



ST. EDMUND'S COLLEGE, SHILLONG

ABSTRACT BOOK

INTERNATIONAL

SEMINAR

ON

**INDIGENOUS SCIENCE DEVELOPMENT: INTERSECTING
TRADITIONAL KNOWLEDGE, SCIENTIFIC INQUIRY,
AND SOCIO- CULTURAL PRACTICES**

24 -25 OCTOBER, 2025

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**NORTH EASTERN COUNCIL
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IQAC & SEC AA

Organized by

**Department of Social Work (UG)
&**

Department of Environmental Science



Abstract Book

INTERNATIONAL SEMINAR

on

**Indigenous Science Development: Intersecting Traditional Knowledge, scientific inquiry,
and socio-cultural Practices**

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Organized by the Department of Social Work (UG) and the Department of Environmental
Science

in collaboration with IQAC and SECAA

St. Edmund's College, Shillong



Sponsored by North Eastern Council, Shillong





St. Edmund's College

(Affiliated to North-Eastern Hill University, Shillong)
Recognised by the University Grant Commission under 2 (f) and 12 (B) of the UGC Act 1956

Laitumkhrah, Shillong – 793 003, Meghalaya, India

E-mail: stedmundscollege@gmail.com

Website: <https://sec.edu.in>

Principal's Message

As Principal of St Edmund's College, Shillong, I am honoured to welcome you to this international seminar dedicated to Traditional Ecological Knowledge. From our hills, where clouds graze ancient canopies and rivers etch memory into stone, a simple insight rises like mist: "Here, bridges are grown, not built."

Traditional Ecological Knowledge—TEK—is cumulative, intergenerational, and tested by centuries of observation and practice. It is not nostalgia; it is a rigor that measures time in seasons, kinship in species, and sustainability in ceremonies. TEK binds ecology to ethics, and survival to stewardship. In a century of climate volatility and biodiversity decline, this integration is not optional; it is foundational. "TEK is not yesterday's folklore; it is tomorrow's resilience."

Meghalaya's sacred forests offer a luminous example. Protected by customary law and ritual taboo, these groves are living libraries where biodiversity is safeguarded through reverence. They stabilise slopes, recharge springs, preserve seed banks, and shelter pollinators and rare endemics. Step into a sacred forest and you encounter a cathedral of moss, mycorrhizae, and memory. "When a forest is a temple, conservation becomes worship."

Equally astounding are the living root bridges of the Khasi and Jaintia Hills. For decades—sometimes a century—communities guide the aerial roots of *Ficus elastica* across streams until they intertwine into load-bearing architecture. These bridges are climate-adaptive (they strengthen with age, withstand floods), low-carbon (grown, not built), inclusive (maintained across generations), and beautiful without waste. They embody a pedagogy of patience: using time as a building material, humility as a design principle, and reciprocity as engineering. "A bridge that grows is a school that never closes."

For scholars, practitioners, and policy makers gathered here, the task is clear: listen deeply, collaborate ethically, and scale wisely.

1. Uphold Free, Prior, and Informed Consent, and recognise communities as co-authors of knowledge—not mere informants.
2. Co-produce research that integrates TEK with rigorous science, from watershed management and fire regimes to pollination networks and agroforestry.
3. Invest in local custodianship: support youth apprenticeships, community monitoring, and customary institutions that keep commons resilient.
4. Embed TEK in curricula and urban planning, treat sacred groves as green infrastructure, and treat living root bridges as nature-based solutions.

St Edmund's stands ready to be a bridge between academy and community, laboratory and landscape, method and memory. May this seminar seed partnerships that honour guardians, restore ecosystems, and change how the world measures progress. From Shillong, where forests are sanctuaries and bridges are Welcome to Meghalaya. Let us learn to grow what we cannot build, and to care for what we cannot replace.



Br. Sunil Britto
Principal i/c



iqac@sec.edu.in

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Message from IQAC Coordinator

Warm greetings on behalf of the Organizing Committee. It is my privilege to invite you, as the IQAC Coordinator, to actively support and participate in the Two-Day International Seminar titled "Intersecting Traditional Ecological Knowledge, Scientific Inquiry, and Socio-Cultural Practices," to be hosted at St. Edmunds College, Shillong on October 24–25, 2025. The seminar aims to foster a dynamic platform for knowledge transfer/exchange by bringing together academicians, teacher's researchers, indigenous knowledge holders, practitioners, and students from across the globe. This collaborative event will highlight methodological pluralism, policy recommendations, and capacity building while emphasizing ethical research and the empowerment of indigenous communities. The participant's role shall be crucial in elevating the academic and organizational standards of this seminar. The College look forward to your active involvement, participation and guidance in promoting best practices, facilitating effective networking, and ensuring impactful outcomes for success of this international seminar. On behalf of all, I solicit your support for smooth completion of this event to bridge diverse knowledge systems for sustainable solutions to global challenges.

God bless all!

Wishing the Seminar the very best !!

IQAC Coordinator

Laitumkhrah, Shillong - 793003, Meghalaya, India



0364-2224533



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0364 - 2223234

International Seminar on Indigenous Science Development: Intersecting Traditional Knowledge, scientific inquiry, and socio-cultural Practices

Preface

The International Seminar on Indigenous Science Development: Intersecting Traditional Knowledge, Scientific Inquiry and Socio-cultural Practices is a significant initiative undertaken by the Department of Social Work (UG) and the Department of Environmental Science, St. Edmund's College, Shillong. It seeks to create a meaningful dialogue between the realms of traditional wisdom and modern scientific thought — two knowledge systems that, though distinct in form, share a common vision of understanding and sustaining life in harmony with nature.

This seminar emerges from a shared recognition that Indigenous knowledge, deeply rooted in centuries of observation, adaptation, and coexistence, constitutes a powerful and legitimate form of science. It provides insights that are essential for addressing today's most pressing global challenges — from climate change and biodiversity loss to community well-being and sustainable development. By bringing together scholars, scientists, Indigenous knowledge holders, and community practitioners, the seminar aspires to nurture interdisciplinary collaboration and promote ethical, inclusive, and culturally grounded approaches to knowledge generation and application.

The organizing departments envision this event as a confluence of ideas where participants may reflect, learn, and co-create new pathways for integrating social and environmental perspectives. It also aims to reaffirm the value of Indigenous epistemologies within academia, governance, and community life, while contributing to the broader process of decolonizing education and research.

We extend our sincere gratitude to all contributors, participants, and supporters whose efforts and enthusiasm have helped realize this initiative. May this seminar inspire a deeper appreciation of Indigenous Science and encourage collective action toward a more sustainable, equitable, and resilient world.

International Seminar on Indigenous Science Development: Intersecting Traditional Knowledge, scientific inquiry, and socio-cultural Practices

Organizing committee

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Ms. Aibakor Kharbuli, Assistant Professor, Department of Social Work (UG), St. Edmund's College, Shillong

Ms. Iasylloklang Rynjah, Assistant Professor, Department of Environmental Science, St. Edmund's College, Shillong

Ms. Michelle D. Khongwir, Assistant Professor, Department of Environmental Science, St. Edmund's College, Shillong

Mr. Emidaoopaya Sumer, Assistant Professor, Department of Environmental Science, St. Edmund's College, Shillong

Mr. Daniel Kharkongor, Assistant Professor, Department of Social Work (UG), St. Edmund's College, Shillong

Dr. Evan Diengdoh, Faculty, Department of Social Work (UG), St. Edmund's College, Shillong

Mr. Frankie Warlarpih, Faculty, Department of Environmental Science, St. Edmund's College, Shillong

Scientific committee

Dr. Debulman Syiemiong, Associate Professor, Department of Botany, St. Edmund's College, Shillong

Dr. Eros V. Kharshiing, Associate Professor, Department of Botany, St. Edmund's College, Shillong

Dr. Wandaia Syngkon, Assistant Professor, Department of Social Work, St. Edmund's College, Shillong

International Seminar on Indigenous Science Development: Intersecting Traditional Knowledge, scientific inquiry, and socio-cultural Practices

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Understanding Indigenous Science, Knowledge Systems Dialogue, and Socio-Cultural Embeddedness

1.1 Man in Nature, and Nature in Man: Lepcha Epistemologies of Ecological Balance

Anugrah Pandi Lepcha

Literature and Research, Head
Tribal Design Forum
anugrah@tribaldesignforum.com

Abstract

Ingrained in ancestral wisdom, Lepcha Indigenous ecological knowledge advocates a world where man is at the center of nature, and nature is at the center of man. This cyclical and relational philosophy offers a sincere intellectual insight into establishing the position of man in nature and nature in man's existence. Riding on this philosophy, this paper explores the eco-social knowledge and practices of the Lepcha Indigenous communities in the Darjeeling hills. The objective of this discourse is not only to highlight the significance of Indigenous knowledge systems in rethinking contemporary dialogues on environmental issues, but also to redirect our approaches to region-specific ecological practices while spotlighting how the inclusion of traditional knowledges, practices, and communities can foster a more inclusive ecological future.

