# NGOs' Role in Sustaining Indigenous Knowledge in Rural Bangladesh: Agriculture, Healthcare, and Disaster Management

**Article** *in* South Asian Journal of Social Sciences and Humanities · February 2024

DOI: 10.48165/sajssh.2024.5106

CITATIONS
3

READS
135

**1 author:**

Md. Rahmat Ullah
University of Dhaka
**2** PUBLICATIONS **3** CITATIONS

SEE PROFILE

SOUTH ASIAN JOURNAL OF SOCIAL SCIENCES & HUMANITIES

ISSN: 2582-7065 (Online) SAJSSH, VOL 5, ISSUE 1, PP. 79-102

# NGOs' Role in Sustaining Indigenous Knowledge in Rural Bangladesh: Agriculture, Healthcare, and Disaster Management

**Md. Rahmat Ullah**[1]

[1]*Lecturer, Department of Anthropology, Shaikh Burhanuddin Post Graduate College, National University, Bangladesh. Orcid ID: 0009-0000-1803-3992*

**Corresponding Author:** Md. Rahmat Ullah, **Email:** rahmat.du156@gmail.com

**Received:** 10th October 2023 **Accepted:** 2nd January 2024 **Published:** 4th February 2024

## ABSTRACT

This paper explores the indispensable role of non-governmental organizations (NGOs) in cultivating, applying, and conserving Indigenous knowledge within rural Bangladesh. It scrutinizes how NGOs sustain Indigenous knowledge by focusing on pivotal sectors like agriculture, local medicine, and disaster management. Employing qualitative methodologies—such as ethnographic interviews, focus group discussions (FGD), and case studies—the research was conducted in the Gabura union, Bangladesh, using primary and secondary data sources. The literature review underscores the significance of Indigenous knowledge in agriculture and disaster management while identifying gaps in comprehending knowledge conservation dynamics and the NGO's impact on Indigenous knowledge. It highlights how locals employ Indigenous Knowledge to combat natural disasters, particularly in agriculture, healthcare, and disaster management. Furthermore, it explores NGOs' active roles in preserving and leveraging Indigenous Knowledge, emphasizing its integration with modern scientific knowledge and significance in rural life. The study delves into Gabura residents' strategies for cyclone resilience, such as seeking refuge on embankments, relocating to higher ground, and preserving seeds and dry food. It emphasizes NGOs like BARCIK and their initiatives—Paramela and Kaviraj Mela—along with resource person engagement and safeguarding local knowledge endangered by globalization. BARCIK's training in disaster management, advocacy for traditional agricultural methods, and promotion of indigenous remedies in healthcare are highlighted. Ultimately, the paper underscores NGOs' significant contributions to fostering and applying Indigenous knowledge for sustainable rural development. It emphasizes the institutional processes in defining knowledge and the NGO's role in its reproduction.

**Keywords:** Indigenous Knowledge, Non-Governmental Organizations (NGOs), Rural Bangladesh, Agriculture, Healthcare, Disaster Management



DOI: 10.48165/sajssh.2024.5106

## INTRODUCTION

Indigenous knowledge refers to the wisdom and practices developed by local communities within a specific area. According to Grenier (1998), Indigenous knowledge is the individual, traditional, and local knowledge of the men and women of a particular geographical area, which develops and exists in particular conditions.

Again, "Indigenous knowledge is a type of local knowledge that is considered to be unique to a culture or society, as opposed to the global concept of knowledge that is practiced in universities and research institutions" (Warren et al., 1995: xv).

Ellen and Harris (2000) assert that Indigenous knowledge differs distinctly from environmental philosophy or global perspectives. They emphasize its focus on localized environmental understanding and its practical application. Indigenous knowledge predominantly encompasses insights into plants, animals, soil, and various natural elements. This knowledge is intricately tied to specific geographical locations and is deeply rooted in the traditions and customs of individual cultures or communities. Moreover, it holds a strong practical significance, closely intertwined with the sustenance and livelihood of the human populace.

Contrarily, a Non-Governmental Organization (NGO) is an entity that operates independently of government control and is not primarily driven by profit motives. However, these organizations are labeled differently across various nations. For instance, in America, they are often termed Private Voluntary Organizations, while in many African regions, they are referred to as Voluntary Development Organizations. Brodhead (1987) defines non-governmental organizations as non-profit entities that actively participate in activities related to development cooperation, education, and policy-making within communities.

In Bangladesh, the primary focus of NGOs revolves around social development. Presently, these organizations predominantly concentrate on establishing avenues and provisions for education, skill development, social connectivity, communication, and employment opportunities. Within their diverse approaches, knowledge stands out as a critical aspect. Emphasized by Islam (2012), NGOs in Bangladesh integrate both Indigenous knowledge and global scientific perspectives into their development endeavors.

Numerous NGOs worldwide, such as the Center for World Indigenous Studies (CWIS), along with local entities like BARCIK (Bangladesh Resource Center for Indigenous Knowledge) and BCAS (Bangladesh Center for Advanced Studies), actively engage in documenting Indigenous



DOI: 10.48165/sajssh.2024.5106

knowledge and exploring its applications. Non-governmental organizations notably contribute to the preservation and innovative utilization of Indigenous knowledge. BARCIK, specifically operating within Bangladesh, actively collaborates with and promotes the dissemination of Indigenous knowledge. This paper delves into exploring the role of NGOs in creating, using, and preserving Indigenous knowledge. It aims to investigate how NGOs contribute to sustaining Indigenous knowledge across key areas like agriculture, local medicine, and disaster management.

## BACKGROUND OF THE STUDY

Approximately three decades ago, Indigenous knowledge emerged as a significant research subject within development studies, largely credited to Robert Chambers. Its introduction was necessitated during the 1960s and 70s, a period marked by the shortcomings of alternative approaches in development initiatives. However, it wasn't until the 1980s and 90s that Indigenous knowledge started garnering considerable attention and recognition within the evolving global discourse on development (Lutfa, 2006).

The prevalent top-down approach employed in development projects was perceived as inadequate in comprehending local nuances and conditions. Consequently, this inadequacy spurred a quest for a fresh epistemological approach within development studies. This pursuit aimed to address the limitations of existing methodologies. This transition laid the foundation for the growing significance and utilization of Indigenous knowledge in the realm of development studies (Grenier, 1998).

