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A STUDY OF THE TRADITIONAL INDIGENOUS KNOWLEDGE WITH SPECIAL REFERENCE TO HISTORICAL PONDS OF KAMRUP DISTRICT OF ASSAM

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ABSTRACT :
Historical sources inform us the importance of utilization of water resources specially dig of ponds in historically important places, strategically important areas and people's day today requirements i.e. drinking water, agriculture and other livelihood purposes. Pond culture is also a very important process for fishing and maintaining bio-diversity. A well-maintained pond can be helpful to create proper eco-system and pleasant environment. During Ancient and Medieval time, we see that dig of ponds was a royal activity. The traditional and indigenous knowledge of the ancient people which is not just applicable to land and water use, it is relevant to all human system. The Ahom dynasty (Who ruled in Assam from 1228 AD in medieval time) had special techniques of dig of ponds. They started pond culture which created socio-cultural entities in a very well-organized way. They had deep knowledge about the ecological need of the area so they started to dig ponds using local scientific skill and techniques. Study of the historical ponds of Kamrup district of Assam and its socio cultural and ecological importance are the aim of the present study.

Keywords: *Historical ponds, Traditional indigenous knowledge system, Ecological and Environmental health hazard, Socio cultural entities.*

I. Introduction:

The Indian knowledge system includes Indigenous and traditional knowledge system which help in developing and awareness and appreciation of India's diversity, culture and traditions, as well as knowledge of various parts of the sphere of universal human values.The indigenous knowledge system is a structured process of knowledge transmission from one generation to next generation and that is based on Vedic literatures and other scriptures and so

it is a rich heritage of ancient Indian knowledge. "The indigenous knowledge which is also known as traditional knowledge restricted to a distinct group of people, culture or society" (Elango et al. 2020). Indigenous knowledge is based on millennia of observation, temporal and Place based, living, kinship-based and wholistic- with an added "w" to emphasize that it wholly encompasses all things covering all areas of human life such as medicine, culture and Spirituality, as well as extensive knowledge of nature etc. Additionally, it is based on indigenous epistemologies (ways of knowing), ontology (understanding of nature, human existence and being and axiology (values, value judgments and ethics). Indigenous knowledge system (IKS) are the knowledge and practices that a local community develops over time to live in their environment. So IKS are dynamic and can be influenced by internal and external factors. They are based on empirical experience and are embedded in social and biophysical contexts. Indigenous philosophy inspires us to consider "all our relations" in order to live harmony with the land. Indigenous knowledge and language emerge from relationships between the land and our peoples. These relationships are central to the philosophies of indigenous people's worldwide. Propositional / theoretical is assumed to be universally valid while practical knowledge can reasonably vary from one society to another. This is because how people do things can be relative while theoretical accounts of such activities are universally valid [Sonkqavi G's (2023].

Horsthemke eminent writer maintained that the idea of propositionally true indigenous knowledge systems leads to the problem of relativism and superstition. Horsthemke also questioned the idea of diversity in light of the traditional conception of epistemology within philosophy proper. The idea of constructivism and in particular its approach to facts and knowledge is questioned in light of its logical in consistencies [Sonkqagi G's (2023)]. About the traditional ecological knowledge of indigenous people Horsthemke concludes that indigenous people's way of seeing and being in the world are as anthropocentric as those of the west. The difference for Horstheke is mainly the degree to which they are anthropocentric [Sonkqagi G's (2023)]. The pragmatism thinking that the meaning of proposition is to be found in the practical consequences of accepting it, and that unpractical ideas to be rejected. Historical sources informed the importance of utilization of water resources specially dig of pond and cannels as architectural construction of historically important places and strategically important

