

Cultural Geography Perspectives on the Dayak Hampang Uplands-Meratus Mountains, Indonesia

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ARTICLE INFO

Article History:

Received: December 30, 2025

Revision: February 21, 2026

Accepted: February 22, 2026

Keywords:

Cultural Geography;

Dayak Hampang Uplands;

Meratus Mountains;

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ABSTRACT

This study examines the cultural geography of the Dayak Hampang community in the Meratus Mountains by integrating spatial, environmental, and political-economic perspectives. It employs a quasi-qualitative approach supported by survey methods and descriptive analysis to operationalize a cultural geography framework. Qualitative data on cultural values, indigenous knowledge, and settlement toponymy were collected through in-depth interviews. Settlement patterns were analyzed using Nearest Neighbour Analysis, GIS, field surveys, and documentation. The findings reveal that clustered toponymy and settlement patterns reflect a strong socio-spatial attachment to rivers, forests, and cultivated land, forming an integrated cultural landscape rooted in customary institutions. Shifting cultivation and ritual practices function as adaptive socio-ecological strategies that sustain livelihoods and conserve the mountainous environment despite pressures associated with protected forest designation. The study demonstrates that socio-ecological resilience increases when customary governance is formally recognized by reclassifying protected forests as customary forests (*hutan adat*). Conversely, restrictive state forest regimes that limit community Access, Assets, and Activities (3A) weaken adaptive capacity and heighten ecological vulnerability. Accordingly, the Sustainable Cultural Geography (SCG) model is expressed as: $SCG = f(\text{Ecological Resilience, Customary Forest Tenure, 3A Capacity})$, positioning cultural landscape sustainability as a function of these interrelated components.

INTRODUCTION

The Dayak Meratus Hampang ethnic group belongs to the Austronesian linguistic and cultural family and is also known as the Dayak Bukit (Yayuk, 2019; Hartatik, 2020; Mubarak, 2021; Haryani, 2022; Widen, 2023). This group inhabits the upland areas of the Meratus Mountains, located in the northwestern part of Kotabaru Regency, and is geographically close to Balangan Regency, Hulu Sungai Tengah Regency, and Hulu Sungai Selatan Regency in South Kalimantan Province, Indonesia.

Scholarly perspectives on the origins of Austronesian populations in Indonesia have produced three main hypotheses: that they originated in Taiwan (Formosa), Island Southeast Asia, or Melanesia (Yondri, 2019; Setiawan et al., 2019).

The theory considered most convincing regarding the ancestors of the inhabitants of Kalimantan's migration to the Meratus Mountains suggests that they were descendants of the Mongoloid race, namely, Protohistoric Austronesian (immigrant) populations originating from northern

Taiwan and mainland Indochina. These populations spread through the Taiwan–Philippines–Sulawesi–Kalimantan route and subsequently dispersed to other islands. These immigrants arrived on the island of

Kalimantan via mountainous routes in the north and by waterways or rivers from the south, particularly the Barito River, which flows into the Java Sea (Hartatik, 2020).

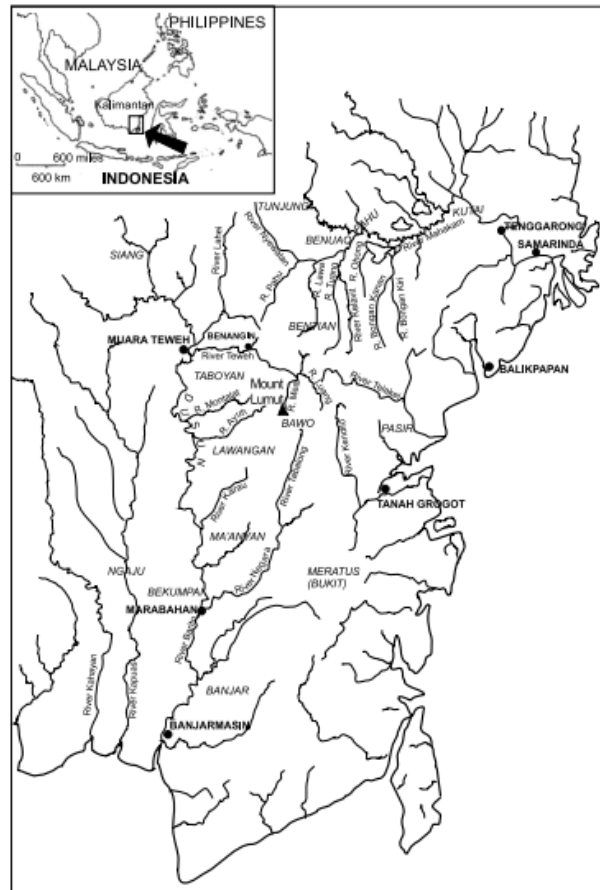


Figure 1. Southeast Borneo (Source: Sillander, 2004; Hartatik, 2017)

The Dayak Hampang community inhabits the uplands of the Meratus Mountains, consisting of three villages: Hulu Sampanahan Village (3 hamlets), Limbur Village (4 hamlets), and Muara Urie Village (8 hamlets). The total population of these three villages was 2,365 people in 2024 (BPS Kabupaten Kotabaru, 2024). The community’s primary livelihood system is predominantly shifting cultivation (Nopembereni et al., 2019), and the majority belief system is Kaharingan (Daito, 2023). A cultural geography framework provides a comprehensive conceptual basis for examining the Dayak Meratus Hampang. Cultural geography, as a branch of human geography (Aitken & Valentine, 2012), explores the interrelationships between

nature and culture through cultural landscapes, between culture and economy through land-use systems, and within broader political-economic contexts (Atkinson et al., 2005; Oakes & Price, 2008).

In geographical studies, these relationships are understood through spatial variations in human–environment interactions (Boas, 1887; Nasruddin, 2016; Shoorcheh, 2018), particularly as manifested in landscapes, land-use patterns, and human–land relations (Hartshorne, 1960; Brandt, 1999; Troll, 1971; Mitchell, 2002). Culturally, the Dayak Meratus Hampang inhabit the upland areas of the Meratus Mountains alongside several other Dayak Meratus subgroups in South Kalimantan Province (Yayuk, 2019; Mubarak, 2021).

Their livelihoods are characterized by shifting cultivation, while forests, natural landscapes, and rivers hold strong symbolic significance in their cultural system. Politically, their settlements are located within protected forest areas that are designated by the Government of the Republic of Indonesia as restricted for permanent habitation (L Ginoga et al., 2005; Utami & Nazir Salim, 2021). This issue will be reviewed using the concept of cultural geography.

Cultural geography conceptualizes space as a cultural product shaped through the interplay of human values, environmental practices, and political-economic relations (Mitchell, 2002). Among indigenous upland communities, settlement patterns, land-use systems, and toponymy function as cultural expressions that materialize long-standing human-environment interactions and encode local knowledge and symbolic meanings within the landscape (Brandt, 1999). In the Meratus uplands, the Dayak Meratus Hampang have developed distinctive cultural landscapes through shifting cultivation (Thrupp et al., 1997; Nopembereni et al., 2019; Tangney et al., 2022), forest-based livelihoods (Utami & Nazir Salim, 2021), and culturally meaningful place names that reflect their adaptive strategies and worldviews. However, these spatial practices are increasingly negotiated within broader political-economic contexts, particularly state forest governance and conservation regimes, which reshape access to land, reconfigure indigenous spatial organization, and influence the cultural meanings

attached to place. Within this framework, this study adopts a cultural geography perspective to examine how culture, environment, and political-economic forces intersect in shaping indigenous spatial practices in the Meratus Mountains.

