STUDIES ON DEPENDENCE OF TRIBAL COMMUNITIES IN AND AROUND AYODHYA HILLS, PURULIA DISTRICT, WEST BENGAL ON NON-TIMBER FOREST PRODUCE (NTFP).

Introduction
INTRODUCTION

Dependence on any substance or object is an outcome of experience, knowledge and wisdom regarding reliability of its virtues and performances. Non-timber forest products happen to contribute one such resource on which the forest dwelling communities are dependent to a great extent. Non-timber forest products (NTFPs) are an integral part of lives of tribal communities surviving in and around forests and depending on them.

Since use of NTFPs always spares felling of trees or rather encourages growth of species of all types including trees, its role in sustenance of forest and conservation of biodiversity is invaluable. Moreover their economic potential can address issues of poverty of the forest dwellers. The potential economic value of NTFPs either in terms of utilization or their market value is often unknown or improperly estimated.

NTFP based activities hold prospects for integrated forms of development that yield higher rural income and conserve biodiversity while not competing with agriculture.

The scientists have also been giving importance to the documentation and protection of the age-long knowledge of the tribal communities regarding the use of NTFPs. This traditional knowledge has been proving useful in stock-taking of bioresources, innovation of novel genetic resources from them and setting conservation strategies.

The tribal people of India, also called Adivasi, have a significant contribution towards the cultural heritage of India and happen to be the richest repository of Traditional Knowledge (TK) regarding nature and natural resources.

In view of all these, the present work was taken up in Ayodhya Hills, which is a forested area with a high occupancy by such tribal communities as Santhals, Paharias, Bhumij, Birhors, Mundas etc whose lives and livelihoods closely integrate and interact with the forest community. It was also felt necessary to assess whether the interaction is mutually beneficial or detrimental to both of them. It is certain that optimization of mutual sustainability can perpetuate economic development and ensure ecological welfare. Unfortunately in most of the developing World, although people are directly dependent on phytoresources for their livelihoods, both resources and traditional knowledge related to them are under threat.

The objective of the present work would thus concern:

(i) Preparation of a taxonomic account of phyto-resources on which the tribal communities of Ayodhya Hills in Purulia district of West Bengal depend so as to contribute towards stock-taking of biodiversity and bioresources and to facilitate their identification.
Studies on dependence of tribal communities

(ii) Documentation of indigenous Traditional Knowledge (TK) about various non-timber uses of forest resources, especially plants, for conveying the benevolence to mankind.

(iii) Documentation of the names and addresses of tribal resource persons who were concerned with this work as primary sources of the Traditional Knowledge (TK) so as to help them in protecting their Intellectual Property Rights (IPR), as and when required.

(iv) A subjective assessment of the impact of use of NTFPs by forest dwellers on the status of concerned forest plants. Assessment of the income generated by the concerned tribes from sale of NTFPs

(v) Formulation of strategies of integrating sustainable use of NTFPs of the area with the economic welfare of the tribal communities and forest conservation.

The present work has been presented in eight chapters. The first chapter entitled General résumé deals with a brief elucidation of the state of art of the subjects like ethnobotany, Non-Timber Forest Products and ethnology of Santhals, Birhors, Paharia, Munda and Bhumij to lay the foundation of the work. The second chapter entitled ‘Glimpse of Purulia district’ incorporates information about the geographical location of the district, physical features, climate, hill and river systems, soils, demography and other pertinent perspectives. Review of literature covered in chapter three, gives an overview of the work so far done on Purulia district by different botanists in the present context. The fourth chapter deals with ‘Materials and Methods’ to include every aspect of the work performed. Results of the work are presented in the fifth chapter each and every aspect of which has been discussed in the sixth chapter entitled ‘Discussion’ so as to reveal keeping parity with objective the significance and scope of the work. The seventh chapter summarizes the work and concludes with precision, rationality and contemporary pertinence. All the publications referred to in this work have been cited under References in the eighth chapter.
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Chapter 1
General Résumé
GENERAL RÉSUMÉ

State of art of the subjects of concern:

The scientific and technical knowledge currently available and pertinent to the title of the present research work can be grouped into four broad categories, viz. ethnobotany, traditional knowledge, ethnology and non-timber forest produce, a precise account of which is given in the following.