areas. World's various civilizations flourished in the bank of the river. India's ancient civilization like Harappan Civilization, Aryan civilization existed in the bank of the river Indus and Ganga respectively. When we study human history water always take a special role whether it is day today livelihood or holy purpose. Vedas, Upanisada, Itihasa (Ramayana and Mahabharata), Puranas, Darsans, Nyayam, Brahmyanas, Smrities and various other ancient religious sources inform us how water used for the purification of holy yojnas by shunting mantras to perform rituals. The ancient people migrated land to land in search of appropriate areas for convenient livelihood. Wet lands were mostly preferable for our ancestors as agriculture was the main source of living healthy life and that slowly become their main backbone by creating socio cultural entities. During medieval time so many races migrated to North Eastern India, specially from South East Asia in search of water for their paddy field and entered wet land area of Assam creating history. During medieval era Ahom race was the most dominating power of Assam who was considered as the creator of agriculture based folk society of Assam. Assam is a state famous as water power having so many rivers with mighty Brahmaputra. With water resources, people of the state had to face various calamities i.e. flood in summer seasons. Now adages in winter season also people have to suffer artificial flood devastating their living areas and paddy fields. Our ancestors had sufficient knowledge and observation of environmental necessities. They had tremendous ideas to protect our eco system. In ancient time sources found of dig ponds with temples in various area of our land. The Ahoms kings and their expertise officers observed the condition of the land and considering the wet land and water resources of the area, they with their skill and techniques had dug ponds and canals which helped procuring the land from devastation and natural calamities.

To maintain the water bodies of the wet areas scientifically and skillfully designed with techniques dug ponds and canals saving entire areas from natural calamities which maintained eco system. The water of ponds also used for day to day use i.e. as drinking water, bathing purpose, fishing etc. In ancient time ponds were generally dug with every temple which might be used for ritual purpose by priests and devotees. The historical ponds had their own historical stories with the temples. The Ahom community really had scientific knowledge and technical skill of dig ponds which still existed in upper Assam. In lower Assam historically important

place Kamrup district of (undivided Kamrup district) of Assam and evidence are found of so many historical ponds. Sources available of four historical ponds in Guwahati region. These are Dighali Pukhuri , Jor Pukhuri, ,Nagkota Pukhuri , Na-Koniapukhuri (Silpukhuri called today), Sakuntala pukhuri (Near Nabagraha, Silpukhuri), Sobhagya Kunda of Kamakhya temple ,Guwahati, Assam(religious), Kunda of Kouti Linga Mandir (Near Kamakhya temple). In undivided Kamrup some historical ponds are found excavated during the time Ahom King Shiva Singha(1714 AD to 1744 AD) and Koch king Naranarayana (1540 to 1584 AD) (By his brother Chilarai) and Kamata King Arimatta (1365 and 1385 CE). Tank of Bhairabeswari Temple (Near Rangia of Kamrup Dist.), Pingleswar Ardhanareswar Devalaya and Pingleshwar Temple pond (Baihata Charali of Kamrup Distric) constructed by king Indrapal of Pala dynasty around 11-12 CE and rebuilt by Ahom Kng Shiva Singha had around 1661), Tank of Balilecha Kali Mandir of present Nalbari District (Re built by king Shiva Singha), Ganga Pukhuri and Mahmara Pukhuri (Present Nalbari District), Billeswar Temple Pond (Belsor), Pithakhaiti Pond (Muguria Village of Bajali), Temple pond of Dubi Parihareswar Dewalay of Bajali which was built in 5th century during the time of Barman dynasty of Early Kamrup (also rebuilt by Ahom King Shiva Singha).

II. Objectives of the Study:

The objectives in this study are -

1. To understand the traditional knowledge system and transmit them from one generation to the next ensuring continuity and cultural richness.
2. To know about the skill and techniques used in dig of ponds in ancient time.
3. To study about the socio cultural and ecological importance of the Historical ponds.

III.Methodology:

This study utilizes historical-analytical methods to examine the subject matter. Data collection is based on a dual approach: secondary source research and primary field visits. Information was gathered through on-site visits to ancient and medieval temple ponds of Assam to obtain first-hand data. This empirical evidence is further supported by a comprehensive review of books, academic journals, and credible internet sources.

