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A Management Approach or Sustainable Practice: A Study of Jhum Cultivation and Community Survival Strategy

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Abstract

For survival, different species have evolved diverse strategies, yet humans, endowed with advanced cognitive abilities, devise particularly adaptive approaches. In the hilly regions of Northeast India, Jhum cultivation exemplifies such a strategy. Practised by Indigenous communities, it reflects not only an agricultural method but also a cultural adaptation, enabling human survival through ecological attunement and resourcefulness in challenging environments. The central inquiry of this study revolves around whether represents a sustainable agricultural approach or merely an outcome of socio-economic compulsion. Traditionally practised by several Indigenous communities in the hilly regions of , Jhum cultivation also known as shifting cultivation, has long been interpreted in dualistic terms: either as a harmonious mode of living with nature or as a manifestation of marginalisation and helplessness. This study critically examines Jhum as a management approach grounded in ecological adaptation, cultural continuity, and communal resource governance, while simultaneously recognising the structural vulnerabilities and environmental risks associated with it. Drawing upon field narratives, secondary ecological data, and policy documents, the paper interrogates whether Jhum continues to embody principles of sustainability, resilience, and agroecological knowledge, or whether it persists primarily due to the absence of viable economic and technological alternatives. By situating Jhum within broader debates on sustainable development, the study also analyses how state-led interventions, market pressures, and climatic uncertainties shape local decision-making and resource-use strategies. It argues that Jhum cultivation cannot be simplistically categorised as either sustainable or unsustainable; rather, it represents a dynamic socio-ecological practice that enables community survival under conditions of uncertainty. This inquiry ultimately seeks to reposition Jhum within contemporary sustainability discourses, while highlighting the tensions between traditional ecological knowledge and modern development imperatives.

Keywords: Jhum Cultivation, Sustainable Agriculture, Indigenous Knowledge, Community Resilience, Resource

1. Introduction

Human societies have always devised diverse strategies to navigate the complexities of survival, yet the strategies adopted are rarely mere reactions to environmental constraints; they are often deliberate, culturally embedded, and cognitively mediated responses shaped by generations of experiential knowledge. While most species adapt primarily through biological evolution, humans demonstrate an unparalleled capacity to innovate and institutionalise adaptive practices, especially within challenging ecological settings. In the hilly regions of , one such manifestation of adaptive ingenuity is —a form of shifting cultivation historically practised by numerous Indigenous communities. This traditional system embodies far more than a subsistence strategy; it reflects a profound intertwining of ecological attunement,

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cultural continuity, and community-based resource governance. Yet, contemporary debates are sharply divided: while some view Jhum as an ecologically rational and culturally resilient form of agriculture, others portray it as a vestige of poverty, driven by socio-economic compulsion and lacking long-term sustainability.

Understanding Jhum requires situating it within its historical and cultural contexts, for it cannot be meaningfully assessed as merely an agricultural technique. Historically, communities such as the , , and have practised rotational cultivation on hill slopes, clearing small patches of forest, growing mixed crops for one or two years, and then allowing the fields to lie fallow for prolonged periods to restore soil fertility (Rasul & Thapa, 2003). The practice is embedded within clan-based tenure systems and ritual calendars, where agricultural cycles are synchronised with religious festivals, customary norms, and communal labour obligations (Tucker, 2019). Through these socio-cultural institutions, Jhum reinforces social cohesion and perpetuates ecological knowledge across generations, exemplifying what Berkes (2018) describes as “social-ecological systems thinking.” This long historical continuity challenges the popular perception of Jhum as merely a primitive or transitory livelihood, instead underscoring its embedded rationality in sustaining human–nature relations in mountainous ecologies.