1.2 Recognising and Valuing Indigenous Knowledge Practised by Lepchas in Sikkim

Gyalmit Lepcha

Research Scholar, Department of Political Science,
North-Eastern Hill University

Abstract

Sikkim, a Himalayan state prone to natural disasters, requires the development of innovative policies to effectively address its environmental vulnerabilities. The Lepcha community relies heavily on indigenous knowledge passed down through generations. Government authorities must recognise, protect, and incorporate this traditional wisdom into wider environmental and disaster management strategies. Active engagement with local communities can improve disaster resilience and adaptive capacity. The Lepchas' deep connection with their natural environment has led to the development of valuable practices, including recognising foul, muddy odours as early warnings of imminent flash floods, constructing resilient bamboo bridges, building earthquake-resistant homes using local materials, and using *Thysanolaena maxima*, also known as broom grass or tiger grass, to help prevent and mitigate landslides. This paper examines Lepcha traditional ecological knowledge and advocates for its inclusion in formal policy frameworks.

1.3 The Intersection of Traditional Governance and Contemporary Challenges: The Pei System of the Rongmei Indigenous Tribe

Joseph Riamei

Assistant Professor
Tata Institute of Social Sciences, Guwahati Campus
josephtiss@gmail.com

Abstract

Rongmei is one of the Indigenous Naga tribes located in Northeast India, primarily in the states of Manipur, Assam, and Nagaland. Each Rongmei village operates as an autonomous political, social, economic, and cultural unit, marked by clearly defined territorial boundaries. The traditional village council, known as Pei, is led by a Namvpou (village chief) and composed of elders from various clans. This council upholds a traditional governance system wherein executive, legislative, and judicial powers are exercised by the Pei. The governance of the Rongmei people is deeply rooted in unique traditional, cultural, and socio-political practices. The Pei serves as the highest decision-making authority within the village. Traditional laws govern Ramv (land), with practices that have been passed down through generations. Despite the challenges posed by modern state governance systems that seek to integrate indigenous practices, the Rongmei continue to uphold their traditional governance, particularly regarding land and resource management. This paper explores the indigenous tribal governance system of the Rongmei tribe, focusing specifically on the Pei and the traditional land governance practices. It critically examines the sustainability of these practices and strategies for mitigation in contemporary times while discussing the emerging challenges faced by traditional land governance.

1.4 The Socio-Cultural Embeddedness of Rural Women in Socio-economic Development: A Study of Mishing Communities in Assam

Snigdhanjoly Kalita¹ and Dr. Prateeti Barman²

¹Research Scholar, Assam Down Town University

²Associate Professor, Assam Down Town University

Abstract

Rural women constitute a vital force in the socio-economic fabric of society, balancing roles in agriculture, household management, education, and community life. This study, conducted in four Mishing villages of Assam, examines the diverse contributions of women to both family welfare and village development. This paper examines the socio-cultural embeddedness of rural women within the Mishing communities of Assam and its implications for local socio-economic development. Drawing on qualitative fieldwork, including in-depth interviews, FGD, and participant observation across multiple villages, the study explores how kinship structures, customary norms, ritual practices, and community institutions shape women's economic activities, access to resources, and decision-making authority. The analysis reveals a complex interplay between traditional gender roles and emergent economic opportunities: while cultural practices and collective institutions (such as gaon-burah networks, community festivals, and cooperative forms of labour) often constrain individual mobility and control over assets, they simultaneously provide social capital, reciprocal support mechanisms, and spaces for collective action that women leverage to participate in livelihood activities. By foregrounding the dual character of socio-cultural embeddedness as both constraint and resource, the study contributes to nuanced strategies for inclusive rural development in indigenous communities.

Keywords: socio-cultural embeddedness, women's empowerment, Mishing, Assam, rural development, gender norms.

1.5 Dr. Dharamsing Teron's ideas on spirituality connected to the Traditional Karbi Eco-Philosophy

Dr. Bandita Teronpi

Assistant Professor, Department of Political Science,
Lumding College
bteronpi@yahoo.com

Abstract

The Karbi society is intricately intertwined with the natural world. All philosophies either directly or indirectly lead to its ecology. The origin theory of the tribe in the 'Mosera', their faith in their Hemphu- Mukrang- Rasinja Arnam (God or deities) as well as numerous territorial deities and ancestral spirits called 'tirim', or the concept of Hi'i- Arnam, the opposing forces of the karbi folk religion, the cultivating occupation; commonly Rit kenong, the rituals like Vurmatha, Peng, Chojun, Sangkimi-kipi etc., the water or river which is called as Lang or Langroi is include various deities, their traditional ways of life fully dependent on water streams of the hills or mountains and forest for their food and livelihood are believed to find their connection through a divine spirit in the nature. A traditional karbi family generally performs all annual rituals or their well-being, if a member gets sick along with the modern medical treatments they go for their traditional healings rites through a sacred traditional healer. It takes a holistic rather than atomistic approach recognizing the interconnection of humans, nonhumans and ecosystem. The Karbi philosophy in terms of 'ecology', finds in their non-separateness towards it. Land not being their individual property is rather belonged to the community of individuals. The connection between "nature" and "culture" as described by Teron (2008), is reflected in the beliefs and practices of Karbi people who interact with and oversee natural ecosystems. The sacred forests, also known as sacred groves, are places that hold cultural or spiritual importance for the local communities. 'Arnamkeso' (sacred grove) are forest areas that remains undisturbed by the local population.

Through this article, attempts are made to highlight the spiritual connectivity of the Karbi Eco-Philosophy by looking into the ideas of Dr. Dharamsing Teron.

Keywords: Karbi; Dharamsing Teron; spirituality; eco-philosophy; indigenous knowledge; sacred groves; ritual; Assam

1.6 Methodological Pluralism in Practice: Integrating Indigenous Knowledge and Western Science for Sustainable Environmental Solutions through Social Work and Sociological Perspectives

Gautam Makwana¹ and Prof. H. Elizabeth²

¹Research Scholar Ph.D (Social Work), School of Social Sciences,
Department of Social Work, Mizoram University (A Central University), Aizawl 796004,
Mizoram, India
gautam_makwana@hotmail.com

²Professor (Social Work), School of Social Sciences,
Department of Social Work, Mizoram University (A Central University), Aizawl 796004,
Mizoram, India
lizahatzaw@gmail.com

Abstract

Environmental challenges in contemporary society demand interdisciplinary solutions that respect both scientific rigor and community-based wisdom. This paper explores methodological pluralism as a framework for integrating Indigenous Knowledge Systems (IKS) and Western scientific approaches within the domains of social work and sociology. Drawing on empirical studies from diverse ecological contexts, the research examines how Indigenous epistemologies—rooted in cultural, spiritual, and intergenerational practices—can be systematically incorporated into evidence-based environmental interventions. The paper argues that social work's emphasis on participatory engagement and sociology's capacity for structural analysis create fertile ground for collaborative environmental problem-solving. Using case studies in biodiversity conservation, climate adaptation, and community resource management, the study identifies pathways for ethical knowledge co-creation, inclusive governance, and policy transformation. The findings contribute to decolonizing environmental research methodologies while fostering sustainable, culturally responsive solutions.

Keywords: Methodological pluralism, Indigenous Knowledge Systems, Western science, social work, sociology, environmental sustainability.

1.7 Transformation of traditional land and property regimes in the Khasi Hills of Meghalaya

Dr. Lavinia Mawlong

Senior District Research Fellow, Indian School of Business (ISB), India
Ph.D, Freie Universitaet, Berlin, Germany
mawlong.lavi@gmail.com

Abstract

Limits on land resources and increasing infrastructural development in developing countries has led to the gradual transformation of property regimes. Land is embedded in social structures, making it imperative to understand the context in which such changes occur. The existence of the autochthonous Khasi land tenure system provides the backdrop against which a formalized allochthonous system is juxtaposed. I employ a qualitative case study analysis of Ri-Bhoi District in Meghalaya to evaluate the changing role and authority of actors in the transformation of property regimes in Meghalaya.

