

A MITTAL PUBLICATION

# PEOPLE AND FOREST IN NORTH EAST INDIA

RESOURCES, REGIMES AND RIGHTS

RAJESH VERMA



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NEW DELHI (INDIA)

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**First Published 2012**

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ISBN 81-8324-423-8

Call No. 333.7509541  
कॉल संख्या  
Accession No. 30072  
परिग्रह संख्या

Published and printed by Krishan Mittal for Mittal Publications  
4594/9, Daryaganj, New Delhi - 110002, India  
Phone: 23250398, 41564398 Telefax: 91-11-25351521  
e-mail : info@mittalbooks.com / mittalp@ndf.vsnl.net.in  
Website : www.mittalbooks.com

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## PREFACE

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Forests are one of the loveliest gifts of the nature to all human and non-human beings who dwell upon this planet. It would not be an exaggeration to say that forests have nourished and sustained life on this earth since time immemorial and cultures and civilizations developed amidst forests. With the passage of time humankind moved away from its natural surrounding and adopted an artificial life. For the city-dwellers forests are now places of fear and fascination and resorts where they can spend their weekend away from the busy life of cities.

But for the people, who live amidst forests, regard them with much veneration, as a sacred place, because forests fulfil all of the necessities of life. In fact, the whole social, economic and cultural activities of the forest-dwelling communities are attached to the natural surroundings. In this sense, their claims over the forests come first not only because they have lived there for generations but also that they have an emotional attachment to the forests. Forest dwellers, mostly the tribal communities, did not over-exploit forest resources; rather they conserved them with their indigenous knowledge system.

Forest rights, as other types of rights of the citizen of India, are vital for millions of forest dwelling communities who have selected a different mode of life pattern.

This book is based on my UGC project work on the topic "Forest Rights of the Tribes of Arunachal Pradesh: Past and Present". So, first of all, I am thankful to the University Grant Commission, Guwahati.

For the completion of the work I was assisted by a number of persons, including my colleagues at Indira Gandhi Government College, Tezu, library staffs, officers and staffs of various departments, public leaders and students. I offer my gratefulness to Sri S. Khandu, Vice Principal, D.N. Government College, Itanagar for his kind support in all respects. I offer my sincere gratitude to my all colleagues, particularly to Dr. H. Naku, Sri M. Dirchi, and Dr. S. Chakraborty,

who provided me valuable information related to the topic and technical help. In the very beginning of my work, Ms Jayshree Ardley, CCF, Lohit gave valuable information and suggestions on the topic, so I offer my gratefulness to her. In the same way I offer my gratitude to DFO, Lohit, and DFO, Deomali for their striking information.

During the process of collection of data I got valuable help from Sri K.K. Dev and Sri M.K. Bhattacharjee of the Department of Economics and Statistics (DES), Itanagar; Sri T.K. Mitra and Sri Prasad of DES, Tezu, Sri L. Ratan, Junior Librarian of District Library, Tezu and Sri Karna of Research Department, Tezu. I am thankful to all of them.

I also extend my gratefulness to Dr. Subimal Ganguly and Dr. Rupa Sharan Ganguly (Kolkata) for their help in various ways.

My wife, Seema, and my son, Ashutosh, always remained behind me with their encouraging words and smile.

I am extremely thankful to the publisher who brought out the work in the present form.

I hope, this book would help the scholars, students and general readers to understand the issues contained in it.

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## INTRODUCTION

### Issues and Themes

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The subject matter in the branches of social science has been changing according to circumstances and exigency of situation. Taking clue from Thomas Kuhn, it is a 'paradigm shift'. Thus, this 'paradigm shift' is also amply manifest in historiography. It has shifted from the theological and metaphysical analysis of historical events to politics and culture. In present time, history as a subject encompasses almost all aspects of life. Thus we find, today, the history of science and technology, art, philosophy, agriculture, trade, industry, warfare, medicine, social system, religion, and what not. In this list one can add the history of environment, or environmental history which deals with man's relations and his behaviour towards the nature. The environmental history includes a number of such topics as are directly related to the survival of human being. Thus not only forests, rivers and mountains are the main topics of environmental studies; it also includes vital topics such as pollution, wildlife protection, big projects meant to develop infrastructures, displacement and rehabilitation, waste management, conservation, forests rights, and so on.

Environmental history as a separate branch of study appeared in the North America and Europe soon after the end of the Second World War. It took the form of a movement in 1960s and very soon became popular as a social philosophy known as '*environmentalism*'.

In the United States of America it appeared as an outcome of the debate over "*second creation*". After the Declaration of Independence (1776), the newly independent colonies started to re-imagine themselves as "a self-created community." The Americans disowned the Amerindians heritage and constructed stories of

self-creation in which the mastery of a particular technology played a central role. Stories of hardships of the pioneers and their conflict with the Native Americans became the basis of "foundation narrative" of the New World. It appeared in the form of frontier epics. Carroll Pursell describes in *'the Machine in America'* how the Americans, by using a new technology (the American axe), transferred the forest into field and meadow.<sup>1</sup> In this way new settlements began for which the elimination of forest was equated with progress. Today it is widely and universally accepted that the wild forests were cleared with the coming of civilizations. However, the American view is that 'the mankind did not exploit nature, but employed the useful arts to improve its rudimentary forms. Only human being could build a second creation.'<sup>2</sup>

This theory has been at the foundation of the rise of American civilization. But in recent times, many American intellectuals have challenged this theory by raising the charges of injustice, misuse of power and environmental destruction. They alleged that selfish individualists (supporter of free market) have exploited the land for short-term gain. They tried to restore the natural beauty and environmental harmony by cleaning the environment. Another group demanded preservation of wilderness. Thus John Muir demanded that certain areas should be set aside in perpetuity for all forms of development. In the same way some organizations such as Sierra Club, Friends of the Earth, and Earth First demanded more wilderness areas.

In Europe, consciousness towards environment could be seen in countries like Germany, France, Prussia, Switzerland, Austria, Sweden, Spain and Russia where forest schools existed in the mid-nineteenth century. In 1885, England was perhaps the only country without a forest school.

