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MEGHALAYA

PYNURSLA



EASTERN HIMALAYAN
NATURENOMICS™ FORUM

INTELLIGENCE REPORT



Intelligence Report of Pynursla, Meghalaya

Understanding Pynursla

Located in the subdivision of the East Khasi Hills, Pynursla is a small town located around 60 km from the capital city of Shillong in Meghalaya. It is the last town on the way to Mawlynnong and Dawki, the major tourist attractions in the state. The region is densely forested, characterised by steep gradients and scenic roadways. The stretch from Pynursla to Dawki is home to multiple root bridges, which can be accessed via short hikes through the forests. Pynursla boasts a varied landscape, featuring humid jungles on the slopes, plateau grasslands, pine-laden countryside, and natural lakes scattered in between. The people of Pynursla belong to the Khasi tribe of Meghalaya.

According to Census 2011, the location or village code of Pynursla is 278929. From the tourist point of interest, Pynursla has many living root bridges that span over a length of 50m. To reach the longest living root Bridge one has to start trekking from the local village down into the forest.



Population

Pynursla has a total population of 1014 people, out of which male population is 485 while female population is 529. Literacy rate of Pynursla is 74.46% out of which 72.78% males and 75.99% females are literate. There are about 250 houses in the village.



Biodiversity -

The East Khasi Hills, characterized by their diverse topography and climate, harbor an abundant array of plant species, some exclusive to this region.

Flora: The region stands out with an impressive 75 orchid genera, comprising 265 species. Among these, the *Nepenthes Khasiana*, a carnivorous pitcher plant, faces the peril of extinction due to habitat loss. Furthermore, this region serves as a

focal point for the diversity of primitive tree genera like *Magnolia* and plant families like *Elaeocarpaceae*.

At the lower elevations, subtropical and temperate flora can be observed, including rhododendrons, magnolias, orchids, ferns, and diverse trees and shrubs. Toward the higher altitudes, coniferous forests become prominent, featuring a variety of pine and spruce.

Fauna: The region is inhabited by a diverse range of herbivores, including elephants, gaur, sambar, serow, and barking deer. Omnivores in the region consist of jackals, common foxes, sloth bears,

Himalayan black bears, large Indian civets, yellow-throated martens, mongooses, and hog badgers. Among the primates, the Hoolock Gibbon, the sole ape in India, and the globally endangered Capped Langur are present. Other primate species in the area include slow lorises, pig-tailed macaques, stump-tailed macaques, and rhesus macaques. Reptiles such as Bengal monitor lizards, water monitor lizards, and various snakes like the King Cobra, Indian Cobra, Indian Rock Python, Banded Krait, Vipers etc also inhabit the region.

The region is also marked by a few endangered species. The Shillong Bush frog, scientifically known as *Raorchestes Shillongensis*, is a Critically Endangered species exclusive to the East Khasi Hills, also known to have been spotted in the forests of

Pynursla. This diminutive frog earned its common name due to its predominant presence in the forest bushes of Shillong and its vicinity. A mature adult of this species can perch comfortably on a coin, leaving ample space for another frog. This unique characteristic distinguishes the Shillong Bush frog as one of the tiniest vertebrates globally.

The region of Pynursla is known to the endemic species of the Grey Sibia, Dark-rumped Swift, and White-naped Yuhina, while simultaneously facing the critical endangerment of birds such as the Oriental White-backed Vulture and Slender-billed Vulture within the region. Birds of various colours and sizes are also found here including some species of migratory birds.



Indigenous Communities in the Region -

Meghalaya encompasses not only a forest of significant biological and ecological value but is also inhabited by distinctive indigenous tribes, primarily the Khasi tribe, with notable social and cultural importance. The Khasi tribe, predominant among others like the Jaintia and Garo tribes, follows a unique cultural practice where property and tribal leadership are traditionally passed down through the female line, from mother to the youngest daughter. However, despite this matrilineal tradition, forest management has historically been in the hands of men, although the influence of Christianity has brought about changes impacting these traditions. For centuries, these tribes have governed the forest lands using traditional management systems. The Meghalaya tribes employ traditional agricultural methods such as shifting agriculture ('slash and burn') in and around forests, as well as terrace cultivation in valleys and foothills. These practices aim to enhance soil fertility, conserve moisture, and prevent soil erosion.



