

CHAPTER-I

INTRODUCTION

1.1 Introduction to Traditional Knowledge System

A human being is carrying the tradition with its origin. What is tradition, how can tradition be defined is a complex matter. Traditional knowledge variously referred to as traditional knowledge, traditional ecological knowledge, local knowledge, folk knowledge is knowledge developed by local and indigenous communities over time in response to the need of their specific local environment. The World Intellectual Property Organisation defines traditional knowledge as indigenous and cultural and intellectual property, indigenous heritage and customary heritage rights.¹ It encompasses all species of plants, animals, and microorganisms and variations between them which form an intangible component of the ecosystems of which they are part.

Traditional knowledge is the knowledge that is handed down from earlier generations, and it validates the acquired knowledge of a folk society. Folk society of an area acquires knowledge of various fields in day-to-day life and those are used in daily life by practicing in the society itself. It is closely related to culture as well as a whole life process without the boundary of industrialised, organisational, and systematic description of folk beings.

The group of people how they perform various activities for their living in the whole cultural atmosphere is the form of acquired knowledge. They utilize inherited and acquired knowledge in respect of food collection, gathering, and in course of production. Scholars have different opinions about the traditional knowledge systems. Community members how they perform diverse actions for way of livelihood in the whole cultural atmosphere are the form of acquired

¹ Intellectual Property need and expectations of traditional knowledge holders, WIPO report on Fact finding Missions on Intellectual Property and Traditional knowledge (1998-1999), Geneva, April, 2001.pp.25.

knowledge. It is long lasting over production from side to side verbal background, exercise and socialization procedure.

Traditional knowledge is the know-how, skills and practices that are developed, sustained, and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.² The term traditional knowledge internal changeably used as indigenous knowledge is used to describe any information, knowledge, innovation, or practices of the indigenous local communities that is of in ensuing the conversation and sustainable use of biodiversity.³ Traditional knowledge as a way of knowing⁴ a community in different ecological backgrounds is handed down orally or by being practiced among the folks. Traditional knowledge comprises the knowledge innovation and practice of the indigenous and local community around the world which is developed from experience gained over centuries and adapted to the local culture and is transmitted orally from generation to generation.⁵ Indigenous peoples themselves have repeatedly claimed that they have fundamental right to indigenous knowledge because it is necessary to have their cultural survival and this principle is increasingly being recognised in international law.⁶

The traditional knowledge is not that thing which is formally learnt from teachers in the formal institution for the economic benefit of somebody in the scientific way. It came with the human being when the group of people had to search for their livelihood. The food habit of a community itself has a sole relationship with the ecology where they reside. Ecology teaches the organism to have the mockery means of their living. Food habits of any organism are handed down to their contemporary stages through the tradition of cultural settings.

²<http://www.wipo.int/tk/en/tk>.

³Jasmine, Biba. Singh, Yashaswi. Onial, Malvika. and Mathur, V.M. *Traditional knowledge systems for biodiversity conservation*. Indian Journal of Traditional Knowledge: Vol. 15(2), April, 2016, pp.304-312.

⁴Berkes, Fikret. Golding, Johan. and Folke, Carl. *Rediscovery of Traditional Knowledge as Adaptive Management*. *Ecological society of America*, 2000, p.1251.

⁵Chakravarty, Kakali. *Genealogical records and traditional knowledge system study in four sacred centres of India*. Kolkata: Anthropological Survey of India, Government of India, pp.115-116.

⁶Mauro, Francesco and D. Hardison, Preston. *Traditional Knowledge of Indigenous and Local Communities: International Debate and Policy Initiatives*. Ecological Applications. Jstor: Published By: Wiley, Vol.10, No.5, 2000, pp. 1263-1269.

It is to some extent acquired skills and practices that are developed, continued from generation to generation within a community, often forming part of its cultural or ethnic identity. Indigenous people have enormous knowledge of the environment and the prosperity and diversity of multitalented ecology. They have appreciative knowledge on flora and fauna of this nature, the performance of ecosystem, the techniques of using frequently and administering them in a comprehensive way carefully. Being the indigenous people of Assam Bodos have diverse knowledge of ecology and food those are created by their ancestors long years ago without knowing the history.

Traditional Knowledge and skills have a special relation with nature where its behavior and sustainable developments are extended by human beings. The technology of cultural practices, social mobility, organization of the social groups, are also parts of experiments and development of human being in the world.

The knowledge of nature or ecology where the human being acquires for their sustainable livelihood development process context may be called local knowledge. Land, water, fire, air sky, these five elements are the indispensable to organism. The organism those are living in a certain landscape fighting for their survival, identity, culture, breathing free air, using its source of water receiving heat of sunlight, consuming its ecological goods for generation to generation may be described as the local or indigenous. Indigenous organism has no predisposition of imposing their knowledge to the invaded group of human being. They safeguard, improve, and exercise their acquired knowledge of their own approached shape of knowledge designed with a particular background availed by inhabitants in day to day life in that locality. Local knowledge of people in cultural context encourages in creating existing cultural heritage. Society of a particular landscape acquires knowledge of handling the natural objects in life processes. Innovations of a particular community in a geographical area occurred for the benefit of human being through generations either through oral cavity or presentations.