Since the advent of man in the biological scenario of the earth, his association with nature and her creations is noteworthy although with the progress of civilization there has been dispersal of human populations far and wide. Still a large diversity and density of aboriginal human populations live today in nature and more precisely in the mega-diversity centres. In India there are nearly 68 million people of 697 indigenous communities designated as scheduled tribes. These communities belong to 227 ethnic groups and no less than 427 scheduled tribes still live in forests sharing all moments of their life with plants, animals and the nature. Due to this intimacy the tribal communities have acquired through generations enormous experience and posses truthful knowledge about nature and biota. The scientific world has, of late, given recognition to the traditional knowledge especially in the context of novel species and bioresource identification since many species are yet to be described and catalogued. This problem has two key elements, which may be termed the ‘Linnaean shortfall’ and ‘Wallacean shortfall’ (Whittaker et al., 2005). The Linnean shortfall refers to the deficiency in the knowledge of the scientific world about the total number of species sharing earth with us. Wallacean shortfall speaks about the inadequacy of knowledge about the distribution of the species we know. To reduce these short falls utilization of the indigenous knowledge has been realized to be indispensible. Exploration of traditional knowledge and indigenous technical knowledge for conservation of species and their sustainable use is in progress.

1.1 Ethnobotany

Evolution of human life and culture has directly or indirectly been associated with and influenced by the surrounding environment, especially the vegetal world. Primitive man living closely associated with nature, mainly depended on it for his survival. His dependence on the plants around him, made him to acquire the knowledge of economic and medicinal properties of many plants by trial and error. Consequently he became the store-house of knowledge of many useful as well as harmful plants, accumulated and
enriched through generations and passed on from one generation to another, without any written documents. It is therefore, important that before this rich unwritten knowledge on uses of plants and sustenance of plant resources is lost forever it must be properly documented and preserved.

“Ethnobotany” appears to be an anthropocentric approach to botany which is essentially concerned with gathering information on plants and their uses. Powers (1873-1874) used the term “Aboriginal botany” to refer to the “study of all the forms of vegetable world which the aborigines used for medicine, textile fabrics, ornaments etc’.

The term was first time coined by Hershberger, in 1896 in the daily Evening Telegraph, Philadelphia although concern with ethnobotany dates back to the dawn of civilization.

“A truly broad concept emerged only when Robbins et al. (1916) defined the term as the “study and evolution of the knowledge of all phases of plant life amongst primitive societies and of the effect of the vegetal environment upon the life.” The coverage of the subject is much more extensive today. It is a multi-disciplinary subject in one hand and intra and inter-disciplinary on the other hand. Ethnobotany, the holistic approach to study all aspects of direct man-plant relationship, has grown to the extent of its further ramifications into different sub disciplines and flourished to build relationship with other disciplines (interdisciplinary). Analysis of the direct man-plant relationship reveals five categories – i) relationship useful to both plants and man, ii) useful to man but harmful to plants, iii) useful to plants but harmful to man, iv) harmful to both and v) cultural relationships.

Vestal and Schultes (1939) have employed the term “economic botany” to include all plant products of use to man, stating that, in essence, economic botany is more inclusive than ethnobotany, “ a term by which most investigators have designated the plants used by aboriginal peoples”. They have adopted what they regard as the broader term economic botany, “because not all the uses of plants by primitive people are of necessity aboriginal in origin”.

Jones (1941) defined ethnobotany as “the study of the interrelations of the primitive man and plants”. Later, Schultes (1941) reiterated this point of view, stating that the members of science of one or another school are agreeing rather unanimously to regard ethnobotany, as “the study of the relationship between man and his ambient vegetation”.

Castetter (1944) confined ethnobotany to man in primitive state of culture and stated that “ethnobotany is sharply differentiated from economic botany in that it is vitally concerned
with the fundamental cultural aspects of plant utilization, while economic botany practically ignores the cultural aspects in a very general way.”

1.1.1 Significance of ethnobotany

The significance of Ethnobotany gets reflected in the following perspectives.