During the 1980s and 1990s, a pivotal shift in development activities occurred, witnessing a notable increase in the involvement and interest of non-governmental organizations (NGOs) over government institutions. This shift stemmed from the recognition that conventional development models were proving ineffective. Consequently, NGOs began incorporating Indigenous Knowledge into their work, recognizing its value as an alternative approach in the field of development. The term "Indigenous knowledge" has now permeated various disciplines, extending its influence beyond the realms of sustainable development. It holds significance in fields such as environmental studies, agriculture, rural development, animal husbandry, social sciences, health sciences, cultural studies, language, linguistics, and other branches of social sciences (Islam, 2012). Furthermore, the emergence of subaltern studies in India during this period marked a quest for subaltern voices within academic discourse. These subaltern groups, including peasants, tribals, and Dalits, inherently possessed Indigenous



DOI: 10.48165/sajssh.2024.5106

knowledge. The attention given to these marginalized voices also contributed significantly to the acknowledgment and elevation of Indigenous knowledge within scholarly circles.

The current stance of Bangladesh's governmental directives on environmental management and agricultural extension emphasizes the imperative inclusion of Indigenous knowledge, particularly in natural resource management. Documents such as the National Environmental Management Action Plan (NEMAP 1995) advocate for the integration of Indigenous knowledge to comprehend local land use practices and improve production techniques and utilization. Notably, the government's policies in Bangladesh's rural economy prioritize crop production, leading to a decline in other essential livelihood activities like home gardening, fishing, and fuel collection. This shift underscores a compelling need for a deeper exploration and application of Indigenous knowledge. Given Bangladesh's geographic landscape, characterized by its flat terrain, Indigenous knowledge emerges as a vital component for development. Research into Indigenous knowledge offers a means to seamlessly embed strategic research initiatives within the broader socio-cultural and agricultural context of Bangladesh (Sillitoe et al. 1998). This approach holds promise in addressing the evolving needs of the country's agricultural and socio-economic landscape, ensuring a more holistic and sustainable development trajectory.

## LITERATURE REVIEW

### *Indigenous knowledge and adaptation in agriculture*

Dwijendralal Mallick's (2006) work focuses on the application of Indigenous knowledge in Bangladeshi agriculture, initially establishing a conceptual framework and exploring the use of locomotion knowledge. While contrasting modern and Indigenous agricultural practices, the emphasis remains on utilization rather than preservation or reproduction of Indigenous knowledge. Surprisingly absent are discussions on preservation strategies or the role of non-governmental organizations in shaping knowledge politics, leaving a gap in understanding the dynamics of knowledge conservation and reproduction within agricultural contexts in Bangladesh.

In Zahidul Islam and Hasan Shafie's (2017) book, they delve into climate change, culture, and adaptation strategies, employing cultural analysis and theories to understand diverse human responses to climate change in Bangladesh. Emphasizing the local and regional impact of global climate change, the book underscores the necessity of co-creating knowledge with communities for effective solutions. Conducting research across over 35 Bangladeshi villages,



DOI: 10.48165/sajssh.2024.5106

the authors observed a seamless integration of nature into the socio-economic fabric of these communities.

Their work focuses predominantly on exploring adaptation strategies rather than inherent capabilities, highlighting the need to assess current threats to livelihoods due to climate change, evaluate adaptation strategies based on present climate risks, anticipate future climate risks, identify barriers to adaptation, analyze the impact of these mechanisms on vulnerable populations, and assess the sustainability of adaptation policies.

While the authors spotlight the current climate change scenario in Bangladesh, detailing steps taken to mitigate its effects and offering recommendations, their reference to Indigenous Knowledge as an adaptation strategy lacks insights into its reproduction dynamics. Additionally, the role of non-governmental agencies in supporting and shaping Indigenous knowledge in climate change adaptation remains unaddressed in their analysis.

In S.M. Arif Mahmud and Md. Borhan Uddin's 2017 study, the aim is to comprehend local perceptions of climate change through an anthropological lens, encompassing beliefs, values, and practices tied to adaptation strategies. Conducted in Pratapnagar and Khazra Unions of Satkhira District and Charhazari and Charparvati Unions of Noakhali District, the research primarily seeks to explore the multifaceted perceptions of local communities on climate change.

The study places significant emphasis on understanding human perceptions from diverse perspectives, examining uncertain climate changes, local factors contributing to climate change, and the resulting impacts. While the research focuses extensively on local beliefs and values regarding climate change in Bangladesh, there is a notable absence in the discussion regarding Indigenous knowledge. Additionally, the role of non-governmental organizations in addressing climate change-related disasters or their involvement in the reproduction of Indigenous knowledge remains unexplored in the researchers' discourse. The study highlights the need for a more nuanced exploration of these local perceptions, delving into their epistemological roots to gain a comprehensive understanding of the causes and consequences of climate change within the context of Bangladesh.

### *Indigenous knowledge in disaster management*

In his article, Mahfuzul Haque (2019) explores the utilization of Indigenous knowledge within disaster management, focusing on the experiences within Bangladesh's coastal regions. Haque



DOI: 10.48165/sajssh.2024.5106

delves into the defining characteristics of this area, detailing recurring disasters like floods, cyclones, river erosion, and tidal waves. The article significantly contributes to understanding Indigenous wisdom and natural resource management by recounting successful instances, including biodiversity conservation and disaster risk reduction.

Haque emphasizes the efficacy of locally inherited knowledge, highlighting its superiority over technical expertise due to its transmission across generations orally, lacking a written form. He advocates for the proper documentation of this knowledge to ensure its preservation for future generations. Interestingly, while Haque acknowledges the ongoing recording and institutionalization efforts by non-governmental organizations, he omits discussing their role in reproducing Indigenous knowledge within his article.

Moreover, Haque doesn't address the involvement of non-governmental organizations in utilizing Indigenous knowledge for disaster management. These organizations engage in diverse activities derived from this knowledge; a facet not explored in his writing.

Md. Sanaul Haque Mondal (2002) endeavors to uncover Indigenous myths and beliefs prevalent among the Char people and establish connections with scientific knowledge. Despite their distance from scientific understanding, the Char people demonstrate adeptness in combating natural calamities, relying significantly on their Indigenous knowledge. Mondal showcases how this knowledge aids the survival of these communities in adverse conditions. The primary discoveries of this research encompass identifying the types of Indigenous knowledge utilized in various disasters, exploring strategies employed for disaster risk reduction, analyzing the motivations behind leveraging Indigenous knowledge, and offering recommendations for effective disaster risk reduction strategies. However, the study does not delve into the preservation methods for Indigenous knowledge, leaving this aspect unexplored. Additionally, while the focus remains on disaster management, the study overlooks numerous other domains where Indigenous knowledge plays a significant role. It neglects to address the involvement of non-governmental organizations in the production and perpetuation of this Indigenous knowledge, a substantial omission within Mondal's research. These organizations often play pivotal roles in nurturing, recording, and passing on Indigenous knowledge across various sectors beyond disaster management, a facet that wasn't discussed in this study.