Traditional knowledge includes religious traditions, traditional beliefs, livelihood traditions as well as hygienic beliefs, and many implications in the community. S.L. Srivastava has commented that the term tradition has been derived

from the Latin word “tradition”, meaning handing down, handing over, delivery, and surrenders that which is handed down from person to person or generation to generation. It is expected to be collectively owned and takes the form of stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, agricultural practices, including the development of plant species and animal breeds. Traditional knowledge is mainly of a practical nature, particularly in such fields as agriculture, fisheries, health, horticulture, and forestry (Minutes of the Convention on Biological Diversity, 2006).

In North-East India customary laws and practices often define how these tribes develop, hold and transmit traditional knowledge. Most of these tribes consider their traditional knowledge as sacred or secret. Sharing the knowledge with unfamiliar community members is thought to be the degradation of their knowledge from the community. It seems the loosing of their cultural assets so also the reducing food materials in the ecology. Some of their customary law and practices also define custodial rights and obligations, including obligations to guard it against misuse or improper disclosure and also sometimes determine how traditional knowledge is to be used, how benefits should be shared, and how disputes are to be settled, as well as many other aspects of the preservation, use, and exercise of knowledge. This requires respect for customary laws and practices of the North East Indian tribes within existing legal mechanisms, including within conventional intellectual property systems which may require a thorough understanding of the relevant provisions of the Constitution of India (Fundamental Rights and Directive Principles), Universal Declaration of Human Rights (1948)

It is important to note that the Convention on Biological Diversity requires each contracting party as far as possible and as appropriate to identify the component of biodiversity for conservation and sustainable use and to adopt socially and environmentally sound measures to achieve conservation and sustainable development. It also ensures the protection of sovereign rights of each country over its biological wealth and associated local knowledge systems.

Traditional knowledge holders are subject to both customary and modern legal systems since their knowledge constitutes the subject matter to which both may

apply. The interfaces, similarities, and differences between customary and modern legal systems require understanding and management. All these aspects are to be looked into when considering legislation of the protection of traditional knowledge of these tribes.

In the words of Sharon Legall, a Cambridge University scholar, 'Traditional knowledge' is used in its broad sense to include knowledge associated with all forms of science and technology as well as artistic, musical, and literary expressions. Traditional knowledge sometimes carries the connotation of pre-modern in the sense of primitive or outdated. The term 'traditional knowledge' is related to a collective organization of understanding and way of life, inherited through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. Further, Traditional ecological knowledge is an attribute of societies with historical continuity in resource use practices; by and large, these are non-industrial or less technologically advanced societies, many of them indigenous or tribal" (Berkes 1993:3). Characteristics of traditional knowledge may be mentioned in the following six points.

- (i) Traditional knowledge is biological
- (ii) Traditional knowledge is community-based
- (iii) Traditional knowledge is a basis for decision making
- (iv) Traditional knowledge is ethnic identity
- (v) Traditional knowledge is nature-based
- (vi) Traditional knowledge is dynamic

1.2 Intellectual Property and Traditional Knowledge System

The term 'intellectual property, corresponds to the creation of the human mind. It refers to design of the mind inventions, literary and artistic works, symbols, names, images, and designs used in commerce. It is said that Intellectual property rights are enshrined as human rights in the UDHR. Article 27 of the Universal Declaration provides that:"(1) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific

advancement and its benefits; (2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.”⁷ These rights are further emphasized by Article 15 of the International Convention on Economic, Social and Cultural Rights, 1966 (ICESCR), Article 19 of the International Convention on Civil and Political Rights, 1966 (ICCPR), the Vienna Declaration and Program of Action, 1993 (VDPA), and other international and regional instruments.

In the contemporary world of intellectual property, traditional knowledge is also recognized as intellectual production that is a source of economic and cultural value, especially for local communities in developing countries across the globe. Yet, a legal gap exists between the kinds of protections afforded by existing intellectual property (IP) law (at international and domestic level) and Traditional Knowledge. This legal gap poses serious consequences for the development of the indigenous people in different parts of the world. Traditional Knowledge, while recognized as a culturally and economically important arena of intellectual activity, presents a definitional challenge to international IP law.

Therefore it can certainly be said that no general accepted definition for Traditional Knowledge at this point. Most global summits and researchers define Traditional Knowledge, in fairly broad terms, as a different assortment of tradition-based innovations and creations ensuing from scholarly activity in the industrial, scientific, literary, or artistic fields. For example, TK’s rubric covers numerous disparate activities, ranging from performing arts to cultivating agricultural products to the medicinal use of plants, to name a few such a broad definition which include diverse intellectual fields means that TK can be organized into several subsets, some of which are designated by the terms “genetic resources”, “traditional medicinal knowledge,” and “expressions folklore.”

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1.3 Food materials and herbal medicinal plants

The study has come across more than a hundred varieties of vegetables with its use as food materials in the community. Those are corns, fruits, fungus, leaves, roots, young shoots, and stems. Indigenous Bodos mostly use fresh vegetables in their diets. The vegetables used as food are mostly useable for different healing purposes. These help them to keep free from old age looking, whitening hairs and mental disorders. They eat strong nutritious foods locally available in the area. The non-vegetable items are domestic fowls, pigs, and wild animals that are available in the locality. Besides the insect's foods are not neglected to them are helpful in some diseases. A few of the insects that use for healing purposes are not edible with meals.