1. Use of man-plant relationship in developing human society.
2. Understanding of history and heritage of a community based on existing human culture.
3. Identification of genetic pool of resistant crops for development of hybrid plant species.
4. Scientific investigation of herbal practices existing among different ethnic communities and tribal groups to discover new area of knowledge, treatment, therapies and new drug development.
5. Utilization of traditional technologies with scientific inputs for the benefit of artism classes and for sustainable utilization of natural resources.
6. Indigenous knowledge can be used in alteration of both Linnean and Wallacean short falls and augmentation of biodiversity documentation.
7. Ethnobotany promises to hand over phytoresources of diverse types for human benevolence especially the medicinal plants together with the ways and means of their sustenance.
8. The cultural perspectives of ethnobotany always have a direct bearing on conservation of species and ecosystem as a whole.
9. Ethnobotany provides to handover phytoresources of diverse types for human benevolence especially the medicinal plants together with the ways and means of their sustenance.
10. Ethnobotany provides opportunities for identification of wild varieties of the present day economic plants, which are likely to handover genotypes for disease and pest resistance and pave the pathway towards sustainable agriculture.

11. Ethnobotany may generate guidelines for ecorestoration of degraded ecosystems

1.1.2. History of Ethnobotany

Though the term “Ethnobotany” was coined in 1895 by the US botanists John William Hershberger, the history of the field began long before the event of its nomenclature. In AD 1, the Greek surgeon Dioscorides published “De Materia Medica” which gave an account of about 600 plants occurring in the Mediterranean region. It also included information on how the Greeks used the plants, especially for medicinal purposes.
In the beginning, ethnobotanical specimens and studies were not very reliable and sometimes not much helpful, but in the early twentieth century, botanists and anthropologists finally collaborated mutually and the collection of reliable, detailed data began.

1.1.3 Modern Ethnobotany

With the beginning of the 20th century, the field of ethnobotany experienced a shift from the compilation of raw data to a greater methodological and conceptual reorientation, which marked the beginning of academic ethnobotany. The founding father of this organized discipline is Richard Evans Schultes.

The indigenous societies all over the world have developed their own knowledge about the plants and animals in their surroundings and have integrated them with their needs, cultural practices and developed mutually sustainable relationships. Studies on direct man-plant and man-animal relationship have been given great importance in composing a subject known as ethnobiology.

There are many interdisciplinary approaches of Ethnobotany viz., ethnomedicine, ethnoveterinary, ethnocosmetics, ethnogastrology, ethnopharmacy, ethnopharmacology etc., the growth of each of which necessitates enrichment by pertinent indigenous knowledge. So aptly the decade beginning from 1st January 1995, was observed as the International Decade for the World’s Indigenous People with the main objective of immediate documentation of the so long uncared traditionally sustained indigenous knowledge which would otherwise be extinct in future. The ethnobotanists realized the necessity to develop methods that empower the people with whom they work. There is an urgent need to record all ethnobiological information from the diverse ethnic communities before the traditional cultures are completely lost. Ethnobotanists have to shoulder the responsibility of stock-taking the traditionally used biological resources and revitalizing the traditional beliefs and culture for conservation of such resources.

1.1.4 Traditional Knowledge (TK):

The World Intellectual Property Organization (WIPO) used the term “Traditional Knowledge” to refer the tradition based literacy, artistic or scientific work performances, scientific inventions, discoveries, designs, marks, names and symbols, undisclosed information and all other tradition based innovations and creations resulting from intellectual activity in different scientific field. The Traditional Knowledge refers to the knowledge systems which have generally been transmitted from one generation to
another by oral means only and are generally regarded as pertaining to a particular people or its territory; they are constantly evolving in response to the changing environment.

Documentation of Traditional Knowledge (TK) especially ethnobiological aspects were carried out in India under the “Man and Biosphere” Project. Traditional Knowledge can act as a source of wisdom for decision making regarding various developmental activities. This is also considered as a valuable asset of the community, helping them to shape and control their own development.

In the current Intellectual Property Right (IPR) regime, documentation of TK with appropriate protection can prevent misappropriation and wrong patenting. Documentation of ethnomedicinal wisdom can further help the identification of promising plants and other materials to be selected for detailed scientific investigation and validation.

It may also help in establishing linkages with the plan and process, especially in the formation of innovative programmes and projects that can be implemented at grass-root level. Value addition of selected plants and other materials may help to enhance the socio-economic status of the knowledge providers/custodians as well as the community as a whole.

Considering the importance of TK in modern era- the scientists have shifted their field of interest to the nature where still reside people with enormous knowledge. So documentation of traditional knowledge is one of the thrust areas in scientific world today.

The study of ethnobiology presently gets adequate consideration in scientific research. Purulia, in West Bengal is the ideal place for studying ethnobiology in general and ethnobotany in particular for its rich tribal population both in terms of density and diversity.