This article provides a comprehensive analysis of the cultural geography of the Dayak Meratus Hampang Uplands in the Meratus Mountains, integrating spatial, environmental, and political-economic perspectives as the basis for the previously developed cultural geography theory (Brandt, 1999; Mitchell, 2002; Atkinson et al., 2005; Davies & Gilmartin, 2002; J. Bonnemaison et al., 2006; Oakes & Price, 2008) and developing a conceptual model of sustainable cultural geography as a novelty value that differs from other articles.

RESEARCH METHODS

This study employs a quasi-qualitative approach (Creswell & Creswell, 2018; Bungin, 2022) complemented by survey methods and descriptive analysis, and integrates ecological and spatial approaches (Yunus, 2010) to operationalize a cultural geography framework encompassing three analytical dimensions: cultural values and indigenous knowledge; natural and cultural landscapes (human-environment interaction); and political economy (Mitchell, 2002; Atkinson et al., 2005; Davies & Gilmartin, 2002; J. Bonnemaison et al., 2006). Qualitative data on cultural values, traditional knowledge, and toponymy were collected through in-depth interviews with 12 key informants selected using purposive sampling (Table 1).

Table 1. Research Informant

Name	Organization Positions	Structural Positions	Informations
Informant 1 (R1)	Central Executive Council of the Kaharingan Religious Council of Indonesia, Kotabaru Regency, South Kalimantan	Secretary of the Central Executive Council of the Kaharingan Religious Council of Indonesia, Kotabaru Regency, South Kalimantan	Kaharingan Belief
Informant 2 (R2)	Branch Consultative Council of the Kaharingan Religious Council of Indonesia,	Chairperson of the Branch Consultative Council of the Kaharingan Religious Council of	Kaharingan Belief

Name	Organization Positions	Structural Positions	Informations
	Kotabaru Regency, South Kalimantan	Indonesia, Kotabaru Regency, South Kalimantan	
Informant 3 (R3)	Head of Village	Head of Muara Urie Village	Hamlet Toponym
Informant 4 (R4)	Head of Village	Head of Limbur Village	Hamlet Toponym
Informant 5 (R5)	Head of Village	Head of Hulu Sampanahan Village	Hamlet Toponym
Informant 6 (R6)	Village Government Official	Secretary of Limbur Village	Hamlet Toponym
Informant 7 (R7)	Village Government Official	Head of the Village Government Affairs Section of Muara Urie	Hamlet Toponym
Informant 8 (R8)	Village Government Official	Head of the Village Government Affairs Section of Hulu Sampanahan	Hamlet Toponym
Informant 9 (R9)	Traditional (Customary) Leader	Customary Chief of Muara Urie Village	Hamlet Toponym
Informant 10 (R10)	Traditional (Customary) Leader	Customary Chief of Limbur Village	Hamlet Toponym
Informant 2 (R11)	Traditional (Customary) Leader	Customary Chief of Hulu Sampanahan Village	Hamlet Toponym

(Source: Research Data, 2023 and 2025)

The qualitative data processing stages follow the model proposed by Miles & Huberman (1994) data reduction, data display, and data verification. First, restating the data obtained, primarily through interviews, to maintain the authenticity of the field data. Second, a descriptive technique is used to show the trend in both interview and observation data. The third stage, interpretation, is used to extract both explicit and implicit meanings from the data. All data were analyzed contextually to examine relationships between aspects, namely belief and toponym.

Land use data were obtained through image interpretation of SPOT imagery (2019), Google Earth imagery (2023), as well as field surveys and documentation. Geomorphological conditions were derived from the Soil Resource Map at Reconnaissance Level of South Kalimantan Province at a scale of 1:250,000 (Balai Besar Penelitian dan Pengembangan Sumberdaya Lahan Pertanian, 2011). Settlement patterns, based on the land use map, were analyzed using Nearest Neighbor Analysis (NNA) within a Geographic Information System (GIS)-Figure 2.

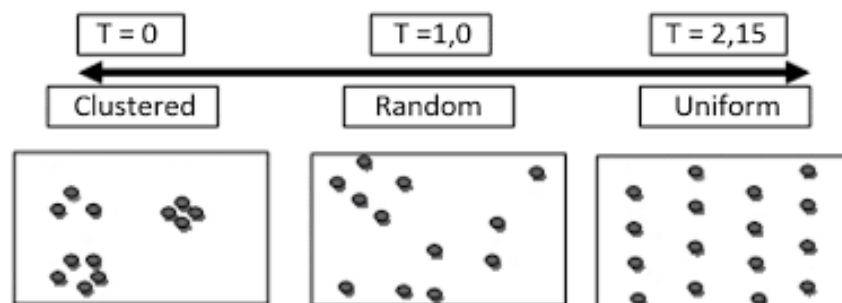


Figure 2. Index and Pattern of Nearest Neighbor Analysis (Source: R Bintarto & Hadisumarmo, 1982; Nasruddin, 2017; Herlina Lupi Listyaning Putri & Nasruddin, 2025)

The results of landscape (geomorphology), land-use, and settlement-pattern analyses were used to interpret the interaction between humans and their environment (Yunus, 2010) as a process shaping the cultural landscape of the Dayak Hampang Upland community in the Meratus Mountains. In addition, policy document analysis was conducted to examine the legal status of the Area, which is currently designated as protected forest based on the South Kalimantan Province

Forest Area Map at a scale of 1:250,000, as stipulated in the Annex to the Decree of the Minister of Environment and Forestry No. 1240/MENLHK/SETJEN/PLA.2/11/2023 dated 17 November 2023 (Prabowo BN, 2023) and Constitutional Court Decision No. 35/PUU-X/2012 concerning the rights of customary law communities over customary forests (Tobroni, 2016). The analytical dimensions and data sources are illustrated in Figure 3.

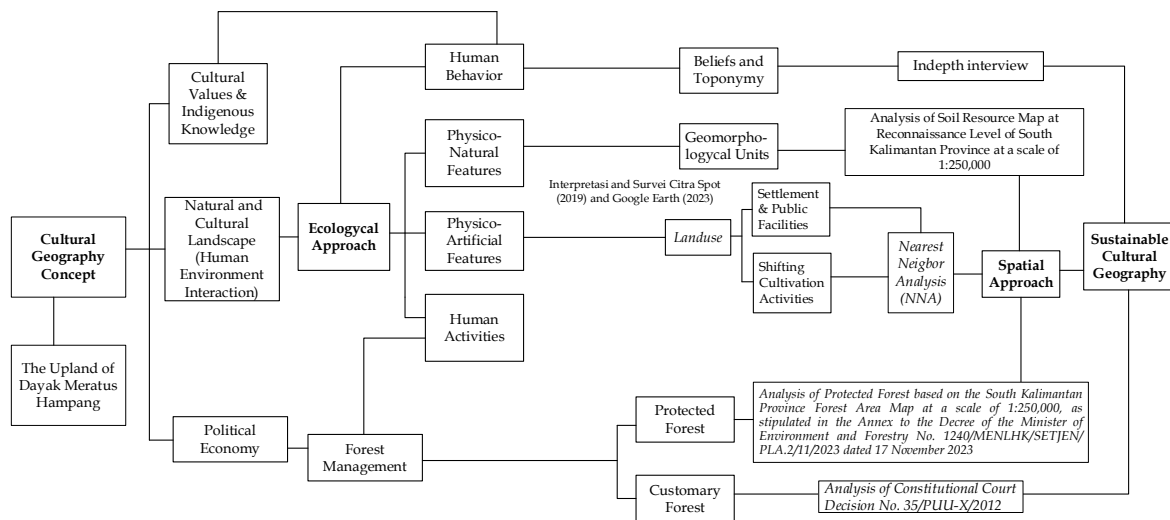


Figure 3. Research Framework (Source: Research Analysis, 2025)