1.8 Indigenous Healing Traditions and Ethnomedicine of Some Tribal Population in Dima Hasao District, Assam

Dr. Deborah Daolagupu

Assistant Professor, Zoology Dept.,
Lumding College, Lumding
ddaolagupu15@yahoo.com

Abstract

Traditional healing systems play an important role in the healthcare of tribal populations in Dima Hasao district, Assam, notably among the Dimasa, Hmar, Zeme Naga, Khelma, Biate and Jaintia communities. These practices include herbal medicine, zotherapy, bone-setting, midwifery, and ritual healing performed by specialists such as the Hojai (priest-healer). Illness is often understood through a dual framework—either as a natural condition treated with plant- or animal-based remedies, or as a supernatural affliction addressed through rituals, offerings, and taboos. Ethnobotanical and ethnozoological studies highlight a rich body of indigenous knowledge, though these traditions are increasingly threatened by modernization, biodiversity loss, and reduced transmission to younger generations. Documenting and safeguarding these practices are vital not only for community health but also for cultural heritage and biodiversity conservation.

Keywords: Traditional healing, ethnomedicine, ethnobotany, ethnozoology, tribal communities, biodiversity conservation

1.9 A Study on Home Gardens in Nongkrem, Meghalaya: An Important Reservoir of Medicinal Plants

Baiahunlang Dkhar, Doansa Ch. Marak, Larihun Jeengaph and Jasmine Therese Sawian

Department of Environmental Science,
St. Edmund's College, Shillong 793003
jsawian99@gmail.com

Abstract

This study investigates the ethno-medicinal plant diversity within home gardens of Nongkrem village, East Khasi Hills District, Meghalaya, India. Traditional medicine, deeply rooted in tribal cultures, remains a vital healthcare source, especially in rural areas. While wild harvesting is common, home gardens represent significant reservoirs of medicinal plants. The research documented 89 plant species across 81 genera and 52 families, commonly used by the Khasi people for various ailments, from headaches to complex conditions like diabetes. Leaves were the most frequently used plant part. Beyond healthcare, home gardens offer social, economic, nutritional, and environmental benefits, highlighting their importance for local well-being and biodiversity conservation, especially for threatened species.

Keywords: Home gardens, Nongkrem, traditional medicine, healthcare, biodiversity conservation

1.10 An Analysis of Transgenerational Transmission of Traditional Proverbs among Undergraduate Students in Lunglei, Mizoram.

H T Zuali

Asst Professor, Department of English
Higher and Technical Institute, Mizoram (HATIM)
Lunglei, Mizoram 796701
htzuali@hatim.ac.in

Abstract

This study investigates the mechanisms and efficacy of intergenerational transmission of traditional Mizo Proverbs among Undergraduate students in Lunglei, Mizoram. Drawing from Austin (1962) and Searle's (1969) Speech Act Theory as well as Hockett's Cultural Transmission Theory (1960), the study aims to ascertain how these cultural sayings; embedded with ethical and values, play a role and how these cultural axioms are transmitted, understood, retained and practiced by the younger generation. This research is particularly relevant given the global trend of diminishing traditional knowledge systems, where proverbs, as condensed form of indigenous wisdom, face the risk of loss without deliberate preservation efforts. The study makes use of mixed methodology, employing questionnaires, semi-structured interviews and focus group discussion, to gather comprehensive insights into students' knowledge, insights and attitudes towards Mizo proverbs. Based on the findings, the study subsequently gives suggestions to strengthen, retain and promote the use of proverbs among Mizo Youth.

Keywords: Intergenerational Transmission, Proverbs, Traditional Proverbs, Mizo

**1.11 Unveiling the Power of Ancient Indian Storytelling for Biodiversity Conservation:
Exploring Traditional Narratives for a Sustainable Future**

Dipshikha Boruah

Abstract

Biodiversity conservation is the practice of protecting and preserving a wide variety of species, ecosystem and habitats of the planet. Ancient Indian Wisdom has a major contribution towards sustainable future and biodiversity conservation. Storytelling has been significantly utilized for sharing of knowledge and preservation. This paper explores the potential of storytelling in promoting biodiversity conservation, with a focus on ancient Indian narratives. The paper will argue that storytelling can be a powerful tool for biodiversity conservation and sustainability. The study aims to contribute to a deeper understanding of the role of the story telling in promoting environmental sustainability through the intersection of storytelling and biodiversity conservation, inspiring emotional connectedness and community effort for a sustainable future.

Key words: Ancient Indian Storytelling, Biodiversity Conservation, Traditional narratives, Sustainable Future.

1.12 Nature participates in Rituals: An ethnographic assessment of Assamese Hindu traditions

Shubhankar Sarma

Faculty, Department of Sociology,
St. Edmund's College, Shillong

Abstract

The state of Assam, since ancient times, with its long-standing cultural diversity, has been a site of an indigenous knowledge system where cultures meet fusion, rituals meet divinity, and performances meet symbolic significance. The role of nature in Assamese Hindu society rituals particularly during the attainment of females' puberty, males' tonsuring ceremony or wedding is uniquely significant where nature meets divinity through practices, namely, 'pani-tula', 'nuoni', 'agni-xakhi', et. al. This paper examines through the ethnographic accounts, the lived and observed experiences of such rituals how indigenous ecological knowledge intersecting the traditional social cultural practises stand unquestioned at the cost of auspicious calling and benediction. However, with the outbreak of modernity and cosmopolitan nature in the Assamese society, several of these rituals have undergone transition with respect to its sanctity in the gender and visual narrative, where the rational ideas of the ancestor attached to nature-culture dualism seems inconvenient and less practical given the constraints of resource availability and adequate knowledge building to the newer generations.

Keywords: Indigenous knowledge, nature, Assamese, rituals, tradition.

1.13 Indigenous Knowledge for Health and Well-being: Insights from the Chakma Community

Dr. Arpita Das

Department of Social Work,
Mahapurusha Srimanta Sankaradeva Viswavidalaya
Guwahati, Assam
arpitadas21186@gmail.com

Abstract

Indigenous knowledge systems play a crucial role in maintaining health and well-being among tribal societies, offering holistic approaches rooted in culture, spirituality, and lived experiences. The Chakma community, has preserved a rich repertoire of healing practices, including the use of medicinal plants, dietary regulations, spiritual rituals, and the guidance of traditional healers. This paper aims to explore the indigenous health knowledge of the Chakma, examine its socio-cultural significance, and analyze the challenges of integrating these practices with modern health systems. It further seeks to assess the implications for social work in community health interventions. The study draws upon qualitative approaches, relying on both primary and secondary data. Adopting a social work perspective, the paper emphasizes the importance of valuing traditional wisdom while advocating for a pluralistic healthcare approach.

Keywords: Chakma community, Indigenous health knowledge, Traditional healing, Social work, Cultural practices

Indigenous Science in Practice, Education and Curriculum Development

2.1 Precipitation in Garo Hills: Looking for Footprints of Climate Change

Dr. Yubaraj Sharma

Assistant Professor, Department of Physics,
Don Bosco College, Tura, Meghalaya.
yubaraj.physics@donboscocollege.ac.in

Abstract

Meghalaya has been a hotspot for geological and climatological studies with particular focus being the erstwhile wettest place—Cherrapunjee. The present paper takes a slight detour and looks at a different part of Meghalaya viz., the Garo Hills region through a climatological lens. There have been numerous articles dealing with climate change studies in Meghalaya heavily reliant on temperature data with rainfall acting as a secondary variable with scanty analysis. We specifically look at rainfall/precipitation data and try to assess whether there is indication of significant change in trend over the years. The present study is in its preliminary stage, to be gradually expanded to cover wider spatial and temporal scales and deeper analysis. The data is sourced from publicly available records. Preliminary analysis using Mann-Kendall test and Theil–Sen estimator (also known as Sen’s Slope) does not show any significant trend, although some interesting patterns are observed.

Keywords: Climate Change; Rainfall; Garo Hills; Trend – Mann-Kendall, Sen’s slope.

2.2 Eco-cultural Resilience: Linking Agriculture and Biodiversity through Limbu Indigenous Knowledge

Asha Subba

Department of Limbu, Nar Bahadur Bhandari Government College,
Tadong, Sikkim
ashasubba630@yahoo.com

Abstract

Eco-cultural resilience illustrates that ecological sustainability and cultural continuity are interconnected. Indigenous knowledge is an essential aspect of the Limbu community's agricultural practices and biodiversity, shaping ways that preserve the environment and cultural identity. Agricultural practices particularly the use of mixed cropping and harvesting that reflects creations of indigenous ecological knowledge system and spiritual beliefs within Limbu community. Maintaining soil fertility, conserving indigenous vegetation, and ensuring food safety for generations to come, these activities contribute in the conservation of biodiversity. Cultural values sustain ecological balance, is shown by rituals, oral traditions, and social activities that further reinforce enduring connection with the natural environment. This study focuses on how indigenous knowledge systems in the Limbu community foster eco-cultural resilience by giving insight for conserving biodiversity and sustainable growth. Therefore, in present context it is important to address and revitalize these practices in order safeguard the sustainability of the environment and cultural significance.

