



CULTURAL LANDSCAPE OF OLD TEA FORESTS ON JINGMAI MOUNTAIN: A DUAL-HERITAGE APPROACH TO ETHNIC VILLAGE CONSERVATION AND SILK ROAD CIVILIZATIONAL CONNECTIVITY

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Abstract

The Cultural Landscape of Old Tea Forests of the Jingmai Mountain in Pu'er was inscribed on the UNESCO World Heritage List in 2023 as the world's first tea-themed cultural landscape, meeting criteria (iii) and (v). Forged over a millennium by Blang and Dai communities through traditional understorey cultivation, tripartite governance, and Tea Ancestor worship, this organically evolved landscape embodies a living heritage system where material and intangible elements are mutually constitutive. However, existing scholarship tends to fragment material heritage (ancient tea forests and settlements) from intangible heritage (traditional tea processing techniques and associated social practices), failing to adequately address UNESCO's core imperatives of living transmission, community participation, and sustainable utilization. Drawing upon UNESCO's official heritage description, ICOMOS evaluation reports, and systematic field investigations, this study adopts a **dual-heritage linkage** perspective to analyze the sustainability challenges facing Jingmai Mountain. It systematically examines the landscape's core constituents, the spatial logic and architectural semiotics of Blang and Dai villages, and its Outstanding Universal Value (OUV) as both a testament to cultural tradition and an exemplar of sustainable land-use. Furthermore, it situates Jingmai within the historical networks of the Southwest Silk Road and the Ancient Tea Horse Road, arguing that the landscape functioned not merely as a node of commodity exchange but as a corridor for cross-cultural transmission of agro-ecological knowledge and spiritual beliefs. Finally, it proposes a five-pillar sustainable development framework—ecological conservation, living transmission, community co-governance, industrial synergy, and smart monitoring—to advance the theoretical integration of tangible and intangible heritage safeguarding. The findings offer an empirical reference for the conservation of living cultural landscapes globally.

Keywords

Jingmai Mountain; Ancient Tea Forests; Blang and Dai Ethnic Groups; Dual-Heritage Linkage; Cultural Landscape; Southwest Silk Road; Tea Horse Road; UNESCO World Heritage

I. Introduction

1.1 Research Background

The 48th session of the World Heritage Committee was held in Busan, Republic of Korea, from 19 to 29 July 2026. To date, the World Heritage List comprises 1,273 properties, including 991 cultural, 240 natural, and 42 mixed properties across 173 States Parties. Amid this global heritage inventory, a significant typological gap remained: despite tea being one of the world's three major beverages, no tea-themed cultural landscape had yet achieved World Heritage status (Chen & Zhang, 2015). This gap was filled in September 2023, when the Cultural Landscape of Old Tea Forests of the Jingmai Mountain in Pu'er was inscribed, becoming the 57th World Heritage property in China and the first globally to recognize tea culture (Zhang & Chen, 2023).

Located in Huimin Town, Lancang Lahu Autonomous County, Pu'er City, Yunnan Province, the Jingmai Mountain property sits at the southwestern frontier of China (22°11'3"N, 100°0'27"E). The property covers a core zone of 7,167.89 hectares and a buffer zone of 11,927.85 hectares (ICOMOS, 2023).



Figure 1. Geographical Landscape of Old Tea Forests of the Jingmai Mountain
(Note: All photos in this paper were taken by the authors on-site during field investigations)

Its history traces back to the 10th century, when Blang and Dai ancestors settled in the area and developed a distinctive understorey tea cultivation system adapted to the subtropical monsoon climate and mountainous topography. Over a millennium, this evolved into an integrated cultural landscape system encompassing **five ancient tea forests, nine traditional villages, and three protective partition forests**, housing approximately 1,200 households and nearly 5,000 residents (Zhang & Chen, 2023).



Figure 2. Wengji Old Village

As Han et al. (cited in the nomination dossier) observed, Asian tea cultural landscapes hold unique potential in reflecting harmonious and sustainable human-land relationships, promoting traditional livelihoods, and transmitting cultural diversity. The successful inscription of Jingmai Mountain not only filled a categorical void in the World Heritage List but also established an important international window for showcasing traditional Chinese ecological wisdom and ethnic cultural diversity.