Ecologically, Jhum embodies principles of , in which diverse crop species are intercropped to optimise nutrient use, manage pests, and maintain biodiversity (Altieri & Nicholls, 2020). This polycultural design often results in higher agrobiodiversity and lower pest vulnerability than monocultural systems, thereby supporting critical ecosystem services such as soil nutrient cycling and pollinator health (Khumbongmayum et al., 2005). Furthermore, the fallow phase—far from being unproductive—plays a crucial regenerative role. Secondary forest regrowth during fallow enhances biomass accumulation, restores soil organic matter, and contributes to carbon sequestration, ultimately enabling the cyclical recovery of the landscape (Ramakrishnan & Toky, 1981). Such dynamics align with resilience theory, which emphasises the necessity of periodic disturbances to maintain system adaptability (Folke, 2006). However, the sustainability of Jhum is highly contingent on the length of the fallow cycle. Traditionally, cycles of 20–30 years allowed for full ecological regeneration, but increasing population pressure, land scarcity, and market penetration have drastically shortened fallow periods to as little as three to five years in some regions (Nongkynrih, 2014). These shortened cycles have diminished soil fertility, increased erosion, and contributed to the dominant portrayal of Jhum as ecologically destructive—although such critiques often fail to distinguish between historically sustainable forms of Jhum and their contemporary, truncated variants shaped by external pressures rather than inherent ecological flaws (van Vliet et al., 2012).

Beyond its ecological rationale, Jhum endures as a socio-economic survival strategy, particularly in remote upland areas where access to infrastructure, markets, or credit remains limited. It is a low-input, self-provisioning system that relies mainly on family labour and produces a nutritionally diverse food basket suited to local consumption patterns (Tawnenga et al., 1997). This feature positions Jhum as a risk-buffering livelihood in environments characterised by high uncertainty, reflecting the logic of that enhances resilience by spreading risk across multiple subsistence activities (Ellis, 2000). For many communities, Jhum is thus not only an economic activity but also a culturally legitimised safety net. However, socio-economic transformations are eroding its viability. Youth outmigration, declining per capita landholdings, and the proliferation of market-oriented cash crops are reshaping agrarian aspirations and undermining intergenerational continuity (Pachau & Schleiter, 2020). Concurrently, state-led development programmes frequently depict Jhum as backward and unproductive, promoting sedentary agriculture, horticulture, or wage labour as superior alternatives (Baruah, 2019). These modernist discourses rarely acknowledge the ecological functions and cultural embeddedness of Jhum, positioning its abandonment as synonymous with progress and thereby generating a normative pressure for communities to transition away from their traditional systems.

The tensions surrounding Jhum are further complicated by policy frameworks and environmental risks. Government interventions—including land tenure reforms, watershed development schemes, and incentives for plantation crops—have restructured the incentive landscape, often inadvertently undermining traditional governance systems that regulated resource use (Rasul, 2009). Conservation policies have also sought to restrict shifting cultivation, at times criminalising it and eroding community land rights, thereby weakening collective stewardship (Karlsson, 2011). Such top-down

interventions reflect what Scott (1998) characterises as “high modernist” rationality, which seeks to impose legible, uniform systems upon complex local practices. Ironically, by disempowering local institutions, these interventions often exacerbate ecological degradation rather than mitigating it. Simultaneously, climate change is intensifying the uncertainty within which Jhum systems operate. Increasing rainfall variability, shifting monsoon patterns, and extreme weather events disrupt traditional agricultural calendars and reduce the predictability essential for rotational systems (Sharma et al., 2021). While the diversity and low external input nature of Jhum offer certain adaptive advantages, the erosion of soil fertility and shortening of fallow periods reduce its resilience to climatic shocks, creating a paradox wherein Jhum embodies both resilience and vulnerability.

Within this context, the central inquiry of this study emerges: does Jhum cultivation represent a sustainable management approach grounded in ecological adaptation and cultural resilience, or is it primarily a residual strategy perpetuated by socio-economic compulsion? This question resists simplistic binary categorisations. Instead, it requires recognising Jhum as a dynamic socio-ecological practice shaped by the interplay of traditional ecological knowledge, community governance, structural marginalisation, and environmental uncertainty. By examining field narratives, secondary ecological data, and policy documents, this research seeks to unravel how Indigenous communities negotiate their livelihood strategies within the shifting terrain of state interventions, market pressures, and climatic risks. Such an approach challenges teleological assumptions that equate development with the abandonment of shifting cultivation and instead considers how Jhum might inform alternative models of sustainable agriculture rooted in local ecological rationality and cultural specificity.