RESULTS AND DISCUSSION

Cultural Values and Indigenous Knowledge in Belief and Settlement Toponymy

The majority of the Dayak Meratus Hampang Upland people adhere to Kaharingan (87%), Protestant Christianity (13%), and Islam (10%) (Source: Field Survey, 2023). Kaharingan is the ancestral belief of the Dayak people (Nareswari, 2008; Darmadi, 2017; Informant R1 and R2), which is still preserved today. Kaharingan comes from the word “haring”, which means “smell” or “fragrance”, originating from Dahupa. Dahupa is the sap of a tree that emits a fragrant smell. Dahupa is an important requirement in the aruh ritual, which is believed to have a fragrance that can penetrate the seven layers of the sky (informants R1 and R2, 2025).

“Kaharingan ini kaparcayaan nenek moyang Dayak nang kami jaga tarus sampai wahini. Kaharingan amun dari sagi bahasa itu “haring” atawa “babau” tatapi babau harum sampai tujuh lapis langit. Nang maulah harum tu “Dahupa” yang dipakai saat kami malaksanaakan aruh, jadi amun kadada dahupa kadada bamakna aruh tu” (Informants R1 and R2, 2025).

The aruh ceremony is held once a year after the rice harvest as an expression of gratitude to God, the Creator of Nature, for the blessings of the rice harvest and other crops (Informants R9, R10, and R11).

“Aruh tu dilaksanaakan satahun sakali imbah mangatam. Aruh ni bahagian ibadah dalam Kaparcayaan kami sabagai Syukur kita kapada Tuhan Sang Maha Pencipta atas razaki hasil bahuma” (Informants R9, R10 and R11, 2023).

The local knowledge of the Dayak Hampang Uplands Meratus Mountains community is evident in the region’s toponymy. Toponymy is the study of place names that reflect linguistic origins, symbolic meanings, and the socio-cultural histories embedded within geographical space (Erikha, 2021; Tichelaar, 2022; Hanafi & Priakusuma, 2023).

The toponymy of the Dayak Hampang settlements in the uplands of the Meratus Mountains, encompassing 12 hamlets across Hulu Sampanahan, Limbur, and Muara Urie

villages, is predominantly derived from river names, accounting for 6 hamlets. At the same time, the remainder reflects natural environmental conditions (such as valleys, terrain, and wind), the *aruh* ritual, and supernatural elements (Figure 3). (Informants R3-R10, 2023). These findings are consistent with previous studies (Yulianti, 2019; Hartatik, 2020), which emphasize that Dayak cultural symbolism is structured around three core elements: land, rivers, and forests.

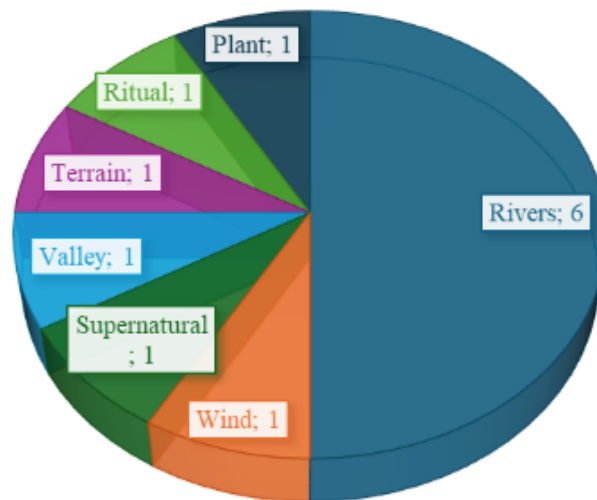


Figure 4. Number of Toponymy Types (Source: Research Results, 2023)

Rivers occupy a central role in Dayak society, functioning historically as primary transportation corridors before the development of land-based infrastructure, as sources of water and food, and as venues for customary rituals (Luardini et al., 2016; Sihombing et al., 2018). Several studies also suggest that the term “Dayak” is derived from the word *daya*, meaning “upstream” (Umberan et al., 1994; Lindblad & Verhagen, 2012; Hartatik, 2017), which, from a geographical perspective, corresponds to the upper reaches of a watershed (i.e., the

uplands).

This characteristic contrasts with that of the Banjar and Bakumpai ethnic groups, who are also widely recognized as river-oriented communities (Syam’ani et al., 2003; Hartatik, 2017; Yuliani, 2019), but are geographically concentrated in the middle and lower sections of river basins. Table 1 summarizes the origins of village and hamlet toponyms (*kampung*) and illustrates how environmental characteristics, cultural practices, and belief systems shape local place-naming traditions.

Table 2. The Origins of the Toponymy of Hamlet’s “Kampung”

No	Villages	Hamlets, Neighborhood Unit/RT, and Population	Toponymy Type	Toponymics Origins
1	Hulu Sampanahan	Hulu Sampanahan (RT 1)	Rivers	Hulu Sampanahan Hamlets derives its name from the word “nanah”, referring to the former appearance of the river water,

No	Villages	Hamlets, Neighborhood Unit/RT, and Population	Toponymy Type	Toponymics Origins
2	Limbur (452 people)	139 people		which was described as resembling pus or having a whitish-reddish color.
		Takau (RT 2) 111 people	Rivers	Topographically, the village is located in the upstream section of the Sampanahan River (Informants R5, R8, and R11, 2023). Takau Hamlets takes its name from the loud, resonant sound of flowing water, locally known as "ka-takau-an." The settlement is situated in the upper reaches of a river system that is directly connected to the Sampanahan River (Informants R8 and R11, 2023).
		Katui (RT 3) 31 people	Wind	Katui Hamlets derives from the sound made by strong winds, causing tree branches to rub against one another. In the local language, this phenomenon is known as "ka-takui-an," which later evolved into the village name Katui. Topographically, the village lies in the upstream Area and is directly connected to the Sampanahan River (Informants R8 and R11, 2023).
		Hawakai (RT 1) 62 people	Supernatural	The Hawakai River traverses Hawakai Hamlets. The village name is derived from a local myth recounting the presence of a supernatural being believed to inhabit a cave and disturb community life. According to oral tradition, residents collectively burned damar resin to expel the being, which reportedly cried out "akai-akai" in pain. This expression subsequently gave rise to the names Hawakai Village and Hawakai River (Informants R4, R6, and R10, 2023)
		Maisi (RT 2 & 3) 238 people	Rivers	Maisi Hamlets has a relatively high population density and comprises two neighborhood units (Rukun Tetangga), namely RT 2 and RT 3. The Maisi River traverses the Area. The village name originates from the local word "maisi," meaning "always filled," reflecting its continuous occupation as a residential area. Topographically, the village is located in a valley zone and is directly connected to the Sampanahan River (Informants R4, R6, and R10, 2023).
		Lokasi (RT 4) 122 people	Valley	Lokasi Hamlets literally means "place" and refers to the site of the first People's School established in Limbur Village.