1.2 The Dual-Heritage Gap in Current Scholarship

Existing scholarship on Jingmai Mountain has evolved from initial value cognition to more recent explorations of resilience capacity, adaptive governance, and living heritage conservation (Chen & Qin, 2023). Chen and Zhang (2015) provided a foundational analysis of the site's Outstanding Universal Value from a geographical perspective, arguing that the landscape possesses unique attributes unmatched by other agricultural heritage sites globally. Subsequent studies have examined ecological wisdom (Gao et al., 2024), village governance (Qin et al., 2023), and the protection of ancient tea forests through local knowledge (Su et al., 2021).

However, a critical limitation persists: the majority of studies treat material heritage (the cultural landscape of ancient tea forests and traditional villages) and intangible heritage (traditional tea processing techniques and associated social practices) as discrete categories of analysis. This fragmentation contradicts the holistic spirit of the UNESCO 1972 Convention and the 2003 Convention for the Safeguarding of Intangible Cultural Heritage, which increasingly emphasize the interdependence of tangible and intangible expressions (Sun & Sun, 2026). As Sun, Sun, and Yang (2026) demonstrated in their spatial analysis of intangible cultural heritage along the Asian Silk Road, cultural routes function as living corridors where material landscapes and intangible practices co-evolve and mutually reinforce one another.

In the specific case of Jingmai Mountain, the 2022 inscription of "Traditional tea processing techniques and associated social practices in China" on the Representative List of the Intangible Cultural Heritage of Humanity, followed by the 2023 World Heritage inscription of the Jingmai cultural landscape, created an unprecedented opportunity for dual-heritage analysis (UNESCO, 2022, 2023). Yet systematic research integrating these two dimensions remains underdeveloped.



Figure 3. Heritage Site Protection Area

1.3 Research Objectives and Significance

This study addresses this lacuna by proposing a **dual-heritage linkage** framework that treats the material cultural landscape and intangible tea heritage as co-constitutive elements of a single living system. Specifically, this paper aims to:

- Systematically analyze the core constituents and characteristics of the Jingmai Mountain cultural landscape, with particular attention to the spatial logic, architectural culture, belief systems, and festival traditions of Blang and Dai villages;
- Elucidate the site's Outstanding Universal Value through the integrated lens of World Heritage criteria (iii) and (v), demonstrating how intangible practices substantiate the material landscape's significance;
- Examine Jingmai Mountain's nodal position within the Southwest Silk Road and Ancient Tea Horse Road networks, revealing its role in transregional civilizational exchange;
- Propose a sustainable development pathway that harmonizes conservation with community livelihoods through the dual-heritage approach.

The academic significance of this research lies in its contribution to the theoretical understanding of organically evolved cultural landscapes and the interaction between agricultural heritage and Silk Road civilizations. Practically, it provides scientific guidance for the living conservation of Jingmai Mountain and offers a transferable paradigm for heritage sites worldwide struggling to balance preservation with development (Sun, 2008; Zhang & Chen, 2023).

II. Theoretical Framework: Dual-Heritage Linkage

The concept of dual-heritage linkage posits that material and intangible heritage elements within a cultural landscape are not merely co-located but are structurally interdependent. In the Jingmai Mountain context, this manifests as a recursive relationship: the understorey tea forests provide the biological and spatial foundation for traditional processing techniques, while the techniques, rituals, and governance systems imbue the forests with cultural meaning and ensure their continued stewardship.



Figure 4. Old Tea Forests of the Jingmai Mountain

This framework draws upon three theoretical pillars. First, critical heritage studies challenge the Cartesian separation of tangible and intangible heritage, arguing that heritage value emerges from the dialectical interaction between people, places, and practices (Sun & Sun, 2026). Second, social-ecological systems theory informs our understanding of how Blang and Dai communities have maintained the resilience of this rural heritage through adaptive governance—what Chen and Qin (2023) term "resilience capability and sustainable evolution." Third, cultural route theory, as applied to the Silk Road by Sun, Sun, and Yang (2026), provides the spatial-temporal lens for understanding how Jingmai's tea culture diffused across Eurasia, generating what they identify as an "ICH corridor effect"—a phenomenon whereby intangible heritage elements cluster along historical exchange routes and undergo functional transformation through institutional recontextualization and semantic densification.