This study thus contributes to three interconnected debates. First, it repositions Jhum as a repository of ecological knowledge, contesting its depiction as inherently destructive and highlighting its alignment with agroecological principles. Second, it foregrounds the socio-economic logic underpinning its persistence, revealing how Jhum operates as a culturally legitimate safety net in marginalised environments. Third, it interrogates the transformative pressures exerted by state policies, market integration, and climate change, illustrating how these forces generate tensions between traditional ecological knowledge and modern development imperatives. By situating Jhum at this intersection of ecology, culture, and policy, the study argues that it should not be framed within the binary of sustainable versus unsustainable. Rather, it should be understood as a complex and adaptive strategy for community survival, embodying both resilience and precarity in the face of contemporary uncertainties.

2. Method of the Study

This study adopted a qualitative research design to explore as a socio-ecological and cultural survival strategy among Indigenous communities in the hilly regions of Manipur. Recognising that Jhum is embedded within local knowledge systems, customary institutions, and community values, the research was guided by a constructivist epistemology, which emphasises the co-construction of meaning between researcher and participants (Lincoln & Guba, 1985). This orientation enabled the study to elicit nuanced perspectives and lived experiences often overlooked in positivist assessments of shifting cultivation, and to foreground the agency of Indigenous communities in negotiating their livelihoods and environmental stewardship (Smith, 2012).

Fieldwork was conducted in three purposively selected hill districts that represent ecological and cultural diversity within the Jhum landscape. These sites included communities practising both longer-cycle Jhum with extended fallows and more intensified systems characterised by shortened cycles. Selecting such variation enabled comparative understanding of how ecological dynamics, demographic pressures, and external interventions shape local decision-making. Gaining entry into the field sites involved preliminary consultations with village councils, customary authorities, and local civil society organisations, ensuring that the research process was culturally appropriate and community-endorsed. The respondents details have been kept anonymised due to ethical privacy concerns, only their responses have been provided in the study.

Participants were selected using purposive and snowball sampling to capture a range of perspectives across different stakeholder groups. These included practising Jhum cultivators (men and women), village elders, local agricultural officials, community leaders, and youth who had partially transitioned to alternative livelihoods. A total of forty-five participants were engaged across the three field sites. The inclusion of diverse demographic groups enabled the study to examine generational and gendered differences in knowledge, attitudes, and aspirations regarding Jhum (Creswell & Poth, 2018). Informed consent was sought from all participants, both verbally and in writing, and participation was entirely voluntary. The research followed ethical protocols for studies involving Indigenous communities, ensuring respect for cultural norms and collective decision-making processes (Chilisa, 2019).

Data collection employed a blend of ethnographic techniques and document analysis to generate a rich and multilayered understanding of Jhum as both an ecological practice and a cultural institution. Semi-structured interviews formed the primary data collection method, allowing participants to narrate their experiences, explain their agricultural choices, and reflect on themes such as crop diversity, soil management, customary governance, and perceived environmental changes. This format provided both structure and flexibility, enabling the researcher to probe deeper into emerging themes while allowing participants to articulate their perspectives in their own terms (Kvale & Brinkmann, 2015). Complementing these interviews, focus group discussions were held with groups of six to eight participants to explore collective perceptions, norms, and decision-making processes. These discussions also facilitated the validation of individual narratives through collective deliberation.