IV. Results and Discussion:

According to the sources Guwahati had 300 historical ponds and of them many ponds were filled by the British during their rule in Assam. But still now some of them existed though in

ruined condition. Specially the four ponds of Kamrup District (M) give us historical evidence.The four famous ponds of Kamrup district i,e,- Dighali Pukhuri, Jor Pukhuri, Nagkota Pukhuri, Na-Koniapukhuri (Silpukhuri called today). From ancient time of historical era sources available of dig ponds. All of we know the legend about the oldest pond Dighali pukhuri situated at present Panbajar of Kamrup district was dug by king Bhagadatta during the time of his daughter Bhanumati's Swayamvar and marriage to Durjobhan (The first prince of Kaurava is mentioned in Mahabharat). The Dighali pukhuri name derived from its length (dighal), Once upon a time, it was connected to the Brahmaputra, and the Ahoms used it as a naval dockyard. During the battles with the Mughals in Alaboi and Itakhuli(near Sukleshwar temple in present-day Guwahati), the dockyard at Dighalipukhuri served as a naval backbone. As history would tell us , the Ahoms emerged victorious over the Mughals because they took them to the river. So comprehensively were the Mughals beaten on water that they could never challenge the Ahom suzerainty again [Garg Ibu Sanjeeb (2017.2nd Edition] .

Jor pukhuri situated on the bank of the Ugratara Mandir, in the heart of Guwahati, stands the twin ponds of Jorpukhuri. White swans and different birds increase the beauty and ecologicand natural balance of the surroundings. This ponds back to the reign of Ahom king Sargadeo Shiva Singha in 1720. When the ponds were dug for the benefits of the priest and other ritual Purpose by the king and in earlier days, it was connected with the Brahmaputra through the Naojan canal, which has now sadly been reduced to a mere sewage canal. The British divided the tank in to two parts by laying a road in its middle and thus the pond acquired the name Jorpukhuri (meaning "a a pair " in the Assamese language)[Garg Ibu Sanjeeb (2nd edition, 2017] Nagkota Pukhuri(which stands in the heart of the city, the Panbazar area today) was built by Ahom king Sargadeo Pramatta Singha with the temple Sukreshwar temple on the banks of river Brahmaputra between 1744 and 1751 AD.As legend has it, regular snake worship was subsequently performed at a special location out a few feet away from the temple.Na-Konia pukhuri (It is called Silpukhuri today) was built by Ahom king Sargadeo Rajeswar Singha through the then Gauhati barphukan (minister),Tarun Duwara ,in 1753, AD.The tank was dug simultaneously with the construction of Navagraha, or nine planet, temple, and hence was provided with nine angles(na-non), which gave it the name Na- Koniapukhuri. The faithful believed that the water that was used bathe the nine planets of Navagraha temple flowed down

to this pond, making it holy. A rock cut inscription written in Sanskrit, of the Ahom era has ever been found now kept Assam state Museum in Guwahati.Historical sources available of the fact that in ancient period Assam was known as Kamrupa during the Puranic times and Pragjyotishpur was its capital [Baruah K.L. (1966)] and Kamrupa kingdom later became Assam. Guwahati served as the capital and continued as the capital city of Assam. From very ancient time different dynasty respectively Danava , Barman, Salastambha and Pala dynasties and till 10-11 th century AD the kingdom was under pala dynasty 's rule. In medieval times (12-17 century) Ahom was the ruling dynasty in upper Assam, however the city functioned as a strategic out post of the Koch Hajo and Ahom kingdoms of western and eastern Assam. Historical study informs us that religion and religious beliefs had taken special role in formation of political and socio-cultural theory which ultimately influenced the customary law of tribal society. From different time construction of archaeological monuments, temples which are still existed in some extent ruined condition and sometime disappearing situation. "There were numbers of ponds and tanks in the city came up at different times and hold tremendous importance. According to eminent Assamese writer and historian, Kumudeswar Hazarika there were about 300 tanks in Guwahati and North Guwahati when the two were a single entity underthe British occupied Assam in 1893 and people used to drink water from them. A majority of them, however, were filled up by the British as they deemed the water unsuitable for drinking" [11]. The excavated sources of Harappan time inform us about the big pond which is identified as Great *Bath* might be used by the devotees for religious bath. "Temple pond was used for bath before entering the temple by the priests and devotees and also for drinking. So many ponds and cannels discovered in Harappan excavated sites. Hence during that time, it was customary to build tanks alongside temples when they were being built." [Dewani Usha (2016)].