III. Core Constituents and Characteristics of the Cultural Landscape

3.1 Geographical and Historical Context

Jingmai Mountain is situated on the southern margin of the Hengduan Mountains, part of the Ailao Mountain range, with an average elevation of 1,400 meters. The region's subtropical monsoon climate, lateritic red soils (pH 4.5–5.5), and abundant rainfall create optimal conditions for tea cultivation (Chen & Zhang, 2015). According to the Blang Annals (Bulangzu Yanzhi), the domestication and cultivation of tea on Jingmai Mountain have a documented history of over 1,840 years. Legend holds that Pa Aileng, the Blang chieftain, led his people to settle on Jingmai Mountain and discovered tea's medicinal properties. Before his death, he instructed his descendants: "I could leave you cattle and horses, but they might perish in disasters; I could leave you gold and silver, but you might exhaust them. Instead, I leave you tea trees, so that your descendants may benefit forever."

This origin myth encapsulates the deep spiritual-economic nexus that defines the landscape. By the Song Dynasty, Jingmai tea had become a tribute product, and by the Ming and Qing dynasties, Pu'er tea had entered a

period of commercial prosperity, consolidating the region's tea culture and expanding its village settlements (Chen & Zhang, 2015; ICOMOS, 2023).



Figure 5. Dapingzhang Old Tea Forest Heritage Protection Area

3.2 Core Constituent Elements

The Jingmai Mountain cultural landscape is a complex organic system comprising four interconnected layers (Table 1):

Table 1. Core Constituents of the Jingmai Mountain Cultural Landscape

Element Category	Name	Quantity	Core Characteristics	Heritage Value
Ancient Tea Forests	Manggeng-Mengben, Nuogan, Jingmai Dazhai, Mangjing-Manghong, Wengji-Wengwa	5 clusters	2.8 million ancient tea trees across 2,800 mu; world's largest, oldest, and best-preserved artificial cultivated tea forests	Core material carrier; WH criteria (iii) & (v)
Traditional Villages	Dai (Jingmai Dazhai, Mengben, Manggeng, Nuogan); Blang (Mangjing Shangzhai, Mangjing Xiashai, Manghong, Wengji, Wengwa)	9 villages	530 traditional dwellings; 321 nationally protected heritage buildings; centripetal or contour-aligned layouts	Living culture core; spatial carriers of ethnic culture
Protective Partition Forests	Jingmai-Nuogang, Nuogang-Mangjing, Jingmai-Mangjing	3 forests	Ecological buffers; wind/pest barriers; maintain landscape segregation	Ecological barriers ensuring integrity
Tea Soul Altars / Ritual Sites	Aileng Mountain Tea Soul Altar, etc.	Multiple	Worship of "One Ancestor and Six Spirits"; Shan Kang Festival cattle sacrifice	Spiritual spaces; material anchors of Tea Ancestor worship
Stilt Dwellings	Blang and Dai stilt styles	530 buildings	Timber-bamboo structure; human-livestock stratification; ridge decorations (bull horns / one-bud-two-leaves)	Architectural heritage; materialization of ethnic totemism
Governance System	"Tribe-Government-Religion" tripartite system	1 system	Village regulations + customs + religious norms; "Elders' Organization" oversight	Institutional guarantee; living community co-governance

Source: Compiled from ICOMOS (2023), Zhang & Chen (2023), and authors' fieldwork.

- **Natural and Agricultural Elements.** The five ancient tea forests represent the core material carrier. Unlike the terraced monoculture plantations that dominate global tea production, Jingmai's understorey cultivation (*linxia zhongzhi*) preserves a three-dimensional community structure: an upper layer of tall trees (*Schima superba*, *Machilus* spp.), a middle layer of tea trees (*Camellia sinensis* var. *assamica*), and a lower layer of herbs, ferns, and medicinal plants (Gao et al., 2024). This agroforestry system requires no chemical fertilizers or pesticides; biodiversity itself regulates pests and maintains soil fertility. Research indicates that summer temperatures within the ancient tea forests are 3–6°C lower than surrounding areas, and winter temperatures are 1–6°C higher, demonstrating the system's climatic buffering capacity (Gao et al., 2024).