### **Situation of Forest in India: Pre-British period**

Civilizations across the world originated and developed from the cradles of forests, and this civilization progress itself was the main reason for the gradual disappearance of forests from the earth. However, the ancient Indian tradition reflects man's harmony with the nature. No doubt, there was material progress and urbanization in early India, but several Indian texts point out to people's awareness for preservation of natural resources, mainly in the forms of forests. James Fergusson has supported the gratuitousness of ancient races of mankind who considered trees as the 'choicest gift of the gods.' In contrast to the American views, the Vedic literatures do not support

man's superiority over nature and other species. The Atharva Veda says that the Earth is not only for humankind but also for all other creatures.<sup>3</sup> It is in sharp contrast with the American theory of 'Second Creation' which reflects the arrogance of science and technology. The early Indians lived in close symbiosis with the nature. They worshipped trees as divine entities. Trees had multiple utility. They were grown wildy and gave food without cultivation, and so forests were given the status of 'divine'. In Buddhism and Jainism, too, trees were taken as highly sacred. Both the religions promoted prudent use of forests, grooves and gardens. The idea of Kalpa Vriksha (wish-fulfilling tree), which was represented in the sculptures of the third century B.C., is a good example of cult of tree-worship.

In the sixth-fifth centuries B.C. the middle Gangetic basin was a thickly forested region.<sup>4</sup> The first major blow to forest appeared during this period itself, when the second urbanization took place. Technological revolution of that period also began 'large scale colonization and spread of agriculture'. It was done by the use of axes, sickles, iron-ploughshares and chisels. A vast area of forest land was cleared to make it suitable for human settlement and agriculture. It was also done by the use of fire. It was a departure from the earlier spiritual and ideological stands, and the new venture got 'scriptural sanction'.

The Mauryan kings were the first to adopt a definite forest policy. They had colonized plains, river valley and hills of the Indian subcontinent, and also got control over material resources and trade routes. Growing demands of the state and the common men in respect of housing, food, fodder, clothing and army supplies were fulfilled by the clearance of forest areas. New cities were established to settle the growing population of the Mauryan Empire. Kautilya had classified forests into ten categories i.e., timber, bamboo, creepers, fibrous plants, plants yielding rope-making materials, plants providing writing materials, plants yielding dyes and medicinal herbs, plants providing poisonous drugs and fruit trees. The Mauryan state received a handsome income from forests, so there was a special store house in the capital for preserving forest produce.<sup>5</sup> Kautilyan jurisprudence provides a number of laws in this regard. The state had exclusive right of exploitation of timber forests and elephant-forests. There were severe punishments for killing protected animals. King Asoka forbade the killing of a number of animals and also gave order not to burn forest in order to kill living things.<sup>6</sup> The rulers of later periods followed the policies of the Mauryan state.



From the sixteenth century, the details of forests, deserts, river-courses, cultivated zones and human settlements were presented in the form of geographical descriptions. Thus, *Ain-i-Akbari*, *Akbarnamah*, *Padshahnamah*, and *Fathiya-i-Ibriyah* provide description of the physical and human geography of different parts of the Indian subcontinent.

It was reported, as in the descriptions of military governors and commanders of campaigning armies of the Mughal and other rulers, that the north-eastern parts were very thickly forested region. The Mughal rulers used to get various types of forest products from Assam. The tribal living on the surrounding of the Assam hills brought forest products of the hills to the plains and bartered them with the products of people of plains. Among the most desired thing which the Mughal wanted from the forest of Assam was elephants. They were used as war animals and beast of burden, and were in heavy demand. Five thousand elephants were there in direct possession of Akbar. His nobles kept another 7,709 elephants. Forests of Assam were the main supplier of elephants. From the forests in Assam as many as 500 to 600 elephants were trapped every year. Timber of various types was also found in different parts of the north-east. Bengal, too, was a densely forested region. It was shown in Rennell's "*Bengal Atlas*" in 1781.<sup>7</sup> Sundarban delta was a large forest zone, and 'home to wild elephants.' In Orissa, there were forest belts along the sea-coast. The area in the Himalayan foot-hills along the Indo-Nepal border was known as the Tarai Forests. In the seventeenth century the region was full of forest, and till the beginning of the nineteenth century it was an important habitat for wild elephants. The South Bihar (now Jharkhand) had dense forest with wild elephants. It was a rich source of gum-lac. 'The Great Central Indian Forest' was most extensive during the Mughal rule. In the south India, the Western Ghat, parts of the Deccan Plateau, Kerala and south Andhra were the main forest regions.

## **Colonization of Forests**

### ***The Ideology***

For colonizers forests were considered a hindrance for new settlements, and forest-dwelling communities the trouble-makers, for their continuous resistance against encroachment in their abode. The colonizers used technology as well as force to conquer virgin lands. The colonial governments supported the cause of industrial class in their countries to get hold over the natural resources of the colonized. Right of conquest was the biggest ideology behind it.



In India, the British government claimed legitimacy over forests on the basis of the ancient laws which provided "the right of the state to dispose of or retain for public use the waste and forest area..."<sup>8</sup> The colonial government, thus, attacked on the 'sacredness' of forests, refuting the natives' age-old claims, with the use of the most 'masculine' and brutal force (gun and axe). The natives felt that their sacred forests were bleeding at the hands of outsiders. Their abode of gods became 'an object to be mastered, exploited, transformed, and commoditised...'<sup>9</sup>

For the colonizers forests were new avenue for agricultural expansion and research. So, there were always groups of geographers, botanists, zoologists, anthropologists, and surveyors accompanying an expeditionary force. They studied topography, climate, flora and fauna, along with the race and nature of the inhabitants. New botanical and zoological names were given to each plant and wildlife. They out rightly criticized and disfavoured the age-old agricultural pattern and started modern techniques in this field. A vast forest land was cleared to make it suitable for new plantations, such as, tea, rubber, coffee, etc. For the forest-dwelling communities, forests for them were meant for their livelihood alone, but for the colonizers they were meant for commercialization. "In India as elsewhere, the foresters sought to increase the commercial profitability of the more accessible forests through the systematic plantation of a very small number of species, such as conifers in the Himalaya and teak in south India, species which were of little use to the local population, as contrasted to many other species which were eliminated."<sup>10</sup>

### ***'Timber Famine' in Europe***

By the end of eighteenth century, forests in Europe were on the verge of depletion because of heavy felling of trees. Growth of industries and shipping needed huge amount of timber of various types. Portugal, Spain, the Netherlands, Italy, followed by France, England and Germany were the leading colonial powers engaged in far-off maritime explorations. In this race they depleted their own forests to meet the urgent needs. It resulted in a sort of 'timber famine' in Europe. Continuous wars of the period of medieval Europe, down up to the eighteenth century, further devastated the forests.