No	Villages	Hamlets, Neighborhood Unit/RT, and Population	Toponymy Type	Toponymics Origins
3	Muara Urie (899 people)	Haraan (RT 5) 30 people	Terrain	Topographically, the settlement is situated in the valley zone of the Meratus Mountains (Informants R4, R6, and R10). Haraan Hamlet, located within Limbur Village, derives its name from the word "hara," which refers to perceptions of difficult or steep terrain, as well as a sense of fear experienced by local communities when traversing the Area. Topographically, the village is located in the upper zones of the Meratus Mountains (Informants R4, R6, and R10, 2023).
		Haulan (RT 1 & 6) 364 people	Customary Rituals (Aruh)	Haulan Hamlets is the most densely populated settlement in Muara Urie Village and consists of three neighborhood units (RT 1, RT 2, and RT 6). The term "Haulan" refers to a communal gathering place where customary rituals (aruh) are conducted. The village is located on the valley floor of the Meratus Mountains (Informants R3, R7, and R9, 2023).
		Juhu (RT 2) 96 people	Traditional Vegetables (Rattan shoots)	Juhu Hamlet derives its name from a traditional vegetable made from rattan shoots. The village is traversed by the Juhu River, which connects to the river system upstream in Hulu Sungai Tengah Regency, South Kalimantan Province (Informants R7 and R9, 2023).
		Batu Belah & Sulian (RT 3) 132 people	Rivers & Rocks	Batu Belah and Sulian Hamlets are named after river conditions characterized by abundant rocks that have weathered and fractured due to strong river currents. The Batu Belah River and Sulian River are part of the upstream river system of the Sampanahan Rivers (Informants R7 and R9, 2023).
		Manggun & Lamuin (RT 4) 175 people	Rivers	Manggun and Lamuin Villages are named after the Manggun and Lamuin Rivers, respectively, both of which are connected to the upstream Sampanahan River system (Informants R7 and R9, 2023).
		Manginding (RT 5) 152 people	Rivers	Manggun and Lamuin Villages are named after the Manginding River, respectively, both of which are connected to the upstream Sampanahan River system (Informants R7 and R9, 2023).

(Source: Indepth Interview, 2023)

The river toponyms listed in Table 2 are an integral part of the Sampanahan Watershed system, which spans 2,443.15 km. This watershed is hydrologically connected to river systems in Hulu Sungai Tengah Regency, notably the Maing River (327.92 km) and the Juhu River (131.07 km), as illustrated in Figure 4. From a geographical perspective (man-landscape relationship) (Troll, 1971; Wijayanti et al., 2025), these connections strongly suggest the existence of kinship networks between the Dayak Meratus Hampang communities and the Dayak Meratus communities in Hulu Sungai Tengah Regency. Rivers have historically functioned as the primary medium facilitating interregional connectivity and

mobility among Dayak communities (Hartatik, 2017; Daito, 2023).

Cultural Landscape and Sustainability

The landscape of the Dayak Hampang upland community in the Meratus Mountains is shaped by the complex geomorphology of the Meratus hills and mountains, which originated from long-term structural geological processes. Land use is overwhelmingly dominated by primary forest (98.83%), followed by water bodies (0.49%), shifting cultivation (0.46%), plantation crops (0.18%), and settlements and public facilities (0.04%). Further details are presented in Table 3 and Figures 5, 6, and 7.

Table 3. The Uplands Landscape of the Dayak Meratus Hampang

Geomorphological Units	Landuse	Villages (the Area ha)		
		Hulu Sampanahan	Limbur	Muara Urie
Hills (2.770,72 ha)	Forest Primary	2,770.72	0	0
	Water Body	50.03	69.61	169.79
Mountains Complex (56.699,52 ha)	Forest Primary	11,953.47	24,442.36	19,609.77
	Mixed Agriculture	0	0	4.29
	Shifting Cultivating	11.24	83.50	178.98
	Cinnamon Plant	12.99	0.47	0.94
	Chocolate Plant	0	0.47	0
	Coconut Plant	0	0.05	4.67
	Candlenut Plant	0	0.91	0.88
	Rubber Plant	0	0	13.97
	Banana Plant	0	0	0.67
	Palm Oil Plant	0	23.69	38.97
	Clove Plant	0	0	0.93
	Settlement	1.51	3.13	20.08
	Health Facilities	0.01	0.07	0.13
	Sport Facility	0.004	0	0.11`
	School	0.02	0.15	0.56
	Traditional Hall "Balai Adat"	0.01	0.10	0.14
	Village Government Office	0.01	0.06	0.14
Worship Facilities	0	0.07	0.25	
Irrigation	0	0	0.28	
Power Plant	0	0	0.04	
Total		14,800.00	24,624.64	20,045.60

(Source: Research Results, 2023)

Table 3 indicates that the community remains highly dependent on the natural environment and has limited access to basic facilities, including village government offices, community health posts, and elementary schools. Villages with particularly low accessibility to these services include Katui Hamlet (16.71 km) in Hulu Sampanahan Village; Hawakai Hamlet (11.60 km) in Limbur Village; and several hamlets in Muara Urie Village, namely Juhu (25.78 km), Batu Belah and Sulian (13.36 km), Manggun and Lamuin (19.41 km), and Manginding (20.25 km) (Table 4).

Limited access to basic facilities has notable impacts. The average literacy rate is

86.04%, indicating that 13.96% of the population is illiterate. Approximately 16.65% of the community is affected by common health issues such as cough, flu, fever, GERD, and malaria, with the dominant treatment patterns being traditional balian medicine (49%), medical treatment (11%), and mixed or alternative approaches (40%). Restricted access to government offices further reduces public service delivery. In some cases, government services are delivered through direct, face-to-face communication because there is no telecommunications infrastructure.