Key words: Agriculture, biodiversity, culture, Limbu, sustainable

2.3 Healing Bones, Honouring Roots: A Brief Study on the Indigenous Bone Healers of Assam

Tamanna Shrieen

Independent Researcher
Sivasagar, Assam

Abstract

Indigenous knowledge, as defined by UNESCO's Local and Indigenous Knowledge Systems (LINKS) programme, encompasses the understandings, skills, and philosophies developed by local communities through prolonged interaction with their natural environment (Hiwasaki et al., 2014). North-East India, with its cultural pluralism and environmental diversity, serves as a rich repository of such knowledge. This study focuses on Assam's traditional bone-setting practices, where folk healers use indigenous techniques and medicines to treat fractures, dislocations etc. Through ethnographic research, it documents the practices of prominent bone setters, emphasizing their role in preserving cultural knowledge and serving rural communities with limited access to modern healthcare. The paper explores their methods, highlights the therapeutic and cultural significance of these practices, and addresses challenges such as inadequate documentation and also the need for integration with modern medical systems to ensure their preservation and safe application.

Key words: Traditional bone setting, Bone setters, TBS, Assam, Health care.

2.4 Tribal Medical Practices are more Indigenous and Scientific

Dr. Satabdi Mondal

Guest Lecturer, Ramsaday College,
Amta, Howrah, Calcutta University
satabdimondal08@gmail.com

Abstract

The traditional cultures of many nations have employed plants as therapeutics for a wide range of ailments, spanning from a basic cold to a complex chronic condition. Knowledge of this nature encompasses a wide range of health criteria, including physical, spiritual, and environmental dimensions. Traditional healing procedures across cultures adopt a comprehensive approach that transcends the simple application of medicinal plants. For centuries across countries, people have turned to traditional healers, home remedies and ancient medicinal knowledge to address their health and well-being needs. According to the WHO Global Report on Traditional Medicine, various systems of traditional medicine being used around the world include acupuncture, herbal medicines, indigenous traditional medicine, homeopathy, traditional Chinese medicine, naturopathy, chiropractic, osteopathy, ayurvedic and Unani medicine. The integration of indigenous knowledge with scientific knowledge has emerged as a key area of interest in various disciplines, including environmental management, agriculture, healthcare, and education. Indigenous knowledge, developed over centuries by local communities, reflects a deep-rooted understanding of local ecosystems, sustainable practices, and holistic approaches to health and development.

Key words: Physical, WHO, herbal, Unani medicine, education.

2.5 Forests as spaces of Indigenous Knowledge System

Darisha Lyngdoh

Ph.D. Research Scholar, Department of History,
North-Eastern Hill University, Shillong
darishanongrang@gmail.com

Abstract

What has Forests not given us? Our ancestors relied on forests for all their needs; Forests was never seen as a singular object where basic needs of everyday life can be fulfilled, in fact it was seen as a ground where tutelary deities reside, a place where spirits dwell, a sacred sacramental place for worship and a place for healing. The Khasi and Jaintias Knowledge system advocates for conservation and sustainability. Their Knowledge system also dominates in, governing Land and forests patches which are categorised accordingly, reflecting administration, conservation and sustainability. The paper will be historical in approach and aims to present Forests as space of indigenous Knowledge systems and the world of indigenous ecological practices. The paper will also look into the interaction between Humans and Forests which is reflected in the culture in many ways including the Iron culture which led to the technological advancement and antiquity of the Khasi-Jaintias.

Keywords: Forests, Conservation, Sacred, Iron culture

2.6 Biodiversity, Forest and Water Conservation and Livelihood Enhancement through traditional knowledge and practices of the ‘War’ Community in betel leaf cultivation.

Karmes Khongsngi¹ and Marvellous B. Lynser²

¹Department of Ecology & Environmental Science, Silchar University, Assam - 788011

²Department of Environmental Science, Shillong College, Shillong - 793003

Abstract

Indigenous communities have extensive knowledge of the natural resources in their surroundings, allowing them to establish sustainable management systems. These practices minimize environmental impact while simultaneously supporting and improving their livelihoods. The War community, indigenous to the Southern region of Meghalaya, has long practiced sustainable betel leaf cultivation through traditional knowledge, harmonizing agricultural productivity with environmental conservation. The study was conducted in Lapalang village with the goal to document the traditional cultivation and management methods of betel leaf and its contribution to the livelihood of the local communities. The cultivation methods adopted by the local communities contribute to biodiversity preservation, fostering a habitat for native flora and fauna while conserving forests and water resources. The community's forest conservation efforts integrate agroforestry, where betel vines are nurtured under naturally preserved tree canopies, reducing deforestation risks. Additionally, their water conservation techniques, such as bamboo drip irrigation systems effectively reduce water usage while making use of accessible and cost-efficient local resources. These age-old practices not only support environmental sustainability but also enhance livelihoods, ensuring economic resilience through organic farming and local trade networks. Recognizing and integrating these traditional approaches into modern conservation frameworks could provide valuable insights for sustainable natural resource management and environmental stewardship.

Keywords: Indigenous communities, biodiversity, natural resource management, sustainability, environmental conservation, betel leaf.

2.7 Eco-Cultural Dimensions of the Ao Nagas in Nagaland

Ms. Niksungla Changkiri

Assam Don Bosco University, Tapesia Gardens,
Guwahati 782402
niksungniksung@gmail.com

Abstract

Emerging from the “Longterok” origin myth, which narrates the birth of Ao-Naga tribe of Nagaland, the Ao Indigenous ecological ethos reflects a primordial bond with the nature, which is seen in all the aspects of social and cultural life. The eco-cultural phenomena of the Ao Nagas are vast, encompassing myths, agricultural practices, customary laws, material culture and oral traditions. The objective of this paper is to explore these dimensions with a focus on three main domains: Festivals, Medicinal herbs and healing properties, customary laws and social order among the Ao Nagas of Nagaland. By focusing only on certain specific aspects, the discussion seeks to illuminate key intersections of indigenous ecology, health, and social order, while also acknowledging that these represent only a fraction of the wider Ao cultural continuum.

Keywords: Ao-Naga, Eco-cultural, Indigenous

2.8 Redefining Indigenous Concept of Astronomy and its Relevance Today: Khasi Perspective

Rev. Dr. S. Hayong

Associate Professor, Department of Theology and Ethics,
John Roberts Theological College, Shillong
shanbhadotsni@gmail.com

Abstract

Indigenous people are the first settlers of the land. They are the one that give names to the hills, mountains, trees, rivers and so on. At the same time they have in depth knowledge about the nature and environment below as well as the sky and celestial realm above. An in-depth study of indigenous wisdom of astronomy of the Khasis portrays a close connection with the moons, the sun, the stars, and perhaps the entire solar system. Their myths, legends, and folktales possess immense rich resources that could provide valuable knowledge on the relations of human and the sky above. For instance, indigenous people generally learnt from the moon or the sun above related to the time of sowing the seeds, the proper timing to cut trees, bamboos or other material to make them more lasting, Khasi calendar and weekly market, festivals has in one way or the other connected to the moon and so on. The sun, the moons and other celestial bodies participated in dance festivals, social gathering and the like. Hence, a proper research study will unearth the deep relations that connects humans and the celestial realm. This study is an attempt to draw important ecological insights, new way of understanding about social relations of humans and these celestial bodies, and so on. In the midst of endanger ecological crisis that threaten the entire life in the planet this research study will make an attempt to draw certain important ecological insights that could help benefitted the present day society making these valuable understanding relevant to the need of people and society in their attempt to preserve the earth from further ecological crisis.

2.9 Decoding Indigenous Knowledge: Scientific Insights from Traditional Practices in Medir Haor Wetland, Bangladesh

Tapas Ranjan Chakraborty¹ and Anusree Ghosh²

¹PhD Scholar, Tripura University

²Bangladesh Open University

tapasbdpoush@gmail.com

Abstract

Indigenous knowledge is manifested through various cultural expressions such as proverbs, sayings, and metaphorical narratives, which often require nuanced interpretation to uncover their underlying wisdom. In the Medir Haor wetland of Nasirnagar, Brahmanbaria, local fishing and farming communities employ a range of traditional practices and norms that contribute to climate change adaptation and sustainable natural resource management. Between July 2024 and June 2025, six community consultations were conducted to document these indigenous beliefs and practices in agriculture, open-water fishing, and nature conservation. This study seeks to elucidate the scientific principles embedded within these traditional knowledge systems by analyzing the functional interrelationships among components of the wetland ecosystem.

