International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 23s, 2025
https://theaspd.com/index.php

Jhum Cultivation In Tripura And Assam: An Ethnographical Study On The Cultural Identity And Environmental Sustainability Among The Indigenous Tribes

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Abstract
Jhum cultivation, or slash-and-burn, remains one of the most significant yet contested agrarian systems in Northeast India, particularly in Tripura and Assam. Frequently portrayed as "wasteful" or "backward," Jhum is, in fact, a sophisticated adaptive practice deeply interwoven with indigenous knowledge, ecological rhythms, and cultural traditions. This study employs the theoretical lenses of cultural ecology, political ecology, and subaltern studies to explore the multifaceted nature of Jhum. From a cultural ecological perspective, Jhum emerges as a land-use strategy tailored to mountainous terrain, seasonal rainfall, and diverse flora, structured through cycles of clearing, burning, cultivation, and fallowing that maintain ecological balance. Political ecology critiques the negative portrayals of Jhum, revealing how development policies, forest laws, and conservation measures often serve to marginalise tribal voices while privileging state interests. Through subaltern frameworks, particularly Ranajit Guha's concept of "everyday resistance" and James Scott's insights on peasant agency, Jhum is interpreted as a symbolic and practical assertion of tribal identity and autonomy in the face of modernity and political control. Ethnographic perspectives further show how Jhum sustains cultural identity among communities such as the Reang, Chakma, Karbi, and Mizo, expressed in rituals, festivals, and oral traditions. By bridging historical insights with present ecological challenges, this research argues that Jhum should be recognised not as an obsolete practice but as a dynamic system that can inspire inclusive and sustainable alternatives. Integrating indigenous knowledge with scientific approaches, through innovations such as agroforestry, improved fallows, and organic methods, can strengthen both cultural heritage and ecological resilience in the Northeast.
Keywords: *Jhum, Ecology, Culture, Identity, Sustainability.*

INTRODUCTION:

Jhum, also known as slash-and-burn cultivation, is an ancient and complex agricultural practice among various tribal communities in the Northeast, particularly in Tripura and Assam. This traditional agricultural practice is not only related to food security and livelihood, but it is fully linked to a cultural identity, tradition and environment. Understanding this approach, which is generally considered 'wasteful' or 'backward', requires a serious intellectual analysis, using theoretical backgrounds such as Cultural Ecology, Political Ecology and Subaltern Studies. Jhum is a useful adaptive process, land use similar to mountain ranges, seasonal rainfall patterns, and a deep coexistence with local flora. For tribal societies like Reang, Chakma, Karbi, Mizo, etc., Jum is not just farming; it encompasses a collective culture associated with festivals, songs, seasonal cycles and gods[1].
In contrast, political ecology criticises the prevailing notion that such aggressive development policies are 'insufficient' Thinkers such as Pierce Blaikie [2]and Arturo Escobar[3] explain that such natural narratives are driven by government policies and political forces. Behind the defamation of Jhum is a cultural repression of modern forest laws, forest conservation policies and the right to speak out in the name of development. Subaltern studies in this regard, especially the concept of 'everyday resistance' by Ranjit Guha[4] and James Scott[5], show that Jhumming is an active representation of the self-rights and traditions of indigenous tribes against modernity and political control. Here, the tribe's status quo and social identity are simultaneously involved in the cleaning environment.
This article attempts to analyse the Jhum farmers of Tripura and Assam from this intellectual perspective and explain that they are not just a backwards practice, but an active carrier of local environmental knowledge, cultural status, and political competition. This shows an important local alternative direction for more inclusive and sustainable development policies in the North East of India while focusing on its historical context.
In this shifting cultivation system, forested areas are cleared by slashing vegetation and subsequently burned to enrich the soil with ash nutrients. Crops are then grown on the cleared plot for a few years before leaving the land fallow to regenerate, allowing the ecosystem to recover. While often critiqued for its environmental impact when mismanaged, Jhum is deeply interwoven with cultural rhythms, ecological adaptation, indigenous knowledge systems and historical perspectives.

This research paper seeks to explore the dual significance of Jhum cultivation in Tripura and Assam**:** first, as a cultural cornerstone that unites diverse tribal communities through shared agrarian practices; and second, as a sustainable land-use system rooted in traditional ecological wisdom and ethnographic relevance. By analysing ethnographic narratives**,** indigenous knowledge systems, and recent environmental transformations, the study aims to examine how cultural identity and ecological resilience are interconnected and how this intersection can inform future strategies for sustainable agriculture and land management**.**

Historical Background of Jhum Cultivation in Tripura:

Jhum cultivation, a form of slash-and-burn agriculture, has shaped the socio-economic and ecological landscape of Tripura for centuries. Rooted in indigenous land management systems, it reflects a complex interplay of subsistence needs, cultural traditions, and environmental adaptation. Traditionally practiced by most of the Scheduled Tribes of Tripura, including the Tripuri, Reang, Jamatia, Chakma, and Halam, Jhum has served as more than a food production technique; it has been a cultural institution interwoven with rituals, seasonal rhythms, and oral traditions[6]. Historically, Jhum was based on long fallow cycles, often extending up to 20 or even 30 years, and these extended periods allowed forest ecosystems to regenerate naturally, replenishing soil nutrients, restoring biodiversity, and maintaining hydrological balance. Tribal communities adhered to rotational systems, guided by ancestral knowledge and spiritual beliefs, ensuring that land use remained ecologically viable and socially equitable. The process typically involved clearing forest patches on hill slopes during the dry season, followed by controlled burning to enrich the soil. Diverse crops, such as upland rice, maize, millets, legumes, and vegetables, were then cultivated in mixed patterns, preserving agrobiodiversity and reducing pest outbreaks[7].