Traditional Knowledge of the Bodo Indigenous people of North East India known for its valuable heritage of herbal medicinal knowledge India's ethnic communities and tribes who live in the extent of the remote plains still depends on the indigenous systems of medicine. This ethnic and tribal segment of India's population constitutes around 430 communities, of which around 130 major tribal groups (a population of about 8 million people which is approximately 12 percent of the total population of India census, 2001) are settled in hills and plains of North East India, a location within the sub-Himalayan ranges, Indo-Burma, hills of Nagaland, Manipur, Mizoram, and Meghalaya plateau and the plains, foothills, N.C. Hills and Karbi Anglong districts of Assam. Being at the confluence of three major bio-geographical realms of the world, the region is extremely rich in floral and faunal biodiversity with several endemic species and represents one of the few hot spots of biodiversity of the world. Bodo is one of the major tribes residing in the plains of Assam in North East India. The Bodo-dominated North Eastern States are flourished with flora, fauna, aquatic fishes, and other edible insects from which they are fulfilling their nutritional needs day by day. They have a rich tradition of cultural behaviour, practices, performances transmitted from their ancestors in the form of folklore, practices, and other community events. Acquisition knowledge of food from those fields affords massive traditional knowledge to the world intellectual property without any records. Various projects carried out and different

authors have reported thousands of ethno-medicinal and miscellaneous uses in this region. The Bodo community living in this region is very much familiar with the knowledge of plant species in their ecosystems also has a proper understanding of the ecological interactions of the various components of their resources. Their understanding and dependence on nature have been reflected in their traditional culture, local beliefs, folklores, and valuable knowledge of ethno-botanical importance which are not covered in the systematic organized manner.

Some of the medicinal uses of tribal communities are now incorporated in the organized system of medicine, yet most of the folk medicines have remained endemic to the Bodos since the knowledge of these medicines acquired through experience is generally passed on by oral traditions as a guarded secret of certain families.

Most of the food commodities of the Bodo people are from the ecological and natural environment of them. They constitute important ecological knowledge as well as food knowledge after various experiments made in the whole life. Therefore, an extensive study of this traditional knowledge is considered to be relevant and proper in having an deep insight into the mankind at larger perspective. But at the same time, the study should be designed to provide protective measures to the entire traditional systems that belong to the Bodo community in particular.

1.4 Tradition of secrecy and ritual rules of food materials

In North-East India there are informal Intellectual Properties like management protecting certain subject matter in the field of traditional medicinal herbs. In India, presently there are two systems that govern this area codified systems of traditional medicine (which include indigenous and tribal medicine) on the one hand and non-codified systems on the other. The codified systems include the Ayurvedic system of medicine, which is codified in the 54 authoritative books of the Ayurvedic System, the Siddha system, as codified in 29 authoritative books, and the Unani Tibb tradition, as codified in 13 authoritative books. Each of these knowledge systems relates differently to formal and informal systems of protection.

While the codified Ayurvedic, Siddha, and Unani Tibb systems are unique to India, their traditional medicinal herbs are governed by the informal IP regime which regulates them in North-East India. They provided examples of informal IP-like protocols regulating the use of unmodified indigenous medicine. In Bodo, it is seen that the informal IP regimes are complex of rituals, magic, and spiritual beliefs that surround indigenous medicine. These informal regimes perform an equally crucial function in the conception, promotion, and diffusion of medical innovations in local and indigenous communities. Bodo traditional medicine practice is maintained by an Oja who is traditionally known as a medicine man. There are few dependable books in this area. The verbal tradition transmitted among them is the secondary source to gather knowledge of this. The knowledge of medicine and the use of herbal medicines are transmitted through the sela or bej whom the Oja teaches practically in the field of cure and prevention of ailments. The edible plants are usually used for food and healing purposes as secret.

One of the informal regimes in North-East Indian Bodos is the secrecy regimes. The secrecy regime rests on the innovator's ability to prevent the public disclosure of his or her innovation. Under a secrecy regime, innovative healers employ their inventions by themselves only, and benefits arise for the healer only as long as the medicinal knowledge remains hidden. But sometimes it is difficult to maintain secrecy within small communities. Sometimes informal innovators often rely on modifications of traditional techniques, which have been passed down in the community. The secrecy which is transmitted to the descendent in regards of healing food, magical hymns, and the system eating as well as medicine is called the sela or bej. The word bej is used for disciple in English. But in case of food they transmit it in their day today meeting in workplace or other free time gatherings.

But on the contrary modern patent law extends legal protection to precisely those ideas which are revealed in their entirety to the public, and therefore, lie beyond the limits of secrecy. By granting time-limited exclusive rights to the inventors once they have disclosed their ideas, patents ensure benefits for innovators while at the same time ensuring that the public gets access to the ideas.

Contrary to a commonly held view, exclusive rights and monopoly powers over informal innovations are not uncommon within indigenous and local communities. Innovators and artists in the communities thereby manage to derive a fair and equitable share of the benefits arising from the use of their innovations within the community. These benefits do not normally take the form of royalties in the meaning of modern Intellectual property law. Relatively, there is an extensive variety of remuneration for which traditional healers exchange their services, ranging from monetary payments, to commodities like food, drinks, and trinkets. Supplementary to the informal Traditional Knowledge holders often receive benefits from their rights by transferring portions of their intellectual property to secondary practitioners.

Ritual formulas and incantations often are transferable and have the advantage of allowing extensive licensure (through the training of apprentices) without requiring inventors to give away unique commodities, such as tools or medicine bundles. At the same time, the informal Traditional Knowledge holders or healers, as well as the communities, are well versed in cultural practices and belief systems that are still in the rituals with meaning. They still protect the innovation. Similar shared cultural assumptions underlie the formal Intellectual Property systems when creators refer to the cultural constructs of ‘authorship’ and ‘originality’ in order to obtain protection. From the intercultural perspective which TK holders considered necessary for an understanding of their Intellectual Property needs, the reference to the attribute original under the formal Intellectual Property system may function not unlike the attributes sacred or “magical” under some informal intellectual property regimes. It is considered needful to compare the formal and informal regimes corresponding to the real perspective, but, before doing so measures should be taken for the informal regime before it dies out. These sacred and secret traditional if not protected through the formal intellectual property regime these storehouses of knowledge will very soon wipe out. Therefore, for the greater interest of mankind, their documentation is considered to be essential.