2.10 Wuyawon: The Pink Orchid Ginger of Shingcha Village, Manipur - A Case Study on Eco-Tourism and Conservation of *Caulokaempferia secunda*

Maxstone Irom, Worthemla Keishing, Jasmine. T. Sawian and Larihun Jeengaph

Department of Environmental Science,
St. Edmund's College, Shillong 793003
01lari06@gmail.com

Abstract

This paper presents a detailed study of Wuyawon (*Caulokaempferia secunda*), a rare and endemic ground orchid known locally as the “Pink Orchid Ginger”. The Wuyawon is found exclusively on the hillocks of Mount Wuyakachui in Shingcha village, Ukhrul district, Manipur, India. The study investigates the orchid’s unique botanical characteristics, its emergence as a major eco-tourism hotspot following social media exposure in 2015, and the subsequent initiatives taken by the local community for its promotion and conservation. Key findings include the flower’s distinct color-changing property, the economic impact on the Tangkhul Naga villagers’ livelihoods, and the results of a soil analysis of its natural habitat. The paper concludes by emphasizing the need for structured governmental and non-governmental support to mitigate risks associated with improper tourism development and ensure the long-term conservation of this invaluable natural asset.

Keywords: Wuyawon, Wuyakachui, eco-tourism, orchid, *Caulokaempferia secunda*

2.11 Contextually-Appropriate Curriculum for India's Northeast: Integrating Indigenous Knowledge Systems into Contemporary Pedagogy

Abhishek Chakravarty¹ and Abhinav Sankar Goswami²

Abstract

The National Education Policy (NEP) 2020 presents a transformative scope to integrate Indigenous Knowledge Systems (IKS) of Northeast India into both formal and informal learning ecosystems. Traditional youth dormitories across the region once served as holistic institutions of education; imparting cultural, ecological, medicinal, and life skills across generations. However, colonial governance and modern education systems have led to their gradual decline. NEP 2020's focus on Indian languages, traditional practices, and "Knowledge of India" across curricula offers a possibility for the formal recognition and inclusion of these indigenous systems. This paper attempts to explore the scope of NEP 2020 in enabling a culturally responsive education model, aligning indigenous scientific knowledge with modern pedagogy. The paper would examine the existing policy framework, exploring approaches to integrate this new hybrid system. It would also highlight the need to incorporate community voices in developing this model, which can lead to a contextually appropriate, community-based curriculum with a contemporary outlook.

Keywords: Indigenous Knowledge Systems (IKS), NEP 2020, Curriculum Development, Youth Dormitories, Northeast India

2.12 Education and Curriculum Development: integrating indigenous Science into Formal and informal learning environments

Farhan Sultana

Assistant Professor, Dept. of Philosophy,
Barpathar College, Barpathar, Assam
farhansultana570@gmail.com

Abstract

Integration of Vocational education in the way of curriculum development is a very positive initiative in India. It has been introduced in educational institutions at the juncture when the youngsters begin to realize their future goal of life. Here introduction and integration of indigenous science into both formal and informal learning may be a matter of great consideration. Indigenous science refers to the traditional knowledge and practices development by indigenous people generations after generations to understand and interact with their environment. Some of the common examples of indigenous science are traditional medicine, sustainable agriculture, traditional water conservation and purification, customs with basic wisdom, traditional mechanical gadgets and instruments, food habits and so on. Since the days of Sarak Ayurvedic Medicines and way of treatment has been working well till date, and if this part of indigenous science can be integrated into formal education in the upper level of education, why can't we go for integrating other valuable and pertinent indigenous science into formal and informal learning environments? In this regard we should go for a clear understanding of the different aspects and prospects of knowledge, understanding and employabilities of indigenous science in future.

Key Words: Education, Curriculum, Development, Indigenous, Science

Indigenous science in practice and Policy and Governance

3.1 Role of Khasi Hills Autonomous District Council in Safeguarding Traditional Ecological Knowledge: A Legal Study

Dr Daiahunlin Mawlong¹ and Dr Arpita Singh²

Abstract

The Khasi Hills Autonomous District Council (KHADC) plays a vital role in preserving Traditional Ecological Knowledge (TEK) by integrating customary practices within India's constitutional framework. Through its legislative authority and collaboration with traditional institutions, such as the Dorbar Shnong and Dorbar Hima, KHADC supports community-driven forest management, the protection of sacred groves, water resource management, and the use of medicinal plants. However, TEK safeguarding faces challenges such as overlapping state and central laws, weak enforcement, and pressures from mining, urbanization, and the commercialization of resources. This paper examines the constitutional mandate of KHADC, its interaction with the Biological Diversity Act, 2002, and the Nagoya Protocol. It argues that stronger legal authority and participatory governance are essential to protect TEK and advance sustainable development.

3.2 Road Infrastructure Projects and Their Impact on Community Climate Resilience: The Role of Decolonial Social Work in Adivasi Areas of Sundargarh.

Eugene Soreng

PhD Research Scholar,
Tata Institute of Social Science, Mumbai
eugenesorengofficial@gmail.com

Abstract

Indigenous communities are known to be one of the most climate resilient communities across the globe. Their ecologically embedded epistemology around land, water and forest has been their strongest base to address climate crisis. However, imposed development projects have peripheralized these communities to an extent that not just they have been losing these epistemological resources but also making them more vulnerable to climate change. Taking a case study approach the paper would examine what ways do a road infrastructure project influences the climate resilience of Adivasi communities in Sundargarh. Most importantly, the paper would explore how social work, from a decolonial perspective (decolonial social work), can contribute to making such projects inclusive, sustainable, and supportive of community climate resilience.

3.3 Ecological Wisdom and the Sustainable Water Burial Rituals of Monpa Tribe of Arunachal Pradesh

Dr. A. Amaladoss¹ and Prostuti Das²

¹Asst. Professor, Department of Sociology,
Don Bosco College, Golagaht, Assam, India
dramaladoss2022@gmail.com

²Guest Lecturer, Department of Social Work,
Birangana Sati Sadhani Rajyik, Vishwavidyalaya, Golaghat
prastutidascotton@gmail.com

Abstract

The presence of Mopas living in Arunachal Pradesh is pointing to their 500 years of history and migration from their origin in China, and Tibet. In 1914 after McMahon Line drawn they settled in and around Tawang and West Kameng of Arunachal Pradesh. According to the Indian Census 2011, the population of Monpas are 60,545 persons, is concentrated chiefly in Tawang, West Kameng, East Kameng and along the Bhutan border. They belong to the Tibeto-Burman language family and are culturally rich, divided into several sub-groups including Tawang Monpa, Dirang Monpa, Lish Monpa, Bhut Monpa, Kalaktang Monpa, and Panchen Monpa. Known for their adherence to Buddhism and unique funerary practices, the Monpas'; water burial ritual involves dismembering the deceased's body into 108 pieces, offered into the river to nourish aquatic life. Their unique practice reflects the community understands towards nature, emphasizing the concept of coexistence and interdependence and upholding ecological balance. This ritual embodies their philosophy of coexistence with nature, representing indigenous knowledge systems that emphasize spirituality, sustainability, and cultural identity. This study utilizes qualitative methodology using primary data through case studies method and secondary data to explore the ecological, spiritual, and communal implications of the Monpa water burial, examining how astrology and village councils mediate its practice and presenting the ritual as a sustainable, environment-friendly death rite.

Key Words: Indigenous Knowledge System, Monpa, Water Burial, Sustainability

3.4 From Clan to Chiefdom Society: The Role of Jaid Bakhraw in the Evolution of Traditional Khasi Governance

Sweetty Queen Lyngdoh Mawlong¹ and Dr. Lamshailang Gordon Blah²

¹PhD Research Scholar, History Department
NEHU, Shillong
sweettymawlong@gmail.com

²Assistant Professor, Shillong College
lamshailanggordonblah@gmail.com

Abstract

The Khasis trace their origins to the time when the jaid Bakhraw/founding clans, came and settled in the hills. These clans claimed ownership of the land they occupied, either by winning it or by settling on it. Such lands came to be recognized as ri-kynti (personal property) and ri-raid (community land). This shows an early form of individual land ownership within a largely clan-based society and reflects their understanding of property rights and social order. Prior to the formal establishment of Syiemships (chiefdom), a hereditary power structure centering on the offices of Basans and Lyngdohs was already in place. Apparently, the jaid Bakhraw formed part of the ‘traditional elite’ group who felt that, under such circumstances, they could no longer manage their territories effectively while adhering to their religious and moral principles. These clans collectively decided to identify certain families from which leaders would be chosen to address these emerging challenges to a new descent group, ka jaid Syiem, or the Syiem clan. Thus, in this background the paper will examine how the jaid Bakhraw in their struggle for power to control the vital resources played a decisive role in the rise of the institution of Syiemship.