However, with rising demographic pressures, land fragmentation, and a growing shift toward monetised economies, the traditional Jhum cycle has undergone significant transformation. Fallow periods have been drastically reduced, often to fewer than five years, leading to diminished soil fertility, increased erosion, and loss of forest cover. These changes have compromised the ecological sustainability that once characterised the practice[8]. In parallel, state interventions promoting sedentary agriculture, rubber monoculture, and commercial plantations have disrupted age-old land stewardship patterns, further exacerbating environmental degradation and socio-cultural dislocation[9].

Prehistoric and Pre-Colonial Period: Tribal Sovereignty and Ecological Equilibrium

Tripura is a land of nineteen Indigenous communities, namely Tripuri, Reang, Jamatia, Chakma, Lusai, Mog, Garo, Kuki, Chaimal, Uchai, Halam, Khasia, Bhutia, Munda, Orang, Lepcha, Santal, Bhil and Noatia. These communities practiced shifting cultivation across the state's hilly terrain, which constitutes more than 60% of Tripura's geographical area. In these early periods, Jhum cultivation was embedded in a self-regulated, communal economy where forest patches were cyclically cleared, cultivated, and left fallow to regenerate[10].

The Tripura Royal Chronicles (Rajmala), though centred on the ruling Manikya dynasty, indirectly suggest that upland areas remained under the control of tribal chieftains, who followed customary law to allocate land and regulate seasonal cycles. The Jhum cycle in earlier times was long, often 10 to 15 years or more, allowing the forest and soil to fully regenerate. Crops like upland rice, millets, arum, chilli, sesame, and a variety of beans and roots were planted together in a multi-cropping system that represented forest ecology and ensured nutritional diversity[11].The practice was gender-inclusive, with both men and women participating in land preparation, weeding, harvesting, and seed preservation. The act of sowing was often accompanied by ritual chants, offerings to forest spirits, and community feasts, reflecting a sacred relationship with land and nature[12].

Colonial Period: Encroachment, Criminalisation and Economic Pressure

The entry of British colonial power in the 18th century, particularly through their indirect control over the princely state of Tripura, introduced significant disruptions to the traditional Jhum economy. The colonial administration, guided by revenue interests and timber extraction, viewed Jhum cultivation as a "wasteful and primitive" method incompatible with modern forestry and agriculture[13]. While much of Tripura remained under the rule of the Manikya kings, British influence introduced new categories of land tenure, settled plough cultivation, and commercial crops like tea, rubber, and jute[14].

Jhum land, which was once part of a flexible rotational system, began to be enclosed as state forest or leased out to private planters. This gradually pushed shifting cultivators into increasingly marginal and steeper slopes, shortening fallow cycles and diminishing the ecological resilience of Jhum[15]. Despite colonial narratives framing them as "nomadic" or "unproductive," tribal communities continued to resist integration into plough agriculture, often shifting deeper into forest interiors to maintain their customary livelihoods[16].

Post-Independence Period: Developmentalism, Displacement, and Resistance

After independence in 1947, Tripura became a state where following the Partition of India a influx of displaced Bengali Hindu populations from East Pakistan (now Bangladesh) entered. The demographic and political shifts radically altered the land use pattern of the state. Vast areas of forest and tribal land were cleared for rehabilitation settlements, infrastructure, and agriculture. This put intense pressure on tribal landholdings, especially in the hilly districts such as North Tripura, Dhalai, and Gomati, where Jhum was most widely practiced[17].

In the name of development, the Indian and state governments introduced schemes to 'wean away' tribes from Jhum, promoting settled terrace cultivation, horticulture, and plantation crops like pineapple, cashew, and rubber. Tribal welfare became associated with sedentarisation, and Jhum cultivators were often portrayed as environmentally harmful. This narrative, however, failed to acknowledge how external encroachments, demographic pressure, and land alienation, not Jhum itself, were causing ecological decline[18].

Contemporary Period: Crisis, Revival, and Ecological Debates

Today, Jhum cultivation in Tripura exists in a state of fragile continuity. It is still practiced by over 30% of the tribal population in hilly regions, though the cycles have drastically shortened, from 10–15 years in the past to as low as 2–3 years in some areas. This has led to soil exhaustion, low yields, and reduced biodiversity, contributing to the widespread belief that Jhum is no longer viable. However, such views often overlook the adaptive strategies that tribes have developed to sustain Jhum under new constraints[19].

Several NGOs, research institutions, and grassroots movements are now pushing for a revaluation of Jhum, not as a backwards practice, but as a form of agroecology that supports food security, seed diversity, and climate resilience. The TTAADC (Tripura Tribal Areas Autonomous District Council) has also initiated programs to integrate Jhum cultivation with conservation farming, indigenous seed banks, and the documentation of traditional knowledge. Under the Forest Rights Act (2006), tribal communities have begun asserting individual and community rights over their customary Jhum lands, challenging older paradigms of forest governance[20].

Rituals and festivals like Garia Puja and Kharchi still draw upon the metaphors of the Jhum cycle, invoking fertility, rainfall, and land blessings. In oral narratives, folktales, and community memory, Jhum continues to be remembered not just as a form of cultivation, but as a sacred inheritance, linking ancestors to the land and life to the forest[21].

Despite these variations, Jhum remains a vital component of tribal life in Tripura. Its historical resilience and adaptive strategies continue to offer insights into sustainable land-use models, especially in the context of climate variability, biodiversity conservation, and indigenous governance. Re-examining the historical trajectory of Jhum, therefore, not only illuminates its ecological legacy but also underscores its potential role in shaping future sustainability paradigms that honour both cultural heritage and environmental integrity.