Shaheed Hassan's (2000) article compares cyclone-prone regions in Bangladesh and Japan, spotlighting local disaster management practices. The study examines cyclones, inhabitants' perceptions, Indigenous coping strategies pre, during, and post-disaster, and the efficacy of



DOI: 10.48165/sajssh.2024.5106

warning systems. Hassan emphasizes the generational transfer and intimate connection of Indigenous knowledge with nature, typically preserved by community elders. However, the article overlooks the institutional preservation of this knowledge, and the involvement of non-governmental organizations, and lacks discussion on the political aspects influencing its reproduction, creating gaps in understanding its broader utilization and preservation dynamics.

Mohammad Tareq Hasan's (2010) research paper illuminates the utilization of Indigenous knowledge by the Rakhine people in perceiving, predicting, and adapting to cyclones. It outlines the strategies employed before, during, and after cyclones, highlighting the effectiveness of locally preserved survival techniques, evidenced by past incidents. Hasan notes that the quality of this knowledge varies based on factors like gender, age, residency, or profession within the community. While the paper mentions the need for documentation or preservation of this local knowledge, it lacks specifics on how to achieve this. Furthermore, there's a noticeable absence of discussion regarding the involvement of non-governmental organizations in conserving this knowledge or their contributions to this field. Additionally, the paper neglects to address the reproduction of Indigenous knowledge through preservation methods, leaving significant gaps in understanding its conservation and broader utilization dynamics.

***Indigenous Knowledge in medicine or the Healthcare system***

Maraia-Costanza Torri and Julie Laplante (2009) explore the potential of ethnomedical knowledge in their research. They highlight the significance of blending Indigenous Knowledge with scientific knowledge in the daily practices of local communities. This fusion forms networks crucial for expanding innovation capacity, enabling the creation, spread, and application of Indigenous knowledge. These networks manifest in various models, enhancing social capital within villages. Understanding how Indigenous knowledge contributes to development and innovation is pivotal. The case studies presented focus primarily on innovative approaches within the realm of development, particularly in biomedicine. The authors discuss the work of two NGOs and underscore the importance of documenting Indigenous knowledge for medical treatments. They emphasize the innovative relationship between Indigenous and scientific knowledge from its inception. However, the text does not delve into the broader spectrum of areas where Indigenous Knowledge is utilized in society, nor does it address the politics of reproducing documented Indigenous knowledge.



DOI: 10.48165/sajssh.2024.5106

M I Zuberi's (1998) research paper primarily highlights the integration of Indigenous knowledge into local medicinal practices for the sustainable utilization of biodiversity in Bangladesh. The article delves into the significance of Indigenous knowledge within the context of Bangladesh, emphasizing its importance in preserving socio-economic conditions and local treatment practices. The focal point revolves around the utilization of Indigenous Knowledge in local treatment methods. Notably, the paper does not address the involvement or role of non-governmental development agencies in either preserving or utilizing this Indigenous knowledge.

***NGOs, Indigenous Knowledge, and Western knowledge***

M.W. Maila and C.P. Louboer (2003) highlight the significant role of Indigenous knowledge in education, particularly in the realm of environmental education. Their article underscores traditional education as a pivotal means for disseminating Indigenous knowledge, emphasizing its incorporation into policies like the Brandland Commission, South Africa's Environmental Education Policy Initiative, and initiatives by NGOs. The text argues that the generation of Indigenous knowledge is influenced by societal structural actions.

Primarily centered on the relevance of Indigenous knowledge in South African environmental education, the paper makes certain assumptions, such as the fixity of Indigenous Knowledge, its limited global applicability, and its exclusive existence within African societies. It focuses on the integration of Indigenous knowledge with environmental education programs and the evaluation of these initiatives within various educational frameworks. However, the scope of Indigenous Knowledge in societal applications beyond environmental education remains unexplored in this text. Additionally, the portrayal of Indigenous Knowledge as solely bound to South Africa overlooks its presence in diverse communities worldwide.

The article illuminates the utilization of Indigenous Knowledge in environmental education and the involvement of NGOs and related organizations in this field. Yet, it neglects to delve into the role of politicization or non-governmental development agencies in the creation and propagation of Indigenous knowledge.

Francis Adyanga Akena's (2012) work elucidates the legitimization, imposition, and impact of Western knowledge production on local communities and their indigenous knowledge. The author asserts a crucial link between the knowledge producer and the societal objectives, highlighting how this connection shapes the definition of valid or just knowledge within a community's politics and economy, especially in non-Muslim societies. To comprehend the



DOI: 10.48165/sajssh.2024.5106

marginalization of Indigenous knowledge, the paper emphasizes considering the social, economic, and political positions of those producing this knowledge within the context of colonialism. This relationship forms the basis for the dominance of Western knowledge and the marginalization of Indigenous knowledge in society.

The essay is structured into four parts: firstly, defining Indigenous Knowledge; secondly, reviewing the literature on knowledge production; thirdly, discussing the prevalence of Western knowledge over Indigenous Knowledge within Ugandan society; and finally, concluding the argument. However, the article lacks engagement with non-governmental organizations. There's an absence of exploration regarding the role these organizations play in influencing politics within knowledge production and reproduction.

## OBJECTIVE OF THE STUDY

The specific aim of this study is to thoroughly investigate the direct contributions made by non-governmental organizations (NGOs) in the creation and sustenance of Indigenous knowledge across crucial societal domains. The research will focus meticulously on discerning the precise roles undertaken by these NGOs in actively fostering and perpetuating Indigenous knowledge within distinct sectors such as agriculture, local medicinal practices, and disaster management.

## METHODOLOGY

Qualitative research methods have been used in this study.

### *Sources of data*

The research methodology involves the collection of data from two distinct sources:

*Primary Source:* Data collection directly from the field through engagement with specific informants. This includes interactions with a diverse group of individuals such as community elders, farmers, local healers, and fishermen who actively utilize Indigenous knowledge. Additionally, insights and information have been gathered from community elders well-versed in the use and understanding of Indigenous knowledge. Notably, staff members from the NGO BARCIK, specializing in the production and perpetuation of Indigenous knowledge, have served as key primary informants. Information has been directly acquired from these sources through interviews, discussions, and fieldwork.