1.2. Ethnology

Ethnology (from the Greek word *ethnos* meaning *people, nation, race*) is the branch of anthropology that compares and analyzes the origin, distribution, technology, religion, language and social structure of the ethnic, racial, and/or national divisions of humanity (Newman *et al.*, 2008). The term *ethnology* is credited to Adam Franz Kollár who used and defined it in his *Historiae ivrisqve pvublici Regni Vngariae amoenitates* published in Vienna in 1783 (Zmago and Jezarnik, 1995). In some parts of the world ethnology has developed along independent paths of investigation and pedagogical doctrine with *cultural anthropology* becoming dominant especially in the United States, and *social*
anthropology in Great Britain. Ethnology has been considered an academic field since the late 18th century especially in Europe and is sometimes conceived of as any comparative study of human groups.

An overview of ethnology covering India reveals that the tribal people, also called adivasi, are the aboriginal people of the nation constituting a large part of Indian population. According to Article 342 of the Constitution of India at present there are 697 tribes. Indian tribals have a significant contribution in the cultural heritage of India. Since the present work is based on the traditional knowledge regarding the non-timber use of phytoresources which still prevails in the tribal communities like Birhors, Santhals, Paharias, Sardars and Mundas settled in Ayodhya Hills of Purulia District, a precise ethnological account of these tribes has been presented in the following.

1.2.1 Ethnology of Birhors

1.2.1a. Origin

Birhors owe their origin to Santhal clan. There is no specific record of their arrival in Purulia district but it is certain that they immigrated from Hazaribagh, the homeland of Birhors. These communities are distributed in the villages as Barrhia, Beredi and Bhupatipally under Bagmundi Block of Purulia District.

1.2.1b. Habit

Birhors have no little title, but they are divided into gotras and their sub groups e.g- Hemrom is divided into chouli Hemrom, Khudi Hemrom and Here Hemrom. They have a dialect of their own, which is used within their kingroups. They have no script of their own and speak in Bengali with their neighbouring community. This tribal group has no identification symbol in form their dress or ornaments. As per constitution they are treated under “Primitive Tribal groups” in the list of scheduled tribes. Birhors used to practice shifting cultivation.

1.2.1c. Food habit

They are non-vegeterians, prefer different types of meat except beef. Cauliflower, rice, green leafy vegetables, pulses, roots of different plants are also consumed. Different
wild animals are also consumed according to availability. Their succession pattern follows the patriarchal rule.

1.2.1d. Settlement

Birhors are the most primitive tribal groups of the State of Jharkhand. They are found in the districts of Hazaribagh, Ranchi, Lohardaga, Palamu, Garhwa, Dhanbad, Singhbhum and different parts of Jharkhand state. They turned out to be a seminomadic tribe of West Bengal though they still depend upon forest. At present they have settled themselves in two portions of Bagmundi Police stations (Bhupatipally of Barrhia village).

1.2.1e. Economy

They depend on forest for their livelihood. They prepare excellent ‘phul jharus’ (brooms). They are skillful in making rope from the stem of Bauhinia vahlii collected from the forest areas. Birhors are still treated almost as untouchable by the people of such tribes as Kudmi, Mahatos, Kumbhars etc. They are least interested in education.

1.2.1f. Social and Cultural life

Some common festivals observed by Birhors are sikar utsab, maroa puja, chuman, and sindurira-kol. The groom’s father observes Maroa Puja by sacrificing goat or fowl to appease ancestors spirits for securing a happy married life for the newly weds. After the death of any Birhor the dead body is smeared with oil and turmeric paste and covered with white cloth after which some ash is scattered on the body to identify the cause of death. The dead body is buried and some food is kept beside it. The Birhors believe in both tribal religion and Hinduism. They observe several rituals and festivals in different months of the year. Some are community oriented, some village based, some confined to individual families and some are regional. Besides these the Birhor’s life style is influenced by his belief in supernatural powers. “Singbonga” is their supreme God. He is worshipped at the time of hunting along with Lagu Haram Burima in Baisakh (April-May). There are other small deities whom they worship for the welfare of their village and protection from death and evil spirit.