In England, forests were on decline for a long time. Henry VII had turned forest lands into cultivable lands. James I started the process of colonization in Ireland. Charles I sold out many Crown Forests in want of money. In the race of colonization, England too,

wanted suitable timber for the Royal Navy. It has rightly been told that 'the safety of the empire depended on its wooden walls.

In this way, colonies were found the best places to meet the home needs. Thus, the Indian teak which was the most suitable one for shipbuilding saved England during her war with Napoleon. The demand of timber from India increased because of its discontinuation from the South-Africa and the United States of America. Destruction of forests in colonies symbolized the political mastery of the colonizers.

### ***Change in Revenue Policy***

The main purpose of the British revenue policy was to collect as much revenue as they could, and that too, in cash. For that, forests were considered as 'an obstruction to agriculture and consequently a bar to the prosperity of the Empire'<sup>11</sup>. From the forest-dwelling communities the revenue collection was very low, so more and more forest and community lands were brought under permanent cultivation. Under the terms of the Permanent Settlement, such lands were placed under zamindars, overlooking the communities' claim over them.

### ***Railways***

Forest woods were required for various types of works, such as, burning in steam-engines, construction of houses in new developing cities, iron-smelting, making of tea and fruit boxes, and above all construction of railway lines and coaches. Railway required more than one million sleepers every year in 1870s in India, and each sleeper lasted normally 12 to 14 years. The Railway department used mostly sal, teak and deodar trees for construction of railway lines, coaches and berths. In fact the railway was the largest consumer of forest trees which were supplied by some local contractors and timber dealers. As were in Sri Lanka, Indonesia and French Indo-China, so were in India the local timber merchants the main force of deforestation. They were actually serving the demands of their colonial masters.

### ***Plantation***

Foundation of the British hegemony in India gave opportunity to a number of British capitalists to invest their capital in plantation works. Thus tea and coffee plantation attracted huge capital flow in the country because of their demand in world market. The British government provided lands on very cheap rates to the European planters. For example, in Assam, lands were given under the Waste Land Rules in 1830s to the European planters to start tea plantation.



In the South India, coffee plantation was started in 1854 in Coorge. The European planters acquired vast area of lands, mostly forest lands, and started planned clearance of forests. In Coorge about 20000 acres of dense forests were cleared just in ten years. In absence of a definite forest policy and unscientific planning, sometimes a forest land was cleared but later on it was abandoned causing much harm to ecology.

Vast forest resources, thus, were one of the main attractions of the British in India, most particularly in the North East. With the coming of the British colonial rule, the organized exploitation of forest resources started which not only depleted resources of India but affected the age-old life pattern of the forest-dwelling communities. They started losing their uncontrolled possessions over the forest resources which were sustaining livelihood for them since time immemorial.

Forest Rights is a current issue among the forest-dwelling communities, academicians, policy-makers, media and social workers. Since, the enactment of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 by the Indian Parliament, this issue has caught the attention of a large number of people. This Act has brought an enthusiasm among the forest-dwelling communities, most of them belonging to the Scheduled Tribe category, all over the country. The Act has sought to correct 'historical injustice' done to them by recognizing their rights over forest lands where they have lived for a long time. It has also started a new debate on the environmental issues.

There has been a global awakening towards environmental issues, including the rights of indigenous peoples since a long time. A number of international agencies, including financial institutions, have also shown interest in these matters. Thus, the World Bank published a policy document entitled 'Tribal Peoples and Economic Development: Human Ecological Considerations' in 1982 in which it recognized that 'tribal people are more likely to be harmed than helped by development projects that are intended for beneficiaries other than themselves'. The Bank clearly stated that it will not 'assist development projects that knowingly involve encroachment on traditional territories being used or occupied by tribal people, unless adequate safeguards are provided'.<sup>12</sup> The Earth Summit (1992) and the Rio Declaration accepted the role of local communities in environmental management, because they have been following traditional approach towards it. But they are also, in fact, the most

backward peoples all over the globe. The United Nations Declaration on the Rights of Indigenous Peoples (2007) "provides a momentous opportunity for states and indigenous peoples to strengthen their relationships, promote reconciliation and ensure that the past is not repeated."<sup>13</sup> It was one of the objectives of the United Nations Decades of Indigenous Peoples (1995-2004). The most important issue was the issue of 'collective rights of indigenous peoples, including their ownership of lands and resources'. India has obligations under various international treaties and agreements that relate to environmental issues. Thus environmental policies and forest acts are the results of the global environmental concerns.

This book ventures to present a description of forest resources and forest dwelling communities of the north eastern states, particularly Arunachal Pradesh. Forest cover is collectively the largest in this part of India. So is the number of tribal communities. Since, they are dependent upon the forest resources found around them for their livelihood, the question of their rights over forest lands and resources has got a legitimate connotation. No doubt, the exploitation of forest resources by the imperial rulers of India also resulted in the exploitation of the forest dwelling communities, but it was tried to be corrected by the forest policies of the Government of India, most particularly by the enactment of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006. Considering, the significance of the Act on the life of tribal communities, this book investigates the traditional and customary forest rights of the tribes of Arunachal Pradesh and their alteration or continuation in the changing scenario.

The work has been completed by adopting the following research methods:—

- Field study, consisting of visits to some forest areas and conducting interviews with local people, including public leaders, village authorities and forest officials.
- Statistical, *i.e.* collection and analysis of numerical data from government sources and internet.
- Comparative and historical, *i.e.* collection and analysis of written records (government reports, newspapers and journals, relevant books, etc.)

The book has been divided into five chapters, including this one. Chapter 2 is a general description of the situation of forests and tribes of the north east, with special emphasis on Arunachal Pradesh. It also deals with the significance of forests in the life of a tribe.



Chapter 3 narrates the forest policies adopted since ancient times to the present age by successive rulers and governments of India and their impact on the forest dwelling communities. Following this, the Chapter continues an analysis of the forest policy of Arunachal Pradesh.

Chapter 4 is a description of the customary forest rights of the tribes and the changes brought into them by the introduction of modern legislations.

Chapter 5 deals with the present status of forest rights of the tribes with reference to the North East since the implementation of the Forest Rights Act 2006.

Chapter 6 is a general observation of the author on the whole work.