Keywords: Basan, Jaid Bakhraw, Lyngdoh, Ri-Kynti, Ri-Raid, Syiem, Syiemship.

3.5 Interregional Migration and Living Conditions: The Case of Naga Migrant Workers in Chennai City

Nazii Ng¹ and Prof. Kanagaraj Easwaran²

¹Research scholar, Department of Social Work,
Mizoram University, Aizawl, India
Naziing513@gmail.com

²Professor, HOD of Social Work,
Mizoram University, Aizawl, India
Mzut079@mzu.edu.in

Abstract

Migration from disadvantaged populations in developing countries, including India, to more affluent areas is common for livelihood strategies. Understanding migrant characteristics, driving factors, and living conditions is crucial to designing effective interventions that can improve their well-being of migrants. However, scholarly research on Northeast India, particularly Naga migrant workers in southern India remains limited, even though substantial migration has occurred; most existing studies tend to focus on larger communities. This study addresses the gap of Naga migrants in Chennai through a social work lens focussing on five interrelated dimensions of migrant characteristics, migration motivations, perceived impacts, social inclusion, and challenges faced. Primary data were collected using semi-structured questionnaire through online survey. The dataset in hand analysis revealed that migration has improved economic and living conditions for many Naga migrants. However, it coexists with the linguistic challenges and cultural misunderstandings. These challenges emphasise the need for inclusive urban policies that recognise cultural diversity and strengthen informal support systems for interregional migrants.

Keywords: Naga Migrants; Internal Migration; Cultural Adaptation; Urban Integration; Employment Challenges; Social Inclusion; Mixed-Methods Research; Northeast India; Chennai; Tribal Identity

3.6 Indigenous Knowledge and Environmental Conservation: Linking folklore to cave and forest conservation among the Khasis

Finley E. J. Syngai
Head of Department, Sociology
St. Edmund's College, Shillong

Abstract

The Khasis are one of the major indigenous tribes inhabiting the state of Meghalaya, India, are rich in their folklore tradition. "Folklore" as firstly defined by William Thoms (1846), referred to the commonly shared understanding of the world, the physical setting and the social and cultural context of the people. Khasi folklore, as the basis of Khasi culture stands in sharp contrast to the culture- nature dualism understanding in western thought. The common denominator is the believe in the 'oneness of creation' as expressed in their folk beliefs and practices. Applying the Verstehen Method of Understanding, this paper examines the effective impact of folklore toward the conservation of the natural world (cave and forest) in the Khasi hills.

Keywords: Folklore, indigenous knowledge, conservation, dualism, preservation, culture, belief and practice, verstehen, worldview.

3.7 Reframing Digital Political Campaigns through Indigenous Knowledge Systems: Sustainability, Ethics, and Democratic Communication in India

Pulak Basak

Ph.D. Research Scholar, Department of Political Science,
Assam University, Silchar, Assam 788011
pulakbk33@gmail.com

Abstract

Digital political campaigns in India have rapidly transformed the scenario of electoral politics, often privileging speed, visibility, and market-oriented strategies over inclusivity and ethical communication, overlooking indigenous ethics. This paper attempts to examine the intersection between Indigenous Knowledge Systems (IKS) and digital political campaigning in India. With the advancement of ICT, as electoral strategies increasingly rely on social media platforms like Twitter, Facebook, and WhatsApp, concerns about ethics, inclusivity, and democratic accountability persist. Drawing from recent researches in political communication, this study situates digital campaigning as a modern knowledge system characterized by data extraction, algorithmic targeting, and short-term persuasion. In contrast, researches on Indigenous ecological wisdom highlights practices deep-rooted in sustainability, reciprocity, and community responsibility. Examples such as sacred groves in Meghalaya, Apatani rice–fish farming in Arunachal Pradesh, and Bishnoi traditions of ecological protection demonstrate how Indigenous practices incorporate ethical limits in the utilization of natural resources. The paper argues that political communication can be reimagined with lessons of sustainability and reciprocity drawn from IKS. Findings suggest that while digital campaigns often prioritize extraction and manipulation, Indigenous wisdom provides frameworks for ethical restraint and long-term accountability. Integrating these insights may guide electoral communication towards more sustainable, inclusive, and responsible democratic practices.

Keywords: Indigenous Knowledge Systems, digital campaigning, electoral communication, sustainability, reciprocity, ethics, India

3.8 Sanitation as a Human Right and Development Priority

Sambor Hynñiewta

Research Scholar, North-Eastern Hill University,
Shillong Meghalaya 793022
sam.7ta004@gmail.com

Abstract

Sanitation is a fundamental determinant of quality of life and a key indicator in the Human Development Index. India has made significant strides in improving sanitation, particularly through the Swachh Bharat Mission – Gramin (SBM-G). A major milestone was reached on October 2, 2019, when the country was declared Open Defecation Free (ODF). SBM-G has since moved into Phase II, focusing on converting ODF villages into ODF Plus villages by incorporating solid and liquid waste management, thereby shifting the focus from infrastructure creation to sustainable environmental sanitation. The paper highlights the need to incorporate indigenous and community-based practices in both policy design and implementation in order to achieve effective and sustainable sanitation policies in the region. In alignment with UN Sustainable Development Goal 6 (Clean Water and Sanitation), this study analyses the intersection of government schemes and policies with the needs, priorities, and values of indigenous populations. It advocates for a participatory approach that empowers communities and integrates indigenous ecological knowledge to enhance the long-term success and ownership of sanitation initiatives in Meghalaya.

3.9 Decolonizing Municipal Governance: Integrating Indigenous Advisory Bodies in Local Councils in Assam

Lucky Dey

Assistant Professor, Department of Public Administration,
Assam Don Bosco University
lucky.dey@dbuniveristy.ac.in

Abstract

In Assam, rapid urbanization is increasingly intersecting with the traditional lands and livelihoods of Indigenous communities. Yet, municipal governance structures often overlook Indigenous knowledge systems and exclude tribal voices from local planning and decision-making. This study explores how city councils and local governments in Assam can move towards more inclusive and decolonized governance by formally integrating Indigenous advisory bodies into urban institutions. It examines how knowledge held by tribal communities—such as the Bodo, Mishing, Karbi, and Rabha—can inform urban planning, resource management, public health, and environmental sustainability. The research highlights existing disconnects between traditional governance and municipal policy, while proposing frameworks for collaboration that respect Indigenous autonomy and cultural values. By institutionalizing Indigenous participation in everyday governance, the study argues for more equitable and culturally grounded urban development in Assam's towns and cities, where tribal knowledge remains crucial to both ecological balance and community resilience.

Keywords: Indigenous governance, Municipal planning, Tribal advisory bodies, Urban development, Assam. Ethics, Protocols, and Intellectual Property, Policy and Governance, Revitalization and Future Directions

3.10 Traditional Practices and Customs in two selected Sacred Groves in Jowai, West Jaintia Hills District, Meghalaya

Wailang Sumer, Emidaoopaya Sumer and Jasmine Therese Sawian

Department of Environmental Science,
St. Edmund's College, Shillong 793003
jsawian99@gmail.com

Abstract

Sacred groves, ancient patches of forest revered by indigenous communities as dwellings of deities and ancestral spirits, represent critical reservoirs of biodiversity and cultural heritage. This study investigates the traditional practices and customs associated with two selected sacred groves in Jowai, West Jaintia Hills District, Meghalaya: Ka Khloo Langdoh and Ka Khloo Mooliksoo. Through interviews with community elders and observation, we documented rituals, prohibitions, and management strategies employed by the Seĩñ Raij Jowai. The findings highlight the groves'; roles in festivals like Behdeĩñkhlam, funerary rites, and the conservation of flora and fauna, underscoring the intrinsic link between cultural beliefs and ecological preservation. Recommendations for enhanced protection and sustainable management are also proposed.