Table 4. Average Distance from Hamlets to Basic Facilities

No	Villages	Hamlets	Basic Facilities (km)			Averages (km)
			Government Office	Community Health Post	Elementary School	
1	Hulu Sampanahan	Hulu Sampanahan*)	1.70	1.72	1.72	1.71
		Takau	5.90	6.94	6.09	6.31
		Katui	16.70	16.71	16.71	16.71
		Hawakai	11.60	11.62	11.57	11.60
2	Limbur	Maisi*)	0.70	0.71	0.70	0.70
		Lokasi	3.80	3.71	3.81	3.77
		Haraan	3.10	3.07	3.11	3.09
		Haulan*)	0.70	0.66	0.65	0.67
		Juhu	25.80	25.74	25.80	25.78
3	Muara Urie	Batu Belah and Sulian	13.40	13.31	13.38	13.36
		Manggun and Lamuin	19.80	18.62	19.81	19.41
		Manginding	18.80	23.14	18.82	20.25

(Source: Research Results, 2023)

*) central government villages

The vulnerability of the Dayak Hampang Upland community is structural and rooted in national spatial planning policies that designate their territory as a protected forest area. This status limits the development of basic social infrastructure, particularly education, health, and accessibility, resulting in administrative and spatial marginalisation. Thus, vulnerability is not primarily triggered by ecological factors, but rather by regulatory constructs that limit living space and access to public services. These findings differ from several international studies that place disasters and

gender inequality as the main determinants of vulnerability. De Freitas Sampaio (2025) shows that flooding in Brazil exacerbates the risk of sexual violence against women, while Manatsa et al. (2025) asserting that climate change in Zimbabwe deepens gender inequality and women’s domestic workload. Johansen & Tjørnhøj-Thomsen (2024) link gender vulnerability in Denmark to heterosexuality norms that mediate online and offline sexual violence. Bari et al. (2024) show that coastal households in Bangladesh, especially those headed by women,

experience multidimensional vulnerability from an intersectionality perspective.

Meanwhile, [Shahzad et al. \(2025\)](#) emphasise weak digital infrastructure and early warning systems as factors contributing to vulnerability to flooding in Pakistan. Compared with other studies, these studies show that vulnerability is generally produced by the interaction between environmental factors and social inequalities, particularly gender. However,

in the context of the Dayak Hampang Uplands, vulnerability is more predominantly shaped by state policy structures that limit access to space and development. Thus, this case confirms that vulnerability does not always stem from disasters or climate change, but can also arise from regulatory regimes that construct spatial and administrative exclusion against indigenous peoples.

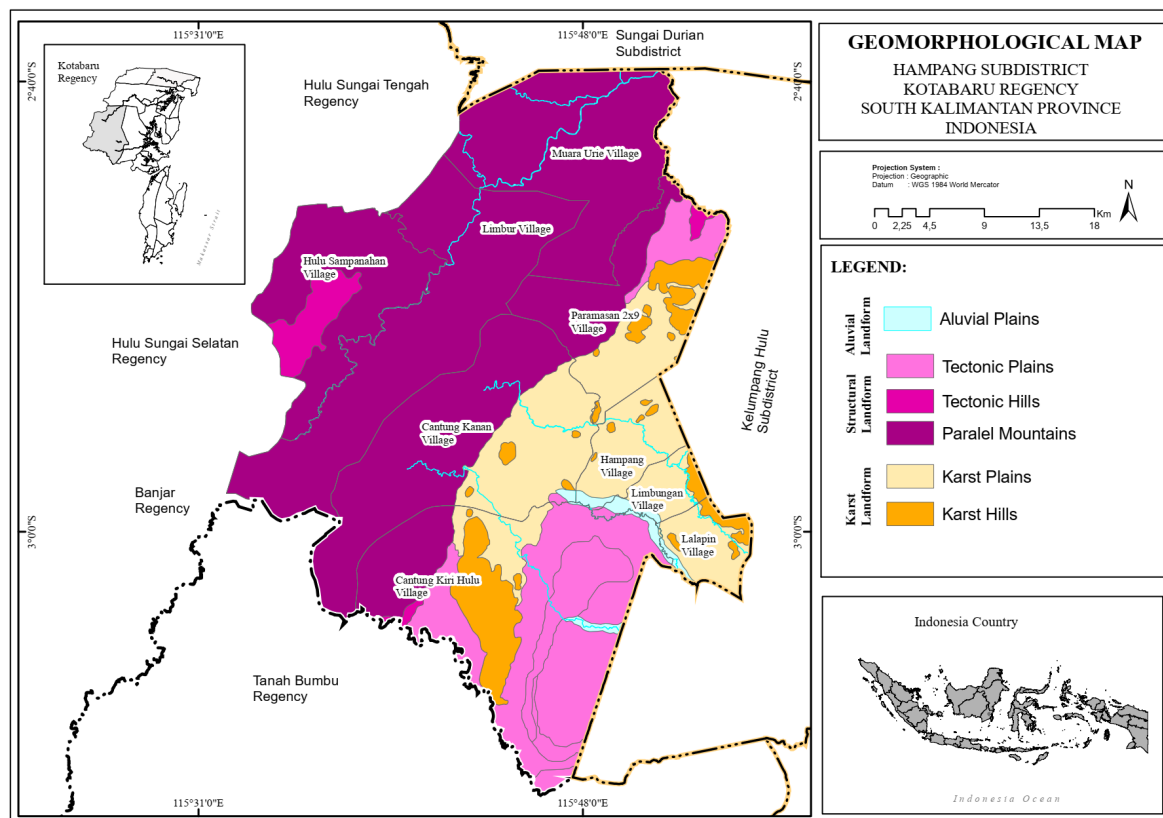


Figure 5. Geomorphological Map of Hampang Subdistrict (Source: [Analysis of the Soil Resource Map at Reconnaissance Level of South Kalimantan Province, 2011](#))

The physical conditions of the Dayak Meratus Hampang uplands, as shown in Figure 4, consist of hilly terrain and a mountainous complex interconnected by the Sampanahan Watershed system. The Sampanahan River, with a total length of approximately 2,443.15 km, originates from Desa Hulu Sampanahan, Desa Limbur, and Desa Muara Urie and functions as a primary transportation corridor linking upland areas to the southeastern part of Kotabaru Regency, particularly in Sungai Durian District and Sampanahan District.

Culturally, the Sampanahan Watershed is of profound significance in shaping the spatial distribution of the Dayak Meratus communities in Hampang and Sungai Durian Districts, as part of the upper watershed system. This spatial arrangement gradually shifts downstream, where settlement patterns change in the lower reaches of the watershed, particularly in the Sampanahan District, which the Banjar ethnic group predominantly inhabits.

