. The dense forests and the hills in these islands plays a great role in maintaining the general equilibrium of the environment. Of the total forest cover, dense forest with a crown density of 40% and above, constitute 85.6%, open forest with crown density less than 40%, constitute 1.7% and mangroves constitute 12.7%²⁰. The whole area of Andamans, except where they have been cleared for the settlement stations, for the purpose of establishing self supporter's villages, for tea, coffee, indigo, and coconut plantations, gardens or grazing lands, may be said to be clothed with dense forests²¹. A closer inspection, leading to a more intimate acquaintance with the tree growth, shows that the forest vegetation may, for all practical purposes, be divided into three main zones. Not that they are in all cases sharply defined, for here, as elsewhere, local physical conditions may readily intervene to cause the occurrence of growth peculiar to one zone in that above or below it; yet, speaking generally, it will facilitate future reference if we specify the following²²:

1. The Tidal Forest- Represented by various species of mangroves²³.
2. The Plain Forests- Commencing practically at high water mark and covering the level ground and more gentle slopes up to an elevation of 300 or 400 feet. This area contain the most valuable timber, that known locally as Padouk as well as Kokoa, White Chuglam, Black Chuglam, Pyimma, Thitmin, Mahua, Taung-peing, and Thingan²⁴.

¹⁸ R S Temple, *Imperial Gazetteer of India*, Calcutta, 1909.

¹⁹ Ibid.

²⁰ *Andaman and Nicobar Islands: Forests and Environment*, Department of Environment and Forests, Andaman and Nicobar Administration, 2001.

²¹ Hill, H.C, *Suggestions for the Administration and Working of the Forests in the Andaman Islands*, Calcutta, 1891, NAI, New Delhi.

²² Simla Records, Department of Revenue and Agriculture, Forests, Proceedings September 1903, Nos. 15&16 (*Inspection Report on Forest operations in the Andamans by the Conservator of forests, Pegu Circle, Upper Burma*), NAI, New Delhi

²³ Ibid.

²⁴ Ibid.

3. The Hill Forests- Covering the highest and steepest mountains, represented by Gurjan, Red Bambwe, White Bambwe, Lakuch, Didu, and Gangan²⁵.

It must, however, be clearly understood that this division into zones is dependant not on elevation but on soil. The valleys and undulations supporting the plain forests, for instance, contain a rich, deep, moist soil that appears to be necessary to the welfare of the representative trees and is not found on higher and the more precipitous part of the islands²⁶. All these types of forests may be described as impenetrable. The mangrove swamps present to the pedestrian a soil composed black salt ooze covered with the exposed root system of this tree, whilst the forests, both of the plain and hills, are densely covered with soft wooded trees bound together with innumerable climbers and canes, the loftier standards being festooned with a climbing bamboo that must at times attain a length of over 150 feet²⁷. Vegetation of these islands has been classified into twelve forest types by Champion and Seth. However, these forest types are not distinctly demarcated and they imperceptibly merge into one another and form an intimate mixture. These are Giant evergreen forests, Andaman tropical evergreen forests, Southern hilltop evergreen forests, Andaman semi evergreen forests, Andaman moist deciduous forests, Andaman secondary moist deciduous forests, Littoral forests, Mangrove(Tidal Swamp) forests, Brakish water mixed forests, Submontane hill valley swamp forest, Cane brakes and Wet bamboo brakes²⁸.

The Giant evergreen forests the most luxuriant type of multitier forests occurring in deep alluvial soil near the banks of larger streams. The main species include *Dipterocarpus* spp., *Calophyllum soulattri*, *Artocarpus chaplasha*, *Amoora vallichi*, etc²⁹. The Andaman Tropical Evergreen Forests are similar to the giant evergreen forests but not so luxuriant. They occur mostly on hilltops. Major species include *Diptocarpus grandiflorus*, *Xanthophyllum andamanicum*, *Artocarpus chaplasha*,

²⁵ Ibid.

²⁶ Ibid.

²⁷ Ibid.

²⁸ *Andaman and Nicobar Islands: Forests and Environment*, Department of Environment and Forests, Andaman and Nicobar Administration, 2001, p.3.

²⁹ Hill, H.C., *Suggestions for the Administration and Working of the Forests in the Andaman Islands*, Calcutta, 1891, NAI, New Delhi.

Myristica andamanica, etc³⁰. The Southern Hilltop Evergreen Forests occur on the exposed upper slopes and tops of hills and sometimes on steep slopes lower down. Major species include *Dipterocarpus costatus*, *Messua ferrea*, *Canarium manni*, *Hopea andamanica*, etc³¹. The Andaman Semi-Evergreen Forests are luxuriant types of forests with many giant trees both of evergreen and deciduous nature. Climbers are often heavy. The Andaman moist deciduous forests are distributed extensively in Andamans but not so much in Nicobar islands. Top storey is irregular with tall deciduous trees followed by a second storey which comprises numerous species including some evergreen trees. The Andaman secondary moist deciduous forests occur in worked over areas of the primary type. The Littoral forests occur all around the coastal wherever a fair width of sandy beach occurs. *Manilkara littoralis* is the most characteristic species of this kind in these islands. The mangrove forests occupy shores, mouth of creeks and inland channels of these islands. These are salt tolerant species and occupy 966 sq.km. area of these islands. The Brackish water mixed forests are considered finest development of tidal forests and may be closed forest of 35m height. These are found larger deltas and creeks along the outer periphery and at places where salt water mixes with fresh water. The sub-Montane hill valley swamp forest is an irregular forest of a limited number of mainly evergreen species. Trees are usually low, crowded and branchy. The Cane brakes are found throughout the evergreen and semi evergreen climaxes and locally in moist deciduous forests. Cane brakes are impenetrable thorny thickets sometimes with a few tall trees. The wet bamboo brakes are often very dense and occur throughout tropical evergreen tracts of Andamans³². The vegetation of the Andamans is an almost unbroken tropical forest, of a distinctly Indo-Chinese type, with a strong admixture of Malayan type. The forest consists of two clearly marked divisions, the littoral and non-littoral, the former of which is the more valuable economically³³.

³⁰ Ibid.

³¹ Ibid.

³² Ibid.

³³ R S Temple, *The Imperial Gazetteer of India*.

Colonial Occupation and the Development of Forest Department:

South Andaman Island was declared as a settlement under section 30, Regulation III of 1876, for the purpose of the regulation³⁴. The penal settlement was started in the year 1859³⁵. The islands and the coast lands of Port Blair, like the whole of the rest of the Andamans, were densely covered with forest. The first work was to clear sites for the barracks and other purposes³⁶. The timber was treated as value less in the initial periods; and this is for the most part is, like the bulk of the timber of tropical evergreen forest³⁷.

The earliest exploration of Andaman forests was made in the year 1839 by Dr.Helfer, the Russian scientist who was murdered by the native tribes in North Andaman. In 1870, S.Kurz made a botanical survey to collect materials regarding the flora of the Andamans and also ascertain the number of valuable timber species³⁸. Teak timber was imported from Burma for all the construction of buildings. In 1864, a beginning was made with the local timbers, and in 1870 the durability and strength of certain of them had been so far ascertained that the importation of the teak was discontinued³⁹.

Forest exploitation may be said to have began by Government agency from 1858, with the establishment of Penal Settlement⁴⁰. Until 1870, however, Burma teak was imported for all substantial buildings, and the local timber was considered useless⁴¹. In fact, until 1929, 'Dhup' and 'Papita', now most valuable as match wood, were being thrown away after making use of them as floats to raft sinker logs⁴². In 1883, the forest

³⁴ *The Andaman and Nicobar Manual*, Calcutta, 1908, p.247.

³⁵ F.J Mouat, *Adventures and Researches Among the Andaman Islanders*, 1863; Man, E.H, *On the Aboriginal Inhabitants of the Andaman Islands*, 1883; Portman, M.V, *A History of Our Relationship with the Andamanese*, 1899.

³⁶ Department of Revenue and Agriculture, Forests, April 1887, Nos.36-38 (Report of Forest Administration in andamans for 1885-86), NAI, New Delhi.

³⁷ Ibid.

³⁸ P Lal., *Andaman Islands*, Calcutta, 1976, p.33.

³⁹ Ibid.

⁴⁰ *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

⁴¹ Ibid.

⁴² Ibid.

department in the Andamans was established under Colonel Farrar⁴³. He explored the forest of North Andaman and submitted a report in 1883. He introduced the mixed plantation of teak and padouk⁴⁴. From this time timber was girdled annually in sufficient quantity to supply the wants of the settlement- 2000 to 3000 tons a year⁴⁵. The working plan was a simple one. At that time there was not any regular working plan and the harvesting of timber confined to a few species only like, Padouk, Pyimmah, koko, etc⁴⁶.

Scientific management of the forest started here with the preparation of first working plan by F.H.Todd in 1906 but due to pressure for extra timber the prescription of this working plan could not be adhered to⁴⁷. This was followed by the working plans prepared by Banington in 1914, H.S Dean in 1935, Chengappa from 1936 to 1939, etc. But due to various socio-political reasons, prescriptions of these working plans were not being implemented⁴⁸. The useful kinds of timber were girdled, in the area destined to be cleared, 2 to 3 years in the advance; and before the clearing was taken in the lands, the girdled timber was worked out.

In 1883 the last of the Port Blair harbour localities had been worked out. The deciduous forest localities situated upon this islet, were of handy size and convenient for transport of timber in both monsoon and in all weathers. A form of account was practiceable under which a tail was kept of each tree, from its being girdled to the logs which it produced being delivered and sawn. This was a development of the Burma system, the purpose of which is to check the lease holders of the forests there, as well as to measure the drain upon the forests the topography of which is not sufficiently advanced to permit of the unit of area being made the basis of work in detail⁴⁹. At the

⁴³ Department of Revenue & Agriculture, Forests(B), January 1923, Nos.89/91 (*Organisation of the Forest department in the Andamans*), NAI, New Delhi, and P Lal, *Andaman Islands*, ASI, 1976, p.33.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ *Andaman and Nicobar Islands: Forests and Environment*, Department of Environment and Forests, Andaman and Nicobar Administration, 2001, p.5.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Department of Revenue and Agriculture, Forests, April 1887, Nos.36-38 (*Report of the Forest Administration in the Andamans for 1885-86*), NAI, New Delhi.

same time, timber for girdling had to be sought in more distant and less accessible localities; and the march of clearings in its turn, was determined by exigencies of different kind and became divorced from the timber operations⁵⁰. The attempt was made to leave girdled trees standing where clearing could be postponed, and to save logs from burning with the lumber which it had not been feasible to extract in time. In some instances, clearing had to be pushed into virgin localities containing ungirdled species⁵¹.

From the very beginning, these forests were worked by departmental agency⁵². Before undertaking the organisation of a Forest Department upon a definite footing, Government decided to test the Andaman timbers in the market and to obtain data of their frequency⁵³. In March 1883, there were about 200 convict labourers and 16 elephants, with which to carry on the local timber supply, to export timber upon a tentative scale and to prosecute survey work. In the beginning the subordinate supervising staff consisted of convict warders⁵⁴. 4000 broad gauge sleepers were exported to Calcutta in 1881 but they had not proved satisfactory⁵⁵. A small assortment of 100 logs of timber had been exported to Calcutta in 1881 but its miscellaneous character militated with its success. From March 1893 to March 1896, 1205 tons, chiefly padouk, the Andaman wood best calculated to take a place in the market, were exported⁵⁶. At the close of 1886, the orders the government received for the working of padouk bearing forest upon a more extensive scale and beyond the range of the settlement operation of Port Blair. Then the working area was extended to the locality on the northern portion of the Shoal Bay and its western coast⁵⁷. A small saw mill erected by Public Works Department was in operation but was cutting timber mostly for their own use⁵⁸. Hand sawing in the forest was also done for cutting

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

⁵³ *Report of Forest Administration in the Andmans for 1885-86*, NAI, New Delhi.

⁵⁴ Ibid.

⁵⁵ Ibid.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

sleepers and padouk poles for Indian Telegraph Department⁵⁹. Elephants and also buffaloes dragged timber from the stump site⁶⁰. But buffaloes were soon found unsuitable except for small timber and these were few⁶¹. Therefore elephants became the main stay. In 1915 this mill was closed and a new mill capable of a monthly output of 750 tons, in squares and scantling was erected by the Forest Department. A second mill, an American circular mill, was erected in Chatham in 1927⁶².

In 1890, Mr. C.J Lyall, Secretary to the Government of India, visited these islands with a view to ascertain the economic value of the Andaman forests⁶³. In 1921, the 'clear felling' system was introduced which entailed the use of very large number of elephants and tramways, in the extraction of forests⁶⁴. In 1930, a beginning was made with light railway and a skidder in the Interview Island⁶⁵. From 1934, tramlines combined with elephants dragging along with efficient drag paths formed the major means of extraction of forest⁶⁶. The Japanese during their occupation in the Andamans (1942-45) extracted timber from the forest for construction and defence purposes. They extracted some 1500 tons of timber per month of all species. They also used the same method of extraction, i.e., the elephants and tramlines⁶⁷. They also used to send several ship loads of timber to Penang in Burma, in the beginning of their occupation⁶⁸. The increasing requirements of wood and timber both during peace and war time necessitated the felling of trees in excessive quantities and large forest areas particularly in South Andaman were cleared. The villagers lopped and felled the trees for fodder and firewood, grazed their herds and flocks in the forests adjacent to the villages and thus destruction was caused to the forest⁶⁹. **Table 2.1** shows the exploitation of padouk trees by the Government agency from the Andaman forests.

⁵⁹ Ibid.

⁶⁰ Ibid.

⁶¹ Ibid.

⁶² Ibid.

⁶³ *Report of the Forest Administration in the Andaman Islands for the year 1890-91*, NAI, New Delhi.

⁶⁴ B.S Chengappa, *Working Plan for the Andaman Forest*, 1950.

⁶⁵ Ibid.

⁶⁶ P Lal, *Andaman Islands*, Calcutta, 1976, p.34.

⁶⁷ B.S Chengappa, *Working Plan for the Andaman Forest*, 1950.

⁶⁸ Ibid.

⁶⁹ P Lal, *Andaman Islands*, Calcutta, 1976, p.34.

The table shows that there was a huge increase in the exploitation of the padouk trees by the Government agency other than the exploitation by the local users. By 1912, the exploitation of the padouk woods increased more than six times of what was existed in the beginning of 1900.

The padouk timber could be used for many trade purposes, such as for furniture, ship, boat and houses, railway carriages, sleepers, paving blocks, boxes, gun carriages, stocks, pianos, etc; and as profitable minor produces such as canes for furniture, rattans for walking sticks, and Gurjan oil⁷⁰.

Table 2.1

Amount of Padouk Collected by the Government Agency(1900-1918)			
Year	Padouk Available(Cubic Feet)	Volume of Export (Cubic Feet)	Total Disposal During the Year (Cubic Feet)
1900-01	---	13030	74393
1901-02	---	29506	108003
1902-03	---	58091	133409
1903-04	---	70593	125609
1904-05	---	---	---
1905-06	545355	189458	424088
1906-07	580479	193233	392516
1907-08	511835	33310	228555
1908-09	447201	38036	223122
1909-10	427904	100687	305316
1910-11	403399	180726	266231
1911-12	622732	150150	427537
1912-13	516357	227700	430160
1913-14	397636	179450	361967
1914-15	337375	115700	290103
1915-16	417330	135700	307448
1916-17	517380	182150	444801
1917-18	421821	149300	364668

Source: *Various NAI Proceedings on the Yearly Administration Reports of the Forests of Andaman Islands.*

During the beginning of the 20th century, extraction was extended to middle and north Andamans for the exploitation of more valuable timber species. The whole mode of

⁷⁰ B Kloss, C, *Andaman and Nicobars*, 1902, p.172.

exportation was changed during this period. Now the concentration was more centred on certain kinds of valuable species like Padouk, Pyimmah, Koko, Chuglam-black, Thingan, Bambway, Lakuch, Satin wood, Mangrove, Toung-peing, Didu, Gurjan, Mahwa, etc for building and other kind of construction works⁷¹. Among these, Padouk, Koko, Chuglam, Marble wood, etc., were best for the furniture works; Bambway, Gurjan, Toung-peing, Thingan Lakuch, Thitmin, etc. for paving blocks; Lakuch, Thitmin, Pyimmah, Gurjan, etc for buildings; Satin wood for tea boxes, indigo boxes and packing carriages; and Mangrove for fire wood. The Madras and Bombay Government gun carriage factories were supplied with the Andamanese timber to their satisfaction. Such timber was also sent to Roorkey for a military gymnasium, it being best suited for such purposes⁷². India Marine Department also takes it regularly. Andaman timber has also been supplied to Woolwich arsenal. These facts showed that Andamanese timber is of value of such establishments as gun carriage factories, arsenal, gymnasia, and ship building⁷³. **Table 2.2** shows the felling of timber trees in the Andaman Islands by the Government agency alone from 1880 to 1940. There was a steady increase in the felling of timber trees by the Government agency after 1905. The table shows that the timber drawn from the Andamans roughly doubles between 1800 and the turn of the century. It nearly doubles again between 1900 and 1910, and increases by about eight times between 1900 and 1940. The productive capacity of these forests based on the results of regeneration so far obtained is about 6,75,000 tons of timber per year on a modest estimate⁷⁴. The most important thing here is, in 1940, the total felling of timber trees by the Government agency was just 39003 tons (see Table 2.2). Though the felling of timber trees increased around eight times between 1900 and 1940, it increased almost around 20 times in between 1940 and 1951.

⁷¹ Hill, H.C, *Suggestions for the Administration and Working of the Forests in the Andaman Islands*, Officiating Inspector General of Forests to the Government of India, 1891, NAI, New Delhi.

⁷² B Kloss C, *Andaman and Nicobars*, 1902, p.340.

⁷³ Ibid.

⁷⁴ *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

Table 2.2

Felling of Timber Trees by the Government Agency from 1881-1951

Year	Number	Number of Logs	Tons.
1881-82	6767	7161	2851
1882-83	---	---	4175
1883-84	---	---	3636
1884-85	---	---	2247
1885-86	---	---	2195
1886-87	4158	7173	---
1887-88	2629	---	---
1888-89	3532	5572	2660
1890-91	4543	---	6730
1891-92	---	---	5881
1892-93	---	---	6191
1893-94	5290	11365	7540
1894-95	---	---	5219
1895-96	---	6371	4592
1896-97	2951	6548	4363
1897-98	3658	---	5160
1898-99	---	5399	4731
1899-00	3202	---	5808
1900-01	3249	---	5054
1901-02	4400	---	---
1903-04	5389	---	9052
1904-05	5763	---	9860
1908-09	---	---	340584 C.Ft
1909-10	---	---	374378 C.Ft
1910-11	---	---	753513 C.Ft
1933-34	---	---	40312 Tons.
1938-39	---	---	42712 Tons.
1939-40	---	---	39003 Tons.
1951			6,75,000 Tons.

Source: *Various NAI Proceedings on the Yearly Administration Reports of the Forests of Andaman Islands.*

In the early part of the century the forest department was a relatively small concern, comprising only the mill at Chatham and some minor operations of log supply; but

later on, especially during the war, the exploitation work was extended to various islands chiefly in search of padouk and by 1920, a demand for other timbers had arisen. Soon the forest department had a budding sub-division in the middle Andamans and a skeleton division at Stuart Sound in the North Andaman⁷⁵. At this time the general idea was to build a second mill somewhere at Stewart Sound and to feed it by a railway traversing the middle Andaman, but though several plans had been debated, from time to time, no definite policy had been evolved⁷⁶.

According to Beadon, Chief Commissioner of Andaman Islands, "the aim of the Forest Department in Andamans should be commercial, that to produce sawn timber and that the normal forest operations of regeneration and that like should take a back place"⁷⁷. In order to expand the working of the Andaman forest by the departmental agency the total area was divided into two divisions in 1916, comprising North and Middle Andaman as the one and South Andaman and other islands not included in North and Middle Andamans⁷⁸. Stewart Sound being the head quarters of the former and Port Blair being the latter. These two divisions were under the direct control of a senior forest officer with head quarters at Port Blair. Both of these divisions had its own separate senior forest officers as their head, but the charge of both continued to be held by the Divisional Forest Officer, Andamans. The exploitation works in these blocks were carried out by the convicts in the settlement as free labourers⁷⁹.

The question of exploiting these forests has been under consideration for years. In summer of 1907, an advertisement was issued inviting tenders for a contract lease, extending over a period of 15 years, of padouk and other timbers available in the North Andaman, Interview Islands and Bennet Island⁸⁰. No tenders were received in

⁷⁵ Department of Revenue & Agriculture, Forests(B), January 1923, Nos.89/91. *Letter from Lieut. Col. H.C Beadon, chief commissioner, Andaman and Nicobar islands to the Secretary to the Government of India*, NAI, New Delhi.