Key words: Sacred groves, cultural heritage, reservoirs of biodiversity, sustainable management

3.11 Sustaining Livelihoods through Broom Cultivation in Mawkynrew, East Khasi Hills District, Meghalaya

Wandaphira Pyngrope, Jasmine Therese Sawian, Iasylloklang Rynjah and Michelle D. Khongwir

Department of Environmental Science,
St. Edmund's College, Shillong 793003

Abstract

This study investigates the sustainability of livelihoods derived from broom cultivation in Iewrynghep village, Mawkynrew Block, East Khasi Hills District, Meghalaya. Historically practiced and passed down through generations, broom grass (*Thysanolaena maxima*) is cultivated on challenging terrains, often intercropped with yam, banana, and sweet potato in its initial year. This study explores the significance of broom cultivation, focusing on its social, economic, and environmental aspects. The cost–benefit analysis reveals that broom grass requires relatively low investment, minimal inputs, and provides high market returns compared to traditional crops, making it an attractive alternative source of income for small and marginal farmers. A survey of 30 households revealed that 90% are involved in broom cultivation, engaging both men and women, often without formal education, relying on traditional knowledge. Land ownership is mixed, with 66.67% on owned land and 33.33% on rented plots, sometimes cooperatively managed. Annual yields range from 10-20 quintals per acre. The market for broom is volatile, with prices fluctuating significantly based on demand and supply, leading to income instability despite generally good returns (80% earn approximately Rs 50,000/annum per acre). Key challenges include price drops, the role of middlemen, lack of government support, and adverse weather affecting drying. While recognized for its economic viability, concerns about soil degradation highlight a need for sustainable practices. Overall, broom cultivation at Iewrynghep village, serves as both a livelihood strategy and an environmental conservation practice for rural communities in Meghalaya.

Keywords: broom cultivation, livelihood sustainability, rural economy, traditional agriculture

Indigenous science in practice and Revitalization and Future Directions

4.1 Role of Indian Women as Custodians of Ecological Sustainability through Indigenous Knowledge

Fatema Nargis Choudhury

Ph.D. Research Scholar, Department of Political Science,
Assam University, Silchar, Assam 788011
nargischoudhury8986@gmail.com

Abstract

Women's role in maintaining ecological sustainability is not only limited to household activities but extends to community-based conservation movements. From the Chipko movement in Uttarakhand to women-led grassroots initiatives in biodiversity conservation across India, women have consistently mobilized to protect land, rivers and forests. This paper discusses women's deep-rooted knowledge through daily interaction with natural resources which strengthens collective resilience and fosters adaptive responses to environmental change. By sustaining these practices, women not only preserve ecosystems but also reinforce their authority and leadership in environmental governance. Feminist political ecology emphasizes this gendered nature of environmental knowledge and resource management. Women's indigenous practices ranging from seed preservation and herbal medicine to water conservation and organic farming highlight how sustainability is inherently gendered. Using secondary sources, this paper attempts to critically examine the role of Indian women in maintaining ecological sustainability through indigenous practices and argues for greater recognition of women's ecological expertise in governance and policy frameworks.

Keywords: Indian women, indigenous knowledge, ecological sustainability, feminist political, ecology, governance.

4.2 Indigenous Science in Practice: A Study of the Rongmei Naga Community in Manipur

Ebina Panmei

Ph.D. Research Scholar, Department of History,
North-Eastern Hill University, Shillong, India
Ebinapanmei21@gmail.com

Abstract

Recent research shows the increasing loss of traditional ecological knowledge (hereafter TEK), tracing the causes that have led to it. The paper uses the concepts of conservative natural resource management and local genetic biodiversity maintenance as a system that upholds a resilience of TEK in the face of changing socio-economic conditions and allows the Rongmei Naga indigenous community in Manipur to transmit and apply TEK till the present. These concepts, deeply interwoven with spiritual beliefs and cultural practices and rituals, represent centuries of observation, understanding, experimentation, and adaptation by the Rongmei people of their local environment. Qualitative method of observation is employed and interviews conducted to analyse the processes involved in the continuance of the said traditional ecological practices. The findings suggest that their indigenous practices of agriculture and resource management fosters revival and transmission of TEK over time. While resource management and biodiversity maintenance based on TEK can act as a resilient force against the changing socio-economic conditions, the gradual loss of traditional practices has been taking place and it is a challenge to keep it alive in the face of rapid environmental changes. Therefore, it is the need of the hour to recognize and validate TEK in order to promote sustainable practices and maintaining the resilience.

4.3 Ancestral Knowledge of India and Self-Development Goal 13-Focus on Climate Action

Dr. Jayashree Sarma

Assistant Professor, Department of Economics,
Rangia College, Rangia, Assam, India
iamjsarma@gmail.com

Abstract

India is a country with ancient and rich collection of beliefs, practices, and philosophies that have been passed down from generation to generation. The traditional knowledge system of the country encompasses various fields such as science, spirituality, art, literature, and social norms, and has played a significant role in shaping Indian society and culture. The foundation of ancestral knowledge lies in the ancient texts of the Vedas, which are considered to be the oldest scriptures in the world. The Vedas contain a vast amount of knowledge on subjects ranging from medicine, astronomy, mathematics, and politics, to spirituality and philosophy. They provide insights into the Indian way of life, highlighting the importance of balance, harmony, and unity in society.

The Self Development Goals were adopted by the member counties of United Nations in 2015 for achieving the Sustainable Development by 2030. Of the 17 goals, SDG 13 talks about “focus on Climate Action”. Climate change is a phenomenon whose wrath has been felt by one and all, impacting all aspects of life. While we continue to live, we all strive for a better future, trying to find ways to mitigate the negative effects.

The present paper attempts to find ways from our traditional knowledge to achieve the SDG13. The paper shall investigate the ideas provided by our ancestors as well as available Vedas and Upanishads which shall pave ways for a better future.

4.4 Indigenous Knowledge Systems (IKS) in ecological conservation through the lens of the Khasi tribe of Meghalaya, India

Dawansaphi Shylla

Abstract

This paper explores the role of Indigenous Knowledge Systems (IKS) in ecological conservation through the lens of the Khasi tribe of Meghalaya, India. Centering on the traditional religion Ka Niam Khasi, it introduces the concept of “faith fencing” to describe how spiritual beliefs and taboos function as powerful, community-driven mechanisms for environmental protection. Sacred groves such as Law Kyntang and Law Lyngdoh are safeguarded not by state laws but by deep-rooted spiritual customs that prohibit activities like tree cutting, hunting, or collecting forest produce. These groves function as biodiversity reservoirs, carbon sinks, and local climate regulators, offering essential ecosystem services. The Khasi worldview, which sees the divine manifested in nature (rivers, stones, forests) reflects a spiritual ecology that informs conservation ethics. Ecological knowledge passed down through maternal lineage, rituals, and collective memory has preserved these traditions. However, religious conversion and developmental pressures increasingly erode these beliefs. The paper calls for recognizing Indigenous conservation models in global social work and policy.

Key words: Indigenous knowledge system, faith fencing, spiritual ecology, community-driven conservation

4.5 Beyond Mobility: The socio cultural Landscape of Mora Bharalu Road

Ankita Goswami

okankitagoswami02@gmail.com

Abstract

This paper examines the evolution of Mora Bharalu Road, located in the Fatashil area of Guwahati, from its early form as a kesa/kecha (mud track) to a concrete and eventually a paved road. More than a route of mobility, the road emerges as a living cultural archive. Tracing its history reveals how it has witnessed and shaped the migration and settlement of diverse ethnic, religious, and cultural communities in its vicinity. The paper argues that Mora Bharalu Road functions as a cultural archive where diversity is both inscribed upon the physical space and shaped through it. Through language, spirituality, arts, ceremonies, governance, and intergenerational practices, the road reflects a dynamic interplay between communities and their environment. In this way, the road stands not merely as urban infrastructure but as a site of socio-cultural embeddedness, embodying the layered.

4.6 Studying Impact of Globalisation on Indigenous Knowledge System: Providing a Counter Thesis

Kangkana Sharma

Assistant Professor, Deptt. Of Political Science,
Dhing College, Nagaon
skangkana1@gmail.com

Abstract

The dominant discourse on globalization and Indigenous Knowledge Systems (IKS) predominantly frames globalization as a homogenizing force that erodes, appropriates, and marginalizes local, place-based knowledge. This paper provides a critical counter-thesis, arguing that while these threats are significant and well-documented, the relationship is not unilaterally destructive. By examining case studies of digital activism, transnational Indigenous alliances, and the leveraging of international platforms like the United Nations Permanent Forum on Indigenous Issues, this study demonstrates how globalization can also serve as a powerful catalyst for the revitalization, validation, and global circulation of IKS. This research challenges the simplistic victimhood narrative and proposes a more nuanced, dialectical model. It asserts that the impact of globalization on IKS is not predetermined but is actively contested and shaped by the agency of Indigenous peoples who are adeptly navigating and harnessing global flows to reinforce, rather than relinquish, their unique knowledge heritage.

Keywords: Indigenous Knowledge Systems (IKS); Globalization; Counter-Thesis; Digital Activism; Resistance.