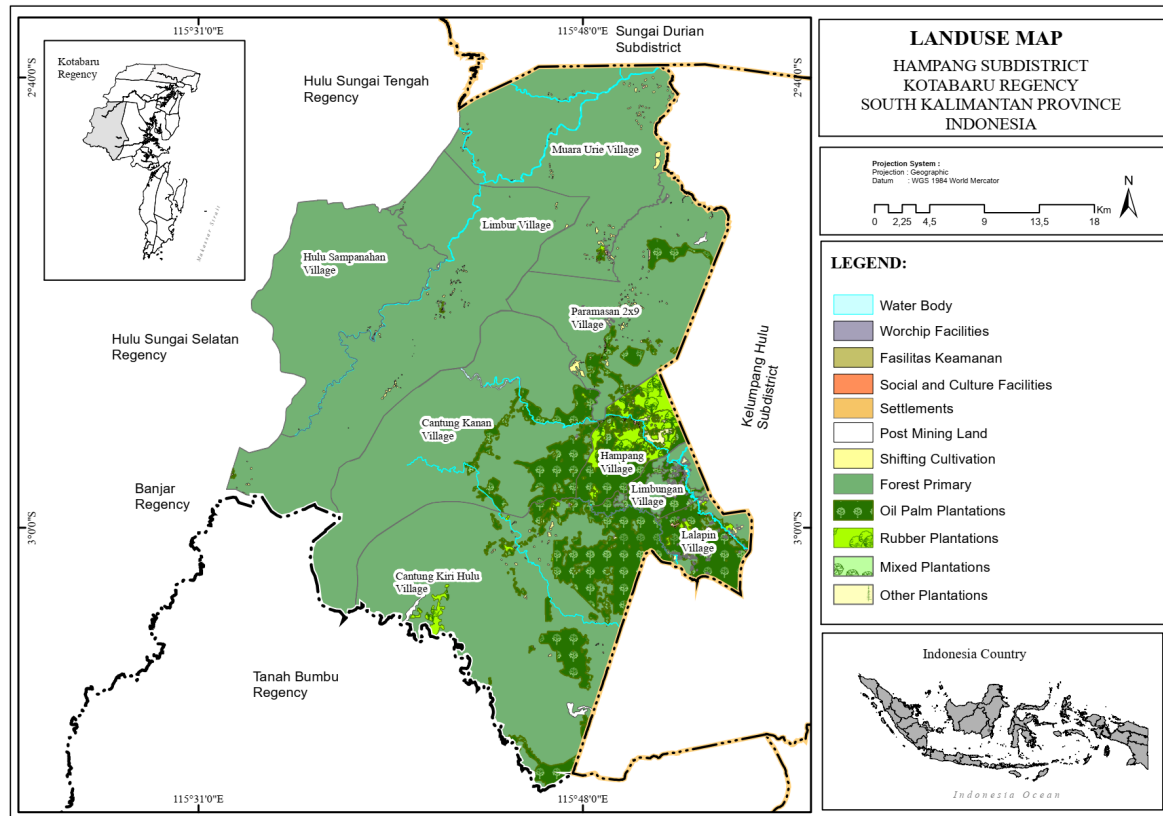


Figure 6. Land Use Map of Hampang Subdistrict (Source: Image interpretation of SPOT imagery (2019), Google Earth imagery (2023), and Field Survey (2023))



Figure 7. Cultural Landscape Formations (Source: Field Survey, 2023)

For the Dayak Hampan g communities in the uplands of the Meratus Mountains, the forest constitutes the lifeline of their existence. Despite severely limited infrastructure accessible only by modified

two-wheeled vehicles adapted to the rugged terrain, their commitment to conserving the forests of the Meratus Mountain region has been sustained across generations, continuing the stewardship inherited from

their ancestors. Shifting cultivation is a defining livelihood practice commonly associated with Dayak communities, including the Dayak Hampang of the Meratus Mountains. The spatial pattern of

shifting cultivation activities is characterized by a dispersed arrangement, with cultivation plots scattered across the landscape rather than concentrated in a single location (Figure 8).

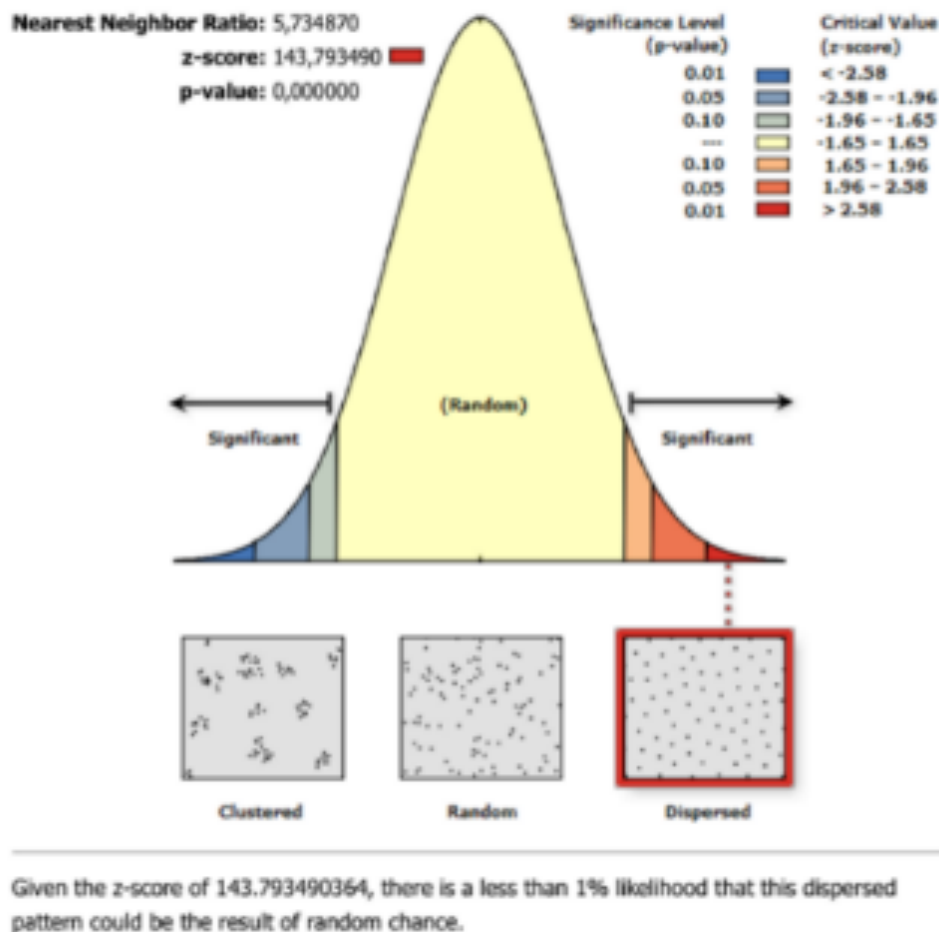


Figure 8. Nearest Neighbor analyses of Shifting Cultivating Activities
 (Source: GIS-Nearest Neighbour Analysis, 2025)

Shifting cultivation activities are carried out annually between August and October, encompassing land clearing, controlled burning using firebreak methods, planting through the traditional *manugal* technique, and harvesting, which concludes with the ritual known as *aruh* (Gumelar, 2024; Kwirinus & Saeng, 2023; Widen, 2023).

The *aruh* ritual, conducted after each harvest, lasts between one and three days and represents the culmination of the shifting cultivation cycle. It is led by the customary leader (*ketua adat*) at the customary hall (*balai adat*) and serves as an expression of gratitude to God Almighty for

the rice harvest. Within the Kaharingan belief system, harvested rice is not permitted to be traded, as doing so is believed to bring adverse consequences (*bala*), including poor yields in subsequent harvests or other misfortunes (Riwut, 2003; Daito, 2023).

From a settlement perspective, the exhibit a clustered settlement pattern, characterized by strong kinship ties concentrated within hamlets (Figure 8). This clustered settlement pattern enables intensive social interaction and supports marital relationships that prioritize kinship ties within extended family groups.