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## FOREST RESOURCES AND FOREST DWELLERS

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Nature has provided our planet, the Earth, with all such things as are required for sustenance of life, or life itself. They are called resources, which are available in various forms and in plenty to fulfil the requirements of every living organism. The earth has several spherical layers, such as, atmosphere, hydrosphere, and lithosphere. The atmosphere is a thin envelop of air around the earth extending to about fifty kilometer above its surface. The hydrosphere is the mass of liquid water, ice, and water vapour, while lithosphere is the earth's upper crust containing fossils fuels and minerals.<sup>1</sup> Next is the biosphere, in which all the living organisms interact with each other and with their environment. It includes most of the hydrosphere, parts of lower atmosphere and upper lithosphere. In fact, the biosphere is that part of the earth and its environment which supports life.

Besides these physical spheres, the human beings made their own sphere, which can be called as the sociosphere. It includes culture, religion and tradition or in a general term, the whole social system. It is the creation of continuous interactions of the human beings with the nature. In this sense, the whole social system of the humankind is the product of its relation with the physical environment.

Resources are categorized in two main classes, namely, the organic and inorganic resources, and in general term they include everything around us, for example, air, water, plant, animals, and minerals. For human beings, everything they make use of, is a type of resource.

Since the dawn of civilization human beings have been utilizing all types of resources without any consideration of their sustainability,

because it was not until very recent times that they realized that the natural resources which they exploited exorbitantly are not inexhaustible. Forests can be regarded as a major resource area for the human beings, because since the very beginning they have been the cradle of their fulfilment of all desires.

The term forest has its origin in the Latin word '*foris*' which means outside. In Indian language its synonymous are van, jungle, and so on. It relates, in this sense, to a village boundary, which is mostly uncultivated and uninhabited. Technically, forest has been defined in general, ecological and legal terms variously. In general term, forest is an area 'set aside for the production of timber and other forest produce'. In ecological term, it is defined as 'a plant community predominantly of trees and other woody vegetation, usually with a closed canopy'. In legal term, forest is an 'area of land proclaimed under a forest law'.<sup>2</sup>

Forests, which are 'a very striking feature of the land surface', are also 'a natural asset of immense value' for a country. If forests are 'scientifically managed and judiciously utilized can be kept perpetually productive and useful, conferring many benefits, direct and indirect, on the people'.<sup>3</sup> In this sense forests are a renewable resource. Forests have got immense *productive, protective and social* values, as they fulfil some of the basic needs, generate employment and give a number of products of commercial and industrial value. Forests preserve the physical features of the earth, check soil erosion, and control floods. They also help to maintain the ecological balance of nature. At the same time, forests are the shelter to the wildlife.<sup>4</sup>

The evolution of man on the Earth, as believed, took place about a million years ago. In the *Eolithic* age, primitive man lived in dense forests, on trees or in natural caves, and subsisted on leaves, fruits and roots of plants'. In the *Paleolithic* age he took to hunting and gathering, and in the *Neolithic* he learnt the use of fire and took to shifting cultivation. With this the art of agriculture was born and man started leading a settled life. The immediate impact of the pattern of permanent agriculture was that man started clearing forests for his social needs. Since then, this process went on continuously which led to the material changes in the life of human being.

According to the World Commission on Forests and Sustainable Development (WCFSD), the status of world forest, in 1999, was about 3.6 billion hectares, which was down from about 6 billion hectares 8000 years ago. Fifty-six countries, it says, have lost between 90 and 100 per cent of their forests.<sup>5</sup>



By 2011, total forested area in the world was 39, 000, 00 sq kms. which was 26.19 per cent of the total land area.

In India, though, the status of forest is still not so pathetic, it is not according to the principle set by the National Forest Policy (1952). According to the State of Forest Report 2009 of the Forest Survey of India, the forest cover of the country was 6, 90,899 sq.kms. It is 21.02 per cent of the total geographical area of the country. Very dense forest constitutes 83,510 sq.kms. (2.54 %), the moderately dense forest 3,19,012 sq.kms. (9.71%) and open forest constitutes 2, 88,377 sq.kms. (8.77%) of the geographical area.<sup>6</sup> The largest area under forest cover is in the hills districts of the country.

As per the India State of Forest Report 2011, released by the Ministry of Environment and Forests, the Forest and Tree cover of the country is 78.29 million ha, which is 23.81 per cent of the geographical area of the country. It has been mentioned in the Report that '15 states have registered aggregate increase of 5000 sq. kms. in their forest cover with Punjab leading with increase of 100 sq. kms. 12 states/UTs (mainly the NE states) have shown decrease to the extent of 867sq. kms. Decline of 281 sq. kms. in Forest cover of Andhra Pradesh is mainly attributed to harvesting of mature plantation of Eucalyptus and other species. Decline in Forest cover of NE is particularly due to prevailing practice of shifting cultivation in this region. The State of Madhya Pradesh has the largest forest cover in the country at 77,700 square km followed by Arunachal Pradesh at 67, 410 sq. kms. In terms of percentage of forest cover in relation to total geographical area, Mizoram tops with 90.68 per cent followed by Lakshadweed with 84.56 per cent. The total growing stock of India's forests and trees outside forests is estimated as 6047.15 million cu m i.e. 4498.73 million cu m inside the recorded forest area and 1548.42 million cu m outside the recorded forests.'

### **Forests in the North East India**

Very few parts of the planet earth are as endowed with plant and wildlife resources as is the north east<sup>7</sup> of India in general. One might feel the exclusiveness of its wide ethnic varieties as well.

One of the basic features of the north east India is 'the universal prevalence of dense and impervious forests', which are there since time immemorial. All types of trees had been growing widely without pre-planned plantation. Various Assamese chronicles and the works of Muslim scholars, including *Shihabuddin Talish's Fathiya-i-Ibriyah*, give wide account of forest resources of the north east. *Nicolo Conti*, a fifteen century Venetian traveler mentions about the abundance of



aloe wood, gold, silver, precious stones and pearls in Assam. *Glanius*, a Dutch sailor of Mir Jumla's expedition army, also describes various products of Assam, including peeper, aloe wood, sandalwood and medicinal herbs.<sup>8</sup> R.B. Pemberton describes that oak and fir of superior quality were seen in Manipur. In the Kubo Valley, there were magnificent forests of sal, garjun, and keo tree. On the Cachar-Manipur frontier there was abundance of jarul, nagisur, cham and toon trees.<sup>9</sup>