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ Department of Revenue & Agriculture, Forests, April 1918, nos.10-21 (*Scheme for the Extention of Departmental Working of the Forests of the Andamans*), NAI, New Delhi

⁷⁹ Ibid.

⁸⁰ *Letter from Finance Department to The Right Honorable Edwin Montagu, His Majesty's Secretary of State for India*, dated 8th December 1917, NAI, New Delhi.

response to this advertisement, and in 1910, the scheme was revived, which has been previously put forward by Mr. Merk when Superintendent of Port Blair, for the lease of the North Andaman and the adjacent islands for the exploitation of the timber and the formation of plantations of tropical production⁸¹. But this scheme was never published and in February 1913 it was decided to hold it in the abeyance until the completion of working plan operations, which were then being carried out in the Middle Andamans⁸². Shortly after this decision proposals were received from Col. Oldershaw and Foss for a general development lease of the North Andamans; and Col. Douglas, the then superintendent of Port Blair, gave his support to this scheme, advocating at the same time the ultimate development of the Middle Andaman forest by convict labour⁸³. The government of India, however, decided to agree to any general development lease and intimated that they will still be prepared to consider tenders for the North and Middle Andaman forests on the lines of the 1907 advertisement subject to reasonable modifications. In September 1911 Messrs. Gillanders, Arbuthnot & Co. of Calcutta made a formal tender for the lease of the North and Middle Andaman islands⁸⁴. Orders on this application were deferred until the inspector general of forests had visited the Andamans, and it was then decided on his advice that the forest produce of the two islands, excepting a small portion of the Middle Andaman in which department work was in progress, should be leased; that tenders should be invited for one or both islands; and that the lease should be for 20 years with the option of renewal of terms to be agreed upon. A notice was accordingly issued early in the year 1915, inviting tenders for a 20 years lease of the timber outturn of the north and middle islands, with option of renewal for a similar period. The date originally fixed for the extension of the date of submission of tenders on 1st September 1915, but subsequently, in deference to representation made by certain firms in India, this date was extended to the 1st June 1916. No tenders were however received in the initial stages⁸⁵.

⁸¹ Ibid.

⁸² Ibid.

⁸³ Ibid.

⁸⁴ Department of Revenue & Agriculture, forests, March 1911, Nos. 12-13. *Acceptance of Messrs. Gillanders, Arbuthnot & Co's tender for the purchase of padouk timber in the Andamans*, NAI, New Delhi.

⁸⁵ *Letter from Finance Department to The Right Honorable Edwin Montagu, His Majesty's Secretary of State for India.*, dated 8th December 1917, NAI, New Delhi.

Small shipments of padouk were consigned to Messrs. Gillanders, Arbuthnot&Co. by the government of India about the year 1884 in sailing vessels direct from Port Blair⁸⁶. Sails were restricted at first, neither the English nor the continental markets showing much interest in the wood, the stocks accumulated in spite of the efforts made to increase the trade. The demand was also adversely affected by a fall in the price of Mahogany. From 1910 onwards Forest Department in Andaman Islands started padouk trade with a German firm⁸⁷. This timber was sold in the form of furniture⁸⁸. A small but rapidly improving outlet for the wood however was found in America where it was used for the interiors of Pullman Cars. In a short time America was able to take much more than the whole of the London stock and Messrs. Gillanders Arbuthnot&Co. were in a position to dispose of the whole of the padouk offered by the Indian government⁸⁹. Later, the timber, in the form of best coloured mill sawn squares and fitches, was sent from Port Blare to America via Calcutta instead of London and this arrangement was continued up to the year 1903. During this time the American market was constantly enquiring for larger supplies and in 1903 the government at the suggestions of Messrs. Gillanders, Arbuthnot&Co. decided to extract for export 12,000 tons per annum⁹⁰. After two years America could not absorb the padouk as quickly as the shipment were coming forward owing to the drop in the prices of mahogany and on the completion of the 12,000 tons contract shipment for padouk ceased for sometime. Further shipment were subsequently arranged, the good coloured wood being send to America as hitherto while the off colour wood was disposed of in India where the firms had built up a trade for this wood⁹¹.

⁸⁶ Simla Records, Department of Revenue&Agriculture, Forests, January 1911, A Proceedings Nos.34-38(*Report on Forest Administration in the Andamans for 1909-10*), NAI, New Delhi.

⁸⁷ Ibid.

⁸⁸ Ibid.

⁸⁹ Department of Revenue&Agriculture, Forests, March 1920, A Proceedings Nos. 1-2, Part-B, *Report on the Andaman Padouk which ahs been prepared by the Imperial Institute adversary Committee on Timbers*, NAI, New Delhi.

⁹⁰ Ibid.

⁹¹ Ibid.

Later the purchase of the entire output of padouk from the Andamans was thrown upon to tenders. In 1914 further rearrangements were made in the terms of purchase, the amount of sales to any single firm being restricted. It was thus possible for the output of the shared by several timber firms and the American Pullman Car Co.(one of the largest users of Padouk) intimated that if padouk was to be obtainable by their competitors they would cease using it. However, the slowly increasing use of steel in place of padouk for internal work of Pullman cars resulted in a set back to the use of padouk in America. Even though the revenue from the extraction and export of padouk and other valuable timbers increased day by day in a large amount⁹².

The charge of the forest division involved the running of the exploitation of the forests, the exploitation of the fuel with regeneration works in the WimberlyGunj valley or the South Andaman islands, the supervision of the sawmill, and the actual shipping of sawn timber and the supply of the forest produce to meet the local demands⁹³. To this were added other duties which really appertained not merely to the Division, but to a wider sphere. Amongst these duties were- general finance of both divisions, obtaining external orders for timber, external sales of timber, obtaining and dealing with agents in India and London, checking timber stocks held by agents in India apportioning orders for sawn timber between the mills and the divisions, control of the departmental fleet of ships, launches and lighters, arrangements for the recruitment of labour from India and Burma, and all external correspondence⁹⁴. Beadon rightly states that "We must realise that in Andaman, the head of the administration is a timber merchant, who, whilst controlling the operation of converting the raw material into saleable article, must advocate much of his energies to tapping the market. Nor has the chief officer had the time to control the work of the agent: he has been able to pay only one visit for the inspection of the stock in 4 years, and on that

⁹² Ibid.

⁹³ Department of Revenue.&Agriculture, Forests(B), January 1923, Nos.89/91. *Letter from Lieut. Col. H.C Beadon, chief commissioner, Andaman and Nicobar islands to the Secretary to the Government of India*, NAI, Delhi, NAI, New Delhi.

⁹⁴ Ibid.

occasion found that large quantities of timber the property of government had melted”⁹⁵.

Lease of Whole North and Middle Andaman Forests

There arose some serious issues as to by what agency the government should exploit the rich Andaman forest, to produce sawn timber. Should Government do this work alone through the medium of forest department? Should the forest be leased out to private enterprise? Or, would it be feasible to adopt both- Government agency and private enterprise working side by side? It was apparently recognised in 1919 by Government that some of the islands might be worked by private agency, but no tenders were forthcoming possible owing to (1)Wartime, (2)the short leases(20 years) offered, (3)absence of labour, (4)the ill repute of a penal settlement⁹⁶. In 1910, the Government of India, by a notice, offered for lease of the whole of the North Andaman island and the adjacent islets, for a period, in the first instance, of 15 and 30 years, respectively with a view to export of timber and the formation of plantation of tropical produce, such as tobacco, sugar cane, manila hemp, cocoa, vanilla, coffee, rubber, etc.⁹⁷

The condition of the lease was laid down in the notice. This notice was prepared by the Government of India to negotiate for the lease of the North Andaman, Interview, and Bennet islands, which were of the adjacent islets north of latitude 12 53’ and south of latitude 13 40’ for the formation of plantation and the export of timber, etc., under the following conditions⁹⁸. Lessees would have the sole right to acquire, cultivate and farm plantation in the above area for a period of 30 years. Blocks of not less than 5 square miles will be set apart for cultivation and may be cultivated up to the maximum of 100 square miles. No land revenue will be taken during the first 5 years. After the

⁹⁵ Ibid.

⁹⁶ Department of Revenue&Agriculture, Forests, March 1922, No.139(B), *Note by the Chief Commissioner, Andamans, And the Inspector General of Forests. Regarding the Immediate Steps to be Taken to the Forest Work in the Islands*, NAI, New Delhi.

⁹⁷ Department of Revenue.&Agriculture., Forests, November 1910, Part A, Nos. 6-8(*Exploitation of timber in the North Andaman and the adjacent islets*), NAI, New Delhi

⁹⁸ Department of Revenue.&Agriculture., Forests, November 1910, Part A,Nos.6-8(*Draft Notice by the Government of India*), NAI, New Delhi

first 5 year a lump sum annually will be taken which will be increased after the expiry of the 10th year⁹⁹. Lessees would have the sole right to cut and export timber for sale during a period of 15 years¹⁰⁰. Trees could be cut in such areas as would be allotted for this purpose by the forest officer with due regard to the convenience of the lessees and, as far as possible, according to the working plan drawn by the Government. A royalty at rates to be fixed by agreement would be paid to Government on all timber exported¹⁰¹. The collection of minor produce would be permitted on terms to be settled by agreement. Neither the right to cultivate nor the right to cut and export timber could be transferred or sub let without the sanction of the government of India. The lessees would be subjected to such restrictions as the government of India, may prescribe to prevent communication between their employees and the convict population in the Andamans. The lessees would not employ convicts or exconvicts within the territorial limits of the lease. They would also be subject to such regulations as the Government may issue on the analogy of the regulations in force in countries to which indentured labour was taken from India, such as regulations regarding the proportion of women among the labourers, the repatriation of labourers on the expiry of their contract, the provision of the hospitals for the sick, and so forth. The lease both as regards cultivation and as regards the cutting of timber would be open to renewal at the expiry of the periods fixed above. If the lease for cultivation is not renewed, compensation would be granted to the lessees which would be calculated on the basis of the value of the unexpired improvement effected by them and crops standing at the time of expiry of the lease. Similarly if the lease for cutting of timber was not renewed, compensation would be granted to the lessees for permanent improvements effected by them¹⁰².

With reference to the land revenue to be taken under clause (I) of the draft notice, it was thought that, a maximum of 6.5 lakhs of acres would be allowed for cultivation, Government could provisionally fix Rs. 30,000 per annum as the revenue to be taken

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

¹⁰² Ibid.

on the expiry of first five years of the lease and One lakh per annum as the revenue to be taken after the expiry of the first 10 years of the lease¹⁰³.

According to P.H. Clutterbuck, the chief disadvantages on this lease system were the following. (1) The loss of a large portion of the property which could in future be reasonably expected to result from the capital exploitation already incurred. (2) The difficulty of fixing a rental or royalty which would ensure the Government a fair proportion of a private company's profits. This was due to the almost unknown potentialities of the forest outturn and the present uncertainty of establishing markets for the whole of it. (3) An increase of expenditure on the sowing and planting operations are essential to maintain the value of the forests-unimpaired, arising from the necessity for the introduction of a labour force to be used solely for such regeneration operations, which presumably could not be left to the concessionaires, and which could not under such conditions be carried out so economically as it was at present possible by utilising the same labour both for extraction and regeneration. And,(4), the possibility of labour difficulties resulting from the presence in the islands of labour imported and controlled by two different agencies, viz., by Government and the Concessionaires¹⁰⁴. Forests were the only large source of revenue in the Andamans and if the islands were ever to be on a self supporting basis, the only chance was for Government to develop the forest themselves, since private enterprise even if willing to take up the work in spite of the difficulties involved could only give a relatively small return to the government.

In 1915, a new division was formed with head quarters at Mayabandar, Stewart Sound, called North Andaman Division. An American Hand Mill was erected at this place in 1925¹⁰⁵. The mill gave endless troubles for want of expert supervision which was

¹⁰³Department of Revenue&Agriculture., Forests, November 1910, Part A, Nos. 6-8 (*Memorandum of subsidiary questions to be decided in connection with the proposed lease of the North Andaman*), New NAI, Delhi.

¹⁰⁴Department of Revenue&Agriculture., Forests, March 1923, No.115(B), (*The papers referring to the attempts made by advertisement to open the Andaman forests to exploitation by private enterprises*), NAI, New Delhi

¹⁰⁵ *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

difficult to secure¹⁰⁶. The division itself was not a financial success for want of better sales organisation which was difficult to obtain under government agency, greatly hampered by rules and regulations¹⁰⁷. The mill and new division were closed down on 1931, and the mill later sold in 1941 to a timber firm in Burma (Messrs. Steel Brothers)¹⁰⁸. As it is already seen, attempts were made in 1906, 1914, and again in 1929, to lease these forests to private enterprise for commercial exploitation. However, these attempts failed because of some limitations. Departmental operations therefore continued up to date. Also, the attempts had met with success and the North Andaman group of forests had gone under to Mr. Ray of Bengal for a minimum royalty of Rs. 50,00,000, and this firm was expected to extract 75,00,000 tons of timber per year¹⁰⁹.

Organisation of the Forest Department

It must be recognised that the administration had settled down into a highly centralised organisation in which the chief forest officer was both controlling and executive officer in almost every branch. It was obvious that such a position could not continue to advantage of the state. The present commitments of the forest department appeared to fall into three well defined geographical circles, with some outside duties which connected these circles: namely, South Andaman, Middle Andaman and North Andaman¹¹⁰. During 1920s there was a deputy conservator in charge. As camps were formed to skin the forests of padouk, additional officers of the Deputy Assistant Conservator type were entertained¹¹¹. Later, a permanent subdivision was located at Bomlungta, and, later still, a skeleton division was established at Stuart Sound under Deputy Conservator of forest, the ultimate result being that the chief forest officer became Deputy Conservator for south and middle Andaman division¹¹². In practice, the chief forest officer developed into a mill manager with a host of outside duties: the middle Andaman charge was under the close control of the chief forest officer: and the

¹⁰⁶ Ibid.

¹⁰⁷ Ibid.

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ *Note on the Organisation of the Forest Department*, Chief Commissioners Office, dated Port Blair, 23rd June 1922, NAI, New Delhi.

¹¹¹ Ibid.

¹¹² Ibid.

north Andaman work had been of an indefinite nature and subject to changes of policy from time to time, in which the local officer did not had much say, his duties never restricted to mill building¹¹³.

During 1920s the main duties of the chief forest officer in south Andaman were the executive administration of the Chatham saw mill, the exploitation of the fuel, and some minor regeneration¹¹⁴. The main duties of the chief forest officer in middle Andaman during the same period were comprised of exploitation of timber for dispatch to mills, construction work of middle Andaman railway, regeneration, etc¹¹⁵. Finally, those of the chief officer of North Andaman comprised of Executive administration of Stuart Sound Mill, construction of the northern half of Middle Andaman railway, and forest exploitation works¹¹⁶. In addition to this, there was the executive administration of the marine service, which connected all these circles, and above it all was the central administrative control, which provided not merely head authority but which undertook the financing of the trades and the disposal of sawn timber produce. According to Beadon the duties of the Chief Forest Officer would be:

- a) Executive(The control of the marine communication)
- b) Administration (Finance, supervision of Assistant Forest Officers, supervision of Indian subordinates, inspections including that of mills, etc.)
- c) Office(Dealing with the chief commissioner, receipt of orders for timber, passing on orders to mills, sales and shipments of timber, accounts,etc.)¹¹⁷

The Forest Department was in the charge of a Deputy Conservator of Forests who was subject to the orders of the Chief Commissioner¹¹⁸. By section 10, Regulation III of 1876, the Chief Commissioner of Andaman and Nicobar Islands could at any time grant licenses in aspect to felling of trees or taking the product thereof, and could appoint, with the sanction of the Governor General in Council, any officer to exercise

¹¹³ Ibid.

¹¹⁴ Ibid.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ Ibid.

¹¹⁸ *The Andaman and Nicobar Manual*, 1908, p.247, NAI, New Delhi.

all or any of the powers conferred by section 5 to 10 of the regulation. The Chief Commissioner could at any time grant a license in writing, on such terms and subject to such conditions as he thought fit, to any person to fell any trees or take the produce of any tree, or collect edible birds' nests, or any other produce of any settlement in the said islands.

The Deputy Conservator of Forests and the Assistant Forest Officers were also appointed ex officio Assistant Superintendants to exercise the powers of a sub divisional officer in respect of convicts working in the forest department in cases under clauses 4,5,6, and 8 of section 186 during working hours, in connection with work of his department¹¹⁹. The former was invested with special powers of punishment of a sub divisional officer. These powers were conferred by name on each holder of these appointments.

The forest service was composed of the Imperial Forest Service, the Provincial Forest Service, and the Subordinate forest Service¹²⁰. The Imperial Forest Service comprised of the Inspector General of Forests, the Chief Conservators, Conservators, Deputy Conservators, and Assistant Conservators. The Imperial Forest service was recruited solely by officers appointed under covenant with the secretary of state and who had received professional training, either under the regulations laid down from time to time by the secretary of state or in such other manner as was approved by him¹²¹. The Provincial Forest Service comprised of Extra Assistant Conservators and Extra Deputy Conservators¹²². The Subordinate Forest Service Consisted of Rangers, Deputy Rangers, Foresters, Guards and other Subordinates¹²³. By 1909, the Forest Department in the Andamans comprised of One Extra Deputy Conservator, Three Extra Assistant Conservators, Three Rangers, Two Deputy Rangers, and Two Foresters and other

¹¹⁹ Ibid., p.543..

¹²⁰ *The Indian Forest Code: General Regulations*, 1877, p.4, NAI, New Delhi.

¹²¹ Ibid.

¹²² Ibid., p.5-6.

¹²³ Ibid., p.7.

subordinate staffs¹²⁴. By 1918, with the formation of the North and Middle Andaman forest division, the increase in the number of officers was necessary. A junior Deputy Conservator, Two Extra Assistant Conservators of Forests as assistants, Two Rangers, Four Deputy Rangers, Six Foresters and twenty five forest guards including personal orderlies were included to the existing department¹²⁵.

Means of exploitation

From its very beginning the basic character of the forest department in Andamans like those of other colonies was exploitative in character. Without any regular working plan, the exploitation of the forest produces both timber and other minor produces reached its zenith during the colonial period, which disastrously affected its basic environment and the health of the indigenous people as well. From the establishment of the penal settlement in Andamans the authorities very cleverly exploited the rich Andaman forest through various means. Even before the establishment of the forest department in Andamans, they started three saw mills there¹²⁶. The labour mainly used for this exploitation was convict labour¹²⁷. However during the later period, when the exploitation of forests extended to Middle and North Andaman regions, they imported free labour from India, Burma, Ranchi, etc¹²⁸. The question of labour was very important one to the forest department in Andamans.

¹²⁴ Department of Revenue.&Agriculture., Forests, June 1909, A proceedings, Nos. 32 to 34 (*Proposal for the reorganization of the provincial and subordinate forest services in Andamans*), NAI, New Delhi

¹²⁵ Department. of Revenue.&Agriculture, Forests, April 1918, A proceedings, Nos.10-21, NAI, New Delhi.

¹²⁶ *Andaman and Nicobar Islands:Forests and Environment*, Department of Environment and Forests, Andaman and Nicobar administration, p.14, 2001, Parmanada Lal, Andaman Islands, ASI, p.34, 1976.

¹²⁷ Home Department, Port Blair, Proceedings June 1895, Part B, Nos. ½ (Report of forest administration in the Andamans for the year 1893-94), NAI, New Delhi.

¹²⁸ Department of Revenue&Agriculture, Forests, Proceedings June 1920, Nos. 31/35 (B), File no. 119/1920. (*Importation of free labour for the settlement forests in the North&Middle Andamans*), NAI, New Delhi.

Table.2.3

Statistics Showing the Average Daily Labour, No. of Elephants and the Distance of the Tramlines used by the Government Agency for the Extraction of Forest Produces from 1890-1900

Year	Average Daily Labour	Average No. of Elephants	Distance of Tramway Terminus from Source of Supply	Quantity of Timber Extracted Tons.	Cost of Extraction per Ton
1890-91	438	22	At Source	6730	7.8
1891-92	554	20	At Source	5881	10.6
1892-93	507	24	About 1 mile	6191	13
1893-94	532	24	Near Source	7540	10.4
1894-95	426	28	1-2 miles	5219	14.6
1895-96	307	32	1-2 miles	4592	17.6
1896-97	304	32	1-3 miles	4363	19
1897-98	302	33	Somewhat more distance than last year	5160	14.5
1898-99	358	29	3-6 miles	4731	16.4
1899-1900	349	26	3-5 miles	5808	12.9

Source: NAI, Calcutta Records, Department of Revenue and Agriculture, Forests, Proceedings No. 25- 27, July 1899, Report on Forest Administration in Andamans for 1897-98.

The average number of the convicts who working in the Andaman forests during the 1894 was around 532¹²⁹ (Table 2.3). However, by 1905, the total number of convicts employed by the forest department increased to 1334, of whom only 220 were employed at Chatham¹³⁰. During 1920s, around 250 coolies were imported to the Middle Andamans¹³¹. Besides these some 20 coolies from Madras and 450 coolies

¹²⁹ Home Department, Port Blair, Proceedings June 1895, Part B, Nos. 1/2 (Report of Forest administration in the Andamans for the year 1893-94), NAI, New Delhi.

¹³⁰ Department of Revenue & Agriculture., Forests, Proceedings September 1905, Nos. 26-30 (Forman for the chatham sawmill in the Andamans), NAI, New Delhi.

¹³¹ Department of Revenue & Agriculture., Forests, Proceedings June 1920, Nos. 31/35 (B), File no. 119/1920, NAI, New Delhi.

from Ranchi were imported to the same place¹³². Above all, the forest department established an agency at Hazaribagh in the province of Bihar and Orissa for the recruitment of a labour force not exceeding 1800 men during the month of November to May and not exceeding 600 from May to November¹³³.

However, there is a considerable decrease in the number of convict labour by the 1920s. The number of convict labour during this period was only 850. This was because of some officers' contempt against using the convict labour for the forest works¹³⁴. In the North Andaman they imported coolies mostly from Ranchi, recruited as a rule under the auspices of Roman Catholic Church¹³⁵. They were paid high wages, but owing to short contracts the cost was enhanced by frequent comings and goings: the divisional forest officer naturally complains that men leave the place as soon as they have become efficient. The men disliked the work as they were visited by Cholera and other epidemics and suffered from exposure and bad housing. In Bolungta, the arrangements were rather better for the imported labour combined with the convicts, who were generally employed on marine duties. This had kept the place going, but even here the labour was not so plentiful, according to the chief commissioner of Andamans¹³⁶. At Wimberley Ganj and Chatham, the labour had been all convict labour. Such labour was cheap in considering the number employed, but the convict having no incentive to work, has done the minimum work per capita which would pass muster¹³⁷.

With the introduction of the tramlines, the accessibility of the best woods in the interior regions became very easy, which resulted in the deforestation of the major wooded areas. The forest department, from its beginning used the elephant power for the

¹³² Ibid.

¹³³ Ibid.

¹³⁴ Department of Revenue & Agriculture, Forests, Proceedings August 1920, Part B, No.36., File No. 301 of 1920. (*Substitution of free labour for convict labour in the forest camps in the Andamans*), NAI, New Delhi.

¹³⁵ Department of Revenue & Agriculture, Forests, Proceedings March 1922, No. 139(B), (*Note by the Chief Commissioner of Andamans and the Inspector General of Forests, regarding the immediate steps to be taken to the forest works in the Andamans*), NAI, New Delhi.

¹³⁶ Ibid.

¹³⁷ Ibid.

extraction of the timber from the interiors. Even after the introduction of the tramlines they continued the use of elephants for dragging the logs¹³⁸. Though the beginning of tramway in Andamans was not in a speedy and extensive manner during the latter part of 19th century, it became wide spread in 1930s and 40s. In 1932, an experimental tramline was built in Ranghat¹³⁹. The novel feature introduced in the construction of this line was that it was confined to a valley, avoided all big cuttings and fellings and was graded down hill¹⁴⁰. Elephants were trained to load, transport and unload a log train¹⁴¹. As some officers called it, it proved a 'Columbus egg' and rendered all the former inaccessible areas accessible for economic exploitation. After a further careful examination it was found that these forests could yield 135000 tons of timber per year against a bare 57000 tons prescribed in the working plan in 1936¹⁴². The sudden rise in the price of padouk timber in London market, owing to the stoppage of the trade in Mahogany due to the late Spanish-American war and the urgent necessity there to throw into the market a sufficient quantity of padouk to meet the demand led to the opening of a trade which would be both lasting and profitable, making it absolutely necessary to extend largely the means of extracting timber from the Andaman forests¹⁴³. However, sufficient quantity of timber could be extracted only by increasing the length and number of tramlines. This was the main reason for the extension of tramlines in Andaman forests. The chief line of extraction, in a permanent form, during 1899 was constructed from Goplakabang Valley to the deep water in the Shoal Bay Creek, a distance of 6.5 miles¹⁴⁴. Another 3.5 mile line was laid with a portable tramway at the same period¹⁴⁵. By 1904, there were a total of 19.5 miles of tramlines in the Andaman tramway¹⁴⁶. By 1940s these lines were extended to Rangat-Betapur, Lurujiig, Waterfall Valley, Porlob, Polujiig, Nanda Valley, Gwen Valley, and Gupta

¹³⁸ P Lal, *Andaman Islands*, Calcutta, 1976, p.34.

¹³⁹ *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

¹⁴² Ibid.

¹⁴³ Department of Revenue.&Agriculture, Forests, Proceedings May 1899, Nos.1/6. (*Extention of forest tramways in Andamans*), NAI, New Delhi

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

¹⁴⁶ Department of Revenue&Agriculture, Forests,(*Progress report of forest administration for 1904-05*), NAI, New Delhi.

Valley¹⁴⁷. The maximum value of logs extracted with these tramways in 1940s was 39000 tons per annum¹⁴⁸. The chief forest officer of Andamans prepared a scheme for raising this figure to 60000 tons¹⁴⁹. The Japanese during their occupation in the Andamans using the same method of extraction, i.e., the elephants and the tramlines¹⁵⁰. They built a tramline of about 2.5 miles from Port Mouat Harbour along Hobdaypur village to very near Tushanabad¹⁵¹.

The sawmills also played a great role in the exploitation of the forests in the Andamans. The government steam saw mill at Port Blair was situated on the island of Chatham in the Harbour of Port Blair about half way between the islands of Ross, at the mouth of the harbour, and Viper, at the inner end of the Port¹⁵². Its situation, so far as the supply of the settlement requirements was concerned as very central. A good and well sheltered anchorage for large steam mills existed to the south and west of Chatham, and close to Haddo, thus allowing of timber being easily shipped from both Haddo and Chatham¹⁵³.

The Chatham sawmill was not made upon any definite plan. At first, it contained only one 72 inches circular saw; one old frame saw, and some smaller chain feed saw benches; this machinery had been gradually added to from time to time, as the settlement demands for timber increased and as funds were available. The mill was erected for the supply of sawn timber for the settlement. The possibility of exporting timber was not at that time contemplated¹⁵⁴. The portable sawmill, then at Bajajag, was done away with in April 1900, and its two 30 inches plain saw benches brought to Chatham and set up at the mill in 1902. The motive power for the mill is given by a 50

¹⁴⁷ Department of Education, Health and Lands, Forests, 25-81/40, 1940, (*Andaman forest Department administration report*), NAI, New Delhi

¹⁴⁸ Department of Education, Health and Lands, Forests, 21-3/40, 1940, (*Wimberley Ganj tramline scheme*), NAI, New Delhi

¹⁴⁹ Department of Education, Health and Lands, Forests, 14-19/40, 1940, NAI, New Delhi.

¹⁵⁰ Lal, Parmanand, *Andaman islands*, ASI, 1976, p.34.

¹⁵¹ Ibid.

¹⁵² Department of Revenue.&Agriculture., Forests, Proceedings March 1905, Nos. 52-54, (*Proposal for the management of Chatham saw mill, Andamans*), NAI, New Delhi

¹⁵³ Ibid.

¹⁵⁴ Ibid.

horse power compound horizontal engine, made by Davy Paxman & Co., to which is fitted a surface condenser of the ordinary marine type¹⁵⁵. Until the year 1902-03 the Chatham sawmill was fully employed in supplying the requirements of the settlement as regards timber and in cutting mill sawn squares of padouk for export and it was not found possible to attempt to place any of the other timber of Andamans on the market.

Shipment of mill sawn and squares to Messrs. Gillanders, Arbuthnot & Co. were commenced in November 1898. In 1902-03, a beginning was made in the export of the other Andaman woods, 33.24 tons of Cocoa and Black Chuglam mill sawn squares were sent to Messrs. Gillanders, Arbuthnot & Co. for sale in London or New York; 41.60 tons of Gurjan scantlings were sent to London and 28.28 tons of padouk scantlings and shingles and 61.30 tons of Pyimma scantlings were sold in Calcutta and Rangoon. The total volume of Andaman timbers other than the padouk exported however only amounted to 136 tons¹⁵⁶. Forest year 1903-04, the volume of timber, other than padouk exported amounted to 402 tons while 92 tons of padouk, other than that exported under existing contracts left Port Blair, making a total of 494 tons. 3200 tons of mill sawn squares and slabs were supplied to them between November 1898 and February 1904.

Messrs. Churchill and Sim, timber importers, London, recommended sending sample shipments of 13 kinds of Andaman timber which they think will sell in England, besides Gurjan, the import of which they have previously recommended¹⁵⁷. Messrs. Gladstone Wyllie also recommended mill sawn squares for America. Messrs. Turnor Morrison are interested chiefly in Calcutta and the continent of Europe, while Mr. C.D. Stewart and Co. had an intimate connection with native timber dealers in Calcutta who were on the look out for some wood to use instead of teak, the price of which had of late increased so much that substitute for it was being pretty generally sought for. A new Contract was made with that firm in December 1903 to supply 12000 tons of

¹⁵⁵ *ibid.*

¹⁵⁶ *Ibid.*

¹⁵⁷ *Ibid.*

padouk rough hewn squares and squares during three years ending the 31st December, 1906¹⁵⁸.

Thus through these means of extraction namely the convict labour, tramway, sawmills etc, the forest department in Andamans spread its extraction operation into the interiors of the forests and even extended to North and Middle Andaman islands. The basic character of the department itself was changed with the introduction of railways and other extraction instruments. Forest department in Andaman became a timber trading corporation which exported its valuable timber trees to America, London, and Germany along with its markets in India and Burma¹⁵⁹.

The Objectives of Forestry in the Andamans

One can find out a similarity in the functioning and objectives of the forest department in India and that of Andaman Islands. The chief object of forestry in India was to secure a permanent supply of timber and other forest produce for local consumption and for export trade¹⁶⁰. Thus the chief aim of forestry was to make revenue. The same object we can see in Andamans also. This is evident from the draft rules, which prepared for the better administration of the forests in Andamans by the forest department in 1876. The main object behind these rules was to create a source of revenue¹⁶¹. **Table 2.4** showing the revenue and expenditure of the forest department from 1884 to 1915. From the very beginning of the establishment of forest department in the Andamans, one can clearly identify the steady increase of revenues from the forests. The first five years revenue was Rs. 288165. By 1935, one year's revenue was even more than five times of the first five years revenue.

¹⁵⁸ Department of Revenue&Agriculture, Forests, March 1920, A Proceedings Nos. 1-2, Part-B, (*Report on the Andaman Padouk which has been prepared by the Imperial Institute adversary Committee on Timbers*), NAI, New Delhi.

¹⁵⁹ Department of Revenue.&Agriculture., Forests, Proceedings March 1905, Nos. 52-54, Dept. of Rev&Agri., Forests, March 1920, A Proceedings Nos. 1-2, Part-B, (*Report on the Andaman padouk which has been prepared by the Imperial Institute Advisory Committee on Timbers*), NAI, New Delhi.

¹⁶⁰ Department of Revenue&Agriculture., Forests (B), September 1881, Nos. 30-32, (*Memorandum by D. Brandis on the present condition of forests in British India*), NAI, New Delhi.

¹⁶¹ Home Department, Forests, Proceedings July 1883, Nos. 7-10, (*Forest management in the Andaman islands*), NAI, New Delhi

Table 2.4

Revenue and Expenditure of the Forest Department in Andaman Islands From 1884-1935					
Year	Revenue	Expenditure	Year	Revenue	Expenditure
1884-85 to 88-89	288165	205540	1916-17	649711	428652
1889-90 to 93-94	1395140	880695	1917-18	793656	3977724
1894-95 to 98-99	1272190	927140	1918-19	1184383	612826
1899-1900	260600	140940	1919-20	800795	971491
1900-01	277886	140137	1920-21	624374	1327930
1901-02	266903	204667	1921-22	550098	1287027
1902-03	326035	281702	1922-23	588027	805184
1903-04	432381	271121	1923-24	611382	896214
1904-05	620796	342431	1924-25	725597	1153690
1905-06	582511	335985	1925-26	891029	1135063
1906-07	607027	295136	1926-27	1170863	1220097
1907-08	291822	229267	1927-28	1418062	1450686
1908-09	202081	180941	1928-29	1522706	1330344
1909-10	259477	194159	1929-30	206813	1619393
1910-11	416773	226963	1930-31	1938810	1678416
1911-12	522160	261732	1931-32	1451463	1231667
1912-13	449925	255141	1932-33	1622129	1310610
1913-14	445811	274676	1933-34	1401064	1096756
1914-15	339248	258056	1934-35	1109488	1030236
1915-16	434784	436832	---	---	---

Source: Dept. of Education, Health&Lands, Forests, 1936, File No. 46-27/36F, NAI, New Delhi.

A set of rules under the section of 33 of the Regulation of 1876, for the management of forests, follows. Section 4 of the regulation states that all land in the settlement is vested absolutely in Her Majesty the Queen, and no person can acquire property or rights except by a conveyance executed by a secretary to the government of India, by orders of the governor general in council¹⁶². Section 5 states that the chief commissioner may, on such conditions as he thinks fit, permit any person to occupy

¹⁶² *Andaman and Nicobar Regulations*, 1876, NAI, Delhi.

land¹⁶³. Section 10 says that the chief commissioner may, on such terms as he thinks fit, grant licences to fell any timber, or the produce of any tree, or collect any products of any settlement in any of the said islands¹⁶⁴. Even the allotment of licenses was also looked as a source of revenue. According to the Chief Commissioner of Andaman Islands, 'the fact is the Andaman authorities have not grasped what is required of them. We have not given them a trained forest officer for the purpose of dragging a few logs to the Port Blair settlement, and of collecting a few rupees from the convict riots; but we want them to take up forest matters generally, to explore all the islands, to value the forest resources, and to ascertain whether they contain the materials to develop a large trade in timber'¹⁶⁵. Huge portion of the Andaman forests were cleared for cultivation and for plantations. These lands were cultivated by the free population along with the convicts on leave. From these lands also forest department collected its revenue. Like cultivation, the emergence of plantation was also meant for the cultivation of valuable timber trees. Ultimately this also proved a better way for the raising revenue. Huge portion of the forests were cleared as a result of this policy. During the period of Col. Tytler the cultivated land was only 149 acres, 76 by self supporters and 73 by Government, and the number of the convicts, 6965¹⁶⁶. Under his successor Col. Ford, the cleared and cultivated areas were, respectively, 724 and 353, and the number of convicts, 6965¹⁶⁷. When his successor Col. Man retired, 2,814 acres were completely cleared and 876 acres cultivated¹⁶⁸. The efforts of Col. T. Cadell, who took charge in 1879, were chiefly directed towards agricultural and forest development, and a regular forest department was established¹⁶⁹. The area of cleared land increased from 10,421 acres in 1881 to 25,189 in 1905 and that of cultivation from 6,775 acres to 10,364 acres, and the amount was steadily increasing¹⁷⁰. In short, the total area of cleared forest land for both agriculture and other purposes was around 35553 acres in the first twenty five

¹⁶³ Ibid.

¹⁶⁴ Ibid.

¹⁶⁵ Home Department, Forests, Proceedings July 1883, Nos. 7-10, (*Forest management in the Andaman islands*), NAI, New Delhi

¹⁶⁶ *Gazetteer*, p. 145.

¹⁶⁷ Ibid.

¹⁶⁸ Ibid.

¹⁶⁹ Ibid.

¹⁷⁰ Ibid.

years of the establishment of forest department in the Andamans, an average of 1420 acres of deforestation per year.

Plantations

In May 1883, the Chief Commissioner of Andaman and Nicobar Islands submitted a draft rules, formed under section 33 of the Andaman and Nicobar islands Regulation of 1876, for the management of forests in the South Andaman islands and proposed the establishment of compact plantations of useful forest trees, for the supply of the requirements of the settlement and for export, in convenient places on cleared land which was no longer fit for agricultural operations or for pasture.¹⁷¹ However, on the basis of the Report by Mr.Kurz regarding the vegetation of Andaman islands in 1870, and another report by Mr Home in1874, A.Machenzie, the Secretary to the Government of India, states that the Andaman islands contain very extensive natural forest, with a fair proportion of the more valuable kinds of timber trees; and under this circumstances, the formation of plantations appears premature¹⁷². Later, the Government of India appointed Mr. Ferrars, the Forest Officer, to systematically explore the whole islands, value their forest resources ascertain whether they contain the material required to develop a large trade in timber with India, and study the mode of growth of more valuable species, and most suitable modes of reproducing them. In the meantime the attempt to introduce Andaman woods into Calcutta and other Indian markets continued on a small scale. When Mr. Ferrars completed his examination, the Government of India deputed the Inspector General of Forests to port Blair to discuss with the local officers the line on which the management of the Andaman and Nicobar forests should in future be conducted¹⁷³. This ultimately led to the formation of small plantations of the useful and exportable timber trees. However, the existing plantation in 1883, were purely experimental, they absorbed, but little labour. The Chief Commissioner accordingly asked for permission to continue the planting up of waste

¹⁷¹ Home Department, Forests, Proceedings October 1883, Nos. 1&2, (*Forest management in the Andaman Islands*), NAI, New Delhi.

¹⁷² Home Department, Forests, Proceedings July 1883, Nos. 7-10, File No. 573 F, *Letter from A Machenzie, Esq, C.S, Secretary to the Government of India to the Chief Commissioner of Andaman Islands, and Superintendent of Port Blair*, NAI, New Delhi.

¹⁷³ *Ibid.*

tracts, conveniently situated close to the station, with young forest trees¹⁷⁴. Accordingly the Government of India stated that there was no objection to the planting up of cleared spaces near port Blair with useful timber trees on a moderate scale¹⁷⁵. In 1884 there were three main plantations in the Andaman Islands at Navy Bay, Goplakabang and at DhaniKhari, on around 20 acres in area¹⁷⁶.

In 1893, the total area of tea plantation only was 390 acres¹⁷⁷. The 'Musa Textilis' plantations at Goplakabang and Shaitan Khari were considerably extended¹⁷⁸. The area under sugarcane was 238 acres during this year¹⁷⁹. During 1895 the total area under teak and Padouk were 1234 acres¹⁸⁰. There were 161 bighas under coffee, 83 under coffee and cocoa mixed, and 1214 under cocoa by itself during 1896¹⁸¹.

By the early years of 20th century the plantations became wide spread. Earlier it was confined to limited valuable species like Padouk, however, now the nature of plantations changed. New varieties of species were introduced for the establishment of plantations like Teak, Mahogany, Rubber, Tea, Coffee, Mangrove, Sugarcane, etc. New methods like 'Taungya' or 'Jhum' were introduced for plantations either for settlement use or for export trade¹⁸². The system of planting paddy with the padouk as in the Taungyas in Burma, suggested in 1909 and this year some 40000 pounds of

¹⁷⁴ Home Department, Forests, Proceedings October 1883, Nos.1&2, (*Forest management in the Andaman Islands*), NAI, New Delhi.

¹⁷⁵ Ibid.

¹⁷⁶ Home Department, Forests, Proceedings December 1885, Nos.29 to 37(*Report of forest administration in the Andamans for 1884-85: Timber work and trade of the Andaman forest department*), NAI, New Delhi

¹⁷⁷ Home Department, Port Blair, Proceedings May 1893. Nos.1-4, (*Annual report of the settlement of Port Blair for the Year 1891-92*), NAI, New Delhi.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid.

¹⁸⁰ Home Department, Port Blair, Proceedings June 1895, Part B, Nos.1/2, (*Report of the forest administration in the Andamans for the year 1893-94*), NAI, New Delhi

¹⁸¹ Home Department, Port Blair, Proceedings January 1896, Nos.101/105, (*Note of inspection by Mr.J.P Hawett, CIE, Secretary to the Government of India in the Home Department, on the occasion of his visit to Port Blair*), NAI, New Delhi.

¹⁸² Simla Records, Department of Revenue.&Agriculture, Forests, September 1903, A Proceedings, Nos. 15&16, (*Inspection Report on forest operations in the Andamans by the conservator of forests, Pegu Circle, Upper Burma*), NAI, New Delhi.

paddy were realised¹⁸³. Para rubber was first planted in the settlement in 1887, when some 30 trees were put down at Namunaghar¹⁸⁴. At the end of the year 1894-94 there were 10,140 acres of land under cultivation in the settlement, of which 4,425 acres represent the Government plantations of tea, coffee, musatextilis, cocoa, coconuts, vegetables, etc., and the remaining 5715 acres were held free and convict cultivators¹⁸⁵. In 1906 a plantation was started at Goplakabang in the Wimberley Ganj Valley, which had been gradually extended to an area of 101 acres by 1913¹⁸⁶. In 1914, 90 acres were added to the existing plantation¹⁸⁷. By 1923, there were 2063 acres under regular plantations in the Andaman reserves¹⁸⁸. This area raised to 4686.85 acres by 1934¹⁸⁹. These plantations provided a better income for the forest department through the export of these valuable timber trees. The forest department saw these plantations as a source of revenue and the ultimate aim of the maintaining these plantations were also nothing other than the revenue. Even the high Forest officials supported the huge amount of exportation because they could acquire a handsome percentage of the profit as commissions in these trades since they acted as mere timber brokers in the Andaman forests¹⁹⁰.

Forest Reserves

The first colonial forest act was passed in 1865. In 1878 a more comprehensive act closed or reserved certain forests so they could be used exclusively to produce timber. It provided for three kinds of forests: the reserved forests for sustained exploitation, where state control was total and peasants' rights were either denied, transferred or

¹⁸³ Calcutta Records, Department of Revenue & Agriculture, Forests, April 1909, A Proceedings, Nos.16-18, NAI, New Delhi.

¹⁸⁴ Department of Revenue & Agriculture, Forests, Proceedings March 1920, No.3, Part B, (*Report on Andaman padouk which has been prepared by the Imperial institute advisory committee on timbers*) ,NAI, New Delhi

¹⁸⁵ R.C Majumdar, *The Penal Settlement in the Andamans*, New Delhi, 1975.

¹⁸⁶ Department of Revenue & Agriculture, Forests, Proceedings March 1920, No.3, Part B, NAI, New Delhi.

¹⁸⁷ Ibid.

¹⁸⁸ Department of Revenue & Agriculture, Forests, Proceedings January 1923, Nos.41/50, Part B, (*Report on the forest administration in the Andamans for the year 1920-21*) ,NAI, New Delhi

¹⁸⁹ Department of Education, Health and Lands, Forests, File No. 13-43/43 F, NAI, New Delhi.

¹⁹⁰ Department of Revenue and Agriculture, Forests (B), January 1923, Nos.89/91. *Letter dated, PB, 21st November 1922*, from Government House to J.Hullah, Esquire, I.C.S, Secretary to the Government of India, NAI, New Delhi.

permitted to limited extent; protected forests, also controlled by the state, where commercially valuable trees were earmarked for cutting and which could be closed periodically; and the panchayat forests controlled by village communities¹⁹¹. The same act was applied in Andaman also. Like the development of plantations in the Andamans, the emergence of forest reserves also took place for the extraction of valuable timber trees for the export trade and for use of the settlement like the construction of buildings, fuel, etc¹⁹². By 1908 the following areas had been declared as reserved forests and placed under the charge of forest department-

1. Navy Bay Padouk Plantation(estimated area 10 acres)
2. Navy Bay Teak Plantation(estimated area 16 acres)
3. Ali Masjid Reserve(estimated area 23 square mile)
4. Mount Harriet Reserve(estimated area 45 square mile)
5. Dhani Khari Reserve(estimated area 12.57 square mile)
6. Brigade Creek Reserve(estimated area 3.66 square mile)
7. Hope Town Reserve(estimated area 415 acres)
8. Shoal Bay Reserve(estimated area 15.20 square mile)
9. Port Meadow Reserve(estimated area 19 square mile)
10. The Middle Strait Reserve(estimated area 36.58 square mile)
11. Goplakabang Reserve(estimated area 2085 acres)¹⁹³

Table 2.5 is showing the area of Reserved Forests of A Class category in the Andaman Islands under the forest department. Conservation and preservation were not at all the policy of the forest department, since their sole aim was to develop marketable timbers in these forests. By 1908-09 two new reserves were added to the existing reserves. They were situated at Namuna Ghar and Minnie Bay, comprising 1275 acres and 231 acres respectively¹⁹⁴. A large portion of the islands were brought under the title

¹⁹¹ Gosling, David L, *Religion and Ecology in India and SouthEast Asia*, London and New York, 2001, p.54.

¹⁹² Simla Records, Dept. of Rev.&Agri., Forests, Proceedings September 1903, Nos. 15&16. (*Inspection Report on forest operations in the Andamans by the conservator of forests, Pegu Circle, Upper Burma*), NAI, New Delhi.

¹⁹³ *The Andaman and Nicobar Manual*, p.248-252.

¹⁹⁴ Department of Revenue&Agriculture, Forests, Proceedings May 1910, Nos.27-30, NAI, New Delhi.

'Reserved Forests' by Indian Forest Act of 1927¹⁹⁵. Along with South Andaman Islands this act now applied to both Middle and North Andaman Islands¹⁹⁶.

Table: 2.5

Area of Reserved Forests, Protected Forests and Un-classed Forests and Leased Forests, 1937-38(A Class)			
Division	Range	Name of Forest Reserves	Acres
Andamans	North Andaman Reserve	North Andaman Block	313728
		Paget Island	1088
		Smith Island	5084
		Chatham Island	384
		Sound Island	3208
		Stewart Islands	1664
Do	Middle Andaman Reserve	M A Block	332608
		Interview Island	26528
		Anderson Island	4352
		Bennet Island	1088
		Long Island	3264
		Guitar Island	192
		Porlob Island	2650
		Do	South Andaman Reserve
North Passage Island	3072		
Colebrook Island	2944		
Strait Island	768		
Kyd Island	1048		
Shoal Bay Island	109186		
Do	Rutland Island Reserve	Rutland Island	29880
Do	Archipelago Reserve	Outram Island	2713
		Henry Lawrance Island	12876
		John Lawrance Island	8806
		Wilson Island	3392
		Peel Island	5632
		Havelock Island	22360
		Total	958879

Source: Department of Education, Health and Lands, Forests, Forest Administration Report, 1935-36, File No. 46-27/36 F.

¹⁹⁵ Delhi Records, Department of Education, Health and Lands, File No. 56-3/35-F, Part A, Serial No.1-3, (Andaman forests-working plan- sawmill, North Andamans-Disposal), NAI, New Delhi.

¹⁹⁶ Ibid.

Regeneration in forests until 1934-35 was mainly artificial and was costly and was not always successful and the area planted was rarely more than 100 acres per year¹⁹⁷. Exploitation fallings traversed over many square miles a year¹⁹⁸. This was thus pure and simple lumbering and not scientific forestry¹⁹⁹. There was, therefore, no progress at all and the forests were fast being replaced with worthless species²⁰⁰. According to B.S. Chengappa the regeneration problem was solved in 1932 though it was perfected in 1936-37. According to this method, the old crop is removed in two or more successive fellings, allowing nature to do the sowing²⁰¹. The resulting crop is tended for two or three years. The results are amazingly good everywhere and the cost of such operations were about 20 to 25 rupees against 150 to 200 rupees per acre for plantations of indifferent success²⁰². The area dealt with rose to 1500 to 2000 acres per year against 100 acres of plantations per year and about 3000 acres of plantation in all in 60 years²⁰³. The annual yield from these plantations only was 1,35,000 tons by 1951²⁰⁴.

Emergence of Occupational Groups

Along with plantations, there emerged a lot of occupational groups in Andaman Islands with the development of the penal settlement. They are "Forestry, reclamation, cultivation, fishing, cooking, making domestic utensils, breeding and tending animals and poultry, fuel, salt, portorage by sea and land, ship building, house building, furniture, joinery, metal work, carpentry, masonry, stone work, quarrying, road making, earth work, pottery, lime, bricks, sawing, plumbing, glazing, painting, rope making, basket work, tanning, spinning, weaving clothing, driving machinery of many kinds and other superior works, signalling tide gauging, designing, carving, metal hammering, book binding, printing, electric lighting, clerical works and accounting,

¹⁹⁷ *Census of India-Andaman and Nicobar Islands*, vol.XVII, Apendix-C, 1951.

¹⁹⁸ Ibid.

¹⁹⁹ Ibid.

²⁰⁰ Ibid.

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ Ibid.

²⁰⁴ Ibid.

messenger service, scavenging, cleaning, petty supervision²⁰⁵. The machinery is large and important and some of the works are on a large scale. In the Phoenix Bay Workshops there is a great variety of work performed, divided under the heads of supervision, general, machinery, wood, iron, leather, silver, brass, copper, tin, and there are besides attached to the shops a Foundry, Tannery, and Limekiln. The whole of the outturn is absorbed locally and no export trade is set up in the shops. The work done at Phoenix Bay has nearly all to be taught to the convicts therein employed and is performed partly by hand and partly by machinery. By hand they are taught to make cane work of all sorts, plain and fancy, rope making, matting, fishing nets, and wire netting²⁰⁶. They do painting and lettering of all descriptions. They repair boilers, pumps, machinery of all sorts, watches and clocks. In iron, copper and tin they do fitting, tinning, and lamp making, forging, hammering of all kinds. In brass and iron they do casting in large and small size, plain and ornamental, and fancy hammering. In wood they perform all sorts of carpentry, carriage building and carving, and in leather they make boots, shoes, harness and belts. They tan leather and burn lime²⁰⁷.

Conclusion:

Thus, the advent of the British had a drastic effect on the forest policy in the Andaman Islands. Forests became increasingly a resource base for the colonial power and setting up of a tramline network had tremendous impact on the forests in Andamans in more than one way. On the one hand, the traditional structure of forest resource use shattered with the newly amended forest laws, and on the other hand, Andaman became the part of World capitalist economy. The plantation economy and forest reserves started a new era in the forest resource utilisation; in turn it shattered the traditional system of forest resource use. Being a peripheral state of the British, the colonial foresters started the appropriation of Andaman forest produces for their trade with European and American countries.

²⁰⁵ *Census of India: Andaman and Nicobar Islands*, Vol. II by R.F. Lewis, Superintendent of Census Operations.

²⁰⁶ *Ibid.*

²⁰⁷ *Gazetteer*, pp.121-147.

The traditional flows of forest resources were limited in a small territory of one or two square miles of area, however, the colonial occupation led to the global level resource flows. The equilibrium in the human/nature relationship that existed in the pre-colonial period vanished with these commercial forest policies like, the deforestation, over exploitation of the forest produces, etc. They introduced a new system of forest management which aimed at the appropriation of maximum revenues. For this purpose, they created new plantation industries, forest reserves of better species of timber trees, and imported a large labour community etc. in addition to the convict labour in the Andaman penal settlement. From the initial stages of the development of forest department, they started the maximum exploitation of the forest produces through the leasing of these forests to the private agencies. The introduction of imported sawmills, Tramlines, etc. also resulted in the worsening condition of these forests. Thus, whether these forest policies were scientific or unscientific, they completely transformed the equilibrium that existed in the pre-colonial periods, and it ultimately led to cultural as well as the physiographic changes in the Andaman Islands. Next chapters discussing these kinds of changes which happened to these groups in the Andaman Islands with the establishment of penal settlement in general and forest department in particular. Changes that happened in the Andaman Islands and the associated pattern of forest resource use can be better studied only through the comparative understanding of those with the pre-colonial period. For this purpose, next chapter mainly discusses the structure of the traditional society in the Andaman forests and their associated pattern of forest resource use.

Human Adaptation to Environment and the Traditional pattern of Forest Resource Use in the Andamans

Introduction

The last quarter of 19th century marked an important watershed in the history of Andaman Islands. The creation of a government forest service in Andaman Islands in 1883 set in motion a programme to change systems of forest management. This forest department, partly staffed by personnel trained in Germany and France, systematically erected framework of resource use modeled along European lines. Laws restricting resource use were passed, silvicultural systems inaugurated and new approaches to forest utilization launched. There is a considerable body of historical literature on colonial forestry and the traditional systems of forest management in India. However, we don't have enough such literature regarding the Andaman Islands. The question on the traditional pattern of forest resources use in Andaman Islands is unaddressed. The changing paradigm of forest management with the colonization of these islands by the British, and the consequences of these changes in the environment and indigenous population would be better understand only through the analysis of indigenous pattern of forest resource use and through the management of forests. For addressing this kind of questions regarding a population, unaffected by the civilization, it is very important to understand their natural habitat, immediate environment and ecology.

What is Environment?

“Environment is a natural richness of diversity and inseparability of life, landscape and eco systems. Every region is a microcosm of these abundant traits of nature. Cultures are effects of human adaptation to this abundance of ecosystems. Each culture results from material processes of human appropriation of nature for survival. History of any culture, therefore, has to start with a delineation of its environment first”¹. In the immediate ecology of a tribal population, especially with a primitive social formation, the forests played a big role in the maintenance of the basic equilibrium of environment

¹ R Gurukkal and R Varrier (Gen. Eds.), *Cultural History of Kerala* Vol.1, Thiruvananthapuram, 1999, p.31.

and society. Forests rival oceans in their influence on the biosphere. They perform a variety of functions, such as stabilizing land, controlling flows of water, modulating local climate, providing the major reservoir of land bio-diversity, and supplying fiber and food for people. In fact, the forests play an essential role in the function of the biosphere as a whole². For most of the recorded history, forests have been recognized not only as a source of personal succor, even wealth, but also as a communal resource, a source of water, game, land, fuel and timber for all³.

Clearly, the evolving relationship between human society and the environment, with consequences for both environmental and social disequilibrium, is not an intrinsic property of modernity, industrialized or western societies alone⁴. A pre-industrial and non-western social formation did not, and certainly not by definition, represent an undisturbed equilibrium in either society or nature, or in the relationship between them⁵. At various stages, the environmental equilibrium was altered irreversibly, but the system had sufficient regenerative capacity to attain a new equilibrium at a different level, indeed to sustain larger populations at each stage⁶.

The tribal populations in the Andaman Islands clearly maintained such kind of equilibrium before and during the colonization of the British. A human settlement in an eco-system starts with its characteristic livelihood, technology and cultural expression when the habitat becomes the basis of its economic activities⁷. The human habitat gives rise to the geographical variation of the region. It is in this kind of region there dialects emerge as a strategy of communication among the members living in a life-situation. Often these dialectic communities of micro localities necessarily enter into relations with similar communities of other regions and this inter-mingling of communities, results in the formation of a larger entity with a common language,

² K Ramakrishna and G M Woodwell, (ed.), *World Forests for the Future: Their Use and Conservation*, Newhaven and London, 1993, p.xi.

³ Ibid, p. 1

⁴ D Raghunandan, 'Environment and Development Under Capitalist Globalisation', in *Social Scientist*, Vol.31, Nos.9-10, 2003, p.41.

⁵ Ibid.

⁶ Ibid.

⁷ R Gurukkal, R Varrier (Gen. Eds.), *Cultural History of Kerala Vol.1*, pp.157-8.

technology and culture including customs, manners, and belief systems⁸. This interaction with the immediate environment, in other words the human adaptation to the environment, resulted in the development of specific cultures according to the nature of their environment.

What is Mode of Resource Use?

Throughout the history of any society we can identify four distinct historical modes resource use. It includes Gathering, Nomadic Pastoralism, Settled cultivation and industrial mode⁹. The distinctive characteristics of each mode are: 1) Aspects of Technology, such as sources of energy, materials used, and the knowledge base relating to resource use; 2) Aspects of Economy, such as the special scale of resource flows and modes of resource acquisition; 3) Aspects of Social Organisations, such as the size of the social group, the division of labour, and mechanisms of control over access to resources; 4) Aspects of Ideology, including broad perceptions of the man-nature relationship, as well as specific practices promoting resource conservation or destruction; and 5) the nature of Ecological Impact itself¹⁰. Largest period of human history has been spent within the Gathering mode of resource use. In the gathering mode, societies depend mostly upon the human muscle power and wood fuel as source of energy, and on naturally available plants, animals and stones to fulfill their material requirements¹¹. Their knowledge base and the ability to store food and other materials are also very limited¹². The economy within this mode of resource use is based on resources which are acquired within a small area of a few hundred square kilometers¹³. The people comprising these societies subsist as nomadic bands; in the more productive and stable environments they exist as tribal groups confined to relatively small territories¹⁴. For the better understanding of any people whose pattern of resource use is based on the gathering mode these five elements are very important. Thus, each mode has its own separate aspects of economy, technology, social

⁸ Ibid.

⁹ M Gadgil, R Guha, *This Fissured Land: An Ecological History of India*, New Delhi, 1992, p.14.

¹⁰ Ibid.

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

organizations and ideology. The most important among them is the ecological impact. Basic structure of each mode itself is constructed according to their immediate environment and ecology. Each mode of resource use is varying according to the changes that occurred in the ecology of that particular terrain. The economy, the social organization, various institutions, ideology, technology, etc. are directly linked to the ecology of a terrain. In short in the making of the super structure of a society, that is the culture, the ecology or the immediate environment plays a great role. The mode of resource use among the indigenous people of the Andaman Islands can only be understood through the analysis of these aspects in details. In order to understand and situate the mode of resource use of the aforesaid society, one has to start with the landscapes and ecosystems of that particular territory.

Geographic Peculiarities

We have already discussed the basic physiographic peculiarities of Andaman forests in the second chapter in details. The group of islands is divided into the Great and Little Andaman, the former being sub divided into the North, Middle, and South Andaman, with the outlying islands of Landfall, Interview, Rutland, and the North and South Sentinel; the Archipelago, and Labyrinth Groups¹⁵. Most part of the great hills and valleys in these islands are covered by the dense tropical forests. Because of this same reason the forests played a major role in moulding the basic structure of Andaman culture and society.

Economy, Religion, Social Organisations etc., is depends greatly upon these forests. The most conspicuous geographical feature of these islands is a central range of mountain in the Great Andaman group, the highest point of which, Saddle Peak, reaches an elevation of about 2400 feet, with an escarped side towards the east, and a sloping declivity to the west¹⁶. On the east coast, as far south as Long Island, there is a great deficiency of water¹⁷. The mangrove is very abundant, inhabiting the low lying pestilential swamp between the hills, and giving shelter to the loveliest orchids.

¹⁵ M.V Portman, *A History of our Relations with the Andamanese* vol.1, India, 1899, p.1.

¹⁶ W W Hunter, *The Imperial Gazetteer of India*, Vol.1, p.281.

¹⁷ Ibid, p.282..

‘Everywhere a dense undergrowth renders the jungle impenetrable by man or beast, and innumerable creepers, stretching from tree to tree prevent the escape of malarious exhalations’¹⁸. The general character of the vegetation is Burmese, but there is also Malayan types no found on the adjacent continent. There is a remarkable absence of animal life in the islands¹⁹. Near Port Blair, south Andaman, the principal rocks are grey tertiary sand stone, in other parts, serpentine and indurated chloritic rock are seen. Traces of coal have been discovered in the rock but no seam²⁰. Coral reefs surround the islands on all sides; on the west they are continuous and extensive, and reefs occur 20 or 25 miles from the shore²¹. Climatically these islands have more or less been uniform since variation in elevation is small causing little influence on climate²².

As such the vegetation of these islands is mainly the function of the climatic or edaphic factors²³. The two main categories into which the forest can be divided are, one; where the forest is mostly a function of the edaphic factor, and two; where the climate is the controlling factor²⁴. These are: A) Edaphic pre-climax forests (influenced by site factor in addition to climate); 1. Tidal swamp forests (mangrove forests), 2. Littoral forests (beach forests), and 3. Andaman semi-evergreen forests; and B) Tropical climatic forests, which includes, 1. Andaman moist deciduous forests, 2. Andaman tropical evergreen forests, and 3. Giant evergreen forests²⁵. There are several key features of tropical rain ecology of the Andamans. They are having one of the most productive terrestrial ecosystems with very high gross and net primary productivity, they are extremely efficient at rapidly cycling most nutrients; and they having a great biomass²⁶. This features of the immediate surrounding helped the indigenous people to construct their mode of daily lively-hood strategies.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² U Kumar, S Biswas, ‘The Jarawa and their Habitat: A Man-Nature Relationship’, in

K. Mukhopadhyay, R.K Battacharya and B.N Sarkar (Ed.), *Jarawa Contact: Ours with them, Theirs with us*, Calcutta, 2002, p.58.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid., p58-9.

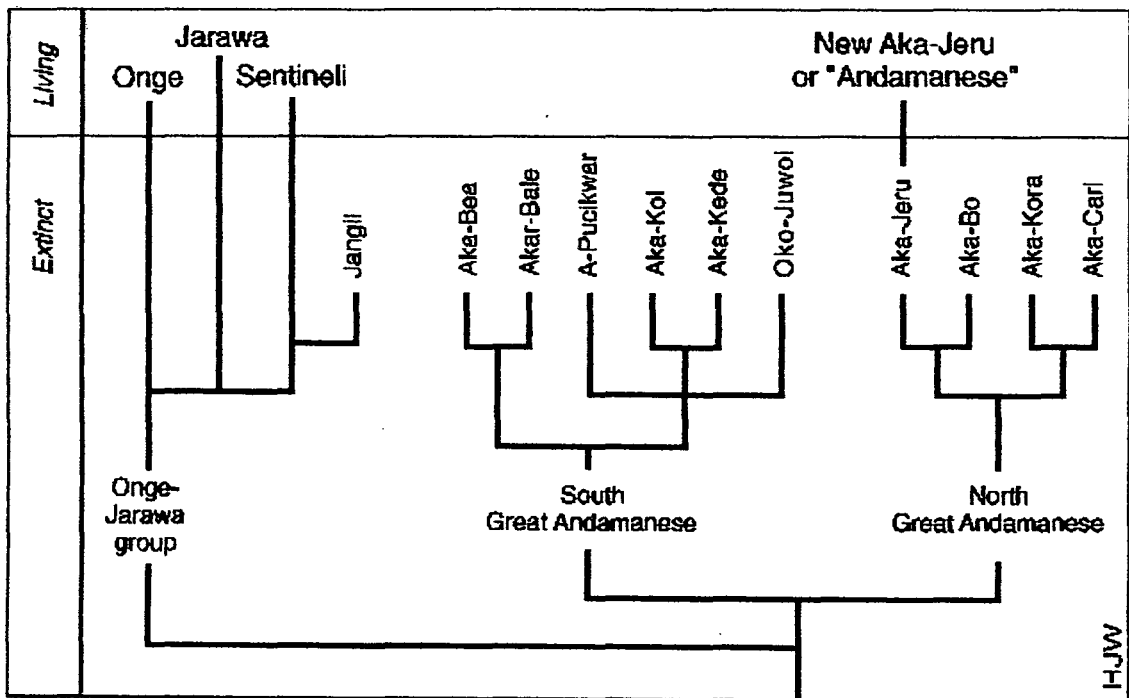
²⁶ Ibid.

Composition of Society

Before going into details of the traditional forest resource use of the Andaman islanders it is very important to understand the composition of the Andaman society. We don't have much evidence about the indigenous people of the Andaman Islands before the advent of the British colonizers in the 18th century. Strangely enough, in spite of their close proximity to India, a country with a glorious past, and their strategic position on the trade routes of India, Burma, and Far East, the condition of the inhabitants of these islands has not been in any way affected by the civilization of the east and the west till the eighteenth century. The Andamanese are a standing puzzle to ethnologists. The various tribe form one race of Negrito, speaking varieties of a single fundamental language²⁷. As we have already seen that there were different septs in a particular tribal group. The details of these septs are given in the Table 3.1.

Table 3.1

Composition of Andaman Indigenous Society



Source: *Andaman Association. Switzerland.*

²⁷ R C Temple, *The Imperial Gazetteer of India* Vol.5, published under the authority of his majesty's Secretary of State for India in Council, Clarendon Press, 1908, Portman M.V, *A History of our Relations with the Andamanese* vol.1, p.15.

According to Richard Temple, the safest thing to say about them is that they are probably the relics of a race now represented by themselves, the Tasmanians, Semangs²⁸ of Malay Peninsula, and the Aetas²⁹ of Philippines, which in very ancient times occupied the south eastern portion of the Asiatic continent and its outlying islands, before the eruption of the oldest of the peoples whose existence or traces can be now found there³⁰. Customs similar to those of the Andamanese are to be found among the people on the islands on the west of Torres straits, and possibly the Papuans and other Melanesian races are Negrito crossed with the Malayan or Polynesian type³¹.

Division of Tribe

An Andamanese belong to a family, which belongs to a sept, which belongs to a group of tribes or division of the race³². There are twelve tribes in three groups as follows: 1) the North Andaman Group of tribes, comprising, the *Chariar* Tribe, inhabiting the coast of the Northern half of the North Andaman, and the adjacent islands; The *Jeru* Tribe, inhabiting the interior, and the southern half of the coast of the North Andaman, and the Northern extremity of the Middle Andaman; and the *Kede* Tribe, inhabiting the northern half of the Middle Andaman, and interview Island; 2) The South Andaman Group of Tribes comprising the *Aka-Bea-da* Tribe, who inhabit the coast of Rutland Island; the coast and part of the interior of the South Andaman, the coast and most of the interior of the remaining portion of the South Andaman; Bluff and Spike islands; and the west coast of the Middle Andaman up to Flat island; *Akar-Bale* Tribe, who inhabit the archipelago islands; the *Puchikwar* Tribe, who inhabit all the country between Middle strait and Homefray strait; and the *Kol* Tribe, who inhabit the coast, and adjacent islands, and part of the interior, of the Middle Andaman, between Amitla-Ted and Parlob; and 3) the *Onge* group of Tribes, comprising the people who inhabit the whole of the little Andaman island; the people in the interior of Rutland island: the tribe in the interior of South Andaman, and the tribe on the North Sentinel island³³.

²⁸ An aboriginal tribe found in the interior in the forests of Malay Peninsula.

²⁹ An aboriginal tribe still found in the interior of Philippines.

³⁰ R C Temple, *The Imperial Gazetteer of India* Vol.5, 1908

³¹ Ibid.

³² Ibid.

³³ Portman, *A History of our Relations with the Andamanese* vol.1, p.21-2.

On the basis of the differences of language, customs, and weapons they used, the Andamanese are divided into three groups, namely, 'Yerewa Group', 'Bojigngiji Group', and the 'Onge-Jarawa Group'³⁴. The Yerewa group comprised of five septs namely, Aka-chariar (da), Aka-kora (da), Aka-tabo (da), Aka-tera (da), and Aka-kede (da); the Bojigngiji group comprised of five different septs namely, Oko-juwai (da), Aka-kol (da), Aka-bojigyab (da), Aka-balawa (da), and Aka-Bea (da); and the Onges and Jarawas have no sub-sections or septs³⁵.

All the tribes inhabit the great Andaman, except the Balawa of the Archipelago, the Onge of Little Andaman, and the Jarawa of the North Sentinel and parts of the South Andaman and Rutland Island³⁶. Most of these tribes were divided into a number of septs³⁷ or bands consisting of several families³⁸. All members of each band lived together in a beehive shaped community hut³⁹. The members of a community hut were grouped under a particular name⁴⁰. Each community hut performed a social unit⁴¹. Each group has certain salient features: the forms of the huts, bows and arrows, and canoes, of ornamentation, females' clothing, utensils, of tattooing, of language, being common generally to the group, but differing in details, and sometimes entirely from those of the other groups⁴². The North Sentinel island people are one tribe without a sub-division⁴³. The Jarawa tribes on the Rutland and interiors of the South Andaman are also regarded as one tribe. The Andamanese are also divided, irrespective of tribal divisions, into the 'Ar-yauto' or 'Coast-Dwellers' and 'Erem-taga' or 'Jungle-Dwellers'⁴⁴. The habits and capabilities of these two differ owing to their surroundings irrespective of their tribe⁴⁵. The Aryautos resides chiefly on the coast

³⁴ *Census of India-the Andaman and Nicobar Islands*, p.11, 1921.

³⁵ *Ibid.*

³⁶ R C Temple, *The Imperial Gazetteer of India* Vol.5, p.361.

³⁷ Sept is a kind of sub-division of a tribe. The members of a sept intermarry with members of another sept of the same tribe.

³⁸ K.S Sing, *People of India: Andaman and Nicobar Islands*, Calcutta, 1994, p.21.

³⁹ *Ibid.*

⁴⁰ *Ibid.*

⁴¹ *Ibid.*

⁴² R C Temple, *The Imperial Gazetteer of India* Vol.5, p.361.

⁴³ Portman, *A History of our Relations with the Andamanese* vol.1, p.25.

⁴⁴ Portman, vol.1, p. 25, and E H Man, *On the Aboriginal Inhabitants of the Andaman islands*, p. 34.

⁴⁵ L.P Mathur, *History of the Andaman and Nicobar islands, 1756-1966*, Delhi, 1968, p.20.

and obtain their food from the sea⁴⁶. They are expert in swimming and diving, fish shooting etc and possess a better knowledge of fishes and marine life⁴⁷. The Eramtagas are more expert at tracking through the jungle and pig hunting⁴⁸. They possess a better knowledge of the fauna and flora of these islands⁴⁹. According to an estimate population accounts there were 3500 Great Andamanese, 700 Onges, and 600 Jarawas in 1858⁵⁰. However from there we can see a great decline in their population during the following years under the British colonialism. By 1951, it decreased to mere 273 souls in all the tribal groups⁵¹.

Aspects of Economy and Technology

Agriculture is absolutely unknown to the indigenous population in the Andaman Islands⁵². Andaman indigenous societies' mostly depend upon the human muscle power and wood fuel as source of energy, and on naturally available plants, animals. The great objects of life are hunting for food and dancing at night⁵³. All other occupations and all industries arise out of the same the personal necessities of the people. They make their own weapons, bows and arrows, harpoons and spears, strings and nets of string, baskets and mats, unglazed circular cooking pots, bamboo baskets, and canoes hollowed out of tree trunks⁵⁴. Some very beautiful weaving of fibre was noticed in their village⁵⁵. Their canoes are also quite strong and sea-worthy. They have learnt the use of dahs, chisels and files and are keen to acquire these in lieu of their collections⁵⁶. The tassel of yellow fibre used by their women in front is quite artistic too⁵⁷. Their weapons are sufficiently murderous and the bow string made of

⁴⁶Portman, p.26 and E H Man, *On the Aboriginal Inhabitants of Andaman Islands*, p.34.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ B.N Sarkar and R. Sahani, 'A Demographic and Health Profile of The Jarawas of the Andaman islands', in K. Mukhopadyay, R.K Battacharya, and B.N Sarkar (ed.) *The Jarawa Contact*, Calcutta, 2002, p.133.

⁵¹ Ibid.

⁵² W W Hunter, *The Imperial Gazetteer of India*, Vol.1,1885.

⁵³ R C Temple, *The Imperial Gazetteer of India* Vol.5, p. 370.

⁵⁴ Ibid.

⁵⁵ *Census of India-the Andaman and Nicobar Islands*, vol.XVII, p.. XLVII, 1951.

⁵⁶ Ibid.

⁵⁷ Ibid.

fibre is quite strong and yet resilient⁵⁸. Among the few remaining industries of these indigenous people, the most important is the basket weaving⁵⁹. These baskets are invariably made from the best specimens of the common cane called 'pidga' which is similar to, if not identically the same as that ordinarily used by the mainstream Indian basket makers and chair makers⁶⁰. Though there are a variety of tribal groups the basic pattern of economic activities are almost the same. Their economy is based on hunting of the wild bores, turtle, wild cat, etc., and the gathering of turtle eggs, certain kinds of larvae, fruits, seeds, tubers, and honey⁶¹.

The utilitarian value of any object would probably be measured in terms of the prevalent social, economic, and religious concepts of that society⁶². The forest dwellers exploited mainly the jungle produce and, when available, the inland creek resources. The coastal group was naturally more adapted to fishing, hunting of turtle and dugong and collecting of molluscs⁶³. In short, the Andaman tribes have a broad spectrum economy⁶⁴. It involves collecting roots, tubers and fruits, hunting and fishing. This type of exploitation has the advantage of reducing any risk of resource paucity; if one resource fails there are other sources to fall back upon⁶⁵. The way in which the broad spectrum economy of the Andamans functions is largely depend on the natural distribution of resources and their density⁶⁶. The resource base of the Andamanese is inclusive of both terrestrial as well as aquatic resources.

At cognitive level they classify their resource base into five categories, namely, the sea shore, marshy area, plain land, forest area, and fresh water bodies and streams⁶⁷. It has been observed that "...the hunter-gatherer population all over the world seems to

⁵⁸ Ibid.

⁵⁹ E.H Man, *On the Aboriginal Inhabitants of the Andaman Islands*, p.163.

⁶⁰ Ibid.

⁶¹ L.P Mathur, *History of the Andaman and Nicobar islands, 1756-1966*, Delhi, p.25, 1968.

⁶² Z Cooper, *Archaeology and History: Early Settlement in the Andaman Islands*, New Delhi, 2002.

⁶³ P C Dutta, *The Great Andamanese- Past and Present*, Calcutta, 1978, p.39.

⁶⁴ U Kumar, S Biswas, 'The Jarawas and their Habitat- A Man-Nature Relationship', in *Jarawa Contact*, p.60-1.

⁶⁵ Ibid.

⁶⁶ Ibid.

⁶⁷ Ibid.

stabilize in numbers well below the carrying capacity of their land. In fact, the territories of most hunter-gatherers can support from three to five times as many people as they typically do. In the long run, it may be more adaptive for a group to keep its numbers low, rather than to expand indefinitely and then suddenly be cut down due to an unexpected disaster. The population density of hunter-gatherer groups rarely exceeds one person per square mile, a very low density, yet their resource could support greater numbers⁶⁸.

It is evident from the accounts of various writers, that for many years prior to the British occupation, the islands were visited by trading vessels manned by Malays, Burmese, and Chinese, who were said to traffic with these Andamanese for edible birds' nests, but it seems more than probable that they obtained their supplies without any assistance from the aborigines; their visits were moreover, in the later years attended with considerable risk, owing to the malpractices of some of the traders in kidnapping such of the race as they could entice on board their vessels, for the purpose of carrying them away into captivity⁶⁹. Even during the colonial period, with the exception of procuring turtles, shells, honey, bows, arrows, and a few other articles which were sold, for their own benefit, by the inmates of the Homes in and near the harbor, to visitors and residents at port Blair, the natives, attempted nothing in the way of trade, and this much was only done by dint of constant inducements being offered in the shape of presents of tobacco, files, etc⁷⁰. Property was communal, as was all the land, and ideas as to individual possessions were but rudimentary, accompanied with an incipient taboo of the property belong to a chief⁷¹.

The race except the Jarawas and the Onges is nomadic in character, having generally speaking no fixed dwellings⁷². Each tribe or sept is broken up in small parties or camps which roam about from place to place within their territories. These parties

⁶⁸ H William, *Anthropology*, New York, 1978, p. 365.

⁶⁹ E H Man, *On the Aboriginal Inhabitants of Andaman Islands*, 1883, p.118-19.

⁷⁰ Ibid.

⁷¹ R C Temple, *The Imperial Gazetteer of India*, Vol.5, p. 370.

⁷² Portman, Vol.1, p.40, and E H Man, *On the Aboriginal Inhabitants of Andaman Islands*, p.36.

erect rude huts or shelters for their accommodation at places where they make their temporary encampment⁷³.

So far the discussion has centred on some of the major external social and economic influences on the Andamans and their putative role in the determining inter-island and inter-regional patterns of interaction. In keeping with this theme, it would now be apposite to consider the modes of transport which enabled the Andaman islanders to travel from one island to another, and possibly farther than their own archipelago. Three types of watercraft are known to have been used by the islanders, namely the single outrigger canoe, the larger canoe without an outrigger, and the raft⁷⁴. The outrigger appears to have been the principal means of inter-island communication for the people of Great Andaman and Little Andaman. However the Jarawas do not use this kind of canoes. They use rafts of bamboos lashed together for crossing creeks and inlets. This mode of transport was apparently available to the Jarawas long before they were first seen using it by Colebrook⁷⁵.

Many colonial officers made serious attempts to study the kitchen-middens⁷⁶ in Andaman Islands. The most important among them were F.Stoliczka⁷⁷, L.Lapicque⁷⁸, E.H.Man⁷⁹, M.V.Portman⁸⁰, T.H Holland⁸¹, and A.R Radcliff Brown⁸². During 1870s

⁷³ Ibid.

⁷⁴ E H Man, *On the Aboriginal Inhabitants of Andaman Islands*(1883), New Delhi(Reprint),p.165, and Radcliffe-Brown, *The Andaman Islanders*, 1922, pp.485-92.

⁷⁵ R.H Colebrook, *On the Andaman Islands*, Calcutta, 1795, p.391.

⁷⁶ Kitchen-Middens: The Andamanese are a nomadic race. A small group of thirty to forty persons in its wanderings is in their habit of reaching a place at a part of a year and stay there for some time in the encampments. They frequent the same spot for forty or fifty days in a year. Empty shells, refuse of food and other waste materials are thrown at a fixed place with the result that huge accumulations of rubbish have been formed. According to Cipriani , many of these middens required a long period for their formation.

⁷⁷ F Stoliczka, *Note on the Kajokkenmoddings of the Andaman Islands*. Proceedings of the Asiatic Society, January 1870, pp. 13-23.

⁷⁸ L Lapicque, 'ethnographie des iles Andaman', *Bulletins de la Societe d'Anthropologie de Paris*, 3 May, 1894, p.367.

⁷⁹ Man, *The Aboriginal Inhabitants of the Andaman Islands*, Delhi, 1883.

⁸⁰ Portman, *A History of Our relations with the Andamanese*, Delhi 1899

⁸¹ T.H Holland, *Ancient Kitchen-Middens in the Andamans*, Records of the Geographical Survey of India, 31:41, pp.107-08.

⁸² R Brown, *Andaman Islands- A Social Study*, Illinois, 1922.

Stoliczka excavated the kitchen-midden site at Hope Town in South Andaman⁸³. The mound contained mollusc shells, bones of pig, fragments of pottery, and numerous stones of different size and shape along with some other artifacts like rude hatches, knives, and a typical arrow head⁸⁴. He also collected a trapezoid Celt made of sandstone, referred to as belonging to the Neolithic period⁸⁵. Their implements were quartz flakes chipped off, but never worked, *cyrena* valves and natural stones, never celts. Lately end of glass bottles and iron from the wrecks have been used in place of quartz flakes and *cyrena* valves. A very rude barter exists between the tribes of the same group in regard to articles not locally obtainable or manufactured⁸⁶. This applied particularly to cooking-pots, which are made of a special clay found only in certain part of the islands. They are moulded by hand, sun dried and half baked in the fire and are not glazed⁸⁷. The barter is really a gift of one article in expectation of another of assumed corresponding value in return, and disputes occur if it is not forthcoming⁸⁸. According to Man, they set no fixed value on their various properties, and rarely make or procure anything with the express object of disposing of it in barter⁸⁹. Apparently they prefer to regard their transactions as presentations, for their mode of negotiation is to give such objects as are desired by another in the hope of receiving in return something for which they have expressed a wish, it being tacitly understood that, unless otherwise mentioned beforehand, no present is to be accepted without an equivalent being rendered⁹⁰. All iron pointed weapons, tools, or shell ornaments are eagerly accepted by the Eram-taga in exchange for such things as are more easily procured by them than by the Ar-yauto: for instance, an adze would generally be considered worth two ordinary bows, or a bundle of wooden pointed arrows; or a man might undertake to make a canoe or bucket for one who would give him an adze⁹¹.

⁸³ F Stoliczka, *Note on the Kjoekenmoddings of the Andaman Islands*, Proceedings of the Asiatic Society, January, 1870.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Richard C Temple, *The Imperial Gazetteer of India* Vol.5, p. 370.

⁸⁷ Portman, vol.1, p.47.

⁸⁸ Richard C Temple, *The Imperial Gazetteer of India* Vol.5, p. 370.

⁸⁹ Man, E.H, *On the Aboriginal Inhabitants of the Andaman Islands*, p.120.

⁹⁰ Ibid.

⁹¹ Ibid.

Lapicque informed that the middens at Bamboo Hut near Port Blair were formed by the accumulations of shells, wild boar bones, a large number of pottery, grinding stones, sharpening stones, baking stones, arrowheads, flint points, glass splinters, etc⁹². He also notices the existence of huts under large common roof upon the debris. In conclusion he remarked that the stone industry of the Andamans was very rudimentary, and it was never developed⁹³. The only stone cutting implement known to them is the quartz flake. It is held between the fingers for shaving and tattooing⁹⁴. Stones found in the shape of anvils, hammers, and ovens are used in their natural shape. In classifying the tool, a purely descriptive system has been adopted. The collection is first classified into major tool classes, generally on the basis of function. The range of major classes that goes to constitute the industry includes blade, point, scraper, trapeze, and trapezoid, and the utilized flake⁹⁵. Wherever possible, these classes are further broken down into sub-classes. The flake category comprises both the utilized and unutilized groups. On the basis of typology and technique of manufacture involved, it can be said that the stone tools discovered from the kitchen-midden site at Beehive Island in the Middle Andaman truly represent a recent flake and blade industry was constituted by certain types of true microliths⁹⁶.

The weapons of the Andamanese are bow and arrow, harpoons, fish spear, and pig spear. The bow of the Jarawas, Onges and Sentinel islanders is a curved long bow while that of the remaining southern tribes is S shaped⁹⁷. This bow is identical with the bows used by the Semangs⁹⁸. The Jarawa bow though considerably longer, broader, and heavier is similar to the Onges, the only difference being that their bows have patterns marked on them, while the Onge bow has no special marking⁹⁹. There is no prescribed or uniform size for any mat, tool, weapon, or utensils, the dimensions of each and all being dependent on the will of the maker, and on the material at his

⁹² L Lapicque, 'ethnographie des îles Andaman', *Bullettins de la Societe d'Anthropologie de Paris*, 3 May, 1894, p.367.

⁹³ *Ibid.*, p.371.

⁹⁴ *Census of India-Andaman and Nicobar Islands*, 1901, p.66.

⁹⁵ P C Dutta, *The Great Andamanese: Past and Present*, Calcutta, 1978, p.28.

⁹⁶ *Ibid.*, p.32.

⁹⁷ *Census of India- Andaman and Nicobar Islands*, 1931, p.9.

⁹⁸ *Ibid.*

⁹⁹ *Ibid.*

disposal¹⁰⁰. No tallies are kept of numbers of articles, nor are counters such as seeds, stones, etc., employed in counting¹⁰¹.

Role of specialization in hunting may be quantitative, with some individuals or groups of individuals taking more game than others¹⁰². It also may be qualitative, where some individuals may hunt more animals than others due to differences in the tactics that they follow or in the categories of animals they pursue¹⁰³. It may be noted that the contribution of females in procuring animal food is less in comparison to that of males, but is not altogether absent¹⁰⁴. The females may not hunt wild pigs, but they have access to small games like, snails, molluscs, and monitor lizards. Much of the qualitative differences between males and females are due to the fact that females do not use bow and arrow while procuring animal food¹⁰⁵. Thus, the society as a whole was characterized by an insular structure which was, however, versatile enough to permit the introduction of certain objects such as canoe and pottery, though probably through widely different channels of communication and at different periods in the course of history¹⁰⁶.

Aspects of Social Organisation and Ideology

The classical way of conceiving the hunting-gathering people to be completely dependent on non-domesticated plants and animals and having simple, egalitarian social systems have been questioned in recent years¹⁰⁷. We now know of hunter-gatherers like the Birhors or the Kadars having trade relations with farmers. We also know that some of them like the Northwest coast Indians of the coastal and islands areas of western Canada and Southern Alaska have rather complex social arrangements. The major reason behind their deviation from the classical model was,

¹⁰⁰ Man, *On the Aboriginal Inhabitants of Andaman Islands*, p.116.

¹⁰¹ Ibid.

¹⁰² U Kumar and S Biswas, 'The Jarawa and their Habitat', in *the Jarawa Contact*, p.64-5.

¹⁰³ Ibid.

¹⁰⁴ Ibid.

¹⁰⁵ Ibid.

¹⁰⁶ Z Cooper, *Archaeology and History: Early Settlements in the Andaman Islands*, p.29.

¹⁰⁷ S Roy, 'Ethnographic Notes on the Jarawas' in *Jarawa Contact*, p. 195.

they were not as isolated as they were thought to be¹⁰⁸. In the case of the Andamanese the case was entirely different. As we have seen in the earlier chapters that, they did not have much with contacts with the mainland India and Burma, though they were situated very near to these regions; and maintained a separate and isolated identity. Because of the same reason, their social organizations and ideologies were also different from the mainland India and other neighborhood regions.

An Andamanese belong to a family, which belongs to a sept, which belongs to a tribe, which belongs to a group of tribes or divisions of the race¹⁰⁹. Their organisation has almost a political tint¹¹⁰. The investigators reinforce the previous theory that organisation of a society is on a septal basis, with clear cut boundaries for hunting ground for each sept near their location¹¹¹. The model envisages that men of a band form a political core; they spend their lives hunting in the territory where they grow up. Band or sept based social organisation is prevalent among the Andamanese¹¹². Members of the band are related by blood or by marriage and their number may vary from twenty to thirty. The nucleus of the band consists of a number of families¹¹³.

The Andamanese were on friendly relations with each other as follows: most friendly within their family; friendly within their septs; fairly friendly within their tribes; on terms of courtesy with the members of other tribes of the same group, if known; hostile to the tribes within their own group whom they do not know, and to all other Andamanese, and to all strangers¹¹⁴. The social organisation did not require relationships to be maintained between groups that lived more than 100km apart¹¹⁵. Among the Andamanese the social unit is the family. They move in family groups to places where game and fish are easiest to obtain. These family groups generally remain isolated in the territories of their particular sept. This isolation, however, did

¹⁰⁸ Ibid.

¹⁰⁹ R C Temple, *The Imperial Gazetteer of India* Vol.5, p. 360.

¹¹⁰ *Census of India-the Andaman and Nicobar Islands*, vol.XVII, p.. XLVII, 1951.

¹¹¹ Ibid.

¹¹² S Roy, 'Ethnographic Notes on the Jarawas' in *Jarawa Contact*, p. 195.

¹¹³ Ibid.

¹¹⁴ Portman, Vol.I, p.26-7.

¹¹⁵ R Brown, *The Andaman Islanders*, Cambridge,1922, p. 23.

not result in their having distinct customs and manners. Only the Onges and the Jarawas have somewhat different customs and manners. The basis of the family system among the Andamanese is the patriarchal system¹¹⁶. The septism verging almost on political nationalism probably led them slowly along the path of annihilation¹¹⁷. Some septs have most certainly vanished for want of food within their limited zone¹¹⁸. The sympathy and antipathies exhibited by the Andamanese are strictly primitive and are governed by hereditary. Even two septs of the same tribe fought with each other on occasions. Similarly Ar-yauto and Eram-taga of one tribe did not mix much¹¹⁹. However, these inter tribal relations have undergone considerable modification through the influence of the 'Andaman Homes' established by the British Government where members of different groups met on common ground¹²⁰.

About the Government Portman says that "Every man is a law unto himself in general, but elders of the tribe have a certain authority, and one man is chosen, either from temper, combined with prowess in hunting or fighting, or else from superior intelligence, as Head of the sept". He grows to this position gradually, and there is no election or formality. The headman certainly is respected but did not seem to hold much authority-the community seemed to be quite democratic and economy communistic¹²¹. The existence of community huts, communal canoes, common fire, etc., points to this¹²². The Andamanese are not fond of obeying other persons, and only band together and obey one Elder when it is manifestly to their interests to do so¹²³.

Among the Andamanese the relation between the sexes are unrestricted before the marriage. As a rule among the tribes of Great Andamanese marriages are contracted at

¹¹⁶ L.P Mathur, *History of the Andaman and Nicobar Islands*, p.30.

¹¹⁷ *Census of India-the Andaman and Nicobar Islands*, vol.XVII, p.. XLVII, 1951.

¹¹⁸ Ibid.

¹¹⁹ L.P Mathur, *History of the Andaman and Nicobar Islands*, p.30.

¹²⁰ Portman, Vol.1, p.26-7.

¹²¹ *Census of India-the Andaman and Nicobar Islands*, vol.XVII, p.. XLVII, 1951.

¹²² Ibid.

¹²³ Mathur, L.P, *History of the Andaman and Nicobar Islands*, p.25.

the age of twenty five by men¹²⁴. But among the Onges they marry while very young, the girls being ten or eleven years and not even developed¹²⁵. The religion is animism, and consists in fear of the evil spirits of the wood, the sea, disease, and ancestors, and in avoidance of acts traditionally displeasing them¹²⁶. There is neither ceremonial worship nor propitiation¹²⁷. According to Portman, the andamanese believe in one God who resides in heaven above, was the cause of the existence of every body and every thing, directly or indirectly, and is somewhat an anthropomorphic conception, having passions likes and dislikes, etc¹²⁸. There is no love for this deity, and the acts displeasing to him are connected with the products of the jungle, etc., and do not affect the relations of the Andamanese towards each other¹²⁹.

Conclusion

One can perceive the fact that the indigenous people in the Andaman Islands attached so close to their immediate environment. This pre-colonial situation gradually changed with the introduction of the Forest Department. The clearance of land for settlements and the loss of forests to logging have had a direct impact on the indigenous people. They have been driven away from what was their prime and preferred habitat and have been forced to move deeper into the forest. With excessive poaching of their food sources like the wild pig, survival became excessively difficult for them. Whole of these forest policies led to the emergence of stiff resistance from the indigenous people. Though the British officials were successful in making friendly relationship with the majority of these groups, some tribes like the Jarawas and the Onges were continued their attacks against the British.

¹²⁴ *Census of India-the Andaman and Nicobar Islands*, 1911, p.84.

¹²⁵ *Census of India-the Andaman and Nicobar Islands*, 1931, p.10.

¹²⁶ Richard C Temple, p.363.

¹²⁷ *Census of India-the Andaman and Nicobar Islands*, vol.XVII, p.. XLVII, 1951.

¹²⁸ Portman, Vol.1, p.44.

¹²⁹ *Ibid.*

THE STRUGGLE FOR EXISTENCE: AN ANALYSIS OF THE ANDAMANESE' RESISTANCE TO THE BRITISH COLONISATION

Introduction

From the very beginning of their occupation, the British faced stiff ferocity from the indigenous inhabitants of these islands. The experiences of the persons who visited in these shores during the interregnum were also not pleasant. The Andamanese resisted the intrusion of the foreigners on their land. The arrival of the large number of convicts in 1858 in the Andaman penal settlement posed a serious problem for the British authorities. The Court of Directors advised the Government of India to take all possible precautions for protecting the aboriginal inhabitants of the Andamans from collisions with the convicts which in their opinion, would most probably be provoked on both sides and which once commenced was likely to end in the extermination of the weaker race¹. Though the British were very much successful in making friendship relations with majority of the indigenous population, through 'Gift-dropping' and through the notorious 'Andaman Homes', the Jarawa tribe of the South and Middle Andamans and some of the Onge Community became a nightmare to the newcomers.

As we have seen there were twelve tribes of the Andamanese, of which two retained their tribal independence, the Onges, who were half tames and live on Rutland and Little Andaman Islands². The second tribes were the hostile Jarawas. They occupied the north western portion of the south Andaman, about 10 square miles of Baratang Island and the whole of the North Sentinal Island. Nearly every year they killed two or three convicts³. We have only a very limited literature on the Andaman Islands before the coming of the British to these islands. The existing pre-colonial accounts, most of these are in the form of travelogues, are also recorded the ferocious nature of the indigenous people of these islands.

¹ Home Department, Public Branch, No.88, August 6, 1858, NAI, New Delhi.

² Simla Records, Home Department, Port Blair A, No.32, October 1914, NAI, New Delhi.
(*Improvement of the position of the Andamanese; Extract from Sir. Reginald Craddock's note of inspection on the Andamans*)

³ Ibid.

The early reports prove that the Andaman Islanders were invariably the helpless victims of their neighbors in Malaysia, Burma and the Nicobars⁴. The nests of some birds in these islands constitute a popular culinary delicacy among the Chinese and many other peoples of South-East Asia. In addition, the coasts of the Andamans abound in sea slugs which are regarded as a valuable food item, though not among the local inhabitants⁵. These resources have always attracted numerous Malays, Burmese, and Chinese⁶. The Malays had a relation with the Andamanese from the time immemorial. They captured the inhabitants of these islands as slaves and had a brisk slave trade with the outside world⁷. Portman reported the presence of Andamanese slaves at the Court of Siam until a recent date⁸. He guessed, such slaves were also present at the other courts in India, Burma and Malay Peninsula. When Portman visited Penang with thirteen Andamanese in 1885, the Malays almost mobbed him in the streets. They were asking their friends to come and see the *Handumans*⁹. The implacable hostility of the Andaman Islanders towards all foreigners was the inevitable outcome of their being constantly preyed upon by Malay, Burmese, Chinese and European pirates to satisfy the demands of the slave market¹⁰.

Nature of Resistance

During their first occupation of the islands in the eighteenth century by the British, Andamanese resisted their intrusion continuously. "From the very commencement of the new settlement serious difficulties had to be contended with the consequence of the harassing attacks on the working parties by the aborigines, whose cupidity was excited by the iron tools and other implements which in their eyes presented an appearance of adaptability as weapons of the chase; the Government gardens they likewise freely robbed, until at length stern repressive measures had to be adopted where by they were introduced for the first time in the laws of private property"¹¹.

⁴ Z Cooper, *Archaeology and History: Early Settlements in the Andaman Islands*, Delhi, 2002, p.17.

⁵ Ibid.

⁶ Ibid.

⁷ L.P Mathur, *History of Andaman and Nicobar Islands 1756-1966*, Delhi, 1968.

⁸ M.V Portman, *History of Our relationship with the Andamanese*, Vol.1, 1899, p.117.

⁹ Ibid, p.19.

¹⁰ Z Cooper, *Archaeology and History: Early Settlements in the Andaman Islands*, Delhi, 2002, p.15.

¹¹ E H Man, *On the Aboriginal Inhabitants of the Andaman Islands*, 1883, p. xviii.

The aborigines were at first very hostile to the settlers, but as time went on friendly relations were gradually established with ten out of twelve tribes¹². With one tribe only on Great Andaman to which the British failed to come to an understanding: the Jarawas, who occupy the forests on the Northern and Western outskirts of the settlement, are to this day as fiercely hostile as were their ancestors of the eighteenth century¹³. With the Onges of Little Andaman, owing to their isolated position the British had come less in contact, and for many years their attitude was somewhat uncertain; but on the whole they may be considered as friendly, or at any rate not actively hostile¹⁴. It was only the Jarawas, who zealously and ferociously fought a lonely battle to keep their independence and identity, consciously rejecting all offers of appeasement with the shattering impact of iron tipped arrows¹⁵. During the British era the battles continued- many of which were deadly and bloody. However the early years of the colonial rule, particularly during the first settlement from 1789 to 1796, the relationship between the colonizers and the Jarawas was not marked by hostility, but rather by indifference¹⁶.

The relationship came to be characterised by hostility during the settlement when the British tried to tame the Jarawas by force and with the help of the Great Andamanese¹⁷. The punitive expeditions of later years further worsened the situation. During that period the British authorities raided the territory of the Jarawas, brutally killed many of them, damaged their huts, and looted their belongings with the help of armed Great Andamanese men¹⁸. For their hostility towards outsiders, some of the indigenous people had to pay a very heavy dividend. Because of their hostility a large number of the Great Andamanese died during the earlier part of the British occupation of the

¹² *Census of India-The Andaman and Nicobar Islands*, Vol.II, p.11, 1922.

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ U Mishra, 'the Jarawas: Contact and Conflict', in K.Mukhopadhyay, R.K. Battacharya and B.N. Sarkar (Eds.), *Jarawa Contact: Ours with them/Theirs with us*, Calcutta, 2002, p.14.

¹⁶ S Chakraborty and A Dinda, 'The Jarawas and their Neighbours: The Post-Independence Scenario', in *Jarawa Contact*, p.43.

¹⁷ *Ibid.*

¹⁸ *Census of India*, 1961, vol.XVII, part IV, 223-243.

islands¹⁹. In the battle of Aberdeen in May 1859 a large number of these people laid down their lives against the British bullets²⁰. The first unprovoked attack of the Andamanese on the settlers occurred on June 9, 1858²¹. On that day large party of Andamanese armed with bows suddenly attacked on an unarmed party of sailors²². In this skirmish there was no casualty among the sailors. In their first organized attack on the settlement on April 6, 1858, about 200 armed aborigines suddenly showered arrows on 248 convicts employed in clearing the wood. Three convicts were killed on the spot and one expired subsequently of wounds. Besides, six convicts were wounded. The attacking party plundered the tools, cloth and cooking utensils of the convicts²³. Consequently on April 14th, 1859, a party consisting of 1500 persons armed with axes, knives, harpoons, bows and arrows attacked the settlement²⁴. This time the convicts, who were outnumbered to a great extent, were completely bewildered. Fortunately for them, the Andamanese did not attack anyone with a mark of imprisonment viz. iron ring round the ankle, but made the gunman convicts, who did not wear any ring and were distinguished by their red turban, brass badge and coloured belt, their main targets²⁵. In this attack three convicts died and six were severely injured.

The saddest chapter in these attacks was the battle of Aberdeen. Dr. J.P Walker, the then superintendent received an advance information about the next big attack of the Andamanese on Aberdeen on May 1859 a few hours before the occurrence of the event from two escaped convicts named Dudhnath Tewari and Sadloo who had escaped from Ross Island on April 23rd 1858, with ninety other convicts. In this fight, none of the convicts was wounded but several members of the attacking party were supposed to have been killed and seriously injured²⁶. The raids of the Jarawas on the settlement had been almost continuous from 1872 to 1902. A list of these is given in the Census report of 1901(p.53) from which we quote the following summary: "They have

¹⁹ M K Raha, 'The Tribes of Andamans: Their Struggle for Existence', *Asian Studies*, Vol. XIX, January-June, 2001, p.60.

²⁰ Ibid.

²¹ Home Department, Judicial Branch, No.26, 29th July, 1859 NAI, New Delhi.

²² Ibid.

²³ Home Department, Judicial Branch, No.32, 29 July 1859, NAI, New Delhi.

²⁴ Ibid.

²⁵ Portman, Vol.1, p.278.

²⁶ Home Department, Judicial Branch, No.34, 29 July, 1859, NAI, New Delhi.

attacked convicts usually at their work on 20 occasions and friendly andamanese camp on 12 occasions. That is they have made thirty-two attacks in 30 years. In these attacks 27 convicts and 4 Andamanese have been killed; 7 convicts, 2 police constables and 5 Andamanese have been wounded. In counter expeditions and searches for the raiders 3 Jarawas have been killed, 9 wounded and 20 captured. Of the captured 18 have been released in a short time and 2 have died. It will be seen thus that the hostility of the tribe is towards all strangers, including their own people, and that the policy of capture, kindness in captivity, and release with presents has not up to date borne any good fruit whatever"²⁷.

During 1897-98 three self supporters of the village of Cadellganj were missing, apparently having been captured by the Jarawas²⁸. The very next year, the tribe of Jarawas in the North of the settlement gave a little trouble by attacking a ration canoe, wounding a convict slightly and hitting a policeman on the 9th September 1878; wounding a self supporting convict on 14th January 1899; and, wounding a self supporting convict on 3rd March 1899²⁹. Andamanese parties sent to capture them were unsuccessful. On the 26th May, an encounter took place between three friendly aborigines and four Jarawas on the mainland opposite to Kyd Island and on the fourth September small parties of the Home inmates with a convict petty convict officer were attacked by six Jarawas, who wounded the petty officer³⁰. At the representation of the superintendent the government of India is the Home department sanctioned the annual issue, up to a limit of 35000 rounds, of blank ammunition for the purpose of scaring away the hostile Jarawas, and the superintendent was asked to submit a periodical report as to the result of the measure³¹. The marauding parties of Jarawas, that almost every cold season raided the outskirts of the penal settlement, raided in November 1901 and January 1902, the forest department gangs working at Jatang, about 25 miles North of Port Blair, killing and wounding convicts at their work³². A party was

²⁷ *Census of India-The Andaman and Nicobar Islands*, p.53, 1901.

²⁸ Home Department, Port Blair A, No.32, October, 1914 NAI, New Delhi.

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ *Ibid.*

³² *Ibid.*

therefore organized to try and discover their haunts in the jungle and to put a stop to further raiding, but on a somewhat larger scale than usual, as the two last raids appeared to be more purposeful than before. The officials detailed for the duty were Mr. P.Vaux, 7th Assistant Superintendent and officer in charge of the Andamanese Mr. Bonig, Assistant Harbor Master and Mr. C.G Rogers, Deputy Conservator of forests, accompanied by certain police man and picked Andamanese trackers. The expedition resulted unfortunately, in the death of Mr.Vaux, but, they were nevertheless, successful as they effectively taught the tribe that the Port Blair authorities could go anywhere in to their territory if they chose and that raiding would not be any longer allowed to go unpunished³³. They showed further that the attacks of the Jarawas were not due to chance collision in the jungle but were the outcome of deliberate attempt to steal iron for their spears, arrows, and adzes³⁴.

It was of interest to note that the Jarawas were on the whole a larger, stronger and more intelligent people than the coast tribe³⁵. Some of the self supporter convicts were attacked by a Jarawa in 1904 which resulted in wounding one of them. A pursuit party in which some Onges joined was sent out but the Jarawas who were closely followed escaped; their huts were burnt³⁶.

The necessity of employing 'Forest Bush Police' is peculiar to Andamans, and the members of this force were only drawn from Burman convicts and ex-convicts³⁷. A Bush Police was formed of friendly Andamanese in October 1905 with a Burma settlement Jamedar in general charge, which consisted twenty Andamanese and one run away convict³⁸. The candidates selected were given one month's training in the use of fire arms by the commandant military police, after which they are posted to the

³³ Ibid.

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid.

³⁷ Department of Education, Health and Lands, File No.56-3/35-F, Serial No. 1-3, Part A, 1935 NAI, New Delhi.

³⁸ Home Department, Port Blair A, No.32, October, 1914 NAI, New Delhi.

Department for duty³⁹. They were armed with 12 Bore S.B.B.L Shot Guns and posted in parties of about 6 to each camp depending on the number of elephants employed⁴⁰. While it would appear prima facie to be unwise to entrust undisciplined convicts and ex-convicts with fire arms and depend upon such persons, they were employed for the safety and protection of the labour working in Jarawa country⁴¹. They were usually stationed at Port Blair Home to be ready at short notice to hunt run away convicts or any Jarawas who might molest convicts in their outskirts of the settlement⁴². In October 1905 a runaway convict was attacked by Jarawas at Jarakatag; Captain Bousfield and Mr. Bonig accompanied by a party of police and Andamanese proceeded to investigate matters but were unsuccessful in catching the Jarawas. During 1908-09 the Jarawas made two attacks on the convicts killing three of them; a party of Andamanese in company with a party of police was sent out after the Jarawas but did not come across them. Orders were issued forbidding the employment of convict, except under police escort, at distances from the settlement and in proximity to the Jarawa country. The Jarawas were more hostile during 1909-10 than ever before. On six different occasions they delivered attacks in the course of which they killed four convicts and one police man and wounded three convicts and one policeman. A punitive police expedition was organized and dispatched after these tribes just before the close of the year. The party returned after the close of the year and although it failed to capture any of them. However, their country had been traversed from end to end, all their haunts visited and many communal huts destroyed⁴³. The very next year they killed three self supporter convicts at Templeganj Village, who had wandered far in to the jungle to collect thatching leaves and bamboos. They killed two self supporter convicts of Herbertabad Village while collecting thatching materials in the neighboring jungle during 1913. In 1917, a number of very daring raids took place by the Jarawas, in one of which, a train on the Goplakabang steam tram line was held up. The punitive expedition undertaken in the spring of 1918 was not an unqualified success, and effect did not last long, and

³⁹ Department of Education, Health and Lands, File No.56-3/35-F, Serial No. 1-3, Part A, 1935 NAI, New Delhi.

⁴⁰ Ibid.

⁴¹ Ibid.

⁴² Home Department, Port Blair A, No.32, October, 1914, NAI, New Delhi.

⁴³ *Census of India-The Andaman and Nicobar Islands*, 1911.

by the winter of 1920 the Jarawas were as active as ever. On one occasion they attacked a camp of convicts employed on collecting canes in a part of the country which had always been looked upon as well outside the territorial limits of the tribe. On this occasion they killed no less than five men, and wounded three others⁴⁴. The cane field consisting of 22 convicts, and two petty officers were cooking food and preparatory to starting out for the day's work on Saturday, October 30, at Chilan-jai, were attacked by a party of men without any warning, estimated by the convicts at twelve in number⁴⁵. Two of the convicts never moved, and the third managed to run about ten yards and then dropped dead. In the meantime the rest of the convicts fled, though five of them were wounded before they finally escaped. Their assailants looted the place and cleared off with all the iron and, good deal of clothes, blankets, etc⁴⁶. The punitive expeditions against the Jarawas were carried out by the party under Mr. Morgan⁴⁷. They came across more than twenty Jarawa villages. Each village had between seven and fifteen huts. Each of the two communal huts was destroyed by this party, which was capable of holding hundred persons⁴⁸.

In the case of the Onges, the septs located on the Rutland, and in the North and Little Andaman, has been fairly continuous touch with the 'civilization'⁴⁹. The attitude of the other septs towards strangers is still a little uncertain. At the time of the Census of 1911, Messrs. Bonig and Faucett toured these islands and were received everywhere without a trace of hostility⁵⁰. These islands had not been visited from the settlement since 1911, and the only contact between Onges of South and outside world occurred in 1918 when a Chinese junk, trading between Penang and Nicobars was blown out of its course and fetched up at Little Andaman⁵¹. There, according to the Chinese they were wantonly attacked by the aboriginals. That they were attacked there is little doubt

⁴⁴ *Census of India-The Andaman and Nicobar Islands*, Vol. II, p.5, 1921.

⁴⁵ *Extract from Mr. Field's report on the Jarawa raid on the cane field at Chilan-jai*, appendix I of *Census of India*, 1921.

⁴⁶ *Ibid.*

⁴⁷ *Extract from Mr. Morgan's report on the expedition against the Jarawas*, in Appendix H of *Census of India*, 1921.

⁴⁸ *Ibid.*

⁴⁹ *Census of India-The Andaman and Nicobar Islands*, Vol. II, pp.2-3, 1921.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*

as they brought away a number of arrows fired into the ship, one of which wounded the master in the neck; but whether the attack was really unprovoked, and by which sept it was carried out it was impossible to prove⁵².

There is no doubt that these attacks were to plunder the implements and tools of the Settlers. Perhaps their main aim in plundering these implements was to prevent the colonisers from making rapid progress in the work of clearing the jungles⁵³. This view was confirmed by Portman on the basis of his talks with a few Andamanese who took part in these struggles⁵⁴.

Results of the Contacts with 'Civilization' in the Indigenous population

The Census Report of 1931 shows that the most striking feature of these islands are a huge decrease in the indigenous tribal population during the colonial period. According to the same, the total indigenous population in the Andaman Islands during 1858 was 4800. Within the span of 30 years, by 1888, the population decreased to 70 percentage of the total population. For more details, see the Table 4.1. At each successive Census of this country had a total decrease over 75 per cent. since 1901 alone⁵⁵. By 1951, the total population of the indigenous Negretos decreased up to merely 273 souls, a terrific decrease from 4800 in 1858 to 273 in 1951. The Census Superintendent in his report is content to damn with faint praise the policy of 'civilizing' the aborigines and the institution of 'Andaman Homes' resulted in the space of seven decades a greater curtailment of human life than the Andamanese themselves are likely to have affected by their more direct methods as in many centuries⁵⁶. One can see the fact that these 'civilizing' missions greatly affected the Great Andamanese than others in these groups of archipelago. The Population decrease among the Great Andamanese when compared to others proves this. The approximate population of these groups in 1858 was around 3500. However, by the beginning of 1951, in the span of a hundred years, it terribly decreased to 23 souls.

⁵² Ibid.

⁵³ Portman, Vol.1, p.278.

⁵⁴ Ibid.

⁵⁵ *Census of India*, 1931, pp.11-12.

⁵⁶ Ibid.

However, Dutta pointed out that the overall population of the Negritos in the Andaman Islands in 1779 was around 10000, which sharply declined to less than half of it by 1858⁵⁷. In 1858, it is roughly estimated that the existence of 6000 souls in the Great Andamanese tribal group and 2000 souls in the Little Andaman⁵⁸. It means the total population of these groups was approximately around 8000 in 1858. This figure dwindled to 1882(viz. 1036 males and 846 females) at the Census of 1901 and to 1317(628 males and 689 females) at that of 1911⁵⁹. The Great Andamanese have decreased to only 23 in 1951⁶⁰.

Table 4.1

Population Figures of the Andaman Negritos During 1858-1951					
	Andaman Tribal Groups				
Census Year	Great Andamanese	Onge	Jarawa	Sentinelese	Total
1858	3500	700	600	---	4800
1888	2000	---	1250	117	3367
1901	625	672	468	117	1882
1911	455	631	114	117	1317
1921	209	346	114	117	786
1931	90	250	70	50	460
1951	23	150	50	50	273

Source: *Jarawa Contact: Ours With Them/ Theirs with Us*, Anthropological Survey of India, Calcutta p. 133.

According to Richard Temple, the estimated population of the Jarawas in 1901 was around 600, and it decreased tremendously as around 273 by 1951⁶¹ (Table 4.1). Immediately after the establishment of the settlement in Port Blair, efforts were made

⁵⁷ P.C Dutta, *The Great Andamanese: Past and Present*, Anthropological Survey of India, Calcutta, 1974.

⁵⁸ Home Department, Port Blair A, No.32, October, 1914 NAI, New Delhi.

⁵⁹ Ibid.

⁶⁰ *Census of India-The Andaman and Nicobar Islands*, Vol. XVII, p. x, 1951.

⁶¹ Ibid.

by the Government with a view to the civilization of the race and the establishment of a better understanding between the Government and the original possessors of the soil. They were very eager to make friendly relations with the Andamanese. The primary objective behind this was to save the mariners of the wrecked ship from the massacre at the hands of aborigines; secondly, it was necessary to protect the settlers at Port Blair from the attack of the Andamanese in order to maintain progress in the settlement; and, thirdly, the British government wanted to bring the Andamanese, who had become British subjects from the low scales of civilization to the comforts and advantages of the civilized life⁶².

The British sought to achieve these objectives through the establishment of the notorious 'Andaman Homes'. Homes were erected in the vicinity of the harbor, where all who needed could obtain protection, shelter, food, and medicine⁶³. The practice of dropping presents on the shores ultimately led to the visiting of these friendly inhabitants to the Homes. Most of the inhabitants of these Homes belonged to the Yerewa and Bojigngiji group of Andaman tribes. They were quite friendly and between one and two hundred of them were domiciled in the three Homes at Dundas point, Balaghat, and Duratang⁶⁴. The average number of the friendly indigenous population in the Homes per year at Haddo, Dundas Point, Aberdeen, Tarachang, Goplakabang, and Daratang, during the years between 1894 and 1914 was 156.15⁶⁵. E.H. Man states that this step of reclaiming the savages from their barbarous custom of murdering all strangers who appeared in their shores effected a marked improvement in relation with the tribes in South Andaman. Dr. Day has stated, "The convicts are left unmolested, the implements of agriculture are not stolen, the fishing stakes are left undisturbed, the gardens are no longer pillaged, runaway convicts have been recaptured, and the ship wrecked sailors assisted"⁶⁶. The Homes had a good bringing together members of various tribes, between whom the way has thus been paved for inter marriages, which were of course formerly of rare occurrence. On the 22nd January

⁶² Home Department, Judicial Branch, O.C.No. 10, 6 July, 1858 NAI, New Delhi.

⁶³ Man, *On the Aboriginal Inhabitants of Andaman Islands*, p. xviii.

⁶⁴ Home Department, Port Blair A, No. 32, October 1914 NAI, New Delhi.

⁶⁵ Ibid.

⁶⁶ Man, *On the Aboriginal Inhabitants of Andaman Islands*, p. xviii

1896 the officer in charge of the Andamanese accompanied the chief commissioner to Calcutta and took with him 16 Andamanese; they were lodged as usual in Spencer's Hotel, were shown sights and shops and entertained at garden parties; they returned to Port Blair on the 12 February after having enjoyed their visit⁶⁷.

However, we have now clear evidences of the extermination of this community. Von Eickstedt, a German anthropologist who visited the Andamans in the beginning of twentieth century states that the Andaman Homes were the door of death to the Andaman race⁶⁸. Originating out of a policy of conciliation with the rather truculent coastal tribes, the Home degenerated into a sort of prison for these free nomads whose normal habits were just the opposite of what was attempted to be foisted on them in this institution⁶⁹. For some time the Home continued as a free asylum for an Andamanese who could come and stay there as long as he chose and go away whenever he liked to do so. During his stay there he was supplied with free food and if he fell sick he was given free medical treatment and medicine. From the Home, too, were taken such little necessities and luxuries as the people desired. In return the Andamanese of the Home were employed to help in catching run away convicts, in collecting edible birds' nests and trepang and other natural produce, and in making Andamanese curios from which a small income was derived and expended on them. However, gradually the Home fell into disuse-the dismal end of a well-meant project⁷⁰. To quote Rev. Corbyn, they daily employed the Andamanese in these Homes in work with the native convicts clearing sites, etc., taught them to speak English and wear clothes⁷¹. In short, a thorough attempt was made to domesticate this roving community, directly opposed to their ingrained habits, with devastating results. Completely devoid of pathological defenses they fell an easy prey to venereal, pulmonary and bronchial diseases and got addiction to the habits of smoking, drinking, etc., most deleterious to their constitution⁷². They have learned to smoke, to drink,

⁶⁷ Home Department, Port Blair A, No. 32, October 1914 NAI, New Delhi.

⁶⁸ *Census of India*, Appendix A, p.XLVI, 1951.

⁶⁹ *Census of India-the Andaman and Nicobar Islands*, Vol.XVII, p. XLVII, 1951.

⁷⁰ *Census of India-The Andaman and Nicobar Islands*, p.53, 1901.

⁷¹ *Census of India-the Andaman and Nicobar Islands*, Vol.XVII, p. XLVII, 1951.

⁷² *Ibid.*

when they get the chance, and to take opium, when they can get it⁷³. By keeping them so far as possible away from the settlement the opportunities for obtaining liquor and opium are restricted, but they will always smoke tobacco in excess⁷⁴. Their innate sense of freedom revolted against this restriction and eventually they had to be released but with innumerable disease spreading bacilli in their organisms⁷⁵. And these hundred years have seen the near annihilation of this erstwhile thriving community of hunters and fishers. The process was perhaps a little accelerated during 1942-45, when the Allied Intelligence Officers visited the Middle and North Andamans and, as a price of their services, gave them drinks, smoke, and tinned food⁷⁶. Loka, the headman of these tribes in 1951 himself a half breed, vexed eloquent of his contact with the American and British officers. "Although detention and linguistic communication were two of the principal motivating factors that prompted the foundation of the first Andaman Home at Ross Island, Port Blair, in 1863, the directives of the Superintendent of Port Blair, Lieutenant Colonel R.C Tytler, indicate that it was also considered to be a 'master' environment for the acculturation and management of indigenous activities. From its inception, the first Home functioned as the centre of 'a system of entire pacification' and 'foundation stone for civilizing a people hitherto living in a perfectly barbarous state, replete with treachery, murder, and every other savageness'. There the Andamanese would 'see the superior comforts of civilization compared to their miserable savage condition', and would 'learn to appreciate their now comfortable home and mode of living'. But it was said they had also to be held in 'custody as hostage, for it undoubtedly secured the better behavior of these inhospitable people towards our settlement; where as their leaving us might injure and abolish all the good that has already been established, and might take years again to regain and recover were we to lose the great advantage we now hold and possess'.

In order simultaneously to make these hostages an acculturative example and to protect them from cultural recontamination, access by andamanese still 'in their fresh and

⁷³ *Census of India-The Andaman and Nicobar Islands*, Vol. II, p. 14, 1921.

⁷⁴ *Ibid.*

⁷⁵ *Census of India-the Andaman and Nicobar Islands*, Vol.XVII, 1951.

⁷⁶ *Ibid.*

ungovernable stage of wildness' was limited: occasionally, about once a fortnight, a few might with advantage be induced to come over for a very short visit, so as to satisfy their trines on their return of the care we take of their people living under our charge, and after feeding and otherwise kindly treating them to return them to their woods"⁷⁷. The Homes were functioning to homogenize and transform the indigenous population. They became the generative locale for hybrid intertribal identities, simply because they provide the only stable context for communication and marriage⁷⁸. By the end of the century their effect on the pre-colonial hunting and gathering life on the Andamanese was disastrous. Tribal autonomy disintegrated following outbreaks of pneumonia (1868), syphilis (1876), ophthalmia (1876), measles (1877), mumps (1886), influenza (1890), and gonorrhea (1892)⁷⁹. Although attempts were sometimes made, as in the case of the 1876 syphilis outbreak, to displace responsibility onto the convict guards, the connection between the Homes and the spread of infectious disease was acknowledged by administrators⁸⁰. Andamanese children born in the Homes invariably died shortly after their birth, while those born in the jungle sometimes survived⁸¹.

Between 1863 and 1908 Andaman Homes functioned as a principal site for acculturation and ethnographic observation- a profoundly contradictory situation, in as much as they were designed to facilitate a transition to a state of civilization, where as the strategy behind ethnographic observation, at this period, was to reconstruct essential precontact representations of an isolated island people⁸². Although the Homes created the necessary contextual stability needed for long term observation, they also continuously undermined the object of study.

⁷⁷ Tytler quoted in Portman's *A History of our Relations with the Andamanese*, p.376-78, 1899.

⁷⁸ Man, 'On the Andaman Islands and their Inhabitants', *Journal of Anthropological Institute*, 1885, p.261.

⁷⁹ D Tomas, 'Tools of the Trade: The Production of the Ethnographic Observations on the Andaman Islands, 1858-1922', in George W Stocking (Ed.), *The Colonial Situation*, University of Wincosin Press, 1991, p.81.

⁸⁰ Ibid.

⁸¹ Home Department, Port Blair A, No. 32, October 1914 NAI, New Delhi.

⁸² D Tomas, *Tools of the Trade*, p.261.

Causes of the Decline

As a matter of fact, the Andamanese were singularly free from the more serious forms of the epidemics so common in India. Plague was unknown; cholera had been confined to the forest coolies when first imported; small pox, on the few occasions when it has been introduced, has been quickly localized, and stamped out; but at the same time measles and influenza do occasionally appear, and their effect on the Andamanese, once the contagion has been introduced, is disastrous⁸³.

The great and rapid reduction of the Andamanese is attributed by Mr. R.F. Lewis in his census report of 1911, in the first instance, to the introduction of epidemics principally of measles in 1876⁸⁴. Under natural conditions the population would in time have recovered from the effects of this epidemic and regained its former numbers. The principal cause of its failure to do so are in his opinion: 1) The increase in the infant mortality in the case of the children of parents coming under the influence of 'civilization', till the latter get accustomed after years to the conditions under which they are called upon to live in the Homes, 2) the low birth rate, caused by the natural tendency to infertility on the part of the andamanese, a tendency which is enhanced till at amounts almost to sterility by the introduction of syphilis, and, 3) the increase in the death rate among the adults⁸⁵. In 1877 measles was introduced into the settlement, and before its effect on the Andamanese was realized it had spread with great rapidity all over the islands⁸⁶. It is estimated that on this occasion about half of the race was killed off; not so much by diseases by its after effect⁸⁷. Under normal conditions a healthy race suffering a set back of this kind would in the course of a few years recover; nature would automatically fill the vacuum created; but in the case of the Andamanese there were already other factors in operation which tended to make recovery impossible.

The effects of the civilization on the andamanese are harmful was to a certain extend recognized by Mr. Homefray as early as 1866 in which year he established a Home at

⁸³ *Census of India-The Andaman and Nicobar Islands*, Vol. II, p. 14, 1921.

⁸⁴ *Census of India-The Andaman and Nicobar Islands*, 1911.

⁸⁵ Home Department, Port Blair A, No. 32, October 1914, NAI, New Delhi.

⁸⁶ *Census of India-The Andaman and Nicobar Islands*, Vol. II, p. 14, 1921.

⁸⁷ *Ibid.*

Port Blair, and was himself living in the vicinity. According to Homefray, "Years of intercourse with the andamanese have taught us that civilization can give them nothing to compensate for the life in their own jungle, and, however, kindly and well treated they may be, they are always ready to leave the settlement with its comforts (and, to them luxuries) for their wild jungle life, its sports, food and amusements. If we are asked why the Andamanese have not been more civilized, the answer is that civilization cannot be forced on a race; a want must be created before it can be gratified; and to attempt, as at one time was done, to force a nomadic hunting race to become agriculturalists, when the labour of agriculture is irksome, takes the people from the pursuits they like, and does not supply any want that they feel is both absurd and impolitic, as liable to estrange them when their friendship is for many reasons important"⁸⁸.

Mr. Portman was of opinion that the Andaman Homes through which the friendly relations were established and maintained were most deleterious, for in them the Andamanese learnt to smoke, contracted new diseases and were given new foods to which they were unaccustomed⁸⁹. Their customs and mode of life were also altered; several well meaning but mistaken persons were very anxious that they should change their mode of life entirely and should settle down to agriculture⁹⁰. He held that so long as the Andamanese were left to themselves and not in any way interfered with by outside influences, of their customs, food, etc., altered, they would continue to live⁹¹.