Figure 6. Dapingzhang Old Tea Forest

- **Settlement Elements.** The nine traditional villages are not merely residential areas but are integral components of the landscape's OUV. As Chen and Zhang (2015) emphasized, the spatial order of these settlements reflects a "tea-centric" cosmology where tea permeates every dimension of multi-ethnic community life.
- **Governance Elements.** The tripartite social governance arrangement—integrating tribal customs, governmental regulations, and religious norms—has been maintained by Indigenous communities for centuries (ICOMOS, 2023). This system operates across multiple spatial scales, from land-use patterns and cultivation methods to village management and residential architecture, embodying profound ecological wisdom (Gao et al., 2024).

IV. Ethnic Village Culture: Spatiality, Architecture, and Belief

The nine traditional villages constitute the "living" core of the Jingmai heritage. Their spatial organization, architectural semiotics, and ritual practices form an integrated cultural system that is essential to the landscape's OUV.



Figure 7. Blang Ethnic Local-style Houses

4.1 Village Siting and Spatial Layout: Centripetal Cosmologies

- **Dai Villages: The Concentric Sacred.** Dai villages typically occupy relatively flat terrain and are organized around the **village Center** (village heart), the spiritual center where the village guardian deity resides. Buildings and streets radiate inward from this point, ensuring all inhabitants receive the deity's protection. The spatial sequence extends outward as: village **Center** → buildings/streets → Buddhist temple → ancient tea forests (nature worship) → sacred mountain headwater forests (mountain deity worship).

Nuogan Old Village, the best-preserved Dai settlement on Jingmai Mountain, exemplifies this pattern. Its name derives from the Dai phrase meaning "golden deer drinking by the water." Traditional stilted houses feature bull-horn decorations and *Dendrobium* orchids on the roof ridge; when the orchids bloom, villagers know it is time to harvest spring tea (Authors' fieldwork, 2025).



Figure 8. Nuogan Old Village

- **Blang Villages: Contour-Aligned Organicism.** Blang villages, by contrast, are sited on gentle ridgelines or terraces, with buildings arranged along contour lines in a loose, visually open configuration. Each village contains one to three village Centers depending on population size. Wengji Old Village, acclaimed as the "Thousand-Year Blang Village," sits at 1,700 meters elevation. Its buildings align with the contour of Aileng Mountain, and all entrances face the village heart, while roof ridges parallel the mountain ridge—a spatial gesture of cosmic alignment with the Tea Ancestor's domain.



Figure 9. Blang Ethnic Group Residential Architecture

Residential Architecture

The Village Center serves as both the spiritual core and the spatial origin of a settlement. As the physical center and the dwelling place of deities, it acts as the soul and hallmark of traditional villages, functioning simultaneously as a spatial node, a public square, a sacred altar, and a spiritual home .



Figure 10. Village Center

In terms of distribution, Dai villages typically feature a single Village Center, while Blang villages may have one to three, depending on their size. Historically, the Village Center marked the starting point of settlement; early inhabitants built their homes around it, established village gates, and constructed Buddhist temples. This created a spatial hierarchy of "Village Center – Village Gate – Buddhist Temple" and a centripetal layout. Such a design not only facilitated defense and fostered collective psychological cohesion but also promoted the intensive and efficient use of land resources (Authors' fieldwork, 2025).



Figure 11. Wengji Buddhist Temple

4.2 Stilt Architecture: Climate Adaptation and Ethnic Semiotics

Dai and Blang dwellings represent the fourth generation of stilt (ganlan) architecture evolution, adapted to the humid subtropical climate and tea-processing needs. The typical structure comprises two levels: the ground floor for livestock, storage, and grain pounding; the upper floor for living and, crucially, tea withering and processing. This functional integration makes the house itself an instrument of heritage transmission.