Cultural Significance of Jhum Cultivation Among the Indigenous Tribes of Tripura:

Jhum cultivation, locally known as shifting or slash-and-burn agriculture, transcends its agronomic function to embody a holistic cultural system among Tripura's nineteen Scheduled Tribes. Far from being a mere subsistence strategy, Jhum is a deeply embedded way of life, intertwining ecological rhythms, spiritual beliefs, gender roles, and community governance. Its practice reflects centuries of indigenous knowledge, resilience, and cultural continuity[22]. For tribes such as the Tripuri, Reang (Bru), Jamatia, Chakma, Halam, and others, Jhum is not just a method of farming, it is a cultural institution. The agricultural cycle dictates the rhythm of life, influencing festivals, rituals, music, and oral traditions. The clearing of land, sowing of seeds, and harvesting are accompanied by ceremoies that invoke ancestral spirits and deities, reinforcing the tribe's spiritual connection to the land[23].

Rituals and Harvest Celebrations

Among the Reang tribe, the Maikhlungmo ritual is central to the post-harvest season. This elaborate ceremony involves offerings to the goddess of food grains and cotton, including animal sacrifices and communal feasting. The ritual culminates in the Hojagiri dance, a mesmerising performance by young women who balance earthen pitchers and oil lamps while narrating the story of Jhum through graceful movements. The dance is not merely artistic; it is a sacred act of thanksgiving and a symbolic representation of ecological harmony[24].

Other tribes celebrate harvest through festivals like Garia Puja (Tripuri), Bizu (Chakma), and Mamita (Jamatia), each reflecting the tribe's unique cosmology and agricultural heritage. These festivals often feature folk songs, bamboo instruments, and dances that mimic the sowing and reaping process, reinforcing the cyclical nature of life and land[25].

Jhum cultivation is preserved and propagated through rich oral traditions. Folk songs recount the myths of origin, agricultural wisdom, and moral values. For instance, the Tripuri and Jamatia communities use ballads and

storytelling during communal gatherings to teach younger generations about crop rotation, soil care, and spiritual taboos associated with land use. These oral narratives are not static; they evolve with each performance, allowing for cultural adaptation while maintaining core values. The use of indigenous languages like Kokborok and Kau Bru further reinforces tribal identity and linguistic heritage[26].

Women play a pivotal role in Jhum cultivation not only as labourers but as cultural custodians. In many tribes, women are responsible for seed selection, weeding, and post-harvest processing. Their participation in rituals like Hojagiri and their role in preparing ceremonial foods highlight their spiritual and social importance[27].

Moreover, tribal societies in Tripura often exhibit egalitarian gender norms. Practices such as bride price, jamaikhata (groom service), and widow remarriage reflect a degree of autonomy and respect for women's agency. In some communities, women inherit land or receive gifts of property, and their voices are integral in household and community decision-making. Jhum is governed by traditional institutions such as village councils (Hoda in Jamatia or Choudhry in Reang), which regulate land use, fallow periods, and ritual observances. These councils operate on consensus, emphasising communal responsibility and ecological stewardship[28].

Spiritual beliefs are deeply embedded in the practice. Deities like Lampra, Mailuma, and Garia are invoked to bless the land and protect the harvest. Sacred groves and water sources are preserved as part of spiritual ecology, reflecting a worldview where nature is animate and sacred. Jhum cultivation in Tripura is a living testament to the symbiosis between culture and ecology[29]. It is a dynamic system that sustains not only food production but also tribal identity, spiritual values, and social cohesion. As modernisation and environmental pressures challenge traditional practices, it becomes imperative to recognise and preserve the cultural significance of Jhum, not merely as an agricultural technique, but as a cornerstone of indigenous heritage and sustainable living[30].

Jhum cultivation in Tripura exemplifies a traditional agricultural system rooted in indigenous knowledge, ecological balance, and cultural resilience. One of its most noteworthy strengths lies in its organic and low-input approach. Practiced without reliance on synthetic fertilisers or chemical pesticides, Jhum leverages natural ecological cycles to maintain soil fertility and crop productivity. Tripura has emerged as a leader in organic farming, with over 25,000 hectares certified under the MOVCD-NER scheme, the MOVCD-NER stands for Mission Organic Value Chain Development for North Eastern Region**.** It is a central sector scheme launched by the Ministry of Agriculture and Farmers' Welfare, Government of India**,** specifically for the eight North Eastern states of India (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura), producing high-value crops such as bird's eye chilli, black rice, and Queen pineapple[31]. This organic shift has enhanced soil health, minimised chemical dependency, and contributed to long-term sustainability in tribal farming communities. Agro-biodiversity remains a core feature of Jhum cultivation. Mixed cropping systems include rice, maize, pulses, and numerous indigenous vegetables, ensuring dietary diversity, economic stability, and ecological resilience. Research conducted in the Atharamura hill range reveals the presence of 35 crop species across 20 botanical families, an impressive testament to the biodiversity embedded in tribal agroecology. This diversity not only sustains food security but also functions as a buffer against climate variability and pest outbreaks[32].

Indigenous pest and weed management practices further illustrate the environmentally attuned nature of Jhum. Ethnic communities in Tripura employ bio-based repellents derived from neem, lemongrass, and Holarrhena pubescens to safeguard crops. Techniques such as ash spreading and the use of bamboo sprayers reflect low-cost, sustainable approaches to crop protection, underscoring how traditional knowledge systems can offer viable alternatives to industrial agriculture[33]. Despite its strengths, Jhum cultivation faces mounting environmental pressures. The most immediate concern stems from shortened fallow cycles. Historically ranging from 10 to 15 years, these cycles have been reduced to as few as 2–3 years due to demographic expansion and land fragmentation. This compression undermines soil regeneration, accelerates nutrient depletion, and leads to declining organic carbon levels. The cumulative result is reduced long-term fertility and impaired ecosystem services[34].