*Secondary Sources:* The research draws upon various secondary sources to complement and enrich the primary data collected. This includes referencing materials related to Indigenous



DOI: 10.48165/sajssh.2024.5106

knowledge, its production and reproduction, as well as literature pertaining to non-governmental organizations. Secondary sources encompass a broad spectrum of references, including books, periodicals, articles, essays, and online resources sourced from reputable platforms related to development studies.

The combination of primary data obtained firsthand through fieldwork and direct engagement with stakeholders, along with secondary sources comprising scholarly materials and literature, forms the foundation of this comprehensive research endeavor.

### *Methods of data collection*

Data has been collected using ethnographic interviews, FGD, and case study methods in carrying out this research.

### *Sampling*

Sampling involves selecting a representative subset from a larger population for research purposes due to limitations in time and resources. In this study, snowball and purposive sampling methods were utilized. Initially, respondents were identified through engagement with BARCIK's staff involved in Indigenous knowledge projects, providing insight into the role of NGOs in perpetuating this knowledge. Subsequent data collection involved individuals connected to these projects and community members knowledgeable about Indigenous practices, leveraging their expertise, particularly that of elders, to gather valuable insights and information.

### *Description of the research area*

The fieldwork for this research was conducted in Gabura union, located within the Shyamnagar upazila of the Satkhira district in southwestern Bangladesh. BARCIK, operating through a resource center in Shyamnagar Upazila, actively engages in numerous projects and initiatives within Gabura Union.

Gabura stands as a sizable riverine island union within Shyamnagar Upazila, with a population totaling 38,825 individuals, comprising 19,307 males and 19,518 females as of 2011 (BBS, 2011). This union encompasses 9 wards and 15 villages, situated approximately 120 km away from the Bay of Bengal. The island is flanked by two significant tributaries, the Kapotaksha and Kholpetua rivers. The Kapotaksha River forms the northern boundary with the mainland



DOI: 10.48165/sajssh.2024.5106

Padmapukur Union, while the Kholpetua River runs westward, separating Gabura from the southern expanse of the Sundarbans.

The perimeter around Gabura extends to 28.83 km, encompassing a dam within its boundaries. However, internal communication is restricted to a mere 2 km of paved roads, with the remaining 27 km presenting challenges due to unpaved pathways, especially during the monsoon season. Essential facilities within Gabura include two government community clinics, 12 primary schools, and two secondary schools. At times, NGOs establish temporary healthcare camps in the area. Notably, the island faces escalating salinity attributed to the impact of climate change, posing ongoing challenges to its ecosystem and inhabitants.

## FINDINGS AND DISCUSSION

### Indigenous Knowledge and Usage

Indigenous knowledge refers to the wisdom and practices developed by local communities within a specific area. It encompasses the techniques and insights cultivated by people to thrive in their natural surroundings. In the remote region of Gabura, Indigenous Knowledge holds significant importance. It proves to be more sustainable compared to modern knowledge systems. The local inhabitants rely on Indigenous Knowledge extensively in their day-to-day lives, notably in disaster prevention, agriculture, and medicine. BARCIK plays a key role in advocating for and promoting the utilization of Indigenous Knowledge within this community.

#### *Indigenous Knowledge in Agriculture:*

Indigenous Knowledge finds widespread application in agriculture, predominantly within rural and local communities. These communities employ cost-effective local techniques in various agricultural facets such as paddy cultivation, fish farming, and vegetable cultivation. Notably, the southern regions of Gabura and Shyamnagar face challenges due to excessive salinity levels, leading to a continual decline in crop yield. To combat this issue, local inhabitants' resort to Indigenous Knowledge methods to mitigate salinity and enhance crop productivity. Additionally, NGOs help to implement it there.

In the realm of agriculture, natural resource management, fisheries, animal husbandry, healthcare, and housing, Indigenous Knowledge serves as a cornerstone in the sustenance efforts of rural communities. Within this context, various Indigenous farming practices play pivotal roles, such as seed collection and the innovative floating cultivation method. Local communities establish seed banks to cater to their specific agricultural needs. Noteworthy



DOI: 10.48165/sajssh.2024.5106

among these practices is the creation of floating vegetable gardens, small yet effective patches of soil, and organic fertilizers housed within bamboo baskets. Additionally, the concept of a floating vegetable seed bed, where cultivation occurs atop water surfaces, has been documented (Sukant Sen et al., 2007). Multiple facets of Indigenous Knowledge find application in agriculture, encompassing techniques for land preparation, seed storage, fish farming, and more.

*Land preparation:* Indigenous Knowledge is effectively employed to counteract soil salinity in Gabura. In the winter season, the soil accumulates salt deposits, resulting in increased surface dust. To address this, the soil is delicately loosened using a spade, preventing compaction. Fragments of soil are gathered into baskets and transferred from one location to another, deliberately tossed up and down during the process. This method allows the soil to aerate and remain elevated. When the rainy season arrives, this stored soil releases its salt content, making it suitable for paddy seed beds or vegetable cultivation. Furthermore, significant amounts of dung or organic fertilizers are generously applied to the land to render it conducive to crop cultivation. In times of calamity, when the surrounding saltwater inhibits conventional cultivation, vegetables are grown on rafts as an alternative approach.

*Seed collection:* In disaster-prone areas like Gabura, agricultural lands often succumb to losses, leading to a scarcity of crop seeds. To mitigate this, local farmers traditionally engage in meticulous seed collection and storage which are vital practices in agriculture. Recognizing the challenges posed by coastal salinity, bamboo and glass containers serve as excellent storage vessels for seeds. The process of seed collection involves selecting robust crops during their initial growth stages and preserving them until the season's end. Upon maturity, these crops are sun-dried. Various vegetables like Shrimp, Tarul, and Borabati are dried along with their peels, while stalk crops are dried with their flowers intact. Techniques such as pressing tomatoes into thin cups and using their seeds as an adhesive before drying are also employed. Paddy seeds undergo specific treatment, being sun-dried two to three times. A telltale sign of their suitability for storage is determined by the crunching sound produced when paddy is bitten. The dried pots used for storage are sun-cooled, with dry neem leaves placed at their base. Twice a year, the seeds are thoroughly sun-dried and repositioned within the pots. To prevent spoilage, the seed pods remain unopened during rainy or humid conditions, ensuring the preservation of the seeds.