1.5 Protection of traditional knowledge

The Bodo community living in Assam looks at traditional knowledge as its cultural and spiritual identity, but it is yet to see as a pathway to social and economic development. Only awareness generation can show the light to the communities about the potentialities of the traditional knowledge they possess, which could be marketed across the globe. In fact, many consumers in Western countries are turning to treatments based on traditional knowledge, on the understanding that such alternative or complementary systems are soundly based on empirical observation over many generations. Therefore, considering the rich biodiversity and the rich traditional knowledge system developed by the Bodos in NE India's Assam over the centuries need to be documented and put to practice with a legal mechanism to regulate. Documentation and a legal system would help to prevent the invalid granting of patents. A legal mechanism can prevent the misappropriation of traditional knowledge including the use of traditional knowledge without benefit-sharing or use in a derogatory manner.

Basically for the Bodos, legal protection keeping in mind their customary laws will provide recognition to their traditional knowledge. Again, a legal mechanism for the protection of traditional knowledge would recognize the objectives concerning the conservation of biodiversity, sustainable use, and equitable benefit-sharing of genetic resources. In general, the preservation and protection against loss and degradation of traditional knowledge would work hand-in-hand together with the protection of traditional knowledge against misuse and misappropriation. In the process of framing out a legal mechanism of these tribes a multiplicity of complementary measures that may be outside the field of intellectual property law can be considered.

In India, it has been a proactive approach to draft national legislation pertaining to traditional knowledge and bio-resources. Examples of such efforts are reflected in the Biological Diversity Act, 2002, the Protection of Plant Varieties and Farmers' Rights Act, 2001, the Geographical Indications of Goods (Registrations and Protection) Act, 1999, and also as amended in 2005. Yet, it could be seen that Western science has recently begun looking at Traditional Knowledge as a source of

new drugs. The growing phenomenon of bio-piracy shows the somewhat hypocritical attitude of western scientists towards Traditional Knowledge, scavenging it on the one hand and claiming patents on all kinds of products derived from Traditional Knowledge (Turmeric, Neem, etc.), yet refusing to acknowledge its economic value and ownership. Despite the growing recognition of Traditional knowledge system as a valuable source of knowledge, western intellectual property law continues to treat it as part of the “public domain”, freely available for use by anybody. Moreover, in some cases, diverse forms of Traditional Knowledge have been appropriated under intellectual property rights by researchers and commercial enterprises, without any compensation to the original creators or possessors of the knowledge.

In recent years, a large number of patents have been granted on genetic resources and knowledge obtained from developing countries, without the consent of the possessors of the resources and knowledge, but later on, these patents were granted by the US Patent and Trademark Office (USPTO) and the European Patent Office on the grounds of its use having been known in India revoked the patent after ascertaining that there was no novelty, the invention having been used in India for centuries. In these circumstances, in the World Trade Organisation regime with its agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in operation fostering globalization, there is a growing need for the protection of traditional knowledge as an inherent right of the Indigenous People. Since the existing Intellectual Property Rights (IPR) regime in India cannot encompass and provide protection to all kinds of traditional knowledge.

Under Part III of the Indian Constitution, under the Cultural and Educational Rights (Articles 29 and 30), the right of minorities to establish and administer educational institutions is a Fundamental Right, since the minorities are prone to discrimination. The concept of the minority is a kind of universal idea in the Indian context. This same concept can be applied to the protection of traditional knowledge of the indigenous people, residing in all parts of India, as an inherent right or in more constitutional terms a Fundamental Right, by insertion of a new Article.

1.6 Possibility of Sui generis of traditional knowledge system

Looking at the innovation in the medicinal use of plants by the indigenous people the methods could properly be patented. Some of these medicines have been in the public domain for ages. These kinds of medicinal uses have been prevalent in most of the states in North-East India. Bodo community is one of the major tribes of this region that has been using traditional medicines to cure their ailments. Most of the wild materials are domesticated in fear of extinction from the ecology. Those are traditionally used as food materials and become the habit of food consumption. But priority prevents them from getting an IP right (patent) on the method. A patent cannot claim something that already exists, nor can it claim something obvious. To determine this, patent examination always involves looking for prior art, earlier publications, or public knowledge that show the invention is not new or is obvious. But when we look forward for a sui generis system of protection of the invention, first we can look into the Peruvian law that defines collective knowledge under Article 2(b) and the TK law in Panama can again be complemented while seeking legislation for North-East India on Traditional knowledge.

In Panama, the collective rights of indigenous communities are recognized in their work instruments and traditional art, as well as the technique for making them, expressed in the national basic materials, through the elements of nature, their method of process, and elaboration. Further, the Peruvian laws, which are very comprehensively drafted laws on prior informed consent (PIC), can be to a certain extent a solution for the North-Eastern tribes in India. The Peruvian law prescribes that those interested in having access to collective knowledge for the purposes of scientific, commercial and industrial application shall apply for the prior informed consent of the representative organizations of the indigenous peoples possessing collective knowledge. The organization of the indigenous peoples whose prior informed consent has been applied for, shall inform the greatest possible number of indigenous peoples possessing the knowledge that it is being applied in negotiations. It shall take due account of their interests and concerns in times to come. The policy makers and drafters of legislation for the North- East India and the Bodo community on TK will have to look into these very relevant factors while framing laws.