Deforestation and biodiversity loss are further challenges associated with the changing nature of Jhum. Tripura recorded a loss of approximately 11,200 hectares of forest between 2020 and 2024, driven in part by shifting cultivation and the spread of rubber monoculture. The degradation of forest cover threatens endemic species, weakens climate resilience, and disrupts the intricate ecological balance that Jhum traditionally relied upon. Additionally, the burning phase of Jhum contributes to soil erosion and the release of carbon emissions, especially in steep terrain where topsoil loss compromises water retention and land stability[35].

In response to these ecological challenges, modern interventions are being introduced to revitalise and adapt Jhum systems. Agroforestry practices that integrate perennial species like bamboo and fruit trees are helping improve soil structure, reduce erosion, and enhance biodiversity. Community-led fallow management initiatives are gaining momentum, fostering collective stewardship and promoting ecological regeneration. While rubber plantations offer economic benefits to tribal farmers, they have also contributed to biodiversity degradation. As a counterbalance, conservation programs now emphasise bamboo-based livelihoods and reforestation efforts, with over 10,000 hectares targeted for afforestation annually[36].

Tribal narratives provide crucial insight into how cultural rhythms support ecological sustainability. The Reang and Jamatia communities, for instance, continue to practice seasonal rituals synchronised with lunar cycles that guide sowing and harvesting decisions. Celebrations such as Kharchi Puja and Garia Puja express reverence for nature and reinforce sustainable land-use practices. Oral histories passed down through generations speak of forest spirits, ancestral stewardship, and moral codes that emphasise harmony with the natural world. These narratives have proven instrumental in shaping adaptive strategies, allowing communities to respond to environmental stress while preserving cultural integrity[37].

Jhum cultivation remains a viable agroecological model when practised with respect for ecological thresholds and cultural traditions. However, external pressures demand a revaluation of its structure and governance. Hybrid models that combine scientific innovation with indigenous wisdom offer a promising path forward. Policy recommendations should focus on legally recognising tribal land rights and implementing ecological zoning to prevent overuse of these lands. Support for organic certification and enhanced market access would incentivise sustainable practices, while the integration of traditional knowledge into formal agricultural extension services would foster greater respect for indigenous expertise. Finally, community-led conservation and monitoring initiatives, particularly in biodiversity hotspots, should be prioritised to preserve both cultural heritage and ecological stability[38].

Jhum cultivation in Tripura stands as a living embodiment of how indigenous agricultural systems can harmonise tradition with ecological resilience. Rooted in centuries of practice and cultural continuity, Jhum is far more than a method of food production; it is a socio-spiritual framework that connects land, identity, and sustainability. Despite mounting pressures from population growth, forest loss, and policy-driven land use changes, the essence of Jhum continues to offer valuable lessons in agroecological stewardship and cultural integrity. Balancing tradition and sustainability requires a nuanced approach that respects tribal customs while addressing contemporary environmental challenges. Hybrid models combining scientific innovation with indigenous wisdom can help restore ecological functions without undermining cultural autonomy. Agroforestry, improved fallow management, and bio-based pest control are just a few of the adaptations that illustrate how tradition can evolve without erasure[39].

To foster inclusive and sustainable development, policy frameworks must actively recognise the value of indigenous knowledge systems. This includes formal recognition of tribal land rights, zoning for ecological restoration, and inclusion of Jhum practices within agricultural extension and educational programs. Supporting organic certification and market access can further incentivise low-impact farming, while community-led conservation initiatives can strengthen ecological governance from within. Ultimately, the future of Jhum lies not in its eradication or replacement, but in its thoughtful transformation. By embedding cultural heritage within sustainability strategies, Tripura and similar regions can model a path that is ecologically sound, culturally rich, and socially just[40].

Historical background of Jhum cultivation in Assam:

Jhum cultivation, also known as slash-and-burn or shifting cultivation, has a long and deep-rooted history in Assam, particularly among the tribal communities inhabiting its hilly and forested regions. Practiced for centuries by groups such as the Karbi, Mising, Dimasa, and Bodo, Jhum was never merely an agricultural technique, it was part of a holistic relationship between indigenous people and their environment.[41] This traditional system involved clearing patches of forest, burning the vegetation to fertilise the soil with ash, cultivating crops for a few years, and then allowing the land to lie fallow for natural regeneration. The rhythm of Jhum was synchronised with seasonal cycles, ritual calendars, and collective labour practices that sustained both biodiversity and community life. It emerged as a subsistence-based agricultural practice among the indigenous tribes of the region, particularly those residing in the hilly and forested tracts of the Eastern Himalayan foothills and the Meghalaya Plateau fringe zones.[42] The origin and continuity of Jhum reflect a pre-agricultural ethos where the forest was not an adversary to be cleared, but a living ecological system to be negotiated with, nurtured, and respected.[43]

Prehistoric and Pre-Colonial Era: Indigenous Autonomy and Ecological Balance

Before the arrival of centralised kingdoms and colonial states, much of Assam, especially the hilly tracts of present-day Karbi-Anglong, Dima Hasao, North Cachar Hills, and parts of lower and upper Assam was inhabited by Austroasiatic, Tibeto-Burman, and Tai-Ahom ethnic communities.[44] These groups lived in small clan-based settlements, organised around kinship and totemic lineages, and practiced rotational agriculture like Jhum based on the cycles of nature.[45]

In the absence of permanent land boundaries, Jhum allowed for flexible land use, where forest patches were selected based on fertility, slope, and availability of water.[46] Land was not privatised but treated as communal, and access was regulated through oral customary laws.[47] Shifting cultivation thus coexisted with hunting, fishing, gathering, and forest worship, forming a diversified subsistence base. Crops such as upland rice, millets, maize, cucurbits, yams, and pulses were grown in mixed plots, creating a multi-layered agro-ecosystem that supported food security and biodiversity.[48]

Rather than exhausting the land, early forms of Jhum had long fallow cycles, ranging from 10 to 15 years or more, allowing the soil to naturally regenerate. This equilibrium between cultivation and regeneration meant that the system was sustainable over centuries, provided that population density remained low and access to land remained unrestricted.