The architectural differences between the two ethnic groups encode distinct totemic systems (Table 2):

Table 2. Comparative Cultural Characteristics of Blang and Dai Traditional Villages

Dimension	Blang	Dai
Village Siting	Gentle ridgelines or terraces	Relatively flat terrain
Spatial Layout	Loose, contour-aligned; entrances face village heart; ridges parallel Aileng Mountain	Compact, centripetal; concentric circles around single village heart
Roof Form	Single-eave pitched roof	Double-eave pitched roof
Ridge Decoration	"One bud, two leaves" tea totem	Bull-horn animal totem
Belief System	Tea Ancestor worship core; animism; limited Theravada influence	Theravada Buddhism core; integrated animism
Village Hearts	1–3 depending on scale	1 fixed spiritual center
Representative Villages	Wengji, Mangjing Shangzhai/Xiazhai, Manghong, Wengwa	Nuogan, Jingmai Dazhai, Mengben, Manggeng
Key Festivals	Shan Kang Tea Ancestor Festival (mid-April, triennial grand ceremony)	Door-Opening, Door-Closing, Water-Splashing festivals
Distinctive ICH	Blang sour tea fermentation technique	Dai sun-dried green tea processing

Source: Authors' fieldwork; ICOMOS (2023); Zhang & Chen (2023)

4.3 Belief Systems and Tea Ancestor Worship

The spiritual foundation of Jingmai Mountain rests upon a syncretic belief system combining animism, Theravada Buddhism, and Tea Ancestor worship. The Blang people revere Pa Aileng as the Tea Ancestor and have constructed the Tea Soul Altar on Aileng Mountain, where "One Ancestor and Six Spirits" are venerated. The Shan Kang Festival (Blang New Year, held in mid-April), features a buffalo sacrifice to honor Pa Aileng and invoke the tea soul. Notably, this festival transcends ethnic boundaries; neighboring Dai, Hani, and Wa communities also participate, reflecting a shared trans-ethnic tea cosmology (ICOMOS, 2023).



Figure 12. Temple and Villagers

The revival of these rituals owes much to local cultural brokers. Su Guowen, son of the Blang chieftain Surya, was charged by his father to "restore Blang traditional culture." After retiring in 2002, Su collected and organized Blang cultural materials and reinstated the interrupted Tea Ancestor ceremonies, ensuring the continuity of this intangible heritage (Zhang & Chen, 2023).

4.4 Everyday Life and Tea Culture as Living Practice

Approximately 90% of the labor force in the heritage area engages in tea cultivation and processing, with over 75% of household income derived from tea (Authors' fieldwork, 2025). For Blang and Dai communities, tea is not merely a commodity but a medium of social reproduction. The traditional processing sequence—picking, withering, pan-firing, rolling, sun-drying, piling, steaming, and pressing—varies subtly between ethnic groups. The Blang sour tea technique, involving blanching, rolling, sun-drying, and anaerobic fermentation in bamboo tubes or

earthen jars, constitutes a unique ethnic marker within the broader "Traditional tea processing techniques and associated social practices in China" ICH system (UNESCO, 2022).

Village regulations govern every aspect of tea forest management: seasonal harvesting restrictions, prohibitions on felling canopy trees, and bans on chemical inputs. These rules are enforced by the "Elders' Organization," demonstrating a robust community-based management system that predates modern conservation frameworks (Qin et al., 2023).

V. Outstanding Universal Value: A Dual-Heritage Interpretation

The successful World Heritage inscription of Jingmai Mountain rests on its satisfaction of criteria (iii) and (v), which must be understood through the dual-heritage lens.

5.1 Criterion (iii): Exceptional Testimony to a Living Cultural Tradition

Criterion (iii) recognizes properties that bear unique or exceptional testimony to a cultural tradition or civilization. ICOMOS (2023) confirmed that Jingmai Mountain satisfies this criterion because the continuous maintenance of understorey tea cultivation for over a millennium provides exceptional testimony to the history of tea culture. The Blang and Dai peoples have sustained these traditions through the tripartite governance system, which, grounded in Tea Ancestor belief, has protected natural resources and preserved ancient tea forest cultivation.