DOI: 10.48165/sajssh.2024.5106

*Fisheries:* The decline in freshwater fish stocks, attributed to rising salinity levels, prompts the application of local methods to restore suitable pond conditions. Measures like incorporating neem juice, dung, or kachuripana into the pond aim to maintain water quality for future fish farming endeavors. Salinity impedes the growth of freshwater fish within these ponds, necessitating specific actions. To address this issue, a sequence of steps is followed. Initially, the pond undergoes irrigation before the monsoon season. Subsequently, rainwater is collected and stored within the pond. After a brief period, the roots of various aquatic plants like Kachuripana, Helencha, and Jalkalmi are embedded into the pond's clay. These aquatic plants rapidly propagate within the pond environment. Once the plants have proliferated, freshwater fish fry are introduced into the pond. These plants serve a dual purpose: they act as food sources for the fish and contribute to maintaining the pond's water quality. This interplay between aquatic plants and fish cultivation becomes integral in managing the salinity levels and nurturing a conducive environment for freshwater fish within the pond.

***Indigenous Knowledge in Medicine and Health Care System:***

For generations, local knowledge has been an integral part of rural life, particularly in nurturing health and well-being using natural resources (N. Begum et al., 2000). The World Health Organization notes that approximately 80% of the global population, especially those in underdeveloped regions, heavily rely on local medical systems for primary healthcare (M. I. Zuberi, 1998). In the absence of modern medical facilities, Indigenous remedies have historically served as the cornerstone of healthcare for local communities. These remedies are not only easily accessible but also cost-effective, ensuring swift availability of first aid.

Indigenous medicine predominantly relies on utilizing locally sourced plants or consulting Kaviraj or Healers for treatments, differing significantly from modern biomedicine. This method of treatment has persisted over time and is employed diversely. For instance, stomach ailments often find relief through water intake, while colds may be treated with a mixture of Tulsi leaf juice and honey. Applying crushed leaves to staunch bleeding from cuts or administering a combination of cardamom, cloves, palm leaves, and Tulsi leaf juice effectively addresses cough-related issues. Such practices exemplify how Indigenous Knowledge is applied in healthcare within the Gabura community, showcasing its efficacy and versatility in addressing various health concerns.



DOI: 10.48165/sajssh.2024.5106

***Indigenous Knowledge in Disaster Management:***

In the disaster-prone region of Gabura, annual occurrences of dam breaks leading to flooding with saline water, along with cyclones like Aila, Yas, and Ampan, pose significant challenges. In navigating these adversities, the utilization of Indigenous Knowledge by local inhabitants remains pivotal, and the involvement and influence of NGOs play a crucial role. Research by Shaheed Hasan (2000) and Tareq Hasan (2010) sheds light on the Indigenous perception, predictive capabilities, and coping mechanisms employed by residents to confront diverse disasters, all rooted in Indigenous knowledge. Traditionally, the people of Gabura relied on Indigenous Knowledge to navigate various calamities. However, a shift has occurred, and dependence on modern technology has gradually supplanted these traditional practices.

The Gabura community experiences a frequent occurrence of natural disasters as an inherent part of their daily lives. Cyclones such as Aila, Yas, and Ampan have been significant contributors to this phenomenon. The breach of the barrage resulted in the inundation of the entire region with saline water, significantly impacting agricultural lands and fisheries—the primary sources of livelihood for the locals. In response, the community relies on their traditional Indigenous Knowledge to mitigate the effects of these disasters. However, the current approach has gradually shifted towards a greater dependence on modern technology to address these challenges.

In Gabura, cyclones, salinity, and river erosion stand out as primary disasters. The local community has developed various strategies to address cyclones. Homes are constructed at elevated heights to safeguard against floods, while the roofs are deliberately built lower than typical to minimize damage during cyclones. Shahed Hasan (2000) discusses this indigenous knowledge infrastructure employed by the community for disaster management. In the face of a cyclone or subsequent disaster, survival tactics include securing oneself to trees, seeking refuge in embankments and polders, and finding shelter on floating objects like bamboo and straw bales. These methods reflect the resourcefulness and adaptability of the Gabura people in confronting and enduring such adversities.

The Gabura locals employ various methods to cope with cyclones. Seeking refuge on embankments, moving to higher ground, storing dry food, and preparing dry cooking ingredients in advance are common practices. Preserving seeds is also a priority, with pumpkin seeds being a popular choice for dry sustenance. Women play a pivotal role in this process by creating a mixture of pumpkin, pulses, and black cumin seeds to form pills. This involves



DOI: 10.48165/sajssh.2024.5106

combining one kilogram each of pulses and pumpkin, along with black cumin seeds, and shaping small pills by hand. A lengthy piece of tin, coated with mustard oil, is used to dry these pills under the sun for several days until they emit a distinct odor and exhibit a melting quality when pressed. Additionally, aside from pumpkin, pills can be crafted from cabbage, potato, radish, and kachur root, addressing the food demands during monsoons or cyclones. These methods showcase the resourcefulness of the community in ensuring food sustainability during challenging climatic conditions.

In anticipation of cyclones, the local practice involves securing houses with ropes and elevating their structures. Constructing such homes involves digging four holes in a square pattern, each about 4 to 5 feet deep, where sturdy pillars are positioned. Additional poles are placed between these pillars, serving as support. Rice is spread atop golpata or tin sheets laid across these supports, forming the foundation upon which an earthen house, approximately 4 feet high, is built. Surrounding this structure, brick masonry is erected with a gap of two and a half inches left in the walls, subsequently filled with saline soil. A bamboo fence is then added atop this soil-filled wall. These uniquely designed houses exhibit resilience against storms and maintain cooler temperatures during summer months. Additionally, the strategic planting of more trees around these houses contributes to their stability and environmental impact. Kachuripana, a method used for pond maintenance, is also employed in the vicinity.

**Fostering and Sustenance of Indigenous Knowledge and the Role of NGO**

NGOs such as BARCIK play a pivotal role in the preservation and dissemination of Indigenous knowledge within Gabura. Their efforts include organizing events like Para Mela and Kaviraj Mela, gathering resource persons, and actively engaging in the conservation of local knowledge threatened by globalization. BARCIK undertakes multifaceted initiatives, offering training in disaster management techniques deeply rooted in the practices of the local populace. Furthermore, the organization focuses on agricultural aspects by showcasing traditional methods like organic fertilization, pesticide use, and seed storage, all inherent to the local community. By doing so, BARCIK ensures the perpetuation of this invaluable knowledge, safeguarding it from potential loss.