Protections of the Traditional Knowledge of the local and indigenous communities seem to be one of the most contentious and complicated issue. The historical development of the protection of intellectual property in the wake of individual private property rights pushed the traditional knowledge and the innovative practice based on outside the purview of the formal intellectual property protection regime. The new millennium poses serious challenge to the international legal community to set new international legal standard for tackling the problem of intellectual property protection throw open by the technology developments. Traditional Knowledge was treated as Knowledge in the public demand for free exploitation without showing any respect or concern for the effort taken by the communities to preserve and promote the same.

The new technological developments, particularly in biotechnology, clearly demonstrate the significance and usefulness of traditional knowledge for the development of new product of commercial importance. Traditional knowledge (TK) associated with the biological resources is the knowledge about a country's biodiversity; the applied uses and applications of biological resources and the prevalent practices. TK has direct correlation with the biodiversity of the country. It is an intangible component of the resource itself. TK has the potential of being transformed into commercial opportunity, providing useful leads for development of products and processes. Hence, a share of benefits must accrue to creators and holders of traditional knowledge. Traditional knowledge is valuable in global economy, Important for biotechnology based industries and agriculture, traditional societies depend on it for their food and healthcare needs, important for conservation and sustainable development of environment and management of biodiversity, Food security of the country is linked to protection of traditional knowledge need to enable tribal communities to harness traditional knowledge for their economic uplift and growth fast mobility of tribal societies.

1.7 Traditional Knowledge Endanger

The national knowledge commission India recommended to protect traditional knowledge and said - Establish goals for conservation of natural

resources. Natural populations of around 12% of the 6000 species of potentially medicinal plants are currently estimated to be under threat due to degradation and loss of habitats alongside unsustainable ways of harvesting and also for the of the some lack of cultivation. The problem of minimal growth also leads to the danger of more counterfeit material being marketed. It is therefore necessary to support conservation and sustainable harvesting efforts in the forestry sector and cultivation in the agricultural sector. Direct maintain for conservation and cultivation as well as indirect methods through motivation strategies should be pursued for nurturing these plant resources. The wild gene pool of India's medicinal plants should be secured, via establishment of a nationwide network of 300 'Forest Gene Banks' across the 10 bio-geographic regions of the country.

1.8 Support ethnic groups to protect traditional knowledge system

The non-government and private sector agencies have played an important role in building public image of traditional health sciences. Non-governmental research and education institutions, NGOs and corporate with a global vision must be strategically supported in the interest of enhancing national and international awareness of India's rich health system through food habit heritage.

1.9 Promote International Co-Operation

International cooperation in exploration of traditional health system must be given a big boost through substantial initiatives like strategic research collaborations with reputed research centre and establishing wellness centers in countries that offer promising market opportunities. EXIM bank of India must be supported to work with industry to open world markets for these products and services.

1.10 Research Problem

The study entitled 'A Study on Food Habits and Traditional Knowledge System of the Bodos' falls under the study area of folklore and folk life studies. Thus the study area relates with the material culture of the folklore study. On the

other hand traditional knowledge has vast area itself. So one requires proceeding with more academic pursuits while deliberating this particular subject-matter on the folkloristic viewpoint. Besides, the research approach entangles with the Cultural Anthropology which is to be explored for the evaluation of food tradition and cultural behaviour of the community in regards of food habits. The division and classification of food items is a major aspect which sometimes get puzzled when it is approached in annotation of data. It needs to group and class the food items observing their common feature and uses in different contexts. No available published documents are found on the concerned topic. Only a few articles are available which are published in Bodo language. Therefore the study needs to depend on field work and door to door data collection which may be a path finder for further observation and broader analysis. The data collection and lack of recorded and printed materials are the major constraints in achieving at an exhaustive conclusion of this research work

1.11 Area of Study

The study has been done based on the food habits and traditional knowledge system of the Bodos. Concentration of this linguistic community is found throughout the state of Assam and adjoining states viz. Meghalaya, West Bengal and in the nation of Nepal. The study specially explores the food habits of the community and traditional knowledge relating to the food collection, preservation, preparation in the natural context of the community. The traditional knowledge system pertaining to food of the community such as technology of food preparation, preservation are peculiar in comparison to other community. The community has varieties of lore (knowledge) relating to food which are brought up in the written literature. Most of the oral lore is not yet discovered in the research works.

1.12 Aims and Objectives of the Study

The study aims to discuss about the “A Study on Food Habits and Traditional Knowledge System of the Bodos.” The community has traditional system of food preparation and preservation habits which is taken for discussion in

the chapters as given herewith. They consume varieties of wild vegetables as food items available in the surrounding. In collecting such food items they take resort to some recreational art which and culture study are to be discussed in the area. Preparation of food in different occasions i.e. in rites, rituals, ceremonies along with the art and architecture will also taken into account. Importance will be given on the identification and classification of foods for the extension of the study.

1.13 Importance of the Study

The study of food habits and traditional knowledge of the Bodos have significance from the point of folklore studies. The study will enable to know the foodstuff culture as well the Bodo traditional food. Bodo food habit is part and parcel of Bodo culture. Different types of traditional cuisine with varieties of food items are consumed in social contexts of the folk society. The community has a number of food preservation methods, cuisine and cultural as well as recreational discourses. It has cultural as well as academic values. If the traditional food of the community is analyzed in a scientific manner it will lead the community socio-economically rich in the global context.