Participant observation was conducted during different stages of the Jhum cycle—including site selection, forest clearing, sowing, weeding, and harvesting. This enabled the researcher to document farming techniques, labour organisation, and cultural rituals embedded within agricultural practices. Detailed fieldnotes were maintained to capture observations, contextual details, informal conversations, and reflexive insights. Alongside primary data, secondary data were collected through a review of policy documents, government reports, and ecological studies related to shifting cultivation in . These included materials from the , state agriculture departments, and non-governmental organisations engaged in sustainable agriculture. Such documents provided critical insights into the policy discourses and institutional interventions shaping the trajectories of Jhum cultivation (Rasul, 2009).

All interviews and discussions were audio-recorded with consent, transcribed verbatim, and translated into English where necessary.

Ethical considerations were integral throughout the research. Given the study's engagement with Indigenous communities and traditional knowledge systems, it adhered to the principles of respect, reciprocity, and relational accountability (Wilson, 2008). Informed consent was sought through culturally appropriate processes, including prior collective discussions with village councils before conducting individual interviews. Anonymity and confidentiality were ensured through the use of pseudonyms and by removing identifying details from transcripts and fieldnotes. Participants were informed of their right to withdraw from the study at any stage without penalty. As a gesture of reciprocity, accessible summary reports of the research findings were shared with the participating communities. This not only honoured their contribution but also reinforced the ethical commitment to ensuring that the knowledge generated would benefit those who shared it.

3. Sustainable Practice and the Generation

The practice of Jhum, locally embedded and intergenerationally transmitted, constitutes a significant socio-ecological system within the upland regions of Northeast India. Understanding its sustainability requires an analysis of how successive generations interpret, maintain, and modify the practice in response to changing socio-economic and ecological conditions. This section presents a narrative analysis of intergenerational perspectives, drawing upon respondents' accounts and situating them within existing scholarly debates on Indigenous agro-ecological systems (Kumar & Nongkynrih, 2012; Berkes et al., 2000). The objective is to elucidate how perceptions of Jhum as a sustainable

practice are constructed, contested, and transformed across generations, thereby revealing its adaptive potential within broader sustainability discourses.

Elder respondents, comprising senior cultivators and traditional village functionaries, consistently conceptualised Jhum as an ecologically reciprocal and culturally mandated practice. Their narratives emphasised ritual continuity, cyclical regeneration of fallow plots, and customary restrictions on overexploitation. One elder stated,

“Jhum is not only for feeding the stomach; it is for keeping the land alive so that it feeds those who will come after us.”

This reflects the notion of a moral ecology wherein subsistence practices are embedded within ethical relations to the environment (Scott, 2008). Empirical studies of shifting cultivation systems in South and Southeast Asia support this perception, showing how Indigenous farmers maintain soil fertility and forest cover through regulated fallow cycles and polycultural cropping (Spencer, 2007; Mertz et al., 2009). The elder cohort thus embodies a conservationist epistemology in which sustainability is conceptualised as continuity of ecological processes rather than maximisation of yield.

Middle-generation respondents, many of whom had temporary experience with wage labour or formal education, articulated a more instrumental orientation. They valued Jhum as cultural heritage but questioned its economic adequacy under contemporary conditions. As one respondent observed,

“Our fathers see Jhum as destiny; we see it as one option among others. It feeds us, but it does not help our children study or find new opportunities.”

This reflects what Ellis (1999) describes as livelihood diversification logic, where traditional subsistence systems are re-evaluated based on opportunity costs. Respondents described adopting hybrid strategies such as integrating cash crops, reducing fallow lengths, and introducing agroforestry species—modifications that enhance market linkages while retaining rotational principles. Similar adaptive transformations have been documented in upland farming systems in Northeast India (Ramakrishnan, 2015) and Southeast Asia (van Vliet et al., 2012). These accounts indicate that sustainability for this cohort is framed less as cultural continuity and more as functional resilience to economic uncertainty.

The youngest cohort—school-going youth and early-career adults—expressed the strongest ambivalence. While acknowledging the cultural significance of Jhum, many associated it with economic stagnation and ecological degradation. One young respondent stated,

“Jhum teaches us resilience, but it also isolates us. We want ways to live with the land that are not trapped in the past.”