Indigenous and traditional knowledge, techniques and skill of dig of ponds:

Traditional skill and techniques of dig of ponds and tanks of Ahom rulers and officers were really appreciable. They used a special type of wooden post (called Naagmari) and a substance called 'roh" which has been translated as 'para' (mercury) which is poured into the spring. These tanks are called as 'roh dhola pukhuri'which is well mentioned in Assamese Bihu folk song. An officer called as 'Rakhendra Barua' was appointed whose duty was to prepare 'Rah' in traditional way. The spring is then capped with a big post of 'sal' (a kind of wood) wood so that water can

be come out in a regular way. Special care was also taken while making the banks of the tanks so as to prevent water seepage. Elephants were used to make the soil of the banks string. Moats were made encircling every tank which helps to keep the water level intact. The Ahom had a unique technique of determining underground water reserves and pinpointing the exact region of underground springs. During the Ahom period a special class of officers called 'mati seleka bixoya (Soil testers) performed rituals and observed several factors such as the direction of the wind and tested the soil to locate the natural aquifers underground for building these tanks. Such understanding of local geology may perhaps be the reason that many of these ponds still have water all-round the year and never overflow of water held during the time of rainy season also. The main characteristics of the Ahom Water Tanks are that :(a) Ahom tanks are colossal in sizes, (b) the water in these tanks were supposed to be crystal clear, (c) the water level is almost at par with the height of the banks and it remains constant throughout the year including the dry seasons. (d) The level of the water being almost at par with its banks is particularly interesting as the banks are normally higher than the outlying areas and hence in effect the water level of the tank were at a higher level than the outlying areas.(e) there has rarely been instances of tank ever having gone dry or its water level going down in any large measure no matter whatever the season of the year.

Environmental and Ecological knowledge of indigenous people:

Socio-cultural and religious ideologies of the ancient traditional rulers of early Kamrupa no doubt suggested for building ponds inside the temples but ecological and environmental knowledge also must guide them for the construction. Considering the wet land area, proper water resource management skills, drinking water, maintenance of bio diversity and no doubt of strategically safety, irrigation, beautification ponds were dag in early time. "The Department of Environment &Forest of Assam inform that there are an estimated 1,85,623 ponds and tanks in the state. This perhaps talks about the lifestyle of Assamese people where water bodies play a crucial role[Dewani Usha (2016)]. For the maintenance of water loss during rainfall and maintain the groundwater level, sustain water flow dynamics and for the control of artificial flood in the city like Guwahati at present time the culture of dig of ponds are very important necessity.Many of the temple tanks in the city with natural beauty are home of rich bio diversity.

So many beautiful birds, swans are seen in the bank of some of them still now also. "Out of the 29 species of turtles identified in India, 20 are found in Assam and 12 such species including Some threatened species and black soft-shelled turtle which has been categorized as extinct in the wild by International Union for Conservation of Nature (IUCN) thrives in the city's temple tanks''[Dewani Usha (2016)]

Societal and Communities involvement around the ponds:

The temple ponds were used for ritual purposes. With religious works for proper management,cleanliness and gardening and other rules to be followed naturally and as a result all surrounding people and communities stared to involve the temple activities. As a result, formation of a society market place in passing of time.