1.14 Hypothesis

- (1) Food commodities consumed by the Bodo people are mostly natural and available in the ecosystem. This view point will be examined. It is observed that food consumed by the folk society is simply cooked with less spice and oil.
- (2) Tradition of food processing, preservation methods in regards to food based on traditional knowledge system acquired by the folk society is inherited from folk society.
- (3) Drinks like jou or rice beer is a kind of unique ethnic drink of the folk society. Food processing is based on traditional knowledge acquired from inheritance of the folk society. Knowledge gathered by the community is ecology-based and organic. The statement will be proved in the analysis.

1.15 Methodology

The study solely relates to the discipline of folklore studies. The topic basically relates to field materials based on primary data. So, the empirical data collection method is most important in this regard. The research approach adopts to apply the folkloristic methods for identification of food consuming habits acquired by the Bodo people. In folklore studies, the study of folklore and folk life is a major aspect. This aspect has been taken into account based on food habits, food preparation, preservation which is bearing an traditional knowledge systems. The basic method of analysis of work is based on folk and folk life studies.

1.16 Data Collection

Data is the main source to analyze a research problem. Data have been collected in two ways viz. primary and secondary. The proposed topic is related with the folkloristic study. The researcher has to collect primary data from different Bodo dominated areas by empirical observation method, interview methods, from the cultural context. Informants of folklore bearers are interviewed for primary data necessary for the study. Secondary data from, magazines, newspapers, books, journals, periodicals, magazines, souvenirs, newspapers and documents are explored.

Besides, some of the pictures of traditional food processing relating to the Bodo food habits are also collected from field works. Participation of some contextual performances like death rites, marriage ceremonies, rituals, and other seasonal festival were also done by controlled observation method. While fieldwork was conducted at different places particularly at Bodo villages many of the informants of different age groups were considered as active and passive bearers. Most of the data have been collected from the women active bearers in the social context.

1.17 Review of Literature

A few numbers of works have been done by the writers and scholars in the field are reviewed. Those books helped the researcher to overcome the scheme of research work smoothly. Amongst the books, research papers, articles the following are significant to mention in the study.

“Folklore and Folklife an Introduction” is an edited book by American renowned folklorist Richard M. Dorson and published by The University of Chicago, 1972 the book has good number of renowned folklorists who have contributed detail description on folklore materials. Don Yoder in this book Folk cookery discussed regarding the traditional knowledge on food. In his writing the scholar discloses the folk cookery and its regional variation with traditional domestic cuisine. Traditional food in his term does not mean commercial, institutional, and scientific nutritional version. Description of food, their morphology, preparation, preservation, social and psychological and ramifications into all other aspects of folk culture are studied in the topic.

Indian folklorist *Jawaharlal Handoo* explains that a student of material culture knows that the making clothes, preparation of food, fish farming, processing bounty, fashioning tools, furniture, and utensils are kind of folk behaviour existed prior to and continues alongside mechanized industry and therefore he has compared the two traditions folk and the modern- and tries to establish correlation.

Secondly, he explains, students of folk architecture may differentiate certain pattern of folk culture area and find their modified improved version in the modern present day architectural styles of the same region, thereby providing the continuity of folk design in the modern urban civilization as regards of food and other architectural productions.

Thirdly, he has opined that no work on folk architecture and folk food is done in the view point of folk life study though some of the work has been done

by Anthropologists in their way of methods. (Sen, Soumen. Ed. *Folklore in North-East India*. New Delhi: Omsons publications,-p.9. Collected from Tribal Research institute library, Guwahati, Acc no.1852)

Nirmali Das in her book, *Sanskritir Rengani* (2011) says that the Bodos are large in number and they are economically sound in tribal process of livelihood; well equipped in agriculture, fishing, and hunting businesses. Impact of globalisation is seen among the Bodo community. They use traditional materials for food in village life. On the contrary, the modern highly literate people changed their recipe and food menu in modern thinking. Bodos used domestic rice beer but they use industrial manufacturing wine. The use of wine in marriage and different festivals is surplus in elite Bodo families. The new generation takes traditional food though they have to habituate alien food due to their education, and work place. Easily availed food materials have reduced the traditional food in the market. The use of principal recipe of roasted pork is familiar in city restaurants and dhabas. She argued that if the Bodo food is strengthened in the international level the development of Bodo culture, food and community heritage is ascertained.⁸ The author differentiates the cooking technology according to the geographic condition. The community preservation system is mentioned by the author.

Don Yoder an American folklorist says in his edited book “American Folklife” that a folklife study (regional ethnology) is a subject of recent development in the United States. The concept of folk life studies was developed in Europe to study the native European cultures, focusing on the traditional aspects of these cultures later it is migrated to America as American migrant. In focusing upon traditional forms of life folklore studies thus far in its development in Europe and the united states has offered three essentially different approaches (1) the study of the historical past, (2) the study of the past

⁸ Das, Nirmali. *Sanskritir Rengani*. Guwahati: Chandra Prakash, First Publish, 2011, pp.62-63.

as surviving in and influencing in the present and (3) the study of the ethnographic present.⁹

Debendra Kumar Biswal, in regards of food change, says that the change in ecosystem brings change in food habits. The difference of food may occur in various communities in the same ecological zones due to food production, distribution and avoidance.¹⁰ He observed that food habits are affected by population composition, natural environment by topography, soil, flora and fauna affected by “*Lokosonskriti Bijnan: Tattva paddhati o Prayog*” (2011), a book written by Sheikh Makbul Islam published at Kolkata by Debasis Bhattacharjee of Bangiya Sahitya Samsad.