Marriage or ‘Bapla’ is an important part of the life of Birhors for which they adhere to endogamy and monogamy. A girl may be married at 5 years of age and a boy at the age of 15-16 years. However in most cases marriage is arranged before the girl attains puberty. In case of ‘Sadar bapla’ (marriage by negotiation) they avoid Bhadra (August-
September), Saturdays and Sundays of Chaitra (March-April). Mahua leaves and stem are used at the time of marriage ceremony. They use garlands of mango leaves at the time of any auspicious occasion. Married women put the mark of vermillion is the dividing part of the hair above forehead and wear an iron bangle in the left hand. Men do not have any distinction after marriage.

**I.2.2 Ethnology of Bhumij**

**I.2.2a. Origin**

The Bhumij is one of the tribes living primarily in the Indian states of West Bengal, Orissa and Jharkhand. The word Bhumij, in many Indian languages, means ‘one who is born from soil’. They speak the Mundari language of the Austroasiatic language family. In West Bengal they also speak the predominant local language i.e. Bengali. According to the 2001 census, they were 336,436 in number in West Bengal, accounting for 7.6 % of the Scheduled Tribe population of the state. In Purulia and Bankura, the two western districts of West Bengal there are conspicuous settlements of Bhumij, although numerically they are considerably behind those of Santhals and Bauris. They live in the territory between the river Kasai and Subarnarekha. Their present area of settlement is spread across Dhalbhum, Barabhum, Patkum and Baghmundi. While the Bhumij in the proximity of Chota Nagpur plateau still retain linguistic links with Mundari, those living deeper east have adopted Bengali as their spoken language. In the Dhalbhum region they are completely Hinduized. During British rule, or sometimes even earlier, many Bhumij became feudal heads called Zamindars and even some secured the title of ‘Raja’, while others started getting called ‘Sardars’.

**I.2.2b. Bhumij habit and Settlements**

The Bhumij in no way lead nomadic life. They are habituated in the settled life of cultivators. Their villages are situated in the plain areas including the foot Hills of Ayodhyha Hills in Purulia district. Houses of the people of Bhumij community are huts raised with bamboo, and sal saplings, tied with grass ropes and thatched with straw.
1. 2.2c. Religion

The Bhumijs believe in animism and they practice ancestral worship. They also believe in naturalism and worship natural objects like sun, river, mountain, tree, animal, birds, plants and bushes. Many of them, especially in West Bengal, have adopted Hinduism conserving plesiomorphism in their own traditions.

1.2.2d. Social and cultural life

Bhumij family is patrilineal. Family structure is nuclear, formed by husband-wife and their unmarried children. Married son has to establish his own family and married daughter has to leave the house to lead a family life with her husband. Although monogamy is the usual form of marriage, bigamy is also allowed. Levirate and surrogate marriage are possible depending on the situation. Although premarital relation within lineage group is not allowed, it is allowed in inter-lineage cases which finally results in marriage. They generally follow village exogamy. Usual way of acquiring bride is by bride-price and through the consent of parents of boys and girls. But marriage by exchange, elopement and love may also take place.

1.2.2e. Economy

Bhumij are basically cultivators. They cultivate rice, different seasonal vegetables and maize. The principal economic activities of the Bhumij are based on agriculture, lac cultivation, collection of non timber produce from the forest and basketry.

1.2.3 Ethnology of Mundas

1.2.3a. Origin

The Munda is the tribe recognized in India as one among the indigenous people mainly of the Chota Nagpur plateau region. The word "Munda" appears to be a Sanskrit derivative meaning "substantial, wealthy," "head," "headman". The concept that the Mundas originally entered India from Southeast Asia is based mainly on their linguistic affiliations. Their language is Mundari, which belongs to the Munda subgroup of the Austro-Asiatic language family. There are nearly two million Munda
people. The people of this community are found in states of Jharkhand, Bihar, West Bengal, Chhattisgarh, Orissa and Assam and are also settled in some parts of Bangladesh.

1.2.3b. Habit

By habit Mundas happen to be of are hunting and gathering community. Many Mundas choose to write "Munda" in place of their surname.

1.2.3c. Settlement

Most Mundas live in villages, though some live and work in towns and some live in forests. Traditionally, there was an involvement of Mundas in shifting cultivation. However with the Government trying to discourage this form of agriculture, Mundas now tend to have permanent settlements and develop their lifestyle accordingly. Both nuclear and extended or joint families are found, Houses are not generally oriented in any specific direction, but they are usually symbolically divided internally according to gender and age. The eldest members sleep near the hearth, male members on the right side of the house, female members on the left, etc. The hearth is especially important ritually and is the spiritual centre of the homestead.