Rural Economy -

Pynursla is predominantly home to an agrarian community, sustaining a rural economy centered on agriculture and related activities. The village's economic activities are rooted in traditional farming methods, including Jhum cultivation, and the growth of crops such as rice, maize, fruits and vegetables. The hilly terrain sees widespread terrace farming, showcasing the resourcefulness of local farmers in optimizing limited land resources. In addition to staple crops like rice and maize, the area is renowned for horticultural produce such as oranges, bay leaves, lemons, pineapples, guavas, lychees and temperate fruits like plums, pears, and peaches.

Livestock rearing, specifically through piggery and poultry, plays a significant role in contributing to the rural economy of Pynursla. The cultivation of cattle and poultry serves not only as a source of income for the local communities but also meets their daily consumption requirements. The Khasi tribe is also known to possess artistic abilities of weaving cane baskets, mats and stools. Furthermore, tourism contributes to Pynursla's rural economy, with the village's picturesque landscapes and serene atmosphere attracting visitors seeking a retreat from urban life. Accommodation options like homestays and small guest houses offer an extra source of revenue for local residents. Although their rural economy relies predominantly on traditional agricultural methods and horticulture, there have been initiatives to promote sustainable and eco-friendly practices, such as organic farming and ecotourism. These efforts aim to strike a balance between economic development and environmental conservation, ensuring the preservation of the village's natural allure and resources for future generations.

RURAL FUTURES INDEX SURVEY: In-depth socio-economic profiling of Pynursla Village

The Balipara Foundation conducted a survey, meticulously selecting a representative sample for a controlled group study to gather on-the-ground data. The objective is to capture essential indicators highlighting the profound interconnection between nature and the economic and cultural sustenance of indigenous and rural communities. Utilizing Focus Group Discussions, the survey aimed to explore the evolving dynamics of the community's relationship with nature, encompassing shifts in attitudes and the welfare of indigenous farmers and local forest authorities. The study also investigated the intricate links between social, economic, and cultural well-being and ecological aspects, thereby addressing the holistic human satisfaction and well-being of Pynursla.



Socio-political context :

Governance and Administration: Pynursla operates within the administrative purview of the Meghalaya state government. Most of The forests in the east Khasi Hills are governed by autonomous councils called the Dhurbars, responsible for small administrative units known as Hima (kingdom/village clusters). Dhurbars are essentially the general meeting of the clans. In practice, the forest

of the East Khasi Hills are essentially governed and managed by Clans individuals, groups or traditional Institutions under customary rules. Dhurbars are traditionally only performed by men. Local governance and decision-making in the village are facilitated through elected representatives, primarily the Panchayat system. This system holds a pivotal role in overseeing local affairs. Pynursla's unique tribal political structure involves Clan Heads, representing the leadership of distinct clans. These Clan Heads are elected by the secretaries of village committees. Pynursla comprises eight clans spread across 14 villages, each contributing to the local governance framework.

Cultural Diversity: Pynursla's inhabitants are members of the Khasi tribe, conversing in the Khasi language. Their distinctive cultural heritage, traditions, and social customs play a significant role in shaping the village's diverse cultural landscape. The community practices a unique form of worship, revering 28 deities, each associated with a tree or other natural resource. Sacred monoliths in the forested hills are of cultural significance to the Khasi people. This cultural richness contributes to the unique social fabric of the village.

Agrarian Economy: The socio-political dynamics of the village are profoundly shaped by its agrarian economy. Agriculture stands as the predominant

occupation, complemented by activities such as poultry farming, piggery, and cane crafting. Choices pertaining to agricultural practices, land utilization, and water resource management frequently carry implications for the well-being and livelihoods of the community.