This reflects what Appadurai (2004) calls the “capacity to aspire”—the reorientation of practices through future-oriented imaginaries. Their narratives often incorporated globalised environmental discourses, such as concerns about carbon emissions, soil erosion, and biodiversity loss, reflecting the influence of formal education (Orr & Malone, 2004). Some youth, however, proposed innovative syntheses, suggesting the integration of Jhum techniques with organic certification or permaculture models to access niche markets. This indicates an emergent epistemic hybridity where traditional and modern paradigms intersect (Bhabha, 1998). Their framing of sustainability thus oscillates between critique of traditionalism and experimentation with novel agro-ecological configurations.

van Vliet et al. (2012) in their study on shifting cultivation communities reported that generational disagreements on fallow cycles reflected competing temporalities of land use. This supports the view that sustainability in traditional agricultural systems is co-produced through intergenerational negotiation rather than inherited as a static legacy.

The narratives also reveal how broader structural pressures mediate generational perspectives. Middle-generation respondents highlighted state-led interventions that promote sedentary agriculture or cash crop plantations as undermining the viability of Jhum. One participant noted,

“They call Jhum backward, but they do not see how it keeps our community together.”

This critique aligns with Scott’s (2005) argument that development policies often delegitimize indigenous ecological knowledge.

Conversely, some youth perceived such interventions as opportunities to access agricultural subsidies or entrepreneurship schemes, indicating differentiated engagements with policy frameworks. This divergence substantiates the argument of Folke et al. (2010) that sustainability pathways are inherently plural and contested, shaped by heterogeneous actor perspectives rather than by consensus.

Intergenerational differences were also evident in attitudes towards collective institutions. Elders emphasized customary norms of reciprocal labor exchanges (*lamnei*) and communal land allocation, which they regarded as essential for ecological regulation and social cohesion. Middle-generation respondents described the erosion of such practices due to monetization of labor and outmigration. As one noted,

“Earlier, we worked each other’s fields; now everyone must pay wages if they can.”

This reflects the weakening of collective action institutions, consistent with Ostrom’s (1990) finding that common-pool resource governance depends on strong social capital.

Youth perspectives were more individualized, often viewing land as a private asset. However, some suggested forming cooperatives or community-supported agriculture groups, indicating a potential reconstitution of collective ethos in modern organizational forms. This aligns with Berkes and Folke (1998), who note that hybrid knowledge systems can enable the re-articulation of traditional values within contemporary structures.

Affective dimensions also shaped generational perspectives. Elders expressed emotional attachment, describing Jhum as a source of peace and ancestral continuity. Middle-generation respondents exhibited ambivalence, expressing both pride in heritage and anxiety over income insecurity. Youths often expressed disinterest or frustration but also a latent desire to reconnect with the land under new conditions. These affective orientations are critical because they influence willingness to continue or transform the practice. Hall (2015) has argued that cultural survival depends not only on economic rationality but also on affective attachments that sustain collective action. Hence, the persistence of Jhum hinges on cultivating both emotional and material incentives across generations.

Overall, this analysis indicates that Jhum’s sustainability is a relational and negotiated outcome of intergenerational interactions, cultural values, and structural forces. The elder generation sustains ecological reciprocity, the middle generation innovates to maintain economic relevance, and the younger generation experiments with hybrid models informed by global environmental consciousness. This intergenerational dynamic exemplifies Folke et al. (2010) notion of social-ecological resilience, wherein systems persist by absorbing change while retaining core functions. Jhum endures not as a static relic but as a malleable socio-ecological practice reinterpreted through generational dialogue. Recognizing this generational dimension is crucial for sustainability policy, which often assumes linear transitions from “traditional” to “modern” agriculture. Instead, fostering sustainability in Jhum systems necessitates supporting the intergenerational negotiation of knowledge, values, and innovations within these communities.