Medieval Period: Shifting Relations with States and Forests

As the Ahom Kingdom rose to power in the Brahmaputra Valley (13th–19th century) and Kachari and Dimasa kingdoms gained control over hill territories, shifting cultivators began to engage in seasonal trade, tribute, and alliances with larger political formations. However, due to the inaccessibility of many upland areas, most tribal groups retained their autonomy over land and lifestyle. Jhum remained a central mode of production and a basis for ritual life.[49]

In many hill communities, including the Karbi, Dimasa, and Lalung, the act of beginning a Jhum cycle, slashing the forest, invoking spirits, and burning the vegetation, was not only agricultural but also spiritual and political.[50] It marked the assertion of a community's presence in a landscape that was otherwise fluid and shifting. Local chiefs or headmen regulated the allocation of land and coordinated labour, reinforcing customary authority and land ethics.

Colonial Period: Displacement, Criminalisation and Control

With the advent of British colonial rule in the 19th century, the traditional logic of Jhum cultivation came under direct attack. The colonial state, focused on forest conservation for timber extraction, railway expansion, and commercial plantations, classified shifting cultivation as 'wasteful', 'primitive', and 'destructive'.[51] This was part of a larger narrative where indigenous agricultural practices that did not fit into the fixed, revenue-yielding agrarian grid were criminalised.[52]

The establishment of the Indian Forest Act of 1865 and 1878, followed by the Assam Forest Regulation of 1891, severely restricted tribal access to forest land.[53] Vast areas traditionally used for Jhum were declared Reserved Forests, and communities were labelled as 'encroachers' on their ancestral territories.[54] Forest officers often imposed fines, arrests, or forced settlements, compelling tribes to either reduce their Jhum cycles or move deeper into inaccessible forests.

However, the colonial government's attempts to sedentarism the tribes through 'taungya' plantations or coercive resettlement schemes largely failed, as tribal resistance continued through everyday acts of refusal and negotiation.[55] Some communities integrated Jhum with wage labour or adopted partial forms of settled agriculture while preserving their ritual and ecological relationships with land.

Post-Independence Era: Developmentalism and Shifting Identities

After independence in 1947, the Indian state inherited the colonial suspicion of Jhum. National development policy prioritised modernisation, settled farming, and integration of tribal areas into mainstream economic systems. The formation of autonomous district councils under the Sixth Schedule of the Indian Constitution provided some protection, but state forestry and development departments still sought to reduce or replace Jhum through schemes like Integrated Tribal Development Projects (ITDP) and Hill Area Development Programs.[56]

Reports by institutions like the Planning Commission and the North Eastern Council often presented Jhum as ecologically unsustainable, linking it to deforestation, soil erosion, and backwardness. However, these assessments frequently ignored the systemic disruptions caused by state intervention, such as shortened fallow cycles due to land alienation, denial of forest access, and lack of recognition of customary rights.[57]

By the late 20th century, a body of anthropological and ecological scholarship began to challenge the dominant narrative. Researchers argued that Jhum was not inherently destructive, but its sustainability depended on land availability, communal management, and adequate fallow cycles, all of which were undermined by external pressures.[58] Studies in Karbi Anglong and Dima Hasao highlighted the adaptive knowledge, seed diversity, and soil regeneration techniques embedded in traditional systems.[59]

Contemporary Context: Crisis, Continuity, and Cultural Assertion

Today, Jhum cultivation continues to be practiced by several tribal communities in Assam, albeit under significant stress. Population pressure, commercial logging, monoculture plantations, and political marginalisation have led to shortened cycles, soil degradation, and declining yields. However, it remains not only a source of livelihood but also a symbol of cultural identity, ecological memory, and indigenous resistance.

In recent years, policies like the Forest Rights Act (2006) and climate adaptation programs have opened up space for a more nuanced understanding of Jhum.[60] Some communities are reasserting their customary rights to shifting cultivation, combining traditional knowledge with sustainable techniques such as agroforestry, contour planting, and organic fertilisation. NGOs and ecologists have begun recognising Jhum as part of an agroecological model rather than a relic of the past.

In many villages, Jhum remains at the heart of annual festivals, seed rituals, and ancestral worship, continuing to link land, labour, and the sacred. Despite the many challenges it faces, Jhum cultivation survives in Assam not as a residue of backwardness but as a resilient system of ecological wisdom, cultural autonomy, and community solidarity.

Tribe-wise variation in Jhum cultivation in Assam:

The practice of Jhum cultivation in Assam varies significantly among different tribes, shaped by ecological zones, cultural traditions, spiritual beliefs, and social organisation. While the core method, clearing, burning, sowing, and fallowing, remains largely similar, the variation tribe-wise reveals a diverse set of agricultural knowledge systems adapted to micro-geographies and community lifeways. In Assam, the method of Jhum cultivation, or shifting cultivation, is not a homogeneous practice but exhibits considerable variation among different tribal communities based on geography, climate, belief systems, and ecological adaptation.[61] Among the Karbi people of Karbi Anglong, Jhum is deeply integrated with their socio-cultural identity. The Karbis follow a rotational cycle that can range from 7 to 10 years, depending on land availability and soil fertility.[62] Their cultivation is often collective, with entire clans working together, and they follow a lunar calendar for deciding the sowing and harvesting times.[63] Crops like rice, millet, ginger, turmeric, and a range of vegetables are commonly grown, and rituals are performed to appease forest spirits before starting the slash-and-burn process.