1.2.3d. Economy

Most Mundas are agriculturalists. The other main traditional occupation is hunting and gathering. Few Mundas live by trade, though they may occasionally sell forest products or some rice to wholesalers. Both men and women work in the fields, but the domestic burdens fall more on the women; many occupations (e.g., plowing, roof repair) are barred to them for ritual reasons. Men hunt; women gather. Specialist occupations are mainly men's work. Some of the Mundas find engagement as wage labourers in mining, factories, road constructions and repairing etc

1.2.3e. Social and cultural life

Endogamous marriage is a normal affair. However, the present day Mundas are better educated and they often abandon Munda tradition and get married even with non-tribals. The Santhal, Ho and Kharia communities are considered by them as blood-brother tribals, marriage with them is common. Marriage with an Oraon is also acceptable. The Mundas have patrilineal families.
Social organization is very basic and simple being alien to the Indian caste system. Mostly Munda people follow the ‘Sarna’ religion, believing in the God ‘Singbonga’. However about one-fourths of the Mundas are followers of Christianity. The surname of a Munda defines their identity. Many surnames are common among other tribes with trivial variations. Surnames are based on natural elements, trees, animals, birds or any other nature related object.

I.2.4 Ethnology of Paharias

1.2.4a. Origin

The Paharias, as the name indicates, represent a hill tribe settled in the hilly ranges of the Rajmahal Hills and the neighboring regions in the Santhal Parganas wherefrom they have migrated to other nearby states including West Bengal. They are of Dravidian origin like the Mundas, Oraons and other members of the Austro-Asiatic sub-family. Racially, linguistically and culturally they are close to the Birhors, the so called primitive tribe still habituated in eating monkeys.

The Paharias are divided into three groups, Sauria, Kumhar Bhag and Mal Paharias. The Mal Paharias are concentrated in the Amrapara Block. The Saurias are concentrated mainly in the Damin-i-koh region called the Rajmahal Hills. They claim to be the original Paharias, as they still preserve their culture, traditions and language. They consider the Mal Paharias as thieves.

1.2.4b. Habit

The Paharias live in the hilly terrain of the Rajmahal Hills situated between Deoghar, Dumka-Bhagalurrange of Jharkhand in the west, Malda, Burdwan and the lateritic plateau of Midnapur in the east, Maheshpur and Pakur in the south and river Ganges in the north, between 22-25° N latitude and 34-87° longitude. The Rajmahal falls in the old Santhal Parganas district, which was later on divided into the districts of Dumka, Pakur and Sahibganj in Jharkhand.

1.2.4c. The Paharia Settlements: from nomadic to settled life

The nomadic life style, coupled with practice of ‘Jhum’ (Shifting cultivation) by the Paharias posed a serious threat to the valuable forests and vegetation. So the
Government decided to fix them up in settled life. In 1823 the policy started getting executed for persuading the Paharias to accept a settled way of life. Accordingly, the Govt. promised to interfere neither with the existing habitats of the Paharias, nor with the present mode of earning a livelihood. In 1867 it released the Damin-i-koh parts of Amber, Patsunda and Barkop for lease at a very nominal rent and finally settled 305 Paharia villagers in 1879.

1.2.4d. Their house

The Paharia houses are mostly thatched/tiled huts with two rooms supported on pillars of poles, with the main pillar at the centre. The hutment usually has a thick fencing done with bamboo splits from top to bottom. There are also a few good houses belonging to economically affluent Paharia families. Such houses are with mud wall and roof covered with tiles.

1.2.4e. Economy

The Paharias are accustomed to live in difficult terrains, with little or no education and inadequate facilities for health care, cultivation, safe drinking water etc. Their economy is much below the lowest minimum required for a decent living. At many places Paharias pose the gesture of poverty and penury in the land of plenty. Their activities include collection of different non-timber forest produce (minor forest produce), cultivation of some minor cereals in slopes (toponym ‘tnar’), domestication of live-stock and poultry farming.

1.2.4f. Social and Cultural life

They perform some ceremonies and cultural activities in their life, viz. during child birth, naming, marriage etc. They have restrictions in meat eating; they abstain from eating beef and meat of dead animals. Marriage is a ‘must’ to have progeny. Child marriage is not practiced. Like the other tribes of Santhal Parganas, initiative for marriage is always taken from the male side. The male side always pays bride-price to the female side. No marriage is allowed between close relatives. Remarriage of widows is a regular practice. Marriage, the Paharias consider, is not merely a union of the man and woman; rather it is a social relationship that brings two villages/families closer to one another.