4. Management or Natural Force to Adopt a Different Strategy

The persistence and transformation of among Indigenous communities in cannot be explained solely as a continuation of ancestral practice; rather, it emerges as a complex interplay between human agency in managing ecological uncertainty and the constraining influence of natural forces that necessitate adaptive strategies. This section presents a narrative analysis of respondents’ accounts, highlighting how communities oscillate between perceiving Jhum as a conscious management system and as a response compelled by environmental contingencies. This interpretation is situated within the broader theoretical discourse on adaptive resource management (Folke et al., 2010; van Vliet et al., 2012) and socio-ecological resilience (Holling, 1973), which emphasize the iterative feedback between human decision-making and environmental dynamics.

Elder respondents described Jhum as a deliberate management system that harmonises agricultural needs with ecological rhythms. They emphasised the conscious planning involved in selecting sites, timing burns, and sequencing crop species to align with forest regeneration cycles. One elder remarked,

"We do not fight the forest; we move with its breath. When it grows tired, we let it sleep and return only when it is strong again."

This illustrates an understanding of ecological succession as a governing principle in their agricultural system, similar to what Karlsson (2007) documented among shifting cultivators who rotate plots based on vegetational recovery indicators. Such accounts indicate that the community exercises active ecosystem stewardship, making calculated decisions about land use to sustain productivity while preventing degradation. This resonates with Ostrom's (1990) principles of common-pool resource management, which underscore local rule-making and collective monitoring as critical for sustainability.

However, the same narratives also revealed an undercurrent of fatalism, reflecting an acknowledgement of natural forces that constrain agency. Climatic variability, pest outbreaks, and unpredictable monsoon patterns were described as decisive factors compelling strategic shifts. As one elder noted,

"Some years, the rain cheats us, and the seeds do not wake. Then no planning helps; we must abandon the plot and try again elsewhere."

This perception aligns with Holling's (1973) notion of ecological uncertainty, wherein disturbances periodically exceed the buffering capacity of management regimes, forcing system reorganisation. The recognition of such uncontrollable forces suggests that Jhum is not only a managed practice but also a risk-distribution strategy that relies on mobility and diversification to mitigate environmental shocks—a pattern observed in other swidden systems globally (van Vliet et al., 2012).

Middle-generation respondents articulated this duality most explicitly, portraying Jhum as both a rationally managed practice and a fallback compelled by environmental and economic volatility. Many described modifying their strategies in response to declining soil fertility, shortened fallow periods, and market pressures. One respondent explained,

"We keep records of which plots recover fast, which crops survive droughts. But when floods come or the prices fall, all plans break. Then we do what we must to survive."

This pragmatic stance reflects adaptive management thinking, where strategies are continually revised through experiential learning and feedback (Folke et al., 2010). At the same time, it reveals the constraints of structural vulnerability: despite local knowledge, external shocks often override management intentions. Such tensions between agency and compulsion echo Scott (2005), who argued that Indigenous communities operate within "entangled constraints," balancing cultural rationalities with environmental and political pressures.

Younger respondents tended to view Jhum less as an intentional management system and more as a residual strategy compelled by the absence of viable alternatives. Their accounts often framed it as an inherited routine rather than a rational choice. One young man stated,

"We do Jhum because there is no factory, no company here. If other work comes, we will leave the fields."

This perception aligns with Scoones (1998), who observed that livelihood strategies in marginal environments are often shaped by structural constraints rather than by intrinsic preference. Yet some youth also acknowledged the strategic logic embedded in Jhum, especially its capacity to provide subsistence security when other income sources fail. One young woman observed,

"Even when the market closes or jobs stop, Jhum gives food. It is the last rope when everything else breaks."

This ambivalent framing shows that younger cohorts perceive Jhum as a safety net shaped by necessity, rather than as a proactive management system, indicating a shift in its symbolic meaning across generations.