The Dimasa tribe, residing in the Dima Hasao region, exhibits a slightly different pattern. Their Jhum fields, known locally as 'Ladhi', are generally located on moderate slopes.[64] The Dimasas have a relatively shorter fallow cycle, often around 4–5 years, due to land pressure and shrinking access to forested areas.[65] However, they maintain rich biodiversity in their cropping system. Apart from upland rice, they grow job's tears (a type of millet), cucurbits, beans, and medicinal plants. Socially, the Dimasa Jhum system is structured around kinship and village-level organisation, where communal labour plays a key role.

Among the Mising tribe, who largely inhabit the foothill and riverine areas of upper Assam, Jhum cultivation is practised mainly in the fringes of hilly zones. Due to their proximity to floodplains, the Misings often integrate wetland and upland agriculture, using Jhum in the higher elevations while cultivating paddy in the lowlands. Their adaptation reflects a hybrid model of agriculture that responds to both flood cycles and hill ecology. The Mising people also use traditional bamboo tools and maintain seed sovereignty by exchanging indigenous seed varieties within the community.[66]

The Rabha and Tiwa tribes of the Assam-Meghalaya border areas have their own distinctive Jhum systems.[67] For the Rabhas, Jhum fields are not just for food production but also serve as cultural sites where forest deities are worshipped. The Tiwas, particularly those in West Karbi Anglong, maintain a dual system of cultivation Jhum for subsistence and settled agriculture for market-oriented crops like ginger and areca nut.[68] Both communities emphasise mixed cropping systems that ensure food security and ecological balance.

Even within a single tribe, the method of Jhum can differ depending on altitude, soil type, and the proximity to forest cover. For example, among the Karbis, people living in higher elevations tend to retain longer fallow periods and more diverse cropping patterns, while those in lower, more accessible areas have adopted shorter cycles and often supplement Jhum with cash cropping or horticulture.

Spirituality, too, plays a significant role across tribes. Many communities perform seed-sowing rituals, offer animal sacrifices, and hold community feasts to mark the beginning or end of the Jhum season. These practices reaffirm the sacred connection between land, ancestors, and agriculture. Tools used in Jhum, like the dao (machete), hoe, digging stick, and firewood torch, are also imbued with cultural meaning and are often made locally using bamboo, iron, and wood.

In sum, Jhum cultivation in Assam is not a static or uniform activity but a complex, dynamic system that varies from tribe to tribe. These variations reflect the diversity of Assam's indigenous communities and their deep ecological knowledge, offering important lessons for sustainable land use and community resilience. Understanding these differences is crucial, especially in the current context of climate change, land alienation, and development-induced displacement, where the future of Jhum and its practitioners remains uncertain yet vital

Jhum Cultivation in Assam: Culture, Ecology, and Adaptation:

Jhum Cultivation or 'Ujo Chash' in the local language is a serious part of the tribal way of life in Assam.[69] It is not only a method of food production, especially among the hill tribes like Karbi Boro, Dimacha, Tiwa etc.; It is a living culture, reflecting the human relationship with the land, kinship with the forest trees, and the unity of the social community.

There are still many villages in the Karbi Anglong and Dima Hasao districts of Assam. They are cultivated. In ancient times, the fruit cycle of this cropping system was 15-20 years, after which biodiversity could be revived in the deserted land. Land selection was done by considering tree size, soil type, and rainfall. Many religious rituals were performed during the cutting down of trees, burning of forests and sowing of seeds. Ficus trees such as sengri or senne are not cut down because they are considered "dwellings of the gods'.[70] Thus, traditional beliefs and naturalism have played a significant role in environmental conservation.

In the old system, the total control of land in the village was not by one person, but by the community together deciding where to cultivate. The elders of the village determined the location of the fields, worshipped the forest gods, and began the jhum. This communal control, production and environmental awareness were intertwined. It served as a 'cultural university' where men, women, and adolescents could all receive social training through agriculture.

But the scenario has changed over time. With population growth and increased land occupation, the fruit cycle of Jhum is now limited to 3-5 years.[71] As a result, soil fertility has declined, the number of bamboo or bad invasive plants has increased, and the forest environment. The water holding capacity of the Kahra River Valley in Kaziranga has been reduced by 90% due to continuous flooding, which has dried up the river flow and made the local ecosystem more vulnerable[72].

As a response to this crisis, farmers in many villages have changed their farming practices. Some Jhumia farmers are now focusing on cultivating bamboo, ginger, wild trees, herbs, and aromatic plants. Others have converted to beekeeping, poultry farming, or tea cultivation[73]. However, many have found new ways within traditional farming practices, such as planting wild plants through cultivation, or protecting special trees during harvest. At the same time, cultural festivals are also carrying the integration of this tradition. Assamese Rangali Bihu is a festival associated with the sowing of rice, celebrating the fertility of crops and the joy of life together. The Karbi Youth Festival also features Jhum, agriculture, traditional music, dance and religious thoughts[74].

Assam, known as a biodiverse state in the North East of India, is home to many traditional tribes. These tribes, Karbi, Boro, Dimasa, Miching, Tiwa, Adibasi, etc., have their own culture, language, religious beliefs and way of life that constitute the cultural and intellectual wealth of Assam. Their culture is nature-based, and this relationship is not limited to ordinary thought or practice, but is strongly reflected through agriculture, festivals, traditional knowledge and community life.