The whole of north east region is very rich in flora and fauna as well as mineral resources of various kinds. On the whole, there are as many as 8000 species of plants in the region. It is about 50 per cent of the plant species available in the whole Indian subcontinent. There are about 1500 species of tree, 337 species of climbers, 700 species of fern, 350 species of grass and 61 species of bamboo in all. Further, there are about 2000-3000 species of medicinal plants, 200 varieties of citrus plants and 600 species of orchids.<sup>10</sup> Some of the important timber trees of this region are- Hollock (*Terminalia myriocarp*), sal (*Shorea robusta*), Bonsom (*Phoebe* sp.), Teeta chopa (*Michelia champaea*), Nahar (*Mesuaferra*), Sonaru (*Cassia fistula*), Simolu (*Bombox ceiba*), Sachi or Agar (*Aquilaria agallocha*), khoir (*Acacia catechu*), and so on. They have been variously used in manufacturing plywood, match wood, packing materials, railway sleeper, poles, oil (from seeds of Sal and Nahar), furniture, houses, etc. Bamboos of various types grow in abundance in Mizoram, Tripura, Garo Hills, Assam, Arunachal Pradesh and Nagaland. Mizoram is the highest producer of bamboo in India. It is widely used for making houses, baskets, and handicrafts. A number of pulp and paper mills work in this region. North east is the storehouse of medicinal plants. Some of the important medicinal plants found in north-east are- *Ranwolfia Serpentina* (a source of reserepine), *Ipecae* (a source of Emetine), *Coptis teeta* (a source of Berberine), *Dioscorea* sps. (a source of diosgenin), *Solanum* (a source of camphor), *Cinnamonium tamala* (a source of cinnamon oil), *Mentha* sps. (source of menthol), Peppermint (source of mint oil), and *Ocimum* sps. (source of ocimum oil), to mention a few only. In the same way, the whole north-east is a vast depository of varieties of birds, mammals, and reptiles. Due to this reason people of other parts of the country and the world have been attracted to the north east of India and there has been a continuous struggle among different parties to have a hold over the natural resources of the region.

Arunachal Pradesh, popularly known as 'the land of rising sun',

is situated at the easternmost corner of the north east region of India. It lies between latitude 26° 28' to 29° 30' N and longitude 91° 30' to 97° 30' E. It has a vast geographical area of 83,743 sq. kms, which is the highest among all the north eastern states. The geographical area of Arunachal Pradesh is 2.54 per cent of the total area of the country. Arunachal Pradesh has long international border with Bhutan to the west (160 kms.), China to the north and north east (1,080 kms.) and Myanmar to the east (440 kms.).<sup>11</sup> It is one of the most beautiful places in terms of natural resources. It has predominantly tribal population of various groups, which add to its beauty par excellence.

Arunachal Pradesh was considered as an isolated place till very recent times. It has crossed several milestones since 1913-14, when the hills of Arunachal Pradesh were brought first time under 'a loose political control.' The journey, from the status of the Frontier Tracts (1882) to the North East Frontier Agency (NEFA, 1954) and from the naming of Arunachal Pradesh (1971)<sup>12</sup> to the attainment of the Statehood (1987), has been an interesting tale of international politics and tribal policies. But the political isolation did not prevent the natural interaction of the people of both the sides i.e. those of hills and plains (of Assam). Whereas, the people of hills came to the *hats* (the local markets) in foot-hills to exchange the forest products of the hills with the goods of plains such as salt, utensils, clothes, etc., the people of plains had equal interest in the vast natural resources of the hills. Woodcutters and elephant catchers from Assam and Bengal used to come to hills regularly. They used to pay nominal dues to the hill chiefs in lieu of timber or elephant. The British government tried to regulate this exercise by means of mediating between the two parties. This role was later converted into a formal interference by the government in the hills-plains trade relations. In this sense the hill people had exclusive rights over the natural resources.

### **Status of Forests in Arunachal Pradesh**

North east in general, and Arunachal Pradesh in particular, is very rich in plant resources. Let us have a look on the Table 2.1 below, reflecting forest cover in the north eastern states, as per State of Forest Report 2005 (revised in 2009).

Arunachal Pradesh has the highest forest cover among all the north eastern states. Forest cover in Arunachal Pradesh is 67,472 sq. kms. which is only next to Madhya Pradesh which has the forest cover of 77,739 sq. kms.

But according to the State of Forest Report, 2011, some changes



States	VDF	MDF	OF	TOTAL
Arunachal Pradesh	20859	31632	14981	67472
Assam	1464	11653	14641	27758
Manipur	689	5522	10741	16952
Meghalaya	334	9527	7344	17205
Mizoram	134	6384	12082	18600
Nagaland	12280	5072	7313	13665
Tripura	113	4816	3244	8173

Source: Forest Survey of India (State of Forest Report 2005, revised in 2009)

have taken place in the forest cover of the north eastern states. Thus, Arunachal Pradesh now has a forest cover of 67,410 sq. kms., Assam has 27,673 sq. kms., Mizoram 19,117 sq. kms., Meghalaya 17,275 sq. kms., Manipur 17,090 sq. kms., Nagaland 13,318 sq. kms., Tripura 7,977 sq. kms. and Sikkim 3,359 sq. kms.<sup>13</sup> According to the Report, the north-eastern region has a forest cover of 1,73,219 sq km, which constitutes 66.07 per cent of its geographical area (7.98%). In this way, nearly a fourth of India's forest cover lies in this part of India. The region, however, has lost 549 sq. kms. of forest cover in the last two years (2009-11), while another 1,229 sq. kms. forest land has also been degraded into scrub with canopy density of less than 10 per cent. 'This decrease is attributed to the biotic pressure and shifting cultivation in the region', the report stated.<sup>14</sup>

District-wise break-up of forest cover in Arunachal Pradesh is as follows:—

Districts	GA	VDF	MDF	OF	Total	% of GA
Changlang	4662	1864	1460	931	4255	91.27
Dibang Valley	13029	1696	4999	2622	9317	71.51
Kameng East & Kameng West	11556	3420	4648	2192	10260	88.79
Lohit	11402	1966	4040	1625	7631	66.93
Papum Pare	3462	990	1556	703	3249	93.85
Siang East	3655	884	1281	637	2802	76.66
Siang Upper	7075	1639	2633	1325	5597	79.39
Siang West	7813	2477	2741	1501	6719	86.00
Subansiri Lower	9548	3001	4250	1424	8675	90.86
Subansiri Upper	7032	1876	2749	1185	5810	82.62
Tawang	2172	366	484	375	1225	56.40
Tirap	2362	679	715	419	1813	76.76
Total	83743	20858	31556	14939	67353	80.43

Source: Forest Survey of India (State of Forest Report 2005, revised in 2009).