Indigenous knowledge traditionally spreads orally, a method vulnerable to erosion over time. Recognizing this risk, NGOs like BARCIK employ diverse strategies to safeguard these insights. They diligently collect, preserve, and disseminate information on various subjects, including the medicinal properties of plants, thus fortifying the wealth of local wisdom. In the



DOI: 10.48165/sajssh.2024.5106

realm of healthcare, these NGOs adopt varied approaches to conserve and share indigenous medical practices. They gather insights from individuals within the society, collate resources, and offer comprehensive training programs, ensuring the continuous transmission of this invaluable heritage.

Through these concerted efforts, NGOs serve as custodians of indigenous knowledge, orchestrating a systematic process to sustain and propagate it within the community.

Here I will discuss the method of reproducing the Indigenous knowledge of NGOs i.e., BARCIK. This segment delves into the intricate process involved in preserving BARCIK's Indigenous knowledge in fields such as agriculture, health care, and disaster management.

***Indigenous Knowledge in Agriculture:***

Local people survive in the changing environment by utilizing indigenous knowledge in agriculture, with the NGO BARCIK playing a crucial role. Indigenous methods for seed collection and storage are employed. The NGO offers training to locals in collecting seeds using this indigenous knowledge. Seeds are planted annually to prevent their loss. Regarding this, Parul Akhter (40), a farmer and seed saver, mentioned,

> "Understanding this, it seems that in the past, when our ancestors stored seeds, it was different from how it is now—kept in a bottle. We used to follow that method as well. However, BARCIK has taught us that by improving how we sort and preserve seeds, we won't have to rely on the market during disasters; we can sustain ourselves. Occasionally, market seeds spoil, and BARCIK has enabled us to address this issue."

Here, BARCIK is educating the local community about the significance of seed conservation. They express that through this initiative, they aim to eliminate seed shortages during calamities and share their preservation methods with others based on their knowledge.

Regarding farming methods, rice, and fish intercropping stand out as a popular technique. Abdul Gafoor (49) mentioned,

> "I have a small plot of land in front of my house where I used to farm fish during the monsoon season when water accumulated. BARCIK suggested that I cultivate both fish and rice in this area and provided the seeds. They also advised on the use of organic fertilizers, What specific organic fertilizers should I use."

Again, farmer Monirul Islam (39) said,



DOI: 10.48165/sajssh.2024.5106

> "Here, we face high salinity, which affects the kind of paddy we can grow. BARCIK provides varieties suitable for this environment, such as BR 11 and Ghuisi rice, which we cultivate after receiving training and seeds from them. Additionally, we have an organization that distributes these seeds for cultivation. We also focus on growing vegetables in sacks. After Cyclone Ayla, each member receives 8-10 sacks for home cultivation. I cultivate gourd and pumpkin seeds using dung manure, having undergone various training sessions. Furthermore, we engage in extensive vegetable cultivation using rafts in ponds. BARCIK introduced a method involving banana rafts with soil during the time of Aila, despite the surrounding saltwater. We plant vegetables using a raft system, placing soil on top, covering it with polythene, and then planting seeds with organic fertilizers. This method has been instrumental in our crop production."

Absolutely, NGOs indeed contribute significantly to adapting to environmental changes. They assist in adopting farming strategies that help communities survive despite challenges like salinity, utilizing local knowledge effectively. These NGOs impart methods such as growing vegetables in rafts and sacks, which are derived from the knowledge and practices of the local population.

The NGOs don't create these methods themselves but rather apply and share the valuable knowledge sourced from society and local communities. According to NGO worker Rakib (32),

> "The significant aspect here is the absence of our own knowledge base. Local farmers don't rely on conventional pesticides; instead, they've innovated their approach. They utilize a blend of neem fruit, gul, and soap shavings, creating an organic pesticide alternative to chemical or compost-based solutions. Moreover, they employ Indigenous Knowledge for pest control, like using "Tin binds" to trap insects and address issues caused by rats. Our role involves showcasing these practices to others by arranging visits to those implementing these innovative methods."

Indeed, the knowledge gathered from local farmers becomes a resource for NGOs. These organizations visit the endeavors of those implementing Indigenous Knowledge and integrate these practices into their initiatives.

NGOs also organize training sessions encompassing organic fertilizers, rice breeding, skill development for youth, and a spectrum of agro-based programs. They leverage this collective knowledge to empower and educate communities in sustainable agricultural practices and skills. Ramakrishna Jowardar (40), Program Officer of BARCIK, said,



DOI: 10.48165/sajssh.2024.5106

> "The ongoing project I'm involved in is abbreviated as PLDP, which stands for 'People Leads Development Process.' Essentially, it means we work based on the insights from agricultural diversity in the region, incorporating local knowledge and addressing the needs of marginalized communities for their development. In my role within this project, I focus on cultivating uncultivated crops. I'm tasked with planting these plants and organizing cooking competitions, workshops conducted by Kaviraj (Healer), and educating schoolchildren about these crops. Our emphasis is on identifying plants affected by salinity, those with medicinal properties, and those easily available in backyard settings. Previously, we didn't need to buy vegetables as mothers used to collect their seeds. These plants require no fertilizers, offering the highest food quality and nutritional benefits. Using Indigenous knowledge in agriculture not only enhances well-being but also improves the environment. One key application is in rice and fish co-cultivation, where we utilize Indigenous knowledge instead of conventional fertilizers or pesticides used in hybrid rice and fish farming. We employ natural elements like neem fruit or dung, which act as organic pesticides. This approach benefits both the fish and rice without causing harm. In contrast, market pesticides result in the death of fish and soil organisms, disrupting the ecosystem. However, when we use natural methods, there's no harm inflicted on any organisms."

Here it can be seen that NGOs are using Indigenous Knowledge through their projects. Using Indigenous knowledge in agricultural diversification. Through Paramela, Kaviraj workshops it is getting interest from local farmers to use it.

*Para Mela (One kind of Fair Like Village Fair):* Para Mela serves as a fair showcasing the qualities and attributes of various uncultivated plants. This concept was initially conceived by BARCIK, and Paramela took shape around 2012-13. Originally, rural women were involved as gardeners, and BARCIK drew inspiration from their practices for the Paramela idea. The fair comprises different stalls similar to shops, yet they showcase diverse plants rather than commercial goods. Notably, the participation of rural women is more prominent at Para Mela. Ramakrishna Jowardar (40), Barsik's program officer, said about the Para Mela.

> "When the para mela is ongoing, we approach 10 or 15 men and women in a village, asking about the number of plants they have and their knowledge of plants. We engage the elders and encourage young boys and girls to learn from them about trees. Each person shares one benefit of each plant they've learned about. We organize this information into a stall at Paramela, resembling a shop, in a fair-like fashion. Villagers visit, sharing their knowledge of plant qualities, which we note down."