4.7 Indigenous Knowledge Based Sustainable Natural Dyes and their Applications

Nirmala Devi and Debashree Kalita

Department of Chemistry, Girijananda Chowdhury University,
Guwahati 781017, Assam, India
nirmaladevi20401947@gmail.com

Abstract

Natural dye extraction from local plants and textile dying using these natural ingredients are common indigenous knowledge practiced in several parts of Northeast India, the knowledge of which is earned through centuries of experience and practice among different communities in different pockets of North Eastern States for dying of cotton, Eri and other silks which are abundantly available in this part of India. This sustainable practice may find commercial viability in eco-friendly textile processing if properly documented and scientifically tested. Therefore, this study is focused on the extraction of natural dyes from various botanical sources such as waste onion skin, beetroot, and marigold followed by phytochemical analysis. Standard qualitative tests were performed to confirm the presence of these compounds in the dye extracts. The natural dyes were subsequently applied to cotton fabric using conventional dyeing methods. Phytochemical screening of the dye extracts revealed the presence of bioactive compounds which is responsible for their dyeing properties (Fig.1). The results from the tests confirmed the superior suitability of onion skin and marigold as natural dye sources compared to beetroot for textile applications.

4.8 Cattle Culture among the Gorkhas: Traditional Ecological Knowledge and its Role in Dairy development in Assam.

Lakhimai Chetry ¹ and Ram Kishor Soren ²

lakhimaichetry8888@gmail.com

ram.kishor.soren@aus.ac.in

Abstract

Commercial dairy farming in Assam began during the British period, particularly after the Treaty of Segowali (1816), which facilitated the migration of Gorkha families from Nepal to Assam and other regions of India. Historically, the Gorkha community has been characterized by its unique pastoral systems and livestock management strategies, which have evolved over centuries. The indigenous knowledge systems that govern these practices are crucial for understanding how local communities interact with their environment, particularly concerning the sustainable management of dairy resources. By employing historical, analytical, and descriptive methodologies, this study elucidates the intricate relationships between cultural identity and ecological governance. At the core of Gorkha cattle culture is a profound respect for biodiversity and an understanding of ecosystem dynamics. The traditional practices associated with Gorkha cattle such as selective breeding, rotational grazing, and integrated crop-livestock systems demonstrate an sharp awareness of ecological stability, while significantly contributing to Assam's overall dairy production. The study highlight the Traditional Ecological Knowledge (TEK) embedded within the Gorkha cattle culture presents a compelling narrative that intersects cultural heritage with contemporary sustainability practices in dairy development. The findings also reveal that the Gorkhas' cattle culture not only preserves ecological balance but also strengthens the socio-economic foundation of dairy farming in the state. These indigenous methods can be further incorporated to increase productivity and guarantee the dairy industry in Assam develops sustainably with the right kind of policy backing and scientific training.

Keywords: Traditional Ecological Knowledge, Gorkhas, Sustainable Management, Dairy Farming, Socio-Culture Practice, Farming

4.9 Epistemic Sovereignty in the Brahmaputra Valley: Integrating Indigenous Knowledge into Multi-Level Governance of Climate and Resource Justice in Assam

Souzatya Dutta¹ and Satabdi Patgiri²

¹MA Politics and International Relations, Pondicherry University, R.V. Nagar, Kalapet,
Puducherry 605014, India
duttasouzatya2020@gmail.com

²MA in Sociology, Gauhati University, Gopinath Bordoloi Nagar,
Guwahati, Assam 781014, India
satabdipatgiri301@gmail.com

Abstract

This interdisciplinary study interrogates how centering epistemic sovereignty Indigenous communities' authority over their knowledge systems can reconfigure climate governance in Assam's Brahmaputra Valley. Facing rising flood threats and cross-border hydro political conflict, Mising and Dimasa peoples are also poorly represented on policy fora despite their advanced socio-ecological knowledge: Mising stilt houses (chang ghar), community-based embankment management, and phenological predictions reported among Indigenous populations in Assam (e.g., Sonowal Kachari, Bodo). Political ecology and decolonial theories help us diagnose institutional obstacles to incorporating Indigenous relational/living waters ontologies into state tools such as the Climate Action Plan (SAPCC) in Assam. We propose co-governed knowledge-bridging institutions, operationalizing data sovereignty via CARE principles and UNDRIP compliance to advance resource justice through decolonial governance praxis.

Keywords: Epistemic sovereignty, CARE Principles, Indigenous data sovereignty, decolonial justice, Brahmaputra governance, Assam SAPC

4.10 Gram Sabha: A Local Level Decision Making Platform in India

Dr. Pratap Kumar Ghorai

State Aided College Teacher-1, Dept. of Sociology,
South Calcutta, Girls' College, Kolkata, West Bengal
pkgviktu@gmail.com

Abstract

Gram Sabha is a very vital local level decision making platform in local grassroot level of Gram Panchayat. Panchayati Raj in India is an eminent local level institution in Indian rural areas where the village panchayat and panchayat members are making decision and priority list for all types of the functioning of panchayat through the meeting of Gram Sabha. Gram Sabha is not only a decision-making platform but it has more another efficient activity which is necessary to make a local level decision accurately. It is because in Gram Sabha has a more scope of active participation of commoners, those who has no voice and choice in higher level. But Gram Sabha is providing a space for the needy, poor, deprived sections, scheduled caste, schedule tribes and EWS (economically weaker sections) of the society. They can participate in gram sabha meeting very spontaneously and actively and also, they can express their choice and voice freely and frequently. Gram Sabha is a permanent body of a village constituency where villagers assemble to make decision on panchayat's functioning. In 1992 by the 73rd and 74th Constitutional amendment and in Article 243(A) where stated the formation of Gram Sabha in Gram Panchayat level to make local level decision.

Key words: Panchayat, rural, decision, local level, participation.

4.11 Livelihood Opportunities and Climate Resilience: A Case Study of Jorbil Village, Ribhoi District

Rinita Sinha, Shilpa Das and Afsana Arlin

Assistant Professors, Department of Social Work, USTM

Abstract

The community in Jorbil Village is heavily reliant on climate-sensitive occupations. Most families depend on farming and small daily work for their living. This makes them particularly vulnerable to climate change impacts. The area has been experiencing changes in weather patterns, which directly affect agricultural productivity, late or heavy rains, potential crop failures and reduced land productivity. These climate changes are likely to have severe consequences on the farming-based livelihoods of the villagers while causing unpredictable rainfall which can disrupt planting and harvesting schedules. Crop failures can lead to loss of income and food insecurity while reducing land productivity which may result in lower yields and diminished agricultural income. These changes will make life very challenging for the villagers, especially those without alternative income sources. This suggests that climate change is narrowing livelihood opportunities and increasing economic vulnerability. As a rural community, Jorbil Village is likely to face significant challenges from climate change while having limited resources to adapt. This lack of resources may further constrain their ability to diversify or shift to climate-resilient livelihood options. The study aims to identify new opportunities that can help villagers earn a living while staying safe from the effects of changing weather. This indicates a recognition of the need to diversify livelihoods and develop climate-resilient income sources. In conclusion, climate change is significantly impacting livelihood opportunities in Jorbil Village by threatening traditional farming practices, increasing economic vulnerability, and necessitating the exploration of alternative, more resilient livelihood options. The community's indigenous status and limited resources further compound these challenges, highlighting the urgent need for targeted interventions and support.

Keywords – Climate Change, Livelihood Opportunities, Agricultural Productivity, Economic Vulnerability, Climate-Resilient Livelihoods, Rural Communities

4.12 Temporal Meshworks: Reverse-Transmission and Youth Custodianship of Sacred Practices

Arjan Roy Rymbai

Assistant Professor, John Roberts Theological College, Shillong
Mawklot, Upper Shillong 793009
arjanroyrymbai@gmail.com

Abstract

This paper reconceptualizes intergenerational cultural transmission in Indigenous communities through Temporal Meshworks - a lens capturing nonlinear, bidirectional knowledge flows and frames youth as active epistemic agents. Using participatory digital diaries, cultural provenance mapping, and FPIC-anchored co-design workshops, it documents youth practices-digitizing chants, reworking ritual economies, and curating hybrid forms that preserve normative intent while enabling adaptation. Findings show reverse-transmission spurs institutional innovations (youth ritual councils, co-authored cultural licences) and that digitization often amplifies elder authority by creating new platforms for recognition and reciprocity. Emerging hybrid protocols balance adaptive use with anti-commodification safeguards. Grounded in rights-based ethics, the paper proposes FPIC, benefit-sharing, and provenance safeguards and recommends juridical and educational instruments to legitimize youth custodianship. Positioning youth as custodial innovators, it offers practicable governance models for cultural continuity and epistemic justice.