Jhum cultivation, especially among the hill tribes, is a hidden aspect of this cultural identity and environmental settlement. Their real relationship with the land, the worship of the forest gods, the veneration of sacred trees and plants and the religious rituals performed before cutting down trees. All this carries environmental awareness and spirituality together. In Karbi society, for example, it is forbidden to cut down Sengri or Ficus trees; it is considered the abode of the gods.[75] This type of practice constitutes an unplanned but effective approach to biodiversity conservation.

At the social level, private ownership of land is relatively low among these tribes. The village community works together to determine the land selection, cultivation location and crop cycle. This collective decision-making process develops a conscious attitude against the overexploitation of the environment. Similarly, festivals, such

as Rangali Bihu or Karbi Youth Festival and other social events are associated with agriculture, dance and the change of seasons, which establish an integrated relationship between culture and ecosystem.

At a time when modernisation, deforestation, and government land policies are threatening tribal areas, such traditional knowledge and beliefs provide an important alternative for environmental restoration and resource management. Many tribal farmers today have modified this tradition through tree-decorating jhum systems, bamboo forests, herb production, and family gardens, but have maintained the core beliefs, community and connection to the land[76].

In this context, the cultural identity and environmental settlement of the tribes in Assam is not only a question of self-representation; It is a search for alternative development, justice-based resource allocation, and sustainable lifestyles. Tribal knowledge, festivals and ways of life embody the principles of respect for the environment and coexistence, which can be a fundamental lesson in the context of today's global environmental crisis.

Jhum Cultivation in Tripura and Assam: Intersecting Paths of Culture and Ecology:

Jhum cultivation, as practiced in both Tripura and Assam, exemplifies an indigenous response to ecological constraints and cultural necessities. While the systems in each state share structural similarities, they differ notably in historical trajectories, environmental pressures, and cultural articulations.

Cultural Continuity and Divergence

In both states, Jhum is not merely an agricultural method but a cultural institution deeply embedded in the tribal worldview. In Tripura, Jhum forms the ritual backbone of tribal life for communities such as the Tripuri, Reang, Chakma, and Jamatia. The agricultural cycle is punctuated by seasonal festivals, ritual dances, and spiritual offerings. For instance, Hojagiri, performed by Reang women, is both a sacred and performative reflection of post-harvest gratitude.[77] Along with that Lebangbumai, The Mamita festival, celebrated by the Tripuri community, is a significant cultural performance intrinsically linked to the practice of jhum cultivation.[78] It serves not only as a post-harvest celebration but also as a ritual expression of gratitude to the deities for a successful yield, reflecting the deep ecological and spiritual relationship between the indigenous people and their shifting agricultural practices.

In contrast, in Assam, especially among the Karbi, Dimasa, Bodo, and Tiwa tribes in Karbi Anglong and Dima Hasao, Jhum cultivation is closely tied to animistic beliefs and sacred environmental practices. The Ficus trees (Sengri/Senne), regarded as abodes of deities, are spared during land clearing, symbolising a spiritually embedded conservation ethic. While Tripura's rituals are more agriculturally cyclical, Assam's practices often reflect sacred geography and taboos, reinforcing environmental restraint through spiritual laws[79].

Community Governance and Land Rights

Tripura's tribal communities exhibit relatively structured governance through village councils, which regulate land use and ritual obligations. These councils are formalised and often integrated with state-recognised Tripura Tribal Area Autonomous District Council (TTAADC) frameworks.[80] In Assam, especially in hill districts like Karbi-Anglong, the collective ownership of land and community-based field allocation have historically reinforced environmental stewardship. Jhum fields are decided communally, and decisions are taken by village elders through consensus, reflecting a non-individualised, eco-social model of land management. This reflects a contrast which is Tripura has witnessed more integration with government-led organic certification and agrarian policies (e.g., MOVCD-NER), while Assam's communities continue to resist such standardisation, preserving a loosely federated model of ecological control.[81]

Ecological Adaptation and Sustainability Challenges

Tripura has seen considerable success in integrating organic farming models into traditional Jhum systems. With over 25,000 hectares under certified organic farming, the state has embraced mixed cropping systems with significant biodiversity.[82] Ethnobotanical studies show as many as 35 species cultivated in a single Jhum cycle in the Atharamura hills, indicating high ecological resilience.[83] On the other hand, in Assam, shortened fallow cycles (down to 3–5 years from the traditional 15-20) have resulted in soil erosion, declining fertility, and proliferation of invasive species like bamboo. Yet, adaptive innovations such as cultivating ginger, bamboo, medicinal plants, and practicing beekeeping are enabling a hybrid system. Some farmers retain spiritual practices while adopting agroforestry and herb farming, demonstrating a transition rooted in cultural logic.

Modern Pressures and Cultural Resilience

In both states, state-sponsored afforestation, land-use policies, and rubber monocultures pose threats to the continuity of Jhum. However, resistance has taken culturally expressive forms. In Tripura, traditional knowledge is being institutionalised through oral histories, storytelling, and formal documentation. In Assam, ritual taboos

and community festivals like Rangali Bihu or the Karbi Youth Festival serve as organic pedagogies that teach environmental ethics. While both cultures face external pressures such as deforestation, population growth, and land alienation, Assam's model is more decentralised, relying heavily on oral tradition and spiritual law, whereas Tripura has begun codifying these practices, aligning them with formal policy frameworks.[84]

Jhum cultivation in both Tripura and Assam represents a complex interplay between subsistence agriculture, cultural identity, and ecological ethics. Tripura demonstrates a model of adaptive integration, where indigenous knowledge aligns with state policy for sustainable development. Assam offers a grassroots conservation model, where spiritual traditions and collective land management sustain ecological functions. Together, these case studies reveal that Jhum is not a 'backward' practice to be replaced, but a resilient agroecological system that holds valuable insights for sustainable development, climate adaptation, and cultural preservation.