‘*Boro Kacharir Jana Sahitya*’ is an Assamese book written and published by Bhabendra Narzy. The author who hailed from Dotoma and settled in Guwahati Kharghuli has a good intimacy with the Indian as well as foreign scholars who have written the book ‘*Boro Kacharir Jana Sahitya*’ in 1957. The book is a collection of Boro folk literature especially the folk songs in the decades of the community. The book is introduced by Prafulladatta Goswami in English version. It has good information on the traditional Bodo customs, religion, faith on deities and their habits of the sixty decades. It has good information on food habits and the use of recipes prepared at that time.

Another book of the same author is entitled ‘*Boro Kacharir Samaj Aru Sanskriti*’ (1966 Reprinted the third edition in 2001) and the same book is translated into Bodo version by Hari Narayan Khakhlari and Gabinda Basumatary renaming as Boro Kocharini Somaj arw Harimu. The researcher used to view the original book in the Assamese version where the original thought and practices are depicted in the Assamese vernacular language. It has rich information about society and culture. Customs, rites, rituals in accordance with material culture included food preparation, preservation and folkloristic behaviour of food of the community. Offerings of food to the deities in different spiritual events in relation to faiths, beliefs, myths, legends,

⁹ Yoder, Don. *American Folk life*. Austin: University of Texas press, 1976, pp.3-6.

¹⁰ Reddy, Viswanadha. *Cultural Ecology of Indian Tribes*. Tirupati: department of Anthropology, Sri Venkateswara University.2001, pp.157-160.

short genres the traditional knowledge are dealt with in the book. It also deals with subjects like food and cooking, the method of preparing jumay (rice beer) the traditional drink, and also different types of vegetables and curries suited to different seasons of the year. The author mentions the six types of Bodo recipes viz. (a) Euframnai (fry), (b) Fram fram (dry cooked curry), (c) stheb stheb (keeping a little water), (d) Job job (fish or meat curry cooked keeping little water in it) gravy, (e) Lao Lao (cooked keeping a little water), (f) Menai (roasted)

Sacrifices, offerings of ritualistic food to the 16 Gods and Goddesses are (1) Bathwu Bwrai, (2) Aileng, (3) Karji, (4) Abra khungur,(5) Agrang, (6)Khwila,(7) Rajphuthar,(8) Raj Khandra, (9) Sali Jwmwn, (10) Mwsa Raja, (11) Ai Manasw, (12) Ai Bauli, (13) Khubir, (14) Mao Thangsri,(15) Song Raja, (16) Buli Buri(Bhorli Buli). They receive different food items from the human being is belief by the Community people. (Those traditions of pieces of knowledge have been passed on from the generation). The Bodo are agriculturist families and they celebrate agricultural festivals and those are related to food habits and traditional knowledge's determination of climatic condition.

Endle in the book *The Kacharis* (1911) mentions the recipe of food and fish preservation traditional technology of the period. Besides the use of varieties of food items the great delicacy of pork and its commercial use are discussed in the book. Local tobacco and Burmese tobacco in the community is cultivated. The delicacy food made of nagran or Na gwan which is called dry fish is one of the frequently used foods. The principal food of the community is rice and this is also used for preparing beverages from broken rice used in their daily life. Preservation of emao making from the rice mixing ingredients available in the nature is a unique traditional method. Preparation of country liquor the jumay¹¹ from this medicine emao¹² is mentioned. Use this drink has social values and cultural tradition run through the generations. Marriage and other community work have been associated with feasting. Description of traditional preparation methods innovated by the community people in respect of rice beer is broadly discussed. The knowledge

¹¹ *jumay/zwu* is a term used for the *jou* or local liquor in the Bodo community

¹² Emao is a medicine traditionally preserved to prepare Rice beer among the Bodos.

flourished among the community is age old and they have immense knowledge at present to make the liquor intoxicating.

Tradition of hunting, gathering, equipments Jekhai¹³ khobai, pholo, sen fandw etc. are related with ecology; besides seating on loom, carrying appetizing food to her good man and sons are the good sign of a good wife among the community people all those are related to ecology.

Tradition of storytelling, customary laws, preservation tradition like each household having granary in their homesteads, preparation technologies are the sources for the research project explored.

Kameswar Brahma has carried out his research work entitled “*A Socio Religious Beliefs Practices and Ceremonies of the Bodos.*” In his work he mentioned a few about the food habits of the Bodo community. Traditional knowledge on agricultural land, selection of land for building house, homestead, and type of house are disclosed in the book. Bodo traditional religion has habit of offering food to the deities. Rituals of the Bodos consist food offering and feasting ceremonies communally. Haba, Kherai Marai, Gwthwi garnai all are the examples and have food arrangements.

Sukumar Basumatary a folk bearer among the Bodos is known to be a Boro Khuga thunlaini Oja has said that the Bodo traditional marriage has a soul concern with the traditional onla khari the rice powder curry with a pair of male and female fowls. In his book writes about the Haba the marriage ceremony concern with the Hathasuni marriage that has Onla khari with a pair of hen and cock meat prepared by the bride on the night of the hathasuni. Bride in the hathasuni khurnai marriage ceremony prepare meal and distributes it to bridegroom and other attended members. He mentions the use of betel nut and betel leaf, banana, rice and other ritualistic plants. The tradition of his age and the present trends are slightly differing to the new decades. The book is though published in the twenty first century its happenings are in the twentieth century and its later parts. So the study has to observe the old and new both which are transmitted and running in the present society.