Narrative analysis across these cohorts suggests that Jhum occupies a liminal position between management and compulsion. Elder narratives emphasise intentional ecosystem regulation, while youth narratives emphasise structural necessity, and middle-generation accounts straddle both logics. This gradient supports Folke (2006), who argue that traditional ecological knowledge systems often blend rule-based management with adaptive responses to environmental

stochasticity. The coexistence of agency and constraint challenges the dichotomy between rational planning and passive adaptation, showing instead that Jhum represents a form of “contingent management,” where planning is continuously recalibrated under uncertainty.

Additionally, respondents’ narratives highlighted how biophysical stressors are reshaping management choices. Several middle-generation cultivators reported shortening fallow cycles from the traditional 10–12 years to 4–5 years due to land scarcity and population pressure. They acknowledged this as ecologically risky but described it as unavoidable. One explained,

“The forest has no time to heal now, but if we wait, our children will go hungry.”

Such forced intensification has been linked to soil nutrient depletion and biodiversity loss in swidden systems (Walker et al., 2004). At the same time, some youth proposed introducing agroforestry and conservation farming methods to counteract degradation, suggesting an emerging shift towards formalised management approaches. This indicates that natural constraints are not merely passive determinants but also stimuli for innovation, consistent with Appadurai’s (2004) concept of resilience as adaptive renewal triggered by disturbance.

The narratives also revealed psychological and cultural dimensions influencing the perception of Jhum as management versus compulsion. Elders expressed a sense of custodianship, framing their work as intentional care for the landscape, while younger respondents often expressed resignation or disconnection. One elder described,

“We mark the stars, watch the insects, listen to the hills before we burn. This is not chance; it is our science.”

In contrast, a youth remarked,

“We do what they tell us to do, even if we do not believe in it.”

This erosion of perceived agency among younger cohorts may weaken the institutional continuity of management norms, as Gunderson & Holling (2002) notes that effective local resource governance depends on belief in collective efficacy. Thus, shifting affective orientations may mediate whether Jhum is enacted as intentional management or as reluctant compulsion.

Overall, the analysis demonstrates that Jhum cannot be categorised strictly as either a managed system or a natural compulsion. It represents an adaptive socio-ecological practice wherein human agency and environmental constraints are co-constitutive. While older generations emphasise intentional stewardship grounded in local ecological knowledge, younger generations increasingly perceive the practice as a contingent response to environmental uncertainty and economic marginality. This intergenerational divergence underscores that sustainability within Jhum systems is produced not solely through technical management but through the continuous negotiation of agency under constraint. Recognising this duality is essential for policy and development interventions, which often assume that shifting cultivation persists either because of ignorance (thus requiring modernisation) or because of deliberate ecological wisdom (thus requiring preservation). In reality, as these narratives reveal, Jhum endures through a dynamic interplay of planning and compulsion, management and necessity—a socio-ecological balancing act shaped simultaneously by human intention and the inexorable force of nature.

5. Conclusion

The Jhum cultivation, as practised in Northeast India, cannot be reductively classified either as a vestige of subsistence-based marginality or as a definitive model of sustainable agriculture. Instead, it emerges as a complex socio-ecological management system, rooted in traditional ecological knowledge, collective governance mechanisms, and adaptive responses to environmental uncertainties. Respondents’ narratives highlighted deliberate strategies to maintain ecological equilibrium—such as regulated fallow cycles, multispecies intercropping, and forest regeneration—yet simultaneously revealed structural vulnerabilities linked to market dependence, restrictive land-use policies, and climatic volatility. This duality underscores that Jhum’s persistence is neither purely voluntary nor entirely coerced; it is sustained through a dynamic negotiation between cultural continuity and external pressures. Conceptualising Jhum within broader

sustainability discourses reveals its dual function: it safeguards community resilience through place-based agroecological knowledge, while also exposing the precarity induced by socio-economic marginalisation. Hence, rather than romanticising or dismissing Jhum, it is imperative to engage with it as a living system of adaptive resilience. Such a perspective necessitates policy frameworks that transcend linear modernisation paradigms, enabling Indigenous communities to assert agency, innovate within their knowledge systems, and pursue sustainable livelihoods while maintaining ecological integrity and cultural continuity.

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