Social Structure: The Khasi community in Meghalaya exhibits a tightly knit social structure, emphasizing the significance of familial and extended kinship connections. In the social structure of Khasi Tribe, women hold a prominent role within the matrilineal societal framework. Inheritance follows a unique pattern, where the youngest daughter, known as the Ka Khadduh, inherits all ancestral property. Post-marriage, husbands reside in the mother-in-law's home, and the children adopt the mother's surname. However, in the political arrangements, men tend to dominate more in comparison to women. Key elements of this social fabric include reverence for elders, adherence to traditional customs, and active participation in community gatherings.

Infrastructure and Development: The village has experienced initiatives aimed at enhancing essential facilities like healthcare, education, road connectivity, and the provision of clean water and sanitation. Unfortunately, the Khasi Hills forests are undergoing extensive degradation and

clearing, primarily for shifting cultivation, timber extraction through rotational felling, and various developmental activities. In Pynursla, educational infrastructure appears somewhat limited, with the town hosting just one college, Riwar College, and a few schools.

Conservation and Environment: Forest conversion and degradation in the East Khasi Hills result from a complex interplay of factors, including the rapid increase in population, particularly among the Khasi community, and alluring economic development, notably the timber trade. The escalating population, coupled with Meghalaya's traditional agricultural practices, is no longer sustainable for meeting mass production needs. At this scale, shifting cultivation poses a threat to natural forest structure and hampers natural regeneration.

Despite these challenges, the resident communities in the region share a profound connection with nature. They have actively participated in local conservation efforts, striving to safeguard their natural surroundings and promote sustainable practices. However, the period from 2000 to

2006 saw an alarming forest loss of over 5% annually in the East Khasi Hills. Currently, about one-third of the Khasi hills area appears barren and shrubby, serving dual purposes for crop cultivation, a feature prominently visible in brown tones on Google Maps.

Socio-Political Participation: The locals engage proactively in socio-political activities, such as local elections and community meetings, to express their concerns and play a role in decision-making that directly influences their livelihoods.



Language and Dialect:

In Meghalaya, the primary languages are Khasi and Garo, with English serving as the official language of the State. The development of Khasi and Garo languages and literature in the context of Modern Indian Languages can be attributed to the efforts of Christian missionaries.

Specifically in Pynursla, Khasi is the widely spoken native language belonging to the Austroasiatic language family. Khasi holds an associate official status in certain districts within Meghalaya and is closely related to other languages in the Khasic group on the Shillong Plateau, including Phnar, Lyngngam, and War.

The Latin script is employed for writing Khasi. Notably, attempts to transcribe Khasi into the Bengali-Assamese script during the initial half of the 19th century encountered limited success.

Discussant topics and key findings Economy: The economic foundation of the village is rooted in agriculture, piggery, poultry and horticulture, sustaining a significant portion of the population and providing livelihood opportunities. Farming engages around 80% of the population in the region, showcasing the community's adeptness in jhum cultivation on the hilly terrain, effectively utilizing limited land resources. Approximately ten percent of locals are involved in supplementary occupations, such as weaving of cane baskets, stools, mats etc contributing to additional income

streams. The art of weaving, passed down through generations, not only supports the village's economy but also preserves its cultural heritage.

A smaller segment of the workforce is dedicated to sales and other business-related activities such as mining, catering to local needs and enhancing the village's economic diversity. Women constitute approximately 40% of the labor force, actively participating in various sectors. The income and livelihood dynamics of Pynursla are intricately connected to its rural environment and cultural diversity. The community's reliance on agriculture and traditional skills, coupled with the significant role played by women, shapes a distinctive economic landscape that mirrors the diverse tapestry of this Himalayan village.

Relationship with nature –

In Khasi society in Pynursla and the adjacent areas, the intertwining of faith and culture with nature is deeply ingrained, considering the natural world as a sacred interconnected way of life.