¹³Jekhai is a triangular shaped bamboo made fishing equipment

‘*Monograph of the Boros*’ (2017) is a book written by Phukan Chandra Basumatary (Sahitya Academy Award winner) and Swarna Prabha Chainary who are linguists and folklorist working in the field with their holistic creations. The book has good information regarding the edible plants and use of those plants in day today life. It has numbers of food plants and its identification with detail illustrations and also the uses of those plants in various purposes i.e. food , medicines, ritualistic use and having social as well as cultural values in socio-cultural context of the community in short.

The book An introduction to Boro language written by Phukan Chandra Basumatary and published at New Delhi by Mittal Publication has information about the ethnic identity, dialect groups, and linguistic studies of the Boros. Some important phonological as well as morphological uses in the name of different flora and fauna are analyzed. It gives us feasts of information on the vocabularies, morphemes, phonemes, verbs, and other parts of speeches used in the socio-cultural context of the community the Bodos.

Anil Boro who is a renowned folklorist, Bodo critic, writer and social worker has written the book entitled ‘*Folk Literature of Bodos*’ a research work done under Guwahati University. He had explored the treasure of Bodo folklore partially in the field of folk literature and its tradition among the Bodo community. In his forward of the book he says ‘the oral lore and literature of the Bodos date back to the Primitives of the ages about which our written history in long years back is completely in the dark.’ He tried to find out the community lore like folk tales, legends, myths, songs and short genres in his study.

Like Rev. S.Endle, Bhaben Narzi, Kameswar Brahma the author mentioned the use of Zau the rice beer. The term /Zu/ is used to denote Jau or Jumai (rice beer) in his book. Performance of Kherai Puja with 18 nos. of dance form for Kherai Puja is notable.

In the Chapter II of the book containing to the conceptual notes Folklore and Folk literature he has referred how the word ‘Folklore’ (1846) from the word “Volkskunde”(1812) was derived from two German words “Volk” (which mean people) and “Skunde” (Meaning Knowledge) that was introduced by German

brothers Jacob Grimm and Wilhelm Grimm. Later this was thenceforth with Folklore in English by William John Thoms in 1846.

He reinforces the American folklorist Alen Dundes that folk has their own tradition in common occupation, language or religion. He has also supported the renowned folklorist R.M Dorson by discussing its four components of folklore viz. oral literature or verbal art, physical folk life or material culture, Social folk customs and performing folk arts in details.

The tradition of folk genres which are spoke and song fulfils the folk literature of a community. Those genres like folk songs, proverbs riddles, folk epic and folk language or speech are described. A brief survey of folk song is made by the Book.

The religious songs of the Bodos are the form of folk literature. The literature of Bodos has associated with food habits and their traditional culture. Darshan Kherai or Lakhi Kherai, Umbrao Kherai offers Amthichua, Phalo Kherai in the Maghi Purima, Noni Kherai performed by household members.

Worship of Kherai has some ritualistic practices. Those ritualistic festivals have related with seasons have associated with food habits and its harvesting. They sacrifice different animals head and food items in respect of worshiping the Bodo God and deities' mantra saying of their verbal arts have been chanted by the Bodo old man or Oza.

Beside indication of food consumption and traditional knowledge flourished in the field of oral literature. Prose narrative has such types of knowledge that traditionally run through the community for generation, i.e. mythical tale, narrating the origin of the musical instruments Serza, Siphung are the examples of the creations. He has peeped in to the validation of culture through rites, rituals, festivals which give us the source of knowledge and its treasure of traditional cultural knowledge. Folk literature has its few merits in the traditional Society reflect culture, validities culture, important of education, parents of social presume and social control with the value of socialization, integration, recreational, entertainment, social protest , mechanism of propaganda and describe the aesthetics aspect of Bodo literature.

Above all these works have been more or less on the topic related to traditional knowledge and food habits of the Bodos. The cited books have no sufficient information regarding the topic which going to do research on the topic. Hence further investigation is necessary to overcome the problem.

1.18 Scheme of Chapters

The study contains seven chapters having some sub-chapters. The study has been done keeping in view the folkloristic approach based on the data of food habits prevalent among the Bodo society. There are four main core chapters. In addition to the core chapters there are two supporting chapters which are added as introductory and concluding. Chapter -1 **Introduction** covers the concept note about traditional knowledge, area of the study, aims and objectives of the study, importance of the study, methodology, hypothesis, statement of the research problem and literature review. Chapter-2 **Identification and Classification of Bodo Food Habits** discusses about the folkloristic characteristics and classification of food habits as extent among the Bodos. Chapter-3 **Preparation of Rice and Traditional Knowledge System** discusses the preparation and methods of varieties of rice items and its uses as principal food; and attempt has been done to focus traditional knowledge relating to the preparation of foods. Chapter-4 **Recipe of Curry and Traditional Knowledge System** aims to discuss about different types of food items identified on the basis of preparation process. Chapter-5 **Food Preservation and Traditional Knowledge System** discusses about food preservation and traditional knowledge system as extent among the Bodos. Chapter-6 **Conclusion** is the concluding remarks as findings of analysis of research. Here the finding of the research and comments of the researcher is to be placed at the end with suggestions for scope of further study.