DOI: 10.48165/sajssh.2024.5106

*Sompod Bhekti (Resource Person):* BARCIK has introduced the concept of Sompod Bhekti (Resource Person), which focuses on individuals with significant expertise in specific fields. This could be someone well-versed in agriculture, forestry, fisheries, or any other specialized area. These resource persons possess extensive knowledge and experience in their respective fields, more than others around them. BARCIK facilitates the sharing of this expertise by arranging opportunities for others to learn from these resource persons. According to Ramakrishna Jowardar (40), program officer at BARCIK,

> "In our area, we have several resource persons who possess extensive knowledge about the region. These individuals are seasoned workers, often older, and learned from their ancestors. They utilize traditional methods, such as boiling mahogany oil or neem leaves, even using mahogany fruit to create bitterness. We glean valuable local knowledge from these experts. For instance, during fairs like seed fairs or Paramela, we identify these individuals and gather their insights. Subsequently, we invite them separately and conduct training sessions in different locations. Our training doesn't rely on books or external sources; it's based on the expertise these individuals hold, and we learn and train alongside them."

NGOs play a crucial role in preserving Indigenous agricultural knowledge. They spread diverse plant knowledge and other insights through events like Paramela, ensuring the retention of Indigenous Knowledge. They identify skilled individuals as resource persons, expanding and sharing this knowledge further. This encompasses various practices, like growing rice in saline conditions or cultivating vegetables on floating rafts—applications of local wisdom. NGOs advocate for using organic fertilizers and pesticides instead of chemicals, all sourced from and shared by the local community.

***Indigenous Knowledge in Medicine and Health Care:***

Indigenous knowledge holds significant importance in rural healthcare, especially in utilizing various forest plants for primary care. BARCIK is dedicated to preserving and promoting the broader application of these Indigenous remedies within this context. Parul Akhtar (40), a farmer and associated with BARCIK, said,

> " In the past, seeking a doctor's help was a distant option for us in this area. Instead, we relied on self-care remedies. For instance, a mix of tulsi leaves juice with honey was believed to cure colds and coughs. We had our methods—crushing herbs with stones or boiling cardamom, cloves, palm leaves, or tulsi leaves for relief. These practices have been passed down through generations and learned from our fathers and grandfathers. If someone had a minor injury, they'd use durba (grass) and stone leaves for treatment. Recently, BARCIK has



DOI: 10.48165/sajssh.2024.5106

> been encouraging us to cultivate medicinal plants, educating everyone about their qualities—Shatamul, Anantamul, Bakusha, and more. They've distributed medicinal plants to many individuals in the community, advocating for their cultivation and sharing their beneficial properties."

BARCIK is actively promoting the utilization of Indigenous remedies among rural farmers, emphasizing the importance of sharing this knowledge beyond individuals.

Social factors play a crucial role in managing Indigenous knowledge. As children grow, they absorb specific knowledge and skills from their environment, following the teachings of previous generations (M I Zuberi, 1998). However, globalization is gradually distancing people from this traditional knowledge, leading to a lack of awareness among locals about traditional treatments. NGOs step in by organizing various Paramela events, where elders or knowledgeable individuals share the authentic qualities and medicinal properties of plants. These discussions shed light on how various plant leaves' juices can effectively treat diseases. The rest of society needs to value and preserve these practices.

BARCIK's farmhouse has a variety of herb gardens. All these herbs are preserved and given to local people. Ramakrishna Jowardar (40), program officer of BARCIK, said,

> "The Kaviraj workshops are crucial. They highlight how Indigenous knowledge can be life-saving, particularly in snakebite cases. For instance, using specific Indigenous methods can save a patient bitten by a snake. Similarly, the use of Thankuni leaves for stomach pain is a common practice known among people. Additionally, the use of honey for newborns helps reduce subsequent colds and coughs, boosting their immunity. These traditional practices are well-known and valued within our community."

NGOs engage in diverse activities aimed at utilizing Indigenous knowledge in medicine. They ensure the transmission of Indigenous remedies to the next generation by organizing Kaviraj Workshops, Paramelas, and by utilizing resource persons. These initiatives help preserve and pass on traditional healing practices to future generations.

***Indigenous knowledge in Disaster management:***

The NGO plays a crucial role in motivating and training communities in disaster management, particularly in handling cyclones. They leverage local knowledge to mitigate river erosion. Encouraging the adoption of diverse Indigenous methods to combat cyclones—constructing sturdy houses, stockpiling dry food, seeking refuge in elevated areas, and preserving seeds—forms a significant part of their efforts. The NGO organizes various training programs to



DOI: 10.48165/sajssh.2024.5106

disseminate these practices among the local population, ensuring widespread awareness and preparedness. In this context, Rakib (32), an employee of BARCIK, said,

> "It sounds like there's been significant damage from recent cyclones. We offer advice to those who can benefit from it, suggesting the installation of a tethering system to prevent houses from being carried away. As water levels periodically rise in the area, we advise raising existing houses. Additionally, we promote the cultivation of rice or vegetables that are salt-tolerant as a proactive measure."

That is, NGOs play one of the key roles in disaster management or mitigation. They work using local knowledge or techniques.

According to Michel Foucault, information in a society earns the label of knowledge when it gains acceptance and social recognition. He emphasizes the institutional process behind establishing something as knowledge or fact. For him, achieving recognition as knowledge involves an institutional journey. Foucault highlights an anonymous, institutional, and policy-based method in knowledge production. On the other hand, examines a technical approach utilized in generating knowledge within the human sciences (Mills, 2003).

NGOs are among the primary organizations contributing significantly to knowledge generation. Their institutional role extends to the reproduction and establishment of Indigenous knowledge as validated knowledge. This illustrates the position and influence of non-governmental organizations in the reproduction of Indigenous knowledge across domains such as agriculture, healthcare, and disaster management.

## CONCLUSION

This research begins by formulating specific research questions, such as understanding the role of non-governmental organizations in generating, utilizing, and safeguarding Indigenous knowledge, among other aspects. And the things that have been seen while searching it-

NGOs play a pivotal role in both generating and employing Indigenous knowledge across various domains. In agriculture, this knowledge is applied in land preparation, seed collection, and fish farming. Similarly, Indigenous remedies find application in the medical field, while local wisdom is utilized in disaster management. Non-governmental development organizations ensure the propagation and application of this Indigenous knowledge through initiatives like Krishi Bari, Shat Bari, Sompod Bekti, Paramela, and Kaviraj Workshops. They



DOI: 10.48165/sajssh.2024.5106

actively utilize Indigenous knowledge to foster sustainable rural development. By offering training rooted in Indigenous practices for agriculture, leveraging forest plants in healthcare, enhancing skills among rural communities, and fostering natural forestry practices for disaster response, NGOs significantly contribute to sustainable development.