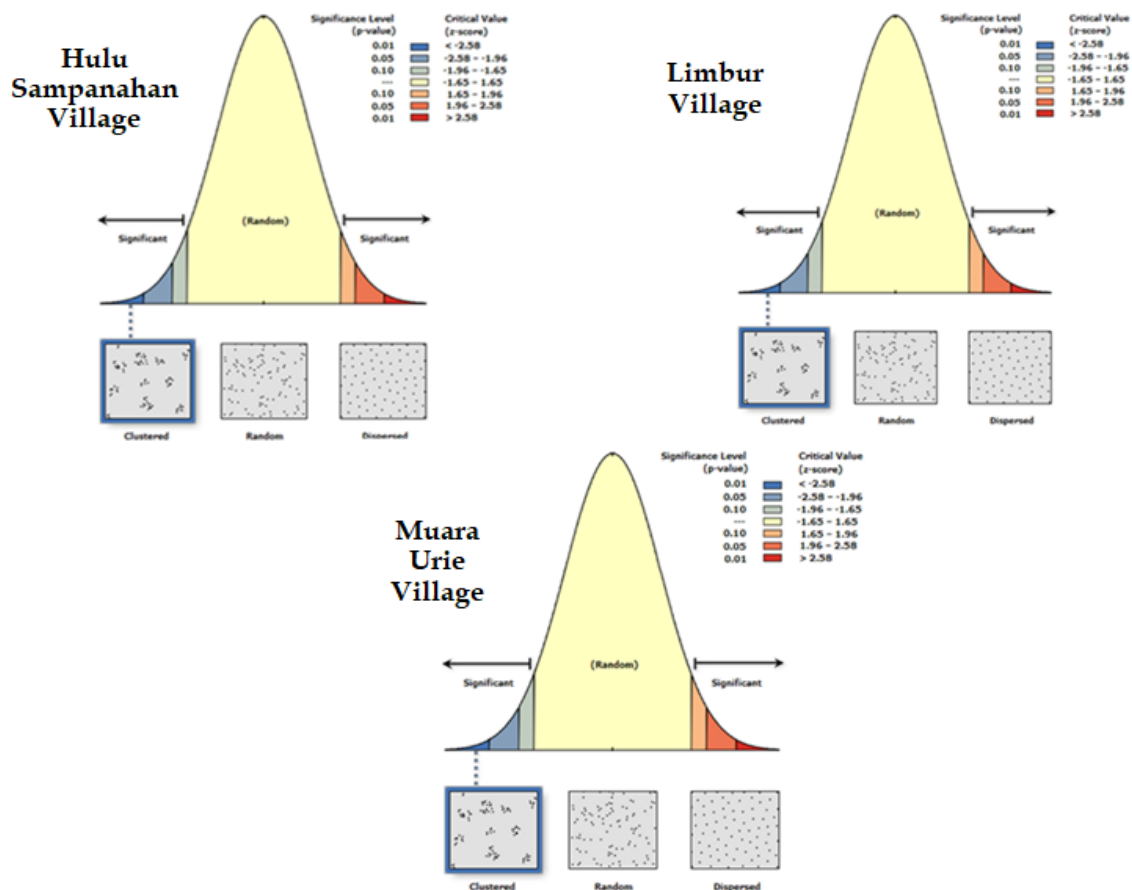


Figure 9. The Nearest Neighbor analysis of Settlement
(Source: GIS-Nearest Neighbor Analysis, 2025)

In terms of health practices, the community continues to maintain the traditional healing system known as *balian*, a form of ritual medicine that involves the use of drums played in specific rhythmic patterns. The *balian* (Riwut, 2003; Widen, 2023; Wilson, 2025), as a designated ritual healer, chants incantations while dancing to invoke ancestral spirits in seeking recovery for the patient. Although modern medical treatments have become known to part of the community, traditional healing practices remain culturally significant.

The Meratus Mountains constitute the ancestral homeland of the Dayak people, including the Dayak Meratus Hampang, and have been designated by the government as a protected forest area. This designation restricts infrastructure development, including road construction and electricity provision, and limits agricultural activities to agroforestry systems. From an ecological perspective, shifting cultivation practices

that have been carried out for generations have not been theoretically or empirically demonstrated to cause large-scale ecological degradation (Manner, 1969; Nopembereni et al., 2019; Thrupp et al., 1997). Moreover, this situation raises concerns about the realization of the principle of social justice articulated in Pancasila's fifth principle.

Comparatively, patterns of marginalisation of indigenous peoples in Southeast Asia, Africa, and Australia show different characteristics, although they are all rooted in state power relations and colonial history. In Southeast Asia, groups such as the Dayak Meratus, Suku Anak Dalam, Penan, Aeta, Mangyan, Akha, Lahu, Karen, Kachin, Shan, and Chin have experienced marginalisation primarily through state territorial expansion and corporate penetration in the forestry, mining, and plantation sectors. The state plays an active role in the process of territorialisation, which transforms

customary lands into state forest areas or economic concessions, thereby depriving indigenous peoples of their traditional management rights and forcing them to integrate into the formal administrative system (Inman, 2016; Aian G. Villanueva, & P Ruanto, 2016; Huang & Ge, 2024; Mangkunegara et al., 2025). Thus, marginalisation in this region is structural and economic in nature and closely related to the extractive development regime.

In contrast, among Pygmy communities in Africa, such as the Mbuti, Aka, Baka, and Twa, marginalisation is more prominent in the form of restrictions on mobility and the delegitimisation of traditional hunter-gatherer spatial systems. Post-colonial state boundaries and modern conservation policies limit their access to forests, which form the basis of their cosmology and subsistence. Here, marginalisation is not only economic exploitation but also the denial of nomadic lifestyles and customary territorial systems (Moïse, 2011 Verdu & Destro-Bisol, 2012). The state acts as an actor that reconstructs space through conservation and administrative boundaries that ignore traditional ecological systems (Ungar, 2021).

Meanwhile, in Australia, Aboriginal communities face more complex and layered forms of marginalisation. Despite legal recognitions such as native title, structural inequalities in health, education, and social welfare persist. Colonial trauma, assimilation policies, and historical racial discrimination practices have shaped a persistent legacy of social exclusion (Moore, 2014; Kairuz et al., 2021; Darne & Kurniawati, 2024). Thus, unlike Southeast Asia, which is dominated by extractive economic expansion, and Africa, which is characterised by restrictions on spatial mobility, the case of Australia shows how formal recognition does not necessarily eliminate institutionalised structural inequalities.

Overall, these three regions confirm that the marginalisation of indigenous peoples is not merely a consequence of geographical isolation, but rather the result of the political construction of space by

modern states. However, the forms and mechanisms differ: Southeast Asia is driven by the expansion of extractive development, Africa by restrictions on mobility and territorial conservation, and Australia by a colonial legacy that has transformed into contemporary structural inequalities.

Based on these findings, several policy implications are proposed to ensure the sustainability within the cultural landscape system of the Meratus Mountains:

- (1) reclassifying protected forest areas into customary forests (Farina et al., 2024; Rif'an, 2020; Baiduri et al., 2025) in accordance with the Dayak Meratus worldview, treating forests, land, and water as means of maintaining ecological balance and ecosystem integrity in the Meratus Mountains. Currently, the forest status in the Dayak Hampang Upland area (Muara Urie, Limbur, and Hulu Sampanahan Villages) remains designated as protected forest based on the South Kalimantan Province Forest Area Map at a scale of 1:250,000, as stipulated in the Annex to the Decree of the Minister of Environment and Forestry No. 1240/MENLHK/SETJEN/PLA.2/11/2023 dated 17 November 2023 (Prabowo BN, 2023), although there is a Decision of the Constitutional Court of the Republic of Indonesia No. 35/PUU-X/2012 stating that customary forests are no longer state forests, but forests located within the territory of customary law communities;
- (2) developing equitable and environmentally sensitive education, healthcare, and basic public facilities for indigenous communities (Sujarwani et al., 2018; Zulfida et al., 2023; Nurliatin et al., 2024) in the Meratus Mountains, which currently remain significantly underserved; and
- (3) recognizing local communities (Nulhaqim et al., 2021) in the Meratus Mountains as the primary guardians of the ecosystem and the final barrier against political-economic practices driven by power interests, such as mining concessions, which pose long-

term and irreversible threats to ecological systems.