Recorded forest area in the State of Arunachal Pradesh (as per the State of Forest Report 2005) is shown in Table 2.3 as under:—

GA	Recorded Forest Area			Total	% of GA
	Reserved forest	Protected forest	Unclassed forest		
83743	10546	9528	31466	51540	61.55

Recorded forest area in Arunachal Pradesh, as shown in Table 2.3, is 51,540 sq. kms. which is 61.55 per cent of the total geographical area of the state. Out of 51540 sq. kms., Reserved Forest constitutes 20.46 per cent, Protected Forest 18.49 per cent and Unclassed Forest 61.05 per cent. In all India figure, Madhya Pradesh has the largest area under recorded forest (94,689 sq. kms.), but in terms of its percentage of the geographical area Andaman and Nicobar has 86.93 per cent, followed by Sikkim (80.31 %), Mizoram (79.30%), Manipur (78.01%), and Himachal Pradesh (66.52%). Very dense forest in Arunachal Pradesh is 20858 sq. km, moderately dense forest 31556 sq. kms., and open forest is 14939 sq. km. About one fourth of the very dense forests of the country exist in Arunachal Pradesh.

Climatic condition of Arunachal Pradesh has been a big factor for the growth of enormous and dense forests. Climate in the State varies from temperate in the northern part to warm and humid in southern part. At the same time the State receives an average rainfall ranging from 2000mm to 8000mm.

In Arunachal Pradesh there are over twenty forest types which can be divided into five main categories, i.e., tropical, sub-tropical, pine, temperate, and alpine forests.<sup>15</sup>

*Tropical forests* are found up to a height of 900m above MSL on the north and south bank of the Brahmaputra. On the north bank, in the districts of West Kameng, East Kameng, Papum Pare, Lower Subansiri, West Siang and East Siang, the main species of trees found under this category, are — *Mesua-Altingia*, *Altingia-Engelhardia*, *Altingia-Syzygium*, *Mesua-Syzygium-Echinocarpus*, etc. On the south bank, in the districts of Tirap, Changlang and Lohit, a good number of commercial timber species are found. They are — *Dipterocarpus macrocarpus* (Hollong), *Shorea assamica*



(Mekai), *Terminalia myriocarpa* (Hollock), *Mesua ferrea* (Nahar), etc. Tropical Semi Evergreen forests (mainly deciduous) are found in all districts up to an elevation of 600m.

Found at an altitude between 800m and 1900m, the *Sub-Tropical forests* are very dense in nature. Main trees found in this category are — *Castanopsis lidica*, *C. hystrix*, *C. armata*, *Quereus lamellose*, *Q. griffithii*, *Q. spicata*, etc. Apart from these, a number of climbers, orchids and ferns are also found.

*Pine forests* are found both in the subtropical and temperate zones in between 1000m and 1800m height. Pine trees of different species can be seen in Rupa and Dirang Valley of West Kameng district, Hapoli in Lower Subansiri district, Mechuka in West Siang, Anini in Dibang Valley and Melinja in Lohit district. Main species of pine forests are *Pinus roxburghii*, *P. wallichiana* and *P. merkusii*.

*Temperate forests* are divided into two subtypes, i.e., temperate broad leaved and temperate conifer forests. The first are found at the height of 1800m to 2800m., whereas the second types are found at the height of 2800m to 3500m.

*Alpine forests* are found above the height of 3500m up to 5500m. Due to the presence of heavy snow in this region, no tall tree grow. Only dwarf bushes, shrubs and herbs with deep roots and cushioned leaves and branches can be seen. Main plants of this region are — *Rhododendron nivale*, *R. anthopogon*, *R. thmsonii*, *Sedum* sp., *Festuea* sp., *Rhodiola* sp., etc.

There are 90 species of bamboos in the whole north east region. This particular group of plant, known as “*poor man timber*”, has been a part of major resource for economic development. Thirty-nine different species of bamboo are found in different districts of Arunachal Pradesh. Arunachal Pradesh Bamboo Development Agency has been working on conservation and development of bamboo in order to cater the need of the local people. In the same way, a large number of different species of cane and medicinal plants are found in the State. India has 60 species of cane, out of which 20 species are found in Arunachal Pradesh. Canes are used as raw material in furniture industries. Arunachal Pradesh is a major source of supply of raw materials required for the Indian furniture industries. There are over 500 species of medicinal plants which are used by the traditional users for treatment of a number of diseases.<sup>16</sup>

Tree species which are found in Arunachal Pradesh grow very fast. Their plantation has been very successful because of various

plantation programmes and people's acceptability to them. Most of the species are easy to grow and the tribes are very well acquainted with 'their nursery techniques from the knowledge gained by experience.'

In all Arunachal Pradesh has 20 per cent of species of India's faunas, 4500 species of flowering plants, 400 species of pteridophytes, 23 species of conifers, 35 species of bamboos, 20 species of canes, 52 species of *Rhododendron* and more than 500 species of orchids. Because of this reason, this State is considered as one of the twelve mega diversity "Hot Spots" in the world.

Arunachal Pradesh has a great variety of wild lives too, for example, tiger, leopard, black panther, elephant, bear, wild boar, barking deer, musk deer, monkey, langur, wild goat, wild buffalo, flying fox, squirrel, porcupine, etc. Hornbill is a special kind of bird found in this State. Mithun (*Bos frontalis*), a semi-domesticated animal, is the most important among all because of its exchange value. Yak is found in the districts of Tawang and Bomdilla.

### Population Structure

Forest areas are largely identified with the concentration of population of a particular group of people known as the tribe. Rather, we can say that forests are largely dominated by the people known as the Scheduled Tribes, according to the Constitution of India. Article 366(25) of the Constitution of India refers to the Scheduled Tribes as 'those communities, who are scheduled in accordance with Article 342 of the Constitution. The Lokur Committee first laid down some essential characteristics for a community to be identified as Scheduled Tribes.<sup>17</sup> These characteristics are-

- (a) Identification of primitive traits
- (b) Distinctive culture
- (c) Shyness of contact with the community at large
- (d) Geographical isolation, and
- (e) Backwardness

However, in abroad academic sense, according to Academic American Encyclopedia,<sup>18</sup> 'a tribe is a group of people sharing common values, general customs, language, and usually contiguous territory, who as a result, also share a common cultural identity.'

It is also defined as a 'type of social organization based on small groups defined by traditions of common descent and having temporary and permanent political integration above the family level



and shared language, culture, and ideology.<sup>19</sup> In the late twentieth century the term 'tribe' was rejected by many anthropologists, because it cannot be defined precisely. Many others thought that the term was 'pejorative as well as inaccurate', and they replaced it with the designation 'ethnic group'.