CONCLUSION:

Jhum cultivation, often reductively dismissed in policy and popular narratives as an unsustainable or primitive form of agriculture, is a sophisticated, ecologically attuned, and culturally embedded system of subsistence that offers vital insights into human-nature relations, environmental stewardship, and community-based resource governance. The comparative study of Jhum practices in Tripura and Assam, as explored in this research, reveals not only the diversity and adaptability of indigenous ecological knowledge but also the centrality of these practices in sustaining cultural identity, spiritual cosmologies, and socio-political autonomy among tribal communities.

In both states, Jhum serves as a powerful expression of place-based cultural identity; it is not merely a mode of food production but an ontological worldview that interweaves land, ritual, memory, and community. The very act of clearing forest patches, preparing seed beds, sowing diverse crops, and performing seasonal festivals reflects a cosmic rhythm in which humans, deities, forests, and ancestors are all interconnected. For tribes in Tripura (such as the Tripuri, Reang, Jamtias and Chakma), these cycles are deeply ritualised, often accompanied by oral traditions, animistic beliefs, and seasonal dance forms like Hojagiri, Lebangbumani, Mamita etc., which reinforce communal bonds and environmental ethics. The land is not just a resource, it is a relative, a living entity that must be respected, propitiated, and managed collectively.

In Assam, especially among the Karbi, Dimasa, Bodo, and Tiwa, this reverential approach toward land is often mediated through sacred groves, clan deities, and taboo zones. Traditional ecological knowledge is passed through generations via oral lore, apprenticeship, and seasonal festivals like the Karbi Youth Festival, which also function as archives of environmental memory. The enduring presence of sacred Ficus trees in shifting fields, protected as abodes of spirits, is a striking example of how spirituality and conservation are seamlessly intertwined in these indigenous cosmologies.

However, the environmental and economic pressures confronting Jhum cultivators are both immediate and intensifying. Population growth, land alienation, shortened fallow cycles, deforestation, and climate variability have contributed to soil degradation, biodiversity loss, and livelihood uncertainty. These challenges are exacerbated by state policies that often view Jhum through the lens of degradation, pushing instead for permanent agriculture, afforestation, or commercial monoculture, solutions that frequently undermine indigenous autonomy and ecological resilience.

Yet, the responses from within these communities demonstrate remarkable adaptive capacity and innovation. In Tripura, the adoption of organic farming certifications under the MOVCD-NER (Mission Organic Value Chain Development for North Eastern Region) scheme shows how traditional knowledge can be aligned with market-oriented sustainability initiatives, albeit with the risk of bureaucratic co-option and the erosion of customary land control. Jhum fields here are being transformed into biodiversity-rich agroecosystems, with over 35 species of crops often planted together, enhancing food security and ecological resilience.

Assam, by contrast, illustrates a different mode of sustainability, less institutionalised but deeply rooted in community ethics and spiritual ecology. The Karbis and Dimasas have begun incorporating ginger, turmeric, bamboo, and medicinal plants into Jhum systems, while retaining traditional rituals, taboos, and decentralised decision-making. This cultural resistance to formalisation reflects not inertia, but a deliberate preservation of autonomous agroecological governance that is inherently democratic, collective, and spiritually accountable.

Thus, what emerges is a tale of two trajectories of indigenous adaptation: Tripura represents a model of hybridisation and negotiated modernity, wherein tribal communities selectively engage with state and market frameworks. Assam, meanwhile, preserves a more grounded and inward-looking approach, sustaining ancestral wisdom as a form of cultural resistance and ecological sovereignty. Both models, however, demonstrate the falsity

of the binary between tradition and modernity, showing instead that indigenous knowledge systems are dynamic, experimental, and responsive to changing conditions.

Crucially, this study compels us to decolonise the developmental imagination that frames Jhum as wasteful or regressive. From a postcolonial ecological perspective, such framing is symptomatic of broader epistemic violence, where indigenous lifeways are rendered illegible within the metrics of scientific forestry, land productivity, and economic rationality. The tribal cultivator is not a 'regressive' peasant to be rehabilitated by state intervention, but an ecological intellectual, to borrow from Gramsci, who embodies a form of situated knowledge that challenges the extractives and anthropocentric paradigms of mainstream development.

In this context, environmental sustainability cannot be abstracted from cultural sustainability. The disappearance of Jhum would not merely be a shift in land use; it would signal the erosion of entire knowledge systems, cosmologies, and languages that have co-evolved with the forested hills of Northeast India. Therefore, any policy intervention or academic engagement must begin with a recognition of the ontological plurality of indigenous communities—their right to define what sustainability, development, and modernity mean on their terms.

Ultimately, the resilience of Jhum lies not only in its ecological logic but in its capacity to anchor identities, reproduce social memory, and nurture a sense of collective responsibility toward land and life. As the global environmental crisis deepens, and as the search for alternative, regenerative models of agriculture and habitation becomes urgent, it is time we turned to such indigenous systems, not as relics of the past, but as guides for a more just, plural, and sustainable future. At a time when climate change, biodiversity loss, and extractive development threaten both livelihoods and landscapes, the Jhum system offers critical insights into how human societies can live with nature rather than against it. Recognising the cultural and ecological intelligence embedded in Jhum is not just a matter of preserving tribal heritage; it is an urgent imperative for rethinking sustainability in a pluralistic and postcolonial framework. As such, any policy intervention must move beyond technocratic solutions and instead foster dialogues of knowledge, enabling indigenous voices to shape the very narratives of development, conservation, and cultural survival.

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