1.2.5 Ethnology of Santhals

1.2.5a. Origin
Santhāl, also called Manjhi, are the largest tribal community in India, who live mainly in the states of Jharkhand, West Bengal, Bihar, Orissa, and Assam. There is also a Santhal minority in neighbouring countries like Bangladesh and Nepal.

In Purulia district of West Bengal out of a total population of 22, 24,577 as many as 3,33,686 are Santhals (2001 Census).

1.2.5b. Settlement

Santhals usually live in houses that are thatched with straw. The walls are neatly plastered with cow-dung and decorated with paintings of flowers and geometrical designs. Each house consists of a large courtyard where washed clothes are hung to dry, grain is husked, and small tools, baskets, and other articles for daily use are made. The cowshed, piggery, and hen-roost are located in one corner of the courtyard. The most important part of the house is the bithar, a compartment that is believed to be the abode of the souls of dead ancestors. The bithar is passionately guarded from those who do not belong to the family.

1.2.5c. Language

Their language is Santhālī, which is part of the Austro-Asiatic family. The Santhali script is a relatively recent innovation. Santhali did not have a written language until the twentieth century and used Latin/Roman, Devnagri and Bangla writing systems. A need for a distinct script to accommodate the Santali language, combining features of both the Indic and Roman scripts was felt, which resulted in the invention of new script called Ol Chiki by Pandit Raghunath Murmu in 1925. For his noble deeds and contribution of the script Ol Chiki for the Santal society, he is revered among Santals. Pandit Raghunath Murmu is popularly known as Guru Gomke among the Santals, a title conferred on him by the Mayurbhanj Adibasi Mahasabha.
1.2.5d. System of governance

In the Santhal system of governance, each village is led by a hereditary headman (Manjhi Heram) and assisted by a council of elders. The Manjhi Heram also has some religious and ceremonial functions. ‘Naike’ is the religious Head of the community. Groups of villages are linked together into a larger territorial unit termed a Manjhi–Paragana. This body is responsible for making decisions about a village's socioeconomic aspects.

1.2.5e. Economy

Their agrarian way of life is based on use of forest resources, cultivation and hunting for subsistence. A patch of land near the house is used for growing vegetables and fruits to fulfill the needs of the family. Further away from the houses the uplands are used to cultivate mainly rice and also maize and millet. Each agricultural event from sowing to harvesting is accompanied with rituals, many of which involve singing and dancing collectively.

Many Santhál leave their traditional abodes to get employed in the mines or the steel and factories, while others work during part of the year as paid agricultural labourers. In the villages away from forests, where tribal life settles, the most important economic activity is the cultivation of rice.

1.2.5f. Social and Cultural life

Santhals believe in supernatural power and ancestral spirits. The traditional religion centres on the worship of spirits, and the ancestral spirits of the headmen are objects of an important cult. Santhali rituals consist mainly of sacrificial offerings and invocations to the spirits, or bongas. Santhali culture is depicted in the paintings and art work in the walls of their houses.

The Santhtal people love music and dance. Like other Indian ethnic groups, Santhals still conserve their traditional music and dance. The Santhals traditionally accompany many of their dances with two drums: the ‘Tamak’ and the ‘Tumdah’ and the flute (tiriao). Santhal dance and music traditionally accompany religious celebrations and festivals. The names of many Santhal tunes are derived from the traditional ritual with
which they were once associated. Sohrai tunes, for example, are those sung at the Sohrai festival.

The Santhāls have 12 clans, each divided into a number of subdivisions also based on descent, which is patrilineal. Members of the same clan do not marry each other. Membership in the clan and subclan carries certain injunctions and prohibitions with regard to style of ornament, food, housing, and religious ritual. Marriage is generally monogamous; polygamy, though permitted, is rare.

1.3 Non Timber Forest Products (NTFP)

Products derived from the forest resources can be differentiated into two broad categories, viz. 'timber' and 'non-timber forest products' (NTFP). "Forest products other than timber" can be very important and sometimes even more valuable than timber. Srivastava (2003) took an initiative to provide a detailed account of NTFPs which have commercial possibilities and socio economic importance.