It is not inappropriate here to go through the historical development of the term 'tribe' in context of India. While defining the caste and tribe, the ethnographer-bureaucrats such as W. Crooke (1897), E. Thurston (1906), H.H. Risley (1905) and Rowley described the tribes as the 'aboriginals' who had been pushed into the inaccessible forests and mountains by more advanced people. Since then they are identified living amidst dense forest, marshy land or inhospitable hills. They formed an emotional and sacred relationship with their habitat where they had developed their own system of life. Although the term 'tribe' is a recent origin in context of Indian people, some of the popular terms occur in old Indian literature which are considered synonymous to 'tribe'. Thus we come across the terms such as, *Vanyajati*, *Vanavasi*, *Pahari*, *Adimjati*, *Adivasi*, and *Janjati*.<sup>20</sup> At present a common term, i.e. Scheduled Tribe or Anushuchit Janjati, which is a constitutional term, is applied for all categories of such people. However, many prefer the term 'Adivasi' to 'tribe'.

At the time of the preparation of the First Census Report (1891), the question of caste and tribe was dealt in detail. On the basis of religious practices, the so-called tribes were first categorized under the heading 'Animism', which was substituted, later on by the term 'Tribal Religion'. But the enumerators could not find differences between Hinduism and Tribal Religion or Animism. Sir Herbert Risley pointed out that 'no sharp line of demarcation can be drawn between Hinduism and animism. The one shades away insensibly into the other'.<sup>21</sup> Sir EA. Gait, the Commissioner of the Census of 1911 also pointed out to the gradual process of Hinduisation.

Amidst the debate, J.T. Martin, the Commissioner of Census of 1921, changed the religious division of Animism of the previous censuses into that of 'Tribal Religions', although he was not satisfied with the distinction being made between Animism and Hindu system.<sup>22</sup> J.H. Hutton, the Commissioner of Census of 1931 retained the heading 'Tribal Religions' as distinct from Hindu, Muslim, Christian<sup>23</sup>, and substituted the term 'Primitive Tribes' for 'Forest Tribes'.

In the Census of 1891, the number of Forest Tribes was given about one crore and sixty lakh. In the Census of 1921 Martin dealt with them under the heading 'Hill and Forest Tribes'. Even if a tribe,



according to Martin's view, had a Hinduized or non-Hinduized section, and even if a large section of it lived in the plains amidst other sections of Indian population, it was included under the category of 'Forest' or 'Primitive Tribe'.<sup>24</sup>

Sir Athelstane Baines calls them 'the pre-Aryan inhabitants' of India. Lacey (1931, Census of Bihar and Orissa) calls them 'the purest aboriginal community. Shoobort (1931, Census of C.P. and Berar) also calls them 'aborigines', 'the true autochthonous stock' and 'the original inhabitants of the Province'. The main purpose was to prove that these people were pushed into the hills and forests by the Aryans. However, this theory may not be correct because considering their wandering nature many of them changed their place of habitat time and again. S.C. Roy, a reputed anthropologist of early twentieth century, points out in the case of the Mundas that before settling down in Chhotanagpur in the sixth century B.C., they had lived at a number of places.<sup>25</sup> The tribes of present Arunachal Pradesh have also migration theory by which they trace their origin from Burma, Tibet or China.

Tribal population is scattered throughout the country, barring a few states where it is in negligible number. Whereas in some parts it is highly concentrated, in other parts it is scanty. According to the Census Report of 2001, the total tribal population of the country is only 8.43 per cent, which constitutes just 8.2 per cent of the total population of the whole country. Out of this, more than half of the Scheduled Tribes population is concentrated in the States of Madhya Pradesh, Chhatisgarh, Maharashtra, Orissa, Jharkhand, and Gujarat.

Tribal communities occupy about 15 per cent of total country's areas. They live in 'various ecological and geo-climatic conditions, ranging from plains and forests to hills and inaccessible areas.'

The distribution to tribal population throughout the country has been shown in the Table 2.4.

More than 700 hundred Scheduled Tribe communities have been notified under Article 342 of the Constitution of India. The largest number of Scheduled Tribe (number of specific communities) is in the state of Orissa, numbering sixty-two.

Most of the tribal communities in India are forest dwellers, however, a number of them have now shifted to the plain areas. Their occupational pattern shows that 44.70 per cent of ST population, according to the Census of 2001, was cultivators, 36.9 per cent agricultural labours, 2.1 per cent house hold industry workers and 16.3 per cent was other occupation workers.<sup>26</sup>

Table 2.4: Distribution of Tribal Population in India		
Sl. No.	States	% of ST population in States/UTs to the total ST Population of the country
1.	Madhya Pradesh	14.51
2.	Maharashtra	10.17
3.	Orissa	9.66
4.	Gujarat	8.87
5.	Rajasthan	8.42
6.	Jharkhand	8.40
7.	Chhatisgarh	7.85
8.	Andhra Pradesh	5.96
9.	West Bengal	5.23
10.	Karnataka	4.11
11.	Assam	3.92
12.	Meghalaya	2.36
13.	Nagaland	2.10
14.	Jammu & Kashmir	1.31
15.	Tripura	1.18
16.	Mizoram	1.00
17.	Bihar	0.90
18.	Manipur	0.88
19.	Arunachal Pradesh	0.84
20.	Tamil Nadu	0.77
21.	Kerala	0.43
22.	Uttarakhand	0.30
23.	Himachal Pradesh	0.29
24.	Dadra & Nagar Haveli	0.16
25.	Sikkim	0.13
26.	Utter Pradesh	0.13

Source: Annual Report of Ministry of Tribal Affairs, Govt. of India, 2008-09.

### Population Structure of Arunachal Pradesh

The population of Arunachal Pradesh, according to the Census Report of 2001, is 1,097,968. The Scheduled Tribe population is 705,158, which is about 64.2 per cent of the total population. There are twenty six major tribal communities and more than hundred sub-groups of them who are scattered over sixteen towns and 4065 villages. The major tribal communities are — Adi, Apatani, Bangni, Bokar, Bori, Digaru Mishmi, Hill Miri, Hrusso (Aka), Idu Mishmi, Khamba, Khampiti, Khowa, Memba, Miji, Miju, Monpa, Nyishi, Nocte, Pallibo, Ramo,

Sherdukpen, Singpho, Sulung, Tagin, Tangsa, and Wangcho. The district wise population of Scheduled Tribes in Arunachal Pradesh is shown as under:

District	Total population	Total ST population	% of STs to total population
Tawang	38924	29191	75.0
West Kameng	74599	36951	49.5
East Kameng	57179	49585	86.7
Papum Pare	122003	69007	56.6
Lower Subansiri	55726	46893	90.1
Kurung Kumey	42518	41619	
Upper Subansiri	55346	49552	89.5
West Siang	103918	84922	81.7
East Siang	87397	60420	69.1
Upper Siang	33363	26094	78.2
Dibang Valley	7272	4827	46.5
Lower Dibang Valley	50488	22005	
Lohit	125086	40552	38.2
Anjaw	18441	14249	
Changlang	125422	45351	36.2
Tirap	100326	83940	83.7
<b>Total for A.P.</b>	<b>1097968</b>	<b>705158</b>	<b>64.2</b>

Source: Statistical Abstract of Arunachal Pradesh 2008 and Census of India 2001.

Arunachal Pradesh has 2.55 per cent of India's geographical area and only 0.11 per cent of all India population, with population density at 13. Till 1961 entire Arunachal Pradesh was under rural category but at present there are seventeen towns. Whereas, the percentage of urban population to total population in 1971 was only 3.70, it rose to 24.41 per cent in 2001. Though during the last two decades urbanization has taken place at a fast speed, Arunachal Pradesh has still a dominant rural base.

However, the provisional Census Report of 2011 shows some important changes in population structure of Arunachal Pradesh. The State's total population has reached to 13, 82,611. The size of rural population is 10, 69,165, while the urban population is 3, 13,446, which is 77.33 per cent and 22.67 per cent respectively. The increase



in population is more in the urban areas than in the rural areas. The level of urbanization has increased from 27.81 per cent to 31.16 per cent in the last ten years.<sup>27</sup>

### **Significance of Forests for Tribes**

Tribes have very close relationship with forests. Their customs, religious practices, social relations, and folk-lore have been greatly influenced by forests. The United Nations in one of its reports on *Development of Tribal...* (1973), mentioned that "tribal people in general, derive either directly or indirectly a substantial amount of their livelihood from the forests. They subsist on edible leaves and roots, honey, wild game and fish. They build their houses with timber and bamboos and practice cottage crafts with the help of local raw materials. They use herbs and medicinal plants to cure their diseases and even their religion and folk lore are woven around the spirits of the forests".

They get everything of their need from forests, or in other words, forests fulfil all of their requirements. Tribal economy is largely based on forest resources, which constitute timber, cane, bamboo, leaves, and wood for fuel, fodder, fruits, herbs, wild games and what not! Thus they depend on forests for food, materials for house construction, fuel for cooking, lighting and heating their houses, medicinal herbs, and fodder for cattle. Dependence of tribes on forests for sustenance and income generation is significant. They earn their livelihood by the collection of minor forest produces. Forestry sector alone provides direct employment to a large number of rural population. According to an estimate, 33 per cent of the tribal earn their livelihood from forests and forest products.<sup>28</sup>

Not only in economic sense but in terms of social and cultural activities, too, tribes are very emotionally attached to forests. In their folk-tales, folk-lore and festivals forests deities and spirits are described frequently. It attests their close relations and understanding with the nature. According to the Nyishis' faith and beliefs, their Wiyus (i.e. their gods and spirits) live in forest, on the lofty hills, on the top of tall trees, in rivers. Apatanis' six deities, i.e. Ui-Tango, Ui-Ngurre, and Nguntre (all females) and Ei Karte, Rup Karte and Ain Karte (males) created trees, plants, animals and birds, and even the sun, moon and stars.<sup>29</sup> Wnchos of Tirap district worship Baua, the benevolent jungle deity. According to the Adis' belief a very big tree, Rotne, in their surrounding forests is the abode of the evil spirit known as Epom. Due to this reason they do not cut such a tree. The Padams' belief that a creeper called Ridin grows out of the placenta of Pedong

Nane, which is the mother of all living beings. This particular creeper protects them from all misfortune.<sup>30</sup>

For other tribes of Arunachal Pradesh, too, forests are the abode of various deities and spirits. Hill Miris consider many plants sacred. Akas of West Kameng have a faith called the Nown-Yiew which means their forest lands and water resources are sacred. They also believe<sup>31</sup> that Wojo Phu or the highest mountain peak in their area is also very sacred and so cutting of trees or hunting from that mountain is strictly prohibited.

The Mishmis have faith in "the spiritual-qualities of natural phenomena and of all things, animate and inanimate." They believe that some of the spirits reside in trees, water, or in air. A spirit, such as, Cupa (of Kaman) or Kapa Baru (of Taraon Mishmis) lives in big trees, and if anybody cuts a tree where he lives, he would get leprosy for offending the spirit.<sup>32</sup>

Spirits in which the Singphos believe have their abode in the house, trees, water, forest and hill. They categorically name a few beneficent spirits as follows:-

Rukju-nat — abode in big trees

Kha-nat — abode in water

Bum-nat — abode in hills

Inlung-nat — abode in hills

Samathi — abode in the house

It is mentioned that "while cutting big trees, Singphos beg leave of the spirit residing in it and request him to leave the tree and dwell in some other tree. When they kill a tiger or an elephant they propitiate the pnun guzu (the spirit of the forest)."<sup>33</sup>

In this way significance of forests for tribal is deeply woven with their material as well as spiritual and cultural well-being.

Dependence of tribes of Arunachal Pradesh on forest resources can be understood in the way that still about eighty percent of population in the state live in villages, which are mostly very remotely situated. In absence of any substantial means of livelihood, they depend solely on agriculture, horticulture, animal husbandry, fishery etc, which are supported by forest resources. The Status of Forest Report of India (2009) also makes it clear that 'the pressure on India's forest continues to be very high, with more than 200 million people being dependent on forest for livelihood'.

In general terms, forests are vital not only for tribes but for the

whole nation, as they contribute significantly to the social, economic, and environmental well-being.

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VDF — all lands with tree cover of canopy density of 70 per cent and above.  
MDF— all lands with tree cover of canopy density between 40 per cent and 70 per cent.  
OF — all lands with tree cover of canopy density between 10 per cent and 40 per cent.
7. The term 'north east' in respect of India originated during the British rule. The regions situated to the east of Bengal were termed as the north-east part of Bengal. Geographically and from the administrative point of view Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura are designated as the north eastern states. Ethnic and cultural similarities of these states bind them together in a distinct entity.
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