Dual-heritage reading: The material landscape of ancient tea forests would remain merely a botanical curiosity without the intangible practices that sustain it. The Shan Kang Festival, the sour tea fermentation technique, the oral histories transmitted by elders, and the village regulations governing harvest times—all constitute the "living" dimension that animates the material substrate. As Sun and Sun (2026) argue in their assessment of China's intangible cultural heritage research, the shift from "salvage documentation" to "living inheritance" requires recognizing that ICH exists only through its continuous enactment within specific material environments. Jingmai Mountain exemplifies this principle: the forests are the stage, and the cultural practices are the performance.

5.2 Criterion (v): Outstanding Example of Traditional Human Settlement and Land-Use

Criterion (v) recognizes outstanding examples of traditional human settlement or land-use representative of a culture, especially when vulnerable to irreversible change. ICOMOS (2023) determined that Jingmai's land-use system—combining horizontal patterns (forests—tea forests—villages) with vertical patterns (headwater forests—tea forests—villages—dry fields—paddy fields—rivers)—represents an outstanding example of human interaction with a challenging environment.



Figure 13. Jingmai Mountain Golden Pagoda

Dual-heritage reading: The spatial complementarity of these land uses creates microclimates and hydrological systems that support both tea cultivation and community well-being. However, this land-use system is not merely a technical achievement; it is codified in ritual and belief. The sacred mountain forests are protected as

ancestral domains; the protective partition forests are maintained as spiritual buffers between human and tea domains. Thus, the intangible belief system directly shapes the material land-use pattern, and the material landscape in turn reinforces the spiritual order—a recursive relationship central to the dual-heritage framework.

VI. Authenticity, Integrity, and Protection Management

6.1 Authenticity

ICOMOS (2023) confirmed that the authenticity of Jingmai Mountain is satisfactory, though it requires careful management of acceptable change limits. Authenticity rests upon five pillars: (1) the location, use, and function of the ancient tea forests; (2) the location, form, and design of traditional villages; (3) the form and design of traditional houses; (4) the structure and function of the land-use system; and (5) the continuity of tea-related cultural traditions.

The nomination dossier acknowledges that modernization and commercialization have impacted tea cultivation practices. However, elderly community members serve as living witnesses to the continuity of understorey cultivation, carrying traditional knowledge across generations (ICOMOS, 2023). Recent restoration of terraced plantations to "ecological tea plantations" using traditional methods has enhanced rather than diminished authenticity, provided that limits of acceptable change are established.



Figure 14. Viewing Platform

6.2 Integrity

The integrity of the property depends on preserving the social relationships and ecological interdependencies between climate, topography, and Blang/Dai cultural practices (ICOMOS, 2023). All key attributes expressing the OUV are included within the boundaries: the five tea forests, three protective partition forests, tea plantations, nine traditional villages, traditional knowledge and governance systems, and associated cultural-spiritual expressions.

However, ICOMOS (2023) explicitly warned that traditional villages are currently under pressure from urban development and could be negatively affected by increased tourism. The integrity of the cultural landscape is also vulnerable to climate change impacts. These threats necessitate rigorous monitoring thresholds and biodiversity indicators integrated with Blang and Dai traditional knowledge.

6.3 Protection and Management System

The legal protection framework is comprehensive, encompassing national laws on cultural relics, ecology, wildlife, and intangible cultural heritage. At the institutional level, the Administration for the Conservation of Old Tea Forests of the Jingmai Mountain (established 2018) coordinates seven levels of governance from national to village committees, operating in conjunction with the tripartite traditional governance system (Zhang & Chen, 2023).

Zhang and Chen (2023) documented the 13-year nomination process, identifying four developmental stages: preparation (2011–2013), development (2014–2018), renovation (2018–2021), and evaluation (2021–2023). Key management innovations include: (1) a "multiple plans integration" system combining heritage conservation,

village planning, and sustainable tourism; (2) the "100-Day Battle" environmental remediation campaign that removed incongruous modern structures; and (3) the establishment of "Concentric Mutual Aid" fire-prevention groups organized at the household level.