These non-timber forest products play a significant role in the livelihood of forest dwellers, communities living in the proximity of the forest, as well as people at large in the immediate surrounding area. Diversity of the forest bio-mass ensures food security and protects the 'safety net'(Shackleton and Shackleton, 2004; Babalola, 2009) of the people, especially the forest dwellers. It is estimated that of the 6.2 billion world population, about 25 percent are dependent on forest resources including plant and animal products (Iqbal, 1993; Walter, 2001). It is also estimated that about 60 million aboriginal people all over the world depend on the forest ecosystem for their livelihood (Anon., 2001). From the publications of UNDP (2004) and FAO (2005) it appears that globally, an estimated 350 million people mostly in developing countries depend on NTFPs as their primary source of income, food, nutrition and medicine. The findings of Dante and Koch (2011) subsequent to the work on NTFP dependence of the people in Ethiopia suggest that forestry management devolution enhances resource use by the poor while reducing dependency among the rich. Tropical forests are considered to be important repositories of forest resources, especially NTFPs. Women forest dwellers alone collect products worth about 700 million US dollars (Pandey and Saini, 2007).

The forests of India harbour about 3000 types of NTF- products of which collection is variable from individual state to state (Das, 2005). A Ministry of Environment and Forests report (Anon., 1999) estimated that about 400 million people in
India are dependent on NTFPs in one way or the other, generating Rs 20 billion as Government revenue. Of these, about 50 millions of forest dwellers, most of them being tribals, harvest substantial quantities of NTFPs for their subsistence and low-volume trade (National Centre for Human Settlements and Environment, 1987; Shiva, 1993; Poffenberger, 1993; Hegde et al., 1996). However 200 to 300 million non-tribals are also dependent on NTFP to a lesser degree (Shiva, 1993; World Bank, 2006).

Drugs of herbal origin are derived mostly from forests. In their investigation Sasidharan and Muraleedharan (2003) have revealed the fact that drug industries in northern Kerala use 40 major raw drugs. They collect nearly 45% of the raw drugs from the forest. Often overexploitation of plant resources for medicinal property leads to devastation. Sreevidya et al., (2003) enlisted the species which have been perceiving threat from ruthless collection from the forest area.

Researches in the field of Ethnomedicine have brought to light may useful medicinal plants into our knowledge. Ramana et al., (2003), during their ethnopharmacobotanical studies in Uttara Kannada District, Karnataka recorded 33 species from 23 families which are useful in woman folks’ health care. The plants reported in this study are claimed to be the most effective remedies for conditions such as leucorrhoea, gonorrhea, disorders during delivery, pregnancy, menstruation and other fertility related complaints in women.

India is a country which is flourished with profound forest resources. However the annual loss of Indian forests was about 1.5 million hectares (Ahmed, 2004). As per current assessment i.e. India State of Forest Report, total forest cover of India is 692,027Km$^2$ which works out as 21.05% of the total geographical area of the country (Anon, 2011). Since this value needs to be escalated nearly to one third of the total geographical area, efforts are launched on war-footing for afforestation collaterally with restoration and conservation of the existing forests utilizing the self designing capacity of the nature.

The non-timber forest products (NTFP), i.e. “Any commodity obtained from the forest that does not necessitate harvesting trees.” (Anon., 2008) have now started getting consideration in matters of conservation through their sustainable economic use.

Prior to the National Forest Policy (NFP, 1988), NTFPs were popularly known as Minor Forest Produce (MFP). The prospect of NTFPs for the welfare of the forest dwellers is much greater than what it is now. A good number of such products are
primarily consumed at local level and are associated with their socio-cultural life with some value additions and sustainable harvesting of the non-timber produce, the NTFPs, may promote economic welfare of the indigenous communities. As such, stock-taking of non-timber forest produce (NTFP) and their sustainable use for the economic benevolence of the indigenous people have been presently prioritized in optimizing and conserving forest ecosystems. In view of the foregoing, the present work was undertaken in such an area as Ayodhya Hills which is rich both in tribal as well as plant diversities.

This work, new of its kind for the area, adheres to the objective of documenting from primary sources the traditional knowledge about various non-timber uses of the plants associated with the lives of the Santhals, Paharias, Birhors, Bhumijs and Mundas in the forests of Ayodhya Hills in Purulia district, West Bengal.