## LIMITATION OF THE STUDY

In my research, I encountered inherent limitations. As a non-native researcher and without NGO affiliation, obstacles emerged. Initially, language barriers complicated communication, and reliance on BARCIK workers for information introduced biases. Addressing misconceptions in Gabura about my role as a researcher further extended data collection. Geographical challenges, exacerbated by weather conditions, and prolonged fieldwork. The advent of the Covid-19 pandemic added complexity, necessitating adherence to hygiene protocols and elongating interactions with local informants. Technical issues, such as the accidental deletion of photographs, prompted alternative sourcing from online platforms and BARCIK's website to supplement my research paper.

In the future, my research could serve as a valuable resource for studying indigenous knowledge transmission and the involvement of non-governmental development organizations. It holds relevance for exploring power dynamics associated with indigenous knowledge, its potential commodification, and its application in environmental adaptation. This work could be beneficial for those investigating the complexities of indigenous knowledge preservation, the influence of external organizations, and its role in adapting to environmental changes.



DOI: 10.48165/sajssh.2024.5106

## REFERENCES


Adams, W.M. (2009). *Green Development: Environment and sustainability in a developing world.* Routledge.

Akena, F. A. (2012). Critical Analysis of Production of Western Knowledge and Its Implications for Indigenous Knowledge and Decolonization. *Journal of Black Studies, 43*(6), 599-619.

Brodhead, T. (1987). "NGOs: In One Year, Out the Other?" *World Development, Elsevier, 15* (1),1-6.

Brundtland, H. (1987). *Our Common Future*, for the World Commission on Environment and Development. Oxford University Press.

Ellen, R., & Harris, H. (2000). *"Introduction" in Indigenous Knowledge and its Transformation: critical anthropological perspectives* edited by R. Ellen, P. Parkes and A. Bicker. Harwood academic publishers.

Eversole, R. (2018). *Anthropology for Development: From Theory to Practice.* Routledge.

Fernando, J. L. (2003). NGOs and Production of Indigenous Knowledge under the Condition of Postmodernity. *The Annals of the American Academy of Political and Social Science, 590*. 54-72.

Granier, L. (1998). *Working with Indigenous Knowledge: a guide for researcher*. International Development Research Centre (IDRC).

Haque, M. (2019). Indigenous Knowledge and Practices in Disaster Management: Experiences of the Costal People of Bangladesh in Bupinder Zutsi, Akbaruddin Ahmad and Ananda Babu Srungarapti edited, *Disaster Risk Reduction: Community Resilience and Response*, Palgrane-McMillan, Germany.

Hasan, M. T. (2010). Cyclones and the Rakhain: Indigenous Perception, Prediction and Survival Strategies. *Grassroots Voice: A Journal of Indigenous Knowledge and Development*. VII (1).

Hassan, S. (2000). Indigenous Disaster Management Culture: A comparative study between the Cyclone Affected People in Bangladesh. *Journal of Human Science. 26*(3). 251-263.

Islam, Z. & Shafie, H. (2017). *Anthropology of Climate Change: Culture and Adaptation in Bangladesh.* Bangladesh Climate Change Trust and Department of Anthropology.

Islam, M. R. (2012). Indigenous or global Knowledge for Development: Experiences from two NGOs in Bangladesh. *International NGO Journal.* 7(1), 9-18.

Luthfa, S. (2006). Debunking the myths of indigenous knowledge: a case study of the Mandhi of Madhupur, Bangladesh. Theses and Dissertations. Paper 944.

Lyon, S. (2018). Economic Anthropology in Nadine Fernandez and Deborah Amory (eds.), *Selected Perspectives: An open Introduction to Cultural Anthropology*. Oer Services.

Mahmud, S. M. A. & Uddin, M. B. (2017). Local Interpretations of Climate Change: A Study in Selected Coastal Areas of Bangladesh in Zahidul Islam, Hasan Shafie and Raashed Mahmood edited, *Culture, Adaptation and Resilience: Essays on Climate Change Regime in South Asia.* Bangladesh Climate Change Trust (BCCT), Ministry of Environment and Forests and Department of Anthropology, University of Dhaka.




DOI: 10.48165/sajssh.2024.5106

Maila, M.W. & Louboer, C.P. (2003). Emancipatory Indigenous Knowledge Systems: implications for environment education in South Africa. *South African Journal of Education*. 23 (4). 276-280.

Mallik, D. (2006). Application of Indigenous Knowledge (IK) and the prospects of Sustainable Agriculture in Bangladesh: An Anthropological investigation. *Grassroots Voice: A Journal of Indigenous Knowledge and Development.* VI (1), 1-12.

Marx, K. (1992). *Capital*, *Volume II*. Penguin Classics.

Mills, S. (2003). *Michel Foucault*. Routledge.

Mondal, M. S. H. (2012). Disaster Management through Indigenous Knowledge: Voice from the people of Erendabari Char. *Journal of South Asian Disaster Studies*. 5 (1&2).

Sillitoe, P., Dixon, P. & Barr, J. (1998). *Indigenous Knowledge Research on the Floodplains of Bangladesh: The search for a Methodology.* Department for International Development.

Torri, M. C. and Laplante, J. (2009). Enhancing Innovation between Scientific and Indigenous Knowledge: pioneer NGOs in India. *Journal of Ethnobiology and Ethnomedicine*. 5 (29).

Warren, D. M., Slikkerveer, L. J., & Brokensha, D. (eds). (1995). *The Cultural Dimension of Development: Indigenous Knowledge Systems*. Intermediate Technology Publications.

Zuberi, M.I. (1998). Indigenous Knowledge (IK) associated with Traditional Medicine and Sustainable use of Biodiversity in Bangladesh. *Grassroote Voice*. II (1), 23-26.

মেয়ার, ল্যানডন (রোমাইসা সামাদ অনূদিত). (2003) জীববৈচিত্র্য সংরক্ষণে লোকায়ত জ্ঞানঃ নৃবিজ্ঞানের ভূমিকা প্রসঙ্গে একটি পুনর্বিবেচনা। *তৃণমূল উদ্যোগঃ* IV (1), 57-65.



DOI: 10.48165/sajssh.2024.5106