A race which does nothing towards increasing or conserving the natural food supply of the country which it occupies, and has to the same time to live on what it can get out of the country, requires a very large area per head of population to wander over if every man is to get enough to eat by hunting and fishing⁹². In any case the population must, in the nature of things, be very sparse. Where as in the case of Andamanese, the area over which the race can spread is restricted, one would expect nature to provide some

⁸⁸ Portman, vol.1, p.48-49.

⁸⁹ Home Department, Port Blair A, No. 32, October 1914, NAI, New Delhi.

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² *Census of India-The Andaman and Nicobar Islands*, Vol. II, p. 14, 1921.

automatic check on over population. That in the case of the andamanese, there was some such natural check is proved by the fact that, so far as is known, they have never resorted to artificial means of preventing overpopulation, such as polyandry, child murder, or the abortion⁹³.

Table.4.2

Growth of Population in the Andaman Islands during the period 1881-1951			
Year	Population		Numbers
	Male	Female	Total
1881	12940	1988	14628
1891	13375	2234	15609
1901	15158	2980	18138
1911	14737	2904	17641
1921	15551	2263	17814
1931	14258	4965	19223
1941	14872	6444	21316
1951	12734	6227	18961

Source: *Jarawa Contact: Ours with them/Theirs with Us, Anthropological Survey of India, Calcutta.*

In the absence of vital statistics it is impossible to say that what form this check took, but the end was probably achieved through a high death rate, and a tendency towards sterility, probably the former was a principal factor⁹⁴. They have also acquired other habits which if not exactly bad in themselves have had disastrous effects on the physique of the race. By nature the Andamanese go naked, and lives in a rude shelter of leaves which gives free access to fresh air. As a result of contact with civilization he has acquire the habit of occasionally wearing clothes; of sleeping under the blankets, an of living in ill-ventilated huts; the result has been the introduction of every kind of pulmonary and bronchial complaint, which tends to encourage an ever higher rate of mortality than is natural in the race⁹⁵. In 1878, the first case of Syphilis infection was

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ Ibid.

reported; the first contamination is said to have occurred through the medium of a convict, but it was sometime before its presence among the andamanese was first discovered, and by that time it had obtained such a hold on the race that its localization was no longer possible and in spite of every effort it spread throughout the group here dealt with⁹⁶. The result is that the majority of marriages are now-a-days infructuous. However, at the same time of the depopulation of the indigenous community, the population rate of the villages of free men and laborers was steadily increasing. Perhaps, this over population also caused the destruction of the traditional population. The import of a large group of main land people from India and Burma in the name of laborers and the relatives of the convicts structurally shook the equilibrium of the human-nature relationships. Table 4.2 shows that there was a great increase of population in the Andaman Islands with the establishment of the Penal Settlement. The total population of the colonizers and convicts, along with the other occupational groups from mainland India as well as from Burma in 1881 was 14,628. By 1941, it increased up to 21,316.

The sudden importation of thousands of convicts and official colonizers to these islands affected the environment in different ways. Firstly, it affected the environment through the introduction of new kind of resource usage system. The new pattern was structurally against the traditional system of forest resource use, thus began an era of commercial forestry. This new form very clearly destroyed a large portion of virgin tropical rain forests and created the agrarian lands for the first time in the history of Andaman Islands. These new forms of forest resource use and the development of commercial/scientific forest policies ultimately resulted in the deforestation of a large portion of these islands. Table 4.3 shows the estimate of the cleared forests in the initial years of the establishment of the forest department in the Andaman Islands for the development of agriculture alone. During 1881-82, the total area cleared by the Governmental agency for cultivation was 8035 acres. By the end of the 19th century (i.e., within the span of 15 years) the total area cleared became almost triple of what was the same in 1882.

⁹⁶ Ibid.

The deforestation may be said to have began by Government agency from 1858, with the establishment of Penal Settlement. Deforestation took a new form when the British started the free convict villages in the vicinity of Port Blair settlement. From the initial ages of the penal settlement, the British cleared a large area for the development of agriculture. The free convict villagers were given permission to settle their relatives with them in the settlement. This resulted in the exploitation of the forest area and ultimately led to the deforestation of these areas in the name of agriculture and subsistence.

Table 4.3

Estimate of the Cleared Forests by the Government Agency from 1881-1897 for Agriculture

Year	Area in Acres.
1881-82	8035
1882-83	10421
1884-86	15180
1884-87	15971
1888-89	18306
1889-90	19334
1890-91	21115
1891-92	21449
1892-93	21663
1893-94	21742
1894-95	22306
1896-97	22470

Source: *Various NAI proceedings and Reports on the forest Administration in the Andamans.*

In short, the pressure on the forest produces increased with these developments. In 1921, 'clear felling' system was introduced which entailed the use of very large number of elephants and tramways, in the extraction of forests⁹⁷. In 1930, beginning

⁹⁷ B.S Chengappa, , *Working Plan for the Andaman Forest*, 1950.

was made with light railway and a skidder in the interview island⁹⁸. From 1934, tramlines combined with elephants dragging along with efficient drag paths formed the major means of extraction of forest⁹⁹. This all ultimately led to the deforestation of Andaman Islands in general and South Andaman in particular. The development programmes of the British colonizers greatly affected the South Andaman region. From the very beginning of the settlement, the colonizers exploited the South Andaman forests for the various needs. Much of the South Andaman forests perished. The Japanese during their occupation in the Andamans (1942-45) extracted timbers from the forest for construction and defense purposes. They extracted some 1500 tons of timber per month of all species. They also used the same method of extraction, i.e., the elephants and tramlines¹⁰⁰. They also used to send several ship loads of timber to Penang in Burma, in the beginning of their occupation¹⁰¹.

The increasing requirements of wood and timber both during peace and war time have necessitated the felling of trees in excessive quantities and large forest areas particularly in South Andaman have been cleared. The villagers lopped and felled the trees for fodder and firewood grazed their herds and flocks in the forests adjacent to the villages and thus destruction was caused to the forest¹⁰².

The British colonial policies and their attitudes towards Andamans very clearly led to the destruction of large portion of the forest region which in turn completely shook the equilibrium of human-nature relationship that was maintained in the pre-colonial period. The British followed very cunning methods against the Jarawas from the beginning. The best example of this kind of treatment is the battle of Aberdeen¹⁰³. In the battle of Aberdeen in May 1859 a large number of these people laid down their life against the British bullets. Very interestingly, the British sought the help of the Great Andamanese for taming the Jarawas. The development of Bush Police in 1905 was

⁹⁸ Ibid.

⁹⁹ P Lal, *Andaman Islands*, Calcutta, 1976, p.34.

¹⁰⁰ B.S Chengappa, *Working Plan for the Andaman Forest*, 1950.

¹⁰¹ Ibid.

¹⁰² P Lal, *Andaman Islands*, Calcutta, 1976, p.34.

¹⁰³ M K Raha, 'The Tribes of Andamans: Their Struggle for Existence', *Asian Studies*, Vol. XIX, January-June, 2001, p.60.

and the joining of the Great Andamanese in these groups proves this fact. The British made large punitive expeditions against the main Jarawa camps, which led to the great destruction of the Jarawa country in the south Andaman region. Ironically, it is the defensive hostility of the Jarawa that has enabled them to survive so far. The reasons for their defensive stance have already been well analyzed. What is important is their continued survival without being subjected to the pressures that have pushed the Onge and the Great Andamanese to the brink of extinction. However, more than these attacks, the contact with the civilization greatly affected the friendly great Andamanese through a myriad ways, which ultimately led to the depopulation of these groups.

CONCLUSION

Andaman is faced with a number of social, economic, and ecological issues including extreme poverty, deforestation and land degradation caused by commercial logging, cattle grazing, exploitation of non-timber forest products etc. All natural resources--including land, forests, water, and biodiversity--are under immense pressure posing an enormous challenge to sustainable natural resource management. As in the rest of India, the prime responsibility for starting the forestry operations in these islands too rests with the British. In fact the British were the first outsiders who were able to successfully establish their settlements on the islands. Many environmental historians hold the views that the large scale destruction of the forests in Andamans rooted in the commercially oriented forest use and ownership policies of the British government which continued even after India gained independence in 1947. The other major causes of deforestation were agricultural expansion, often state-sponsored¹.

The new policies and programmes of development; rapid industrialization, urbanization and growing consumerism that have resulted in the wide scale destruction of the forests. What has been equally bad if not worse is that the development projects very insensitively alienated the communities living in the forests, depriving them of their basic sources of survival, forcing them to move away and in the process making them refugees in their own land². British colonial expansion profoundly altered indigenous people's demographic structure, subsistence mode, and social organization not only in the Andaman archipelago but around the world. Deforestation poses many problems to the indigenous people in terms of demography, subsistence, ecology, and culture. Different development schemes in Little Andaman, including allocating land to settlers, planting mono-crop species, constructing roads, and building government offices, private industries, harbors, agricultural farms etc., have all added to the large-scale forest clearance. As colonialism forced indigenous people to transform from foraging to advanced hunting and gathering, to shifting or settled agriculture, some of

¹ P Shekzaria, *Underlying Causes of the Deforestation and Forest Degradation: Case Studies of Andaman Island, Uthara Kannada, and Gadchiroli – Chandrapur, India*

².Ibid.

the foraging communities completely lost their will to survive and now approach extinction.

In the previous chapters we have seen that the development of a penal settlement in Andaman Islands by the British colonisers have taken place in the years between 1858 and 1945. We discussed the new resource use system introduced by the colonisers for the better management of forests and forest resources in the Andaman Islands. The first chapter analysed the British colonial policies in the Andaman forests and the basic agendas of scientific forestry in the Andaman forests. As we seen that these policies were implemented mainly for the maximum exploitation of the forest produces especially the timber trees. However, this new pattern of resource use and the associated development projects seriously affected the pristine environment, on which the indigenous Negrito population depended on. Whether these policies were scientific or not, they made great harm to their total way of life, economy, culture, etc. When the Great Andamanese, the Jarawa, the Onge, and the Sentinelese are viewed in this light, the technological knowledge of the colonisers and their market imperative economy, etc. gradually changed the whole basic patterns of their daily livelihood strategies. The most important thing here is the sudden shift of a pre-urban region into an urban region based on the capitalist mode of recourse use. These policies gained much strength with the introduction of the forest department as an institution in the Andamans in 1883. It caused a great damage to the pristine rain forests in the Andamans which in turn led to the changing pattern of resource use. Whole of these changes are associated with the modern kind of state formation in the Andamans. In brief, the root cause of the deforestation and the associated pattern of degradation lies in the emergence of the modern kind of colonial state-making.

Colonial rule introduced dramatic breaks in the way in which forests in Andaman were perceived and used. The perception of forest ecosystems as having multiple functions for satisfying diverse and vital human needs for air, water and food was superseded by the growth of one-dimensional scientific forestry during the colonial period which had as its only objective the maximization of the production of commercially valuable timber and wood while ignoring the other ecological and economic objectives for the

utilization of forest resources. One can examine the colonial forestry in guises- first, as a set of material technologies imposed on trees grasses and wild animals; second, as a legal regime aimed at appropriation of natural rents; and third, as a system of rational knowledge, that ironically, became the sight of a struggle among the technocrats who vied for professional recognition at the upper levels of bureaucracy³. Sivaramakrishnan demonstrates that forest as a technology never consolidated its hold on the most valued tree species nor it was able to codify the requirements for their rapid regeneration; forestry as a legal regime never achieved consistency in application – sanctions and regulations were often released, and exclusive claims were forsaken when they could either not be enforced or when bureaucratic agencies contested them; and finally, forestry as a system of professional knowledge failed to garner respect or authority because many other colonial elites remained unconvinced of its scientific pedigree. Forestry in the colonial period consolidated only on certain kinds of works such as the production of mono cultural timber trees for exportation, etc. In short, it shattered the basic structure of the ecological equilibrium, which has maintained by the indigenous population for many centuries. Felling of trees for agricultural lands, roads, railways, and for official buildings and for settlements adversely affected its basic environment. Colonial forest policies of exporting the timber and other forest produces ultimately led to a global economy. Along with these developments one can see the emergence of different kinds of industries among the migrated population from mainland India and Burma. Another important change that one can perceive in Andamans with the coming of forest department is the transformation of natural forests into resources or commodities. Thus, a new era has begun in which the indigenous people were suffered a lot from the hands of the so called ‘civilisation’. The tribal cultures are intricately linked with the forests where they live in. By various means, both intended and unintended, they have been constantly alienated from their forests, their lands and their very cosmos that is built around all these.

³ K. Sivaramakrishnan, *Modern Forests: State Making and Environmental Change in Colonial Eastern India*, New Delhi, 1999, p.3.

The increasing requirements of the forest produces along with the development of the settlement in the Andamans led to the over exploitation of the forests in excessive quantities. The villagers lopped and felled the trees for fodder and firewood grazed their herds and flocks in the forests adjacent to the villages and thus destruction was caused to the forests. The colonial policy of cutting large timber trees of great economic value for the ship building and railways also caused great damage to the forests from the initial years of the development of forest department which resulted in the clearing of large forest areas especially in the South Andaman region. The clearance of land for settlements and the loss of forests to logging have had a direct impact on the indigenous people. They have been driven away from what was their prime and preferred habitat and have been forced to move deeper into the forest. With excessive poaching of their food sources like the wild pig, survival became excessively difficult for them. Logging operations have also played the role of opening up the island further. Roads that are bulldozed in the forest to carry out the logging operations give the settlers greater and easier access to areas that were otherwise inaccessible and inhospitable. Not only has it facilitated greater poaching, but also made it much easier for the settlers to move further and further into the forest to establish settlements. They have had to also face the onslaught of an alien, modern culture that is highly insensitive and unable to appreciate or even acknowledge their traditional way of life⁴.

The leasing of the forest region in South, Middle and North Andamans in the later years caused the same deforestation, but this time in the hands of the private entrepreneurs. The exportation of the timber woods to mainland India, America and other European countries also resulted in the same effects. Exploiting rich forests in Andaman for timber often meant encroaching onto the traditional resource base of the hunter-gatherer communities such as the Onge, Great Andamanese, Jarawa, and Sentenelese. The implications of clearing and extracting timber from these islands in general and from Little Andaman in particular are not considered seriously enough by the government, either in terms of ecology or human suffering.

⁴ P Shekzaria, *Underline Causes of the Deforestation and Forest Degradation: Case Studies of Andaman Island, Uthara Kannada, and Gadchiroli – Chandrapur, India.*

Along with these developments the migration of large number of population from mainland India as well as from Burma in the name of labourers and other officiating staffs started to the Andamans. Apart from this the Andamans witnessed a definite sign of the increase of population when the government decided to offer greater inducement to convicts to remain as free settlers after their release. Besides families from India and Burma joined their relatives in the Andamans during this year. This led to the clearings of forests in the vicinity of Port Blair, and there emerged free settlers villages. In addition, the rising population in these islands accompanied with heavy demands for cleared land for roads, house sites and paddy fields, resulted in the growing demand for more and more cleared land. In short, the pre-urban Andaman region was in the path way of urbanisation with these migrations and the development of village settlements.

The development programmes had great harmful effects on the immediate environment and ecology of the Andaman Islands which are mainly reflected in the deforestation process in the Andamans. Another great change that happened in the Andaman forests was with the landing of Japanese force numbering around 20000 in the years between 1942 and 1945. The Japanese during their occupation in the Andamans extracted timbers from the forest for construction and defence purposes. They extracted some 1500 tons of timber per month of all species. These all made severe ecological impact on the Andaman Islands. From the ecological point of view, it resulted in the soil erosion of these deforested regions in the Andaman Islands. According to Parmanand Lal, the soil erosion takes place in two forms, i.e., sheet erosion and gully erosion. In sheet erosion the upper layer of the soft particles of the soil are washed away into the sea by rainfall. In addition to this, due to heavy rainfall which persists continuously for a number of days makes deep gullys in the soil which are deforested. Gradually, most of the fine particles of the soil are washed away which renders the land unfit for cultivation.

These ecological destructions directly affected the entire indigenous population in the islands in the sense that their lively-hood strategies were based on the nature of the immediate environment of their particular region. This indigenous population were

hunter-gatherer communities who had successfully survived in these islands for centuries, much before the advent of modern man here. Their knowledge and understanding of the forests was extensive and they shared a close relationship with it. The colonial capitalist policies resulted in the acute natural resource crisis among the indigenous population. The imperatives of colonial forestry were essentially commercial in nature and its operations were dictated more by the commercial and strategic utility of different species than by broader social or environmental considerations. By bringing about an escalation in the intensity of resource exploitation and control, state forestry sharply undermined the ecological basis of subsistence patterns of hunting and gathering communities. Thus it can be noted that the development of capitalist mode of resource use and their impact on the ecology in the Andaman Islands with the colonisation by the British. For the British, the forests were 'wastelands' that need to be tamed, settled and developed.

Along with the great destructions to the basic ecology of the Islands, the colonial policies severely affected the indigenous people of the Andaman Islands. The people who have suffered the most in these islands are the indigenous communities for whom the forests are home. This has resulted from the combined impacts of the destruction of the forests and the imposition of an alien and insensitive culture that brought along with it various diseases and other vices such as alcohol and tobacco. The two Negrito communities, the Jarawa and the Sentinelese have scrupulously avoided contact with the outside world and even used violent means to do so. Whereas the Great Andamanese declined because of the various epidemics, the Onge are suffering on account of the destruction of their forests and the imposition of a way of life that is alien and insensitive to them. Except the Jarawas, whole of the Negrito populations were gradually made friendly relationship with the British through the colonial policy of Gift Dropping and through the Andaman Homes. The White Man's burden of 'civilizing' these people ultimately resulted in the utter failure of the mission. The contacts with the civilisation only helped them to learn more and more vices of the civilisation which in turn negatively affected the physique of the tribal population. Cappieri postulated that the process of involution brought about by hyper fractioning of

scare population into closed cells hastened the decline of numbers. Thus, these new relations with the civilisations gave only vulnerable diseases and the decreasing power of immunity to the indigenous friendly population of the Great Andamanese. Subsequent contact with outsiders and introduction of development schemes have exerted great pressure on the natural resources available and the Great Andamanese have been experiencing population decline. There are only three sub-divisions among them at present while they had twelve such divisions till 1920s. There is a great shift from their traditional food system (wild boar, deer and turtle meat, fish, crabs and birds) to cereals, pulses, oilseeds, rice, wheat, sugar and so on. As a result of resettlement, they have no other alternatives but to adapt to these food items, which are not produced by themselves. This is because of large scale destruction of forests and depletion of natural resources in their vicinity on which they were directly dependent for their subsistence.

It is very meaningful to note that those sections of Andamanese population which were friendly and came under the 'civilizing' mission of the British ultimately virtually got exterminated while those sections like the Jarawas who resisted the so-called efforts at 'civilizing' them survived in relatively larger numbers, though they too could not fully escape the onslaught of colonial modernization.

The Andaman situation is a classic example of unplanned natural resource exploitation, disregarding the basic ecological principles. It is primarily an economy determined by the prerogatives of mainland development. In the process, the indigenous islanders have succumbed to a 'proletarian dependence' on the islands administration, whose commercial transactions and territorial control now determine their daily routine and mode of existence⁵. The historical contact of the various egalitarian societies with the wider concept of democratization resulted in different levels of growth towards modernization. Innovative technology, increased human habitation and development policies aimed at developing the tropical regions amount to a *death trap* for traditional societies inhabited therein. Once the Great Andamanese had 12 sub-divisions, each

⁵ S Venkateswar, *Development & Ethnocide: Colonial Practices in the Andaman Islands*, New Jersey, 2004, pp.17-8.

constituted with 40 to 50 persons, with an extended family structure. Marriages were contracted within the sub-divisions. These practices have now disintegrated. Life-cycle ceremonies have no significance for them nowadays. The subsistence economy based on hunting, gathering and fishing practiced traditionally by them is slowly dying. They are now leading a settled economic life involving *cash* as prime source of livelihood and averse to the agriculture⁶. One can rightly conclude that the present degeneration of the indigenous communities in Andaman Islands have their roots in the colonial forest policies. Along with these, the 'development' as well as 'civilization' missions of the colonisers also had a direct relationship. One has to find out alternatives for the better treatment of this 'pristine' population.

⁶ D. Venkatesan, *Question of Survival: Assimilation Process Among Hunter Gatherers of Andaman Islands, International Conference on Hunting and Gathering Societies(CHAGS9)*

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