Numerous Khasi traditional dances and rituals vividly portray their inherent ecological connection. For the past five centuries, the Khasi community has safeguarded sacred forests and ancient stone megaliths, dedicated to cultural and religious practices. The majority of the community is involved in occupations closely linked to the utilization of forests. Village forests play a crucial role in providing villagers with essentials such as firewood, edible plants, and wood materials for construction and repairs.

Particularly noteworthy is the Khasi people's practice of age-old intercropping and agroforestry, where trees are a primary source of cash income. This involves cultivating economically valuable trees within natural forests, exemplified by activities like betel leaf cultivation in the forest. The Khasi actively nurture forests and trees in close proximity to their habitats, water sources, and on steep slopes, viewing these areas as ancestral treasures to be passed down to future generations. Consequently, they have implemented age-old forest management practices, emphasizing forest conservation near their residences, around water sources (sacred groves), and on steep slopes with Bun cultivation. The community employs a rational approach to tree logging, distributing revenues equitably among all community members in clan forests, village-restricted forests, and similar areas.



Deforestation patterns -

The extensive degradation and clearance of the East Khasi Hills forests, primarily for shifting cultivation, timber extraction through rotational felling, and developmental activities, have led to forest loss exceeding 5% annually in the East Khasi Hills between 2000 and 2006. The reasons behind forest conversion and degradation are multifaceted, involving factors such as a rising population, especially among the Khasi community, and enticing economic development, notably the timber trade. Meghalaya's traditional agricultural practices are proving unsustainable for meeting mass production needs in the face of rapid population growth. Shifting cultivation at this scale poses a significant threat to the natural forest structure and its regeneration.

In recent times, traditional forest management institutions have transitioned towards the privatization of forestland to individual villagers. Presently, the Khasi community is clearing forests for both permanent and temporary crop cultivation. Additionally, they lease their lands for activities such as stone, sand, and gravel quarrying, forest logging, and grazing. These practices contribute to soil erosion and landslides on denuded hill slopes. The shift towards privatization has been accompanied by a decline in traditional culture and tribal traditions, weakening traditional authorities

and institutions. Meghalaya is also endowed with deposits of coal, uranium, granite, and crystals.

Many individuals within the Khasi tribes are recognizing the correlation between deforestation and the escalating issues of water scarcity, soil erosion, and land degradation, coupled with observable changes in microclimates. The absence of sewage systems and proper waste management poses a significant risk of water pollution, with rivers being contaminated by faecal coliform and organic nitrate from cattle defecation. The Khasi community is aware of the forest's potential role in absorbing organic nitrates.

Certain forest-dwelling Khasi individuals express concerns about economic development interests, fearing a potential disconnection from nature and the erosion of their cultural values. The repercussions of these practices manifest in soil nutrient degradation, declining groundwater levels, loss of biodiversity, and adverse impacts on the overall well-being of both human communities and the animals reliant on these forests. Deforestation is further aggravated by infrastructure development, mining activities, illegal logging, and the conversion of forested areas for alternative purposes. These combined factors contribute to the persisting deforestation challenges faced by Pynursla and its neighboring areas, emphasizing the imperative for sustainable land-use practices and conservation initiatives.



Climatic conditions of the region

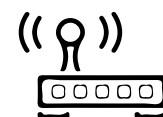
The region enjoys a temperate Himalayan climate characterized by four distinct seasons. Mild and pleasant summers with temperatures ranging from 15°C to 25°C are followed by the monsoon season from July to September, bringing moderate to heavy rainfall that nourishes the green surroundings but can also result in moderate to heavy landslides. Autumn presents a comfortable climate, with temperatures ranging from 10°C to 20°C, attracting tourists to the scenic landscapes. Winters bring chilly temperatures, ranging from 2°C to 15°C. Pynursla experiences the consistent comfort of Himalayan weather throughout the year. However, due to the region's geographical positioning, the hills are frequently impacted by seasonal ocean winds, resulting in unpredictable rainfall even on days

when it is least expected.