The Conservation Management Plan (2020–2040) establishes a daily carrying capacity of 3,350 visitors (1,050 for tea forests; 2,300 for villages), with tourism infrastructure deliberately located in Huimin Town outside the property boundaries (ICOMOS, 2023). This "protection on the mountain, development at the foot" model represents a spatially differentiated strategy for sustainable tourism.



Figure 15. Country Inn

VII. Connectivity with the Southwest Silk Road and Tea Horse Road

7.1 Geographical Nodal Position

Jingmai Mountain occupies a critical position within the Southwest Silk Road (also known as the Ancient Tea Horse Road network). As Chen and Zhang (2015) and Zou (2019) documented, the region sits at the intersection of the southern and southwestern Tea Horse Road routes, connecting Lancang, Menglian, and Ximeng in the immediate hinterland while linking to broader networks extending northwest to Tibet via Dali, southwest to Myanmar and Southeast Asia, and northeast to Sichuan. As early as 1139 CE, tea markets operated at Dapingzhang within the Jingmai tea forests, and by the Ming Dynasty, Jingmai tea had become tribute tea, distributed along these routes (Chen & Zhang, 2015).

7.2 Dual Transmission: Commodity and Culture

The Southwest Silk Road functioned not merely as a trade corridor but as a living corridor for intangible cultural heritage transmission (Sun, Sun, & Yang, 2026). Along these routes, Jingmai Mountain exported not only tea leaves but also agro-ecological knowledge, processing techniques, and spiritual beliefs. The understorey cultivation model, the Tea Ancestor cosmology, and the governance systems diffused outward, influencing tea cultures across Southeast Asia and the Himalayan region. Conversely, Theravada Buddhism traveled inward from Myanmar and Thailand, merging with indigenous animism to produce the syncretic belief system observed today.

Sun, Sun, and Yang (2026) identified a "functional sacralization" law along the Silk Road: as intangible heritage elements travel farther from their origin, their ritual functions become increasingly sacred through institutional recontextualization, audience stratification, and semantic densification. While the Jingmai case represents the origin pole of this spectrum—where tea practices remain embedded in everyday secular and festive contexts—the diffusion of Pu'er tea culture along trade routes toward Tibet and Central Asia illustrates the early stages of this transformative process.

7.3 Civilizational Significance

As the first tea-themed World Heritage property, Jingmai Mountain serves as a material anchor for China's tea civilization narrative. The nine traditional villages preserve not only stilt architecture and tea altars but also the Shan Kang Festival and sour tea techniques—tangible and intangible evidence of Silk Road cultural hybridity. Recent "Tea Dialogue" initiatives between Jingmai Mountain and Wuyi Mountain (another World Heritage tea site) demonstrate emerging models for trans-regional heritage collaboration that echo the ancient connectivity of the Tea Horse Road (Authors' fieldwork, 2025).



Figure 16. Traditional Vernacular Dwellings of the Blang People

VIII. Conservation Challenges and Sustainable Development Pathways

8.1 Primary Challenges

Drawing upon ICOMOS (2023) assessments and field observations, three interconnected challenges threaten the long-term sustainability of the Jingmai cultural landscape:

- First, modernization and urbanization pressures. Traditional villages face demographic growth and architectural modernization. New construction using modern materials and styles threatens the visual integrity of settlements. ICOMOS (2023) specifically noted that "traditional villages within the property are currently under pressure from urban development."
- Second, tourism commercialization risks. Visitor numbers reached 400,000 in 2024, generating tourism revenue of 338 million RMB—year-on-year increases of 33.5% and 184%, respectively. While economic benefits are substantial, unregulated tourism may lead to commodification, homogenization, and the erosion of ritual authenticity (Sun, 2008).
- Third, intergenerational transmission gaps. Youth engagement in traditional agricultural practices and cultural rituals is declining. As ICOMOS (2023) emphasized, "the involvement of youth in the sustainability of the nominated property is of primary concern." The aging of inheritors and low youth participation represent a systemic crisis for living heritage (Sun & Sun, 2026).

8.2 A Five-Pillar Sustainable Development Framework

To address these challenges, this study proposes an integrated framework grounded in the dual-heritage linkage approach (Figure 2):

- Pillar 1: Strengthen Regulatory Constraints. Strictly implement the Conservation Management Plan (2020–2040) and the Guidelines for Construction Activities (2022). Maintain village boundaries and enforce traditional architectural standards for all new construction. Establish clear limits of acceptable change with quantitative monitoring thresholds (ICOMOS, 2023).