Science and Technological study on Indigenous Knowledge:

For the benefit of human livelihood in a scientific way study of indigenous knowledge system based on practical science and technology is very important. "Philosophers of science, activists, and practitioners of indigenous knowledge have debated the status of indigenous knowledge with respect of science. Indigenous knowledge is often used synonymously with 'local knowledge' or 'ethno science' indicating knowledge specific to a culture. Science and Technology Studies scholarship, however, suggests that all knowledge, including scientific knowledge, is specific to its context" Philip Kavita S (2015)]

Scope of Tourism and socio-cultural and economic benefit of the historical ponds:

There are tremendous scope of tourist attraction and socio-economic benefit of this culturally rich heritage site of Assam. Historical ponds are need to preserve for proper utilization.

Present status of the historical ponds:

But sorry to say that the historical ponds specially in kamrup district are in a very pathetic condition. The *Dighali Pukhuri* which is situated just opposite of district state museum of Kamrup district , is still survive but its traditional construction is totally changed. No water canal to river Brahmaputra internally from the pond *Dighali pukhuri* is observed now. *Jor Pukhuri* and *Na-Konia pukhuri* now existed in a very shrinking condition. Many of them are on the verge of extinction due to less maintenance from the local people. This is also because unaware of

thebackground of the pond by the new generation." Rapid urbanization, choking off of traditional water bodies, degradation of the hills, that surround the city, and lack of proper waste management system have all contributed to ongoing vulnerabilities"[Garg Ibu Sanjeeb (2017 ,2nd Edition)] Today, these ponds lie in ruin condition.

V.Conclusion:

The indigenous knowledge system formed by the conception of basic knowledge of observation, experiences and utilization in practical situation with tremendous ideas of basic skill and techniques which influenced by basic native science etc. The environmental scientific knowledge and ecological concept on land and nature helped them for a safe livelihood encouraging creativity and invention. Indigenous people had scientific knowledge on climate change, water bodies, natural calamities etc. "Yet a scan of environmental science and polity literatures reveals there to be differences in definitions that make it difficult to form a consensus" [Whyte Kyle Powys (Article no -7, 2013)]. Therefore, knowledge mobilization and collaboration of indigenous knowledge and non-indigenous knowledge for the proper policy formation may be the only solution. Considering the importance of the knowledge of indigenous people now Federal Government of USA also have started to take support of indigenous knowledge in to policy processes that in forestry or toxicology and ethno science implementation. So, for the fulfillment of policy different implications of approaches to knowledge of indigenous people should be taken with recent modern technological knowledge. During the time of British colonial era the value of Traditional knowledge system overlooked or disapproved of scientists and policy makers. Therefore, proper improvement of cooperative environmental and natural resources management between indigenous and non-indigenous institutions is urgent need for the flourishing of environmental and natural resources challenges. The historical ponds are closely associated with the cultural and socio-economic status of the people. They serve as gathering places for local fairs, picnics, and religious observances deeply embedding cultural fabric of the respective area, the ponds are not just water bodies, they are living testaments to the rich history of the area, folklore, and spiritual heritage. Ponds are the dwelling place of migratory Birds and water species. Therefore, proper care and preservation of the ponds is urgent need so that historical heritage of our state could be saved. Some of the ponds are in very pathetic condition of the path of extinction. Along with that local NGO, the Institution of the district needs to take

an initiative to organize a general awareness drive on the conservation of ponds and their habitat for wild species. Pollution Control Measures should be taken for purification and cleanliness of the water of the ponds. "Silts arrestors/ Siltation ponds/Sedimentation ponds which catch drain terminating at sedimentation ponds have been constructed garlanding the OB dumps to arrest flow of silts to the rivers /nalas [Singh Dr. Oinam Pahari 2023, First Edition)]. Government should take initiative to save historical ponds and create potential tourism sectors that would enrich social and cultural values in future for the region.

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