Climate Vulnerabilities-

Like many other places, Pynursla is vulnerable to a number of climate-related issues that affect the local community and ecosystem. Because of its steep topography, there is a risk to infrastructure and livelihoods during the monsoon season due to landslides and soil erosion. Even if the monsoon induces a lot of rain, during the dry season, water shortage can impair everyday water demands and agricultural operations. The loss of biodiversity is exacerbated by deforestation and habitat degradation, which upset the delicate ecological balance and have an impact on the local flora and fauna. Variations in climatic patterns have an effect on agricultural production as well, which can result in crop failures and possible problems with food security.



Transport and communication

Pynursla is conveniently accessible by well-maintained roads, providing connectivity to nearby attractions and facilities. The town itself offers adequate medical services and markets. Situated approximately 50 kilometers away, the capital city, Shillong, is easily reachable. Reliable transportation options, including regular bus services and shared taxis, cater to both locals and tourists along these routes.

For those traveling by air, the nearest airport is Umroi Airport in Shillong. From the airport, individuals can hire taxis or use pre-arranged transportation services to reach Pynursla.

In terms of railways, the closest major station is the Guwahati Railway Station in Guwahati, Assam. Taxis and shared vehicles are readily available at the railway station, facilitating a journey of approximately 4 to 5 hours from Guwahati to Pynursla, depending on road and weather conditions.

Case Story-

Ingenious Architecture of Nature: Meghalaya's Living Root Bridges

Meghalaya is adorned with over 100 living root bridges, boasts of architectural wonders dating back 500 years, crafted through a harmonious blend of nature's craftsmanship and human ingenuity.

Locally known as Jingkieng Jri, these bridges exhibit remarkable diversity; some stand tall above

valleys, while others gracefully hover just meters above river surfaces. Recognizing their unmatched ingenuity and resilience, UNESCO regards these living root bridges as evidence of an ancient culture deeply rooted in collective cooperation and reciprocity.



Each structure embodies a captivating ethno-botanical journey, reflecting the profound synthesis between culture and nature. This exceptional architectural feat, nurtured by the collective tribal identity and cooperative spirit of the Khasi tribe, embodies a cultural ethos passed down through generations. Rooted in ancient Khasi beliefs and moral codes, this practice underscores the importance of righteous thought and action

for the collective well-being of communities. Beyond the realm of living root bridges, this unified vision permeates various indigenous practices, encompassing nature worship, the preservation of sacred groves, and a deep-seated belief in the interconnectedness of God, nature, and humanity.



By planting *Ficus Elastica* trees along riverbanks and meticulously weaving, knotting, and shaping their aerial roots, the Khasi gradually transform these natural elements into robust, load-bearing structures. The resulting bridges, spanning up to 50 meters in length and several stories in height, exhibit remarkable strength and durability, capable of supporting the weight of dozens of individuals. These bridges can withstand extreme weather and help enhance the surrounding soil, water, and air quality. It's a genuine community endeavor, with generations joining hands to create something truly extraordinary. These living root bridges aren't just about transportation, they are a powerful symbol of resilience.

Morningstar Khangthaw, a native of Rangthylliang village, Pynursla tehsil of the East Khasi Hills district, embodies the spirit of living bridge activism, tirelessly advocating for the preservation and restoration of these cultural treasures. In the face of modernity's encroachment, characterized by deforestation and the prevalence of concrete

bridges, Morningstar and others like him strive to safeguard this ancient heritage through awareness-building initiatives within the Khasi community. Nevertheless, immediate attention is necessary.

The living root bridges of Meghalaya face imminent threats from deforestation, the proliferation of concrete structures, and the pressures of burgeoning tourism. Furthermore, the absence of scientific documentation and analysis of these bridges underscores the urgent need to preserve the oral traditions associated with their construction and maintenance before they fade into oblivion. Given these challenges, it is crucial that we unite our efforts to preserve and honor these living expressions of human ingenuity and ecological balance. Urgent action is needed, emphasizing the importance of promptly safeguarding this priceless cultural heritage for the benefit of generations to come.



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