The principal novelty of this article lies in the formulation of an original conceptual model within cultural geography that explicitly integrates socio-ecological Resilience and political ecology to explain the sustainability of the Dayak Hampang Uplands cultural landscape in the Meratus Mountains, unlike conventional cultural landscape studies that remain descriptive (Brandt, 1999; Mitchell, 2002; Atkinson et al., 2005; Davies & Gilmartin, 2002; J. Bonnemaïson et al., 2006). This model reconceptualizes customary forest recognition (hutan adat) as a structural mechanism for restoring territorial governance and ecological Resilience.

The study demonstrates that sustainability can be achieved by reclassifying state-designated protected forests into customary forests, grounded in historical evidence that Dayak Meratus customary institutions have long functioned as resilient ecological guardians of Kalimantan's forests. This historically embedded adaptive governance system constitutes an empirically grounded model of Resilience that challenges state-centric forest management paradigms (Leo et al., 2022; Harada et al., 2022).

In contrast, the state's designation of protected forest status has, in certain instances, been instrumentalized within political-economic agendas, particularly through the issuance of extractive permits, such as mining concessions. Such practices have contributed to ecological degradation and long-term disruptions of both ecosystem integrity and cultural systems, thereby producing conditions of ecological vulnerability (Peluso, 1992; Humaedi et al., 2024).

The sustainability of the cultural Geography (SCG) perspective can therefore be advanced through strengthening customary legal institutions grounded in

cultural values and indigenous knowledge (Arjumend & Beaulieu-Boon, 2018; Gashure & Wana, 2023). This includes reinforcing balanced human-environment interactions within both natural and cultural landscapes, while simultaneously enhancing community-based economic capacity without undermining the ecological integrity of the Meratus Mountain forest ecosystem.

The functional relationship within the Sustainable Cultural Geography (SCG) framework posits that socio-ecological resilience increases when customary governance institutions are strengthened and when forest tenure is reclassified from state-designated protected forest to customary forest (hutan adat). Such reclassification enhances resilient ecology by restoring community-based control over territory and reinforcing indigenous legal systems, local economic capacity, and balanced human-environment interactions. Conversely, the imposition of protected forest status that restricts customary tenure and limits community rights tends to reduce ecological Resilience and increase ecological vulnerability. Restrictions on customary forest rights occur through restrictions on community access, assets, and livelihood activities (3A framework: Access, Assets, and Activities), thereby weakening adaptive capacity within socio-ecological systems. Operationally, the Sustainable Cultural Geography model can be expressed as: **SCG = f (Ecological Resilience, Customary Forest Tenure, 3A Capacity)**. Where:

- Ecological Resilience reflects the system's adaptive capacity and long-term ecological stability.
- Customary Forest Tenure represents institutional recognition of indigenous governance over forest territories.
- 3A Capacity (Access, Assets, Activities) indicates the degree to which local communities maintain economic and territorial agency.

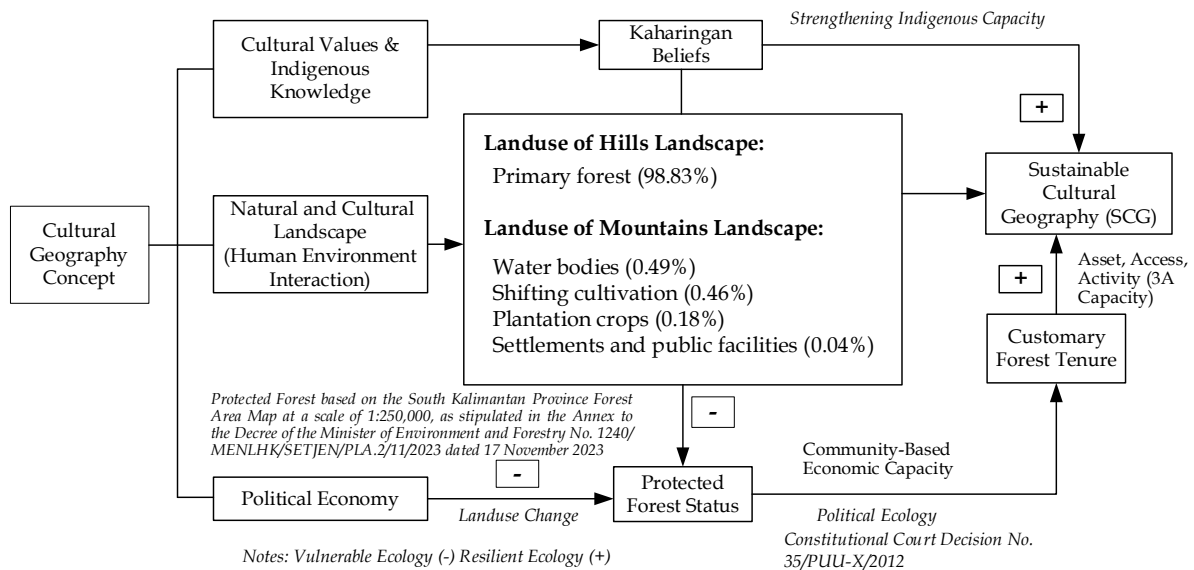


Figure 10. Conceptual Model of Sustainable Cultural Geography (SCG) Perspective

CONCLUSION

This study moves beyond descriptive cultural landscape analysis by demonstrating that the sustainability of the Dayak Hampang Uplands is fundamentally a question of governance, power, and socio-ecological Resilience. The clustered settlement toponymy, river-centered connectivity, shifting cultivation systems, and ritual cycles are not merely cultural expressions; they constitute an adaptive socio-ecological governance system embedded in customary institutions that has historically maintained ecological balance in the Meratus Mountains.

The findings reveal that state-imposed protected forest designation, when detached from customary tenure systems, may unintentionally generate ecological vulnerability by constraining community access to resources, assets, and livelihood activities (3A), thereby weakening adaptive capacity. In contrast, the recognition of customary forests (hutan adat) strengthens ecological Resilience by restoring territorial agency, reinforcing indigenous legal systems, and sustaining balanced human-environment interactions. The proposed Sustainable Cultural Geography (SCG) framework, therefore, offers a theoretical advancement by integrating cultural geography, political ecology, and socio-ecological Resilience into a single

operational model: **SCG = f (Ecological Resilience, Customary Forest Tenure, 3A Capacity)**

This model provides not only an analytical tool for understanding cultural landscape sustainability but also a policy-relevant pathway for reconfiguring forest governance to reconcile conservation, indigenous rights, and long-term ecological integrity. In this sense, the Dayak Hampang case demonstrates that customary tenure recognition is not a threat to conservation but a structural foundation for resilient ecology in the Meratus Mountains.

ACKNOWLEDGMENT

This research was conducted with the support of the village governments of Hulu Sampanahan, Limbur, and Muara Urie. Fieldwork was carried out in 2023 and subsequently refined and completed through 2025.

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