- Pillar 2: Advance Living Transmission through Community-Based Inheritance. Establish a community-centered transmission mechanism prioritizing traditional tea processing inheritors, particularly for Blang sour tea and Dai sun-dried green tea techniques. Utilize festival events, skills training, oral history documentation, and digital archives to ensure intergenerational continuity. As Qin et al. (2023) argue, adaptive governance must integrate "academic education + master-apprentice" dual-track systems to bridge the gap between modern schooling and traditional transmission.
- Pillar 3: Develop Low-Impact Cultural Tourism and Ecological Tea Industry. Implement the "protection on the mountain, development at the foot" spatial strategy. Restrict development intensity within the heritage area while concentrating boutique tea industries, ecological study tours, and ICH experience centers in Huimin Town. Adopt reservation systems, visitor caps, and clean-energy transportation to minimize environmental footprints.
- Pillar 4: Enhance Monitoring and Disaster Prevention. Integrate biodiversity indicators into the monitoring system, drawing upon Blang and Dai traditional ecological knowledge (ICOMOS, 2023). Deploy digital technologies—satellite remote sensing, drones, and the "Jingmai Mountain Monitoring Cloud" platform—for real-time heritage surveillance. Prioritize climate vulnerability assessments and adaptation planning to address shifting monsoon patterns and extreme weather events.
- Pillar 5: Foster Trans-Regional Synergy. Strengthen linkages with other Southwest Silk Road and Tea Horse Road heritage sites to construct a collaborative conservation and cultural transmission network. Promote joint documentation, shared research, and coordinated tourism management across the corridor. Deepen the "dual-heritage" dialogue between Jingmai Mountain (World Heritage cultural landscape) and "Traditional tea processing techniques" (Representative List of ICH), creating a comprehensive protection chain from "technical process" to "human-land relationship" (UNESCO, 2022, 2023).

IX. Conclusion

The Cultural Landscape of Old Tea Forests of the Jingmai Mountain in Pu'er stands as a monumental achievement of human-environment co-evolution and the world's first testament to tea civilization on the World Heritage List. Forged over a millennium by Blang and Dai communities, its understorey cultivation system, tripartite governance structure, and Tea Ancestor cosmology constitute an integrated socio-ecological system of global significance.

This study has demonstrated that the site's Outstanding Universal Value cannot be fully comprehended through material heritage analysis alone. The nine traditional villages—with their centripetal layouts, stilt architecture, village hearts, tea soul altars, and ethnic totems—are not merely containers of culture but are active producers of heritage value. The Blang sour tea technique, the Shan Kang buffalo sacrifice, and the oral histories of Pa Aileng are as essential to the landscape's integrity as the 2.8 million ancient tea trees themselves.

Situated at the nexus of the Southwest Silk Road and the Ancient Tea Horse Road, Jingmai Mountain functioned historically as a node of both commodity exchange and civilizational dialogue. Its agroforestry knowledge, spiritual beliefs, and processing techniques traveled outward along these corridors, while external influences—particularly Theravada Buddhism—flowed inward, producing a dynamic cultural hybridity that endures today.

Looking forward, the conservation of Jingmai Mountain requires transcending the "static museum" mentality and embracing a dynamic, human-centered governance model (Zou, 2023). The five-pillar framework proposed herein—ecological conservation, living transmission, community co-governance, industrial synergy, and smart monitoring—offers a theoretically grounded and empirically validated pathway for achieving the sustainable co-evolution of material and intangible heritage. As the ICOMOS (2023) evaluation emphasized, establishing limits of acceptable change and ensuring youth participation are not merely technical requirements but existential imperatives for the continuity of this living heritage.

Ultimately, Jingmai Mountain offers more than a regional conservation success story; it provides an Eastern paradigm for global heritage governance—one that demonstrates how ancient ecological wisdom, ethnic cultural diversity, and spiritual cosmologies can converge to address the pressing sustainability challenges of the twenty-first century.

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