

Cultural Sustainability Crisis of the Taikat People of Papua

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Abstract

The Taikat people of Keerom, Papua, are experiencing a growing cultural sustainability crisis driven by the interaction between modernization, social transformation, and the weakening of intergenerational cultural transmission. This study examines how ecological relationships, customary land tenure, kinship systems, Indigenous language, traditional knowledge, and customary institutions contribute to the continuity of Taikat cultural identity and how these elements are increasingly challenged by external change. Using a qualitative ethnographic approach within the framework of applied anthropology, data were collected through participant observation, in-depth interviews, informal conversations, and documentation involving customary leaders, elders, women, youth, and community members. The findings reveal that Taikat culture is fundamentally biocultural, with forests, rivers, sago groves, and customary territories serving as the ecological foundations of livelihood, spirituality, social organization, and collective identity. Customary land and the keret kinship system remain central mechanisms for regulating resource access, inheritance, social obligations, and conflict prevention. However, modernization, formal education, religious transformation, market integration, migration, and administrative expansion have altered traditional learning environments and reduced opportunities for transmitting Indigenous language, ecological knowledge, and customary practices. The study argues that cultural sustainability among the Taikat people depends on strengthening language revitalization, protecting customary territories, reinforcing Indigenous education, and recognizing traditional governance institutions. Cultural preservation should therefore be understood not merely as safeguarding traditions but as maintaining the interconnected social and ecological systems that sustain Indigenous identity and resilience in contemporary Papua.

1. Introduction

The Taikat people, also known in ethnographic records as Tajkat, Taiget, Daiget, Arbrab, or Arso, make up one of the Indigenous communities of Papua where cultural identity has been historically shaped by a close relationship with customary land, forests, rivers, kinship systems, traditional leadership, and locally embedded knowledge. For generations, cultural values have been passed along through oral traditions, ritual work, language, and customary institutions that guide social relations and everyday dealings with the surrounding environment. However, the rapid push of modernization, formal education, religious transformation, market-driven economies, migration, and state-led development programs have changed the socio-cultural landscape the Taikat people inhabit. Because of these shifts, you can see impacts in how language is used, how customary knowledge is less likely to be transmitted, and how traditional institutions in general have a reduced role in daily life. So, many Indigenous communities in Papua, including the Taikat, are now facing increasing concerns about the long-term sustainability of their cultural heritage and collective identity.

The issues faced by the Taikat people mirror broader anxieties that get mentioned in Anthropology studies of Indigenous communities across the world. Researchers have repeatedly said that cultural continuity leans on language staying alive, traditional ecological knowledge being carried forward, customary governance continuing to function, and community driven pathways for learning. Berkes

(2017) puts it plainly that traditional ecological knowledge is not just a pile of practical tricks but a full, integrated system of beliefs and values, and a deep environmental view, all of which help both cultural endurance and ecological resilience. Likewise, Agrawal (1995) maintains that Indigenous knowledge ought to be treated as a proper, meaningful knowledge base, and not pushed aside by dominant development logics. Work in Papua and Melanesia also shows that local knowledge systems still matter a lot for day to day survival and adaptation, even when external pressures increase. Sillitoe (1998) points to Indigenous knowledge as a pillar in sustainable development, while Kirsch (2006) describes how Indigenous communities actively interpret and respond to changing social conditions and shifting environments using their own cultural structures, and not waiting for outside explanations. Also Kik et al. (2021) report that when Indigenous languages weaken in Papua New Guinea, ethnobiological knowledge tends to decline as well, so language loss often pulls apart cultural memory, and with it, environmental know how.

Against this background, it can be assumed that the cultural sustainability crisis among the Taikat people is driven not only by external forces but also by the gradual weakening of intergenerational cultural transmission. As younger generations become increasingly integrated into national and global social systems, opportunities to learn traditional language, customary law, oral history, ecological knowledge, and ritual practices may become more limited. When those learning pathways loosen, the continuity of cultural knowledge that has historically sustained Taikat social organization, and identity, is put at risk. Here cultural change should not be understood only as a side effect of modernization but also as a process that touches the inner mechanisms through which communities reproduce, and maintain their cultural heritage. This view resonates with Appadurai's (1996) argument that globalization reshapes local cultural practices by altering aspirations, identities, and social imaginaries.

This study argues that the situation faced by the Taikat people represents a critical challenge of cultural sustainability, in which language, customary land, kinship relations, ritual practices, and ecological knowledge are all tied together in a way that matters. When one cultural element fades or weakens, it can unintentionally disturb the broader cultural system, its stability goes with it. So, safeguarding Taikat culture requires more than just documenting traditions or keeping cultural artifacts in place. Sustainable cultural preservation has to include revitalizing Indigenous language use, protecting customary territories, strengthening community-based education, and making sure traditional authorities take part in contemporary governance and development processes in a real way. Using Steward's (1972) cultural ecology angle, cultural adaptation can only stay sustainable when communities keep meaningful control over their knowledge systems, social institutions, and environmental resources. Understanding the experiences of the Taikat people is therefore essential for examining how Indigenous communities negotiate cultural continuity and resilience, even as pressures from social transformation speed up in contemporary Papua.

2. Research Methods

This study uses a qualitative approach with an ethnographic method within the perspective of applied anthropology. The qualitative approach is appropriate because the study seeks to understand the cultural sustainability crisis of the Taikat people through meanings, experiences, practices, and interpretations constructed by community members themselves. Ethnography is used to describe cultural life from within the community's own social context, especially regarding language, kinship, customary land, ritual practices, traditional leadership, and ecological knowledge. As Creswell and Poth (2016) explain, qualitative research is useful for exploring complex social phenomena in depth, while Hammersley and Atkinson (2019) emphasize that ethnography enables researchers to understand everyday practices through direct engagement with people in their natural setting.

The perspective of applied anthropology is used because this research does not only aim to describe Taikat culture, but also to identify practical issues related to cultural preservation, community resilience, and the weakening of intergenerational knowledge transmission. Applied anthropology is relevant for studies involving Indigenous communities because it connects ethnographic understanding with real social problems and community-based solutions (Sillitoe, 1998). In this context, the research focuses on how Taikat cultural knowledge is maintained, transformed, or threatened by modernization, education, religion, migration, and development. This perspective follows Trotter et al. (2015) argument that applied anthropology uses ethnographic and qualitative methods to understand local knowledge systems and support problem-solving in community settings.

Data collection is conducted through participant observation, in-depth interviews, informal conversations, and documentation of cultural practices. Participant observation is used to understand how cultural values are practiced in daily life, including interactions within families, customary meetings, rituals, subsistence activities, and relations with ancestral land. In-depth interviews are conducted with traditional leaders, elders, women, youth, religious figures, and community members who possess knowledge about Taikat history, language, kinship, customary law, and cultural change. Bernard (2017) states that participant observation and interviewing are central techniques in anthropological research because they allow researchers to capture both observable behavior and the meanings attached to that behavior by local actors.

The study also uses purposive sampling to select informants who are considered knowledgeable about Taikat cultural life and the changes experienced by the community. Key informants include elders, customary leaders, clan representatives, cultural practitioners, and younger community members who can provide different generational perspectives. This strategy is important because cultural sustainability cannot be understood only from the viewpoint of elders, but must also include the experiences of younger generations who live between customary expectations and modern social influences. Spradley (2016) argues that ethnographic interviews require informants who are able to explain cultural meanings from their own perspective, while Patton (2014) notes that purposive sampling is useful in qualitative research when researchers need information-rich cases.

Data analysis is carried out through thematic analysis by identifying recurring patterns related to cultural continuity, cultural loss, adaptation, and resilience. The analysis focuses on themes such as language use, customary land, traditional leadership, ritual practices, ecological knowledge, kinship, and youth participation in cultural life. The data are interpreted inductively, meaning that categories and findings are developed from field data rather than imposed in advance. This process follows Miles, Huberman, and Saldaña (2014), who explain that qualitative analysis involves data condensation, data display, and conclusion drawing. Triangulation is also applied by comparing information from interviews, observation, and documents to strengthen the validity of the findings (Denzin, 2017).

Ethical considerations are central to this research because it deals with Indigenous knowledge, customary identity, and community memory. The research therefore respects local norms, seeks consent from informants, protects sensitive cultural information, and avoids presenting sacred knowledge without community approval. The position of the researcher is also treated reflexively, recognizing that ethnographic knowledge is produced through interaction between researcher and community. This is important because Indigenous research requires respect, reciprocity, and sensitivity toward local authority and cultural ownership (Smith, 2021). Thus, the method used in this study combines ethnographic depth, qualitative interpretation, and applied anthropological orientation to understand the cultural sustainability crisis of the Taikat people while also contributing to efforts for cultural preservation and community empowerment.

3. Results

3.1 The Taikat People's Culture Is Strongly Shaped By Their Ecological Environment

The ethnographic data indicate that Taikat culture is deeply rooted in the ecological landscape of Arso and Keerom, Papua. Forests, rivers, swamps, sago groves, gardens, and hunting grounds are not merely physical spaces, but living cultural territories that shape how the Taikat people organize livelihood, kinship, spirituality, and customary authority. The document describes that the Taikat people live within an ecological landscape consisting of valleys, wetlands, humid forests, rivers, and fertile land. This finding reflects Steward's (1972) cultural ecology perspective, which explains that culture develops through continuous adaptation to environmental conditions. In the Taikat context, the environment becomes the basis of social life, economic activity, ritual practice, and collective identity.

The forest holds a central position in Taikat cultural life because it provides food, medicine, building materials, hunting areas, and sacred places. The ethnographic data show that the Taikat people obtain forest products such as wild animals, fruits, medicinal plants, wood, and materials for traditional tools. This relationship demonstrates that the forest functions as both an economic and symbolic space. As stated in the field narrative, "Sungai dan rawa bukan hanya sumber protein, tetapi juga bagian dari lanskap suci yang dihormati melalui berbagai tabu dan pantangan." This quotation confirms that ecological spaces are governed not only by practical needs but also by moral and spiritual rules. This is

consistent with Berkes (2017), who argues that traditional ecological knowledge combines practical skills, belief systems, and environmental ethics.

Sago is one of the clearest examples of the relationship between Taikat culture and ecology. The document explains that sago is obtained from wild and semi-managed palms around the village and processed through traditional techniques involving family cooperation. The ethnographic note states, "Sago as an important source of carbohydrates is obtained from sago trees that grow wild or are planted semi-intensively around the village." This quotation shows that sago is not only a food source but also part of cultural memory, gendered labor, and household survival. Studies on Indigenous Papuan food systems also show that sago is closely related to food security, forest dependence, and cultural identity (Sidiq et al., 2022; Kadir et al. 2022).

The Taikat subsistence system is shaped by ecological cycles. Gardening, hunting, fishing, and gathering are carried out according to seasonal changes and local environmental signs. The document records that planting activities are adjusted to natural indicators such as animal behavior, rainfall, and the position of celestial bodies. As an ethnographic transition, one field statement notes, "Planting seasons are adjusted to natural cycles and observations of natural signs such as star positions or animal behavior." This shows that Taikat agricultural knowledge is based on observation, inheritance, and long-term ecological experience. Such knowledge supports Ellen's (2006) argument that Indigenous subsistence systems are built through detailed environmental classification and practical ecological management.

Traditional technology among the Taikat people also reflects environmental adaptation. Tools such as bows, spears, stone axes, wooden boats, rafts, and sago-processing instruments are made from materials available in the surrounding environment. The document states, "The Taikat people's living equipment relies heavily on local ecological knowledge and adaptation to the varied natural conditions of Mannem." This quotation shows that technology is not merely a technical object but a cultural expression of ecological knowledge. Pfaffenberger (1992) explains that technology in traditional societies must be understood as part of social relations and cultural systems. In the Taikat case, every tool reflects knowledge of forest materials, water conditions, soil, hunting practices, and household needs.

Customary land tenure reveals how ecology is organized through kinship. The Taikat people regulate access to land, rivers, forests, hunting grounds, and sago areas through keret or clan-based ownership. The document states, "Each clan has a customary territory that regulates access to natural resources such as gardens, forests, rivers and hunting grounds." This quotation indicates that land is not treated merely as property but as ancestral inheritance and collective identity. Customary territory functions as a cultural map that connects people with genealogy, memory, and responsibility. This finding is in line with Datta (2015), who argues that Indigenous understandings of land are relational, connecting nature, identity, spirituality, and sustainability.

The spiritual dimension of Taikat ecology strengthens the cultural meaning of the environment. Mountains, rivers, forests, and sacred places are associated with ancestors and spiritual beings. The ethnographic data state, "Mountains, rivers and forests are not just physical landscapes, but spiritual entities that must be respected and protected." This quotation demonstrates that ecological preservation is supported by taboo, ritual, and ancestral respect. Environmental destruction, therefore, is not only the loss of natural resources but also the weakening of cultural and spiritual order. Grim and Tucker (2014) explain that many Indigenous religious traditions understand nature as a sacred field of moral relations, a view clearly reflected in Taikat ecological life.

The quantitative data from the document strengthen this ethnographic interpretation. The Taikat ecological landscape is dominated by flat land covering 47.18%, followed by gently sloping areas at 27.44%, moderately steep areas at 19.16%, steep areas at 6.09%, and very steep areas at 0.13%. These figures show that most Taikat territory consists of flat and gently sloping areas suitable for settlement, gardening, mobility, and sago-related activities, while steeper areas remain important for forest resources, hunting, and sacred landscapes. This ecological diversity explains why Taikat livelihood practices are varied and adaptive rather than dependent on only one economic activity. The diagram below visualizes the slope composition of the Taikat ecological landscape: View Diagram.

The main finding is that Taikat culture is ecological at its foundation. Livelihood, kinship, technology, spirituality, food systems, and customary authority are all shaped by the relationship between people and environment. The sustainability of Taikat culture therefore depends on the protection of forests, rivers, sago groves, customary land, and traditional ecological knowledge. When these ecological foundations are weakened, cultural transmission, identity, and social organization are also threatened. The cultural sustainability crisis of the Taikat people must therefore be understood as a simultaneous crisis of land, ecology, knowledge, and intergenerational continuity.

3.2 Customary Land And Kinship Remain Central To Taikat Social Life

The ethnographic data show that Taikat social life is organized around the close relationship between customary land and kinship. Land is not understood as individual property, but as collective inheritance connected to ancestral descent, keret, and clan-based authority. In the document, the Taikat are described as a community whose use of sago forests, rivers, gardens, and mountain slopes is regulated through "kinship-based customary rights system (keret)." This finding indicates that kinship is not only a family structure but also the main institution that determines access to land, natural resources, marriage relations, and social responsibility. This is consistent with anthropological studies which show that Indigenous land tenure is often relational, meaning that land is tied to ancestry, identity, obligation, and collective memory (Datta, 2015; Smith, 2021).

The keret system functions as the basic unit of Taikat social organization. The document states, "The Taikat community recognizes the keret group which acts as the basic unit in social relations, inheritance of customary rights, and exogamous marriage arrangements between keret." This quotation shows that

keret regulates three important dimensions at once: social relations, customary land inheritance, and marriage rules. In anthropological terms, this demonstrates that kinship is a structuring principle of society, not merely a biological relation. Lévi-Strauss (1971) explains that kinship systems organize alliance, exchange, and social order, while Evans-Pritchard (2023) shows that descent groups can become the foundation of political and territorial organization.

Customary land among the Taikat is inherited through patrilineal descent. The document explains that the use of land and natural resources is “communal in nature and inherited patrilineally.” This means that rights over gardens, sago groves, hunting areas, rivers, and forest zones are transmitted through male lineage and recognized by customary norms. As a transition to the meaning of land inheritance, the document also states, “Land ownership is not individual, but collective based on paternalistic lineage, and land use rights are determined by one's position in the clan structure.” This quotation confirms that land tenure is inseparable from one's place in the clan structure.

The Taikat kinship system also shapes marriage rules and inter-clan relations. The prohibition of marriage within the same keret is an important norm for maintaining social balance and preventing conflict within descent groups. The document notes that “The prohibition of marriage on one paper is an important norm to maintain the purity of bloodlines.” This rule reflects an exogamous marriage system in which marriage creates alliances between different keret. Such a pattern supports Lévi-Strauss's (1971) argument that marriage is not only a private union between individuals but also a social mechanism for creating alliances between groups.

The document also records the existence of two major moiety structures symbolized through the traditional house, Jagirbek. It states that “Two large moieties are distinguished through the symbols of the carvings on the traditional houses (Jagirbek), namely Dinmamoigir and Yatgubrugir.” This finding shows that kinship is expressed not only through genealogy but also through material culture and symbolic architecture. The house becomes a visible marker of social classification, descent, and collective identity. In this sense, Jagirbek is not merely a building but a cultural institution that represents the structure of Taikat society.

Customary land also organizes economic cooperation. The document explains that each clan has its own customary territory regulating access to gardens, forests, rivers, and hunting grounds. As stated in the ethnographic record, “Each clan has a customary territory that regulates access to natural resources such as gardens, forests, rivers, and hunting grounds.” This quotation demonstrates that economic activities such as gardening, hunting, sago extraction, and forest gathering are regulated through kinship-based rights. Polanyi (2018) argues that economic life in non-market societies is embedded in social relations, and the Taikat case clearly reflects this pattern.

The dominant clans mentioned in the document include Taikat, Suagayap, Sufia, and Suwae. These clans play important roles in organizing subsistence activities, resource distribution, and collective labor. The document states that economic life is supported by “The dominant clans in the village are the Taikat, Suagayap, Sufia, and Suwae clans.” This shows that clan identity remains socially relevant in daily life.

The clan is not simply a name inherited from ancestors, but a living social unit that regulates cooperation, obligation, land use, and cultural continuity.

Customary land and kinship also function as mechanisms for preventing conflict. Because each keret or clan has recognized rights over particular territories, access to land and resources is guided by customary rules. The document explains that this system “to become an efficient natural resource management mechanism and prevent inter-clan conflicts.” This finding is important because it shows that customary institutions function as local governance systems. They regulate who may use land, how resources are shared, and how relations between clans are maintained. This supports Ostrom’s (1990) view that community-based institutions can effectively manage common resources when rules are locally recognized and socially enforced.

The central finding is that Taikat society cannot be understood without examining the relationship between land, keret, marga, and ancestral inheritance. Customary land provides the material foundation of life, while kinship provides the social structure that regulates access, responsibility, marriage, and identity. When customary land is weakened, the kinship system is also affected; when kinship transmission declines, customary land governance becomes vulnerable. The cultural sustainability of the Taikat people therefore depends on the continuity of both land rights and kinship-based social organization.

3.3 Taikat Cultural Sustainability Is Facing Pressure From Modernization And External Change

The ethnographic data reveal that the cultural sustainability of the Taikat people is increasingly challenged by processes of modernization, administrative expansion, religious transformation, formal education, infrastructure development, and integration into broader economic systems. While these changes have created new opportunities for mobility, education, healthcare, and market participation, they have also altered the traditional mechanisms through which cultural knowledge, language, customary norms, and ecological practices are transmitted across generations. The document describes the Taikat community as a society that has experienced significant social transformation since increased contact with government institutions, migrants, churches, schools, and regional markets. These transformations have gradually shifted the relationship between people, land, and customary authority. Similar patterns have been documented across Indigenous societies worldwide, where modernization often introduces new opportunities while simultaneously weakening traditional systems of knowledge and social organization (Appadurai, 1996; Sahlins, 1999).

One of the most visible pressures concerns the transmission of Indigenous knowledge between generations. Traditionally, cultural knowledge was passed from elders to younger family members through direct participation in gardening, hunting, fishing, sago processing, ritual activities, storytelling, and customary gatherings. The document notes that knowledge transfer occurred through continuous interaction within families and clans rather than through formal instruction. However, younger

generations now spend more time in schools, churches, and modern occupations, reducing opportunities for traditional learning. As reflected in one interview excerpt, an elder explained:

"In the past, children would accompany their parents to the forest, to the garden, to the river. They learned directly from what they saw. Now, many of them spend more time at school or in the city." (Elder Informant, Taikat Community)

This statement illustrates the growing gap between traditional and contemporary learning environments. Berkes (2017) argues that traditional ecological knowledge survives only when it is continuously practiced and transmitted through everyday activities, making reduced participation a significant threat to cultural continuity.

Language preservation represents another major challenge. The ethnographic document indicates that the use of the Taikat language has declined in many daily interactions, particularly among younger generations who increasingly communicate in Indonesian. While the Indigenous language remains important in customary contexts and among elders, its use is becoming more restricted. This pattern reflects broader trends observed throughout Papua and Melanesia, where language loss is closely associated with the decline of traditional knowledge systems. As one community member stated:

"Children now speak more Indonesian. Taikat still exists, but not all children can speak it well." (Community Member, Taikat Community)

This observation corresponds with the findings of Kik et al. (2021), who demonstrated that declining Indigenous language proficiency is strongly correlated with the erosion of ethnobiological and cultural knowledge in Papua New Guinea, one of the world's most linguistically diverse regions.

The role of customary institutions has also undergone substantial change. Historically, traditional leaders exercised significant authority over land management, conflict resolution, marriage arrangements, resource allocation, and ceremonial activities. The document indicates that the expansion of formal administrative structures has introduced alternative systems of governance that sometimes overlap with or replace customary authority. While customary leaders continue to play important cultural roles, decision-making processes increasingly involve government officials, church leaders, and external stakeholders. An elder described this transition as follows:

"Previously, all village matters were discussed by the traditional elders. Now, many decisions must follow government regulations." (Customary Elder, Taikat Community)

This statement suggests a gradual shift from customary governance toward bureaucratic governance. Such transformations are commonly observed in Indigenous societies experiencing state integration and administrative expansion (Kirsch, 2006).

Religious transformation has likewise reshaped aspects of Taikat cultural life. Christianity has become an important social institution within the community and contributes significantly to education, social

cohesion, and moral guidance. However, the document also indicates that some traditional rituals, spiritual beliefs, and ancestral practices have declined as Christian practices became more dominant. Certain ceremonies that were once central to community life are now performed less frequently or have been modified to align with contemporary religious values. One respondent noted:

"Some customs are still practiced, but there are also some that are no longer practiced because they are considered not in accordance with church teachings." (Community Elder, Taikat Community)

This finding reflects broader anthropological observations that religious conversion often produces both cultural continuity and cultural transformation rather than complete cultural replacement (Robbins, 2004). Economic change constitutes another important source of pressure. The document shows that subsistence activities such as gardening, hunting, fishing, and sago processing increasingly coexist with wage labor, trade, transportation services, and participation in regional markets. While engagement with the cash economy provides new income opportunities, it also alters patterns of resource use and social relations. The expansion of market-oriented livelihoods reduces dependence on traditional subsistence practices and can weaken the social contexts in which ecological knowledge is learned and transmitted. As one informant explained:

"Nowadays, many necessities have to be purchased with money. People are more likely to look for work than to go hunting or gathering sago." (Adult Community Member, Taikat Community)

This transition reflects what Polanyi (1957) describes as the movement from socially embedded economies toward increasingly market-oriented economic systems. Infrastructure development and improved transportation have also accelerated cultural change. Roads connecting villages with urban centers have increased access to education, healthcare, consumer goods, and communication technologies. At the same time, these developments have intensified interactions with outside populations and exposed younger generations to new lifestyles, aspirations, and cultural influences. The document notes that increased connectivity has facilitated the circulation of goods, people, and information throughout the region. Appadurai (1996) argues that such global and regional cultural flows reshape local identities by introducing alternative visions of modern life, often creating tensions between traditional obligations and contemporary aspirations.

Quantitative evidence contained in the document further illustrates the conditions under which these transformations occur. The expansion of settlement areas, transportation networks, educational facilities, and administrative infrastructure has become concentrated in the relatively accessible portions of the landscape, particularly the 74.62% of territory categorized as flat or gently sloping land. These areas are the primary locations where schools, churches, government offices, and markets are established, increasing daily interaction with external institutions. The concentration of modern infrastructure in accessible zones contributes to more intensive cultural change compared to remote forested and mountainous areas where traditional activities remain relatively stronger.

The findings demonstrate that the cultural sustainability crisis experienced by the Taikat people is not the result of a single factor but emerges from the interaction of multiple processes, including language decline, changing educational patterns, religious transformation, economic integration, administrative expansion, and increasing mobility. These forces do not simply eliminate Taikat culture; rather, they reshape the conditions under which cultural knowledge is produced, transmitted, and practiced. The persistence of customary land tenure, kinship institutions, and ecological knowledge indicates that cultural resilience remains strong in many areas. Nevertheless, the weakening of intergenerational transmission mechanisms suggests that the long-term continuity of Taikat cultural identity will depend on deliberate efforts to strengthen language revitalization, customary institutions, Indigenous education, and community-based cultural preservation.

4. Discussion

The findings indicate that Taikat culture is fundamentally ecological, as identity, subsistence activities, local knowledge, and spiritual practices are deeply shaped by long-term interactions with forests, rivers, wetlands, gardens, and sago landscapes. These environmental features do not merely provide material resources but constitute the foundation of social organization and cultural continuity. Contemporary scholarship increasingly argues that Indigenous cultural sustainability should be understood as the sustainability of social–ecological relationships rather than the preservation of cultural artifacts alone. Fernández-Llamazares et al., (2021) emphasize that Indigenous and local knowledge systems are currently threatened by environmental change, language loss, development pressures, and the erosion of traditional learning environments. The Taikat case demonstrates that cultural sustainability is inseparable from the maintenance of ecological relationships that support everyday cultural practices.

The close dependence of the Taikat people on forests, rivers, and sago resources illustrates how ecological knowledge is generated through direct engagement with the environment. Activities such as gardening, hunting, fishing, gathering, and processing sago function as informal educational spaces through which younger generations learn about seasons, plant species, animal behavior, territorial boundaries, and customary norms. Sharifian et al. (2022) argue that traditional ecological knowledge serves as an adaptive mechanism that enables Indigenous communities to respond to social and environmental change while maintaining sustainable livelihoods. In the Taikat context, the declining participation of younger generations in traditional subsistence activities reduces opportunities for experiential learning and weakens the transmission of ecological knowledge.

The findings further reveal that customary land and kinship remain central institutions in Taikat society. The *keret* or clan system regulates access to forests, gardens, rivers, hunting territories, and sago groves while simultaneously organizing social relations, inheritance, and collective responsibilities. This demonstrates that customary land is not merely an economic asset but a social institution embedded in ancestry, memory, and identity. Recent scholarship on Indigenous sustainability highlights that land is understood through relational frameworks connecting people, ancestors, non-human beings, and future generations. Mazzocchi (2020) argues that Indigenous conceptions of sustainability are grounded in

kinship with nature and responsibilities of care rather than resource extraction. The Taikat experience reflects this perspective, as customary land functions as the foundation of both cultural identity and social cohesion.

The relationship between customary land and kinship also illustrates how Taikat society maintains collective systems of resource governance. Territorial boundaries, inheritance rules, access rights, and customary restrictions create locally recognized mechanisms for regulating natural resources and preventing conflict among clans. Such arrangements contrast with modern development paradigms that often prioritize individual ownership and commodification of land. Lima and Soares-Pinto (2024) demonstrate that many Indigenous cosmologies understand land as a living relative rather than a passive object of ownership. This perspective is particularly relevant to the Taikat case, where land remains inseparable from genealogy, customary authority, and collective responsibility. Consequently, any weakening of customary territorial rights may have profound implications for both social organization and cultural continuity.

The findings also show that Taikat cultural sustainability is increasingly challenged by modernization and external influences. Formal education, religious institutions, transportation infrastructure, market integration, administrative expansion, and digital communication have introduced new opportunities while simultaneously altering traditional mechanisms of cultural transmission. Gruberg et al. (2022) note that traditional ecological knowledge often declines when social and environmental transformations reduce opportunities for daily engagement with customary practices. Among the Taikat people, reduced involvement of younger generations in forest-based activities, gardening, hunting, and sago processing has diminished the contexts in which ecological and cultural knowledge were traditionally acquired.

Language shift represents another critical dimension of cultural change. The Taikat language embodies ecological classifications, place names, customary concepts, kinship terminology, and collective memory. As younger generations increasingly use Indonesian in everyday communication, the cultural knowledge embedded within the Indigenous language becomes more vulnerable. Fernández-Llamazares et al. (2021) emphasize that language loss frequently accompanies the erosion of Indigenous knowledge systems because many ecological, spiritual, and cultural concepts cannot be fully translated into dominant languages. The Taikat case supports this argument, suggesting that language revitalization is essential not only for cultural identity but also for preserving ecological knowledge and customary practices.

Economic transformation from subsistence-oriented production toward market-oriented livelihoods further contributes to cultural change. Increased dependence on wage labor, trade, and cash-based transactions may reduce reliance on traditional activities such as hunting, fishing, gathering, and sago production. Similar patterns have been documented in other Indigenous communities where modernization and changing consumption patterns weaken traditional food systems and environmental knowledge. Ginting et al. (2025) found that Indigenous knowledge related to food security and environmental management can be undermined by perceptions of modernity and changing economic

aspirations. In the Taikat context, forests, rivers, and sago remain culturally important, yet their practical significance may decline if younger generations increasingly associate progress with formal employment and market participation.

Religious institutions and modern educational systems should not be viewed solely as threats to Indigenous culture. Both institutions contribute to social cohesion, literacy, leadership development, and community welfare. However, cultural sustainability depends on whether these institutions recognize and support Indigenous knowledge systems rather than replacing them. Huaman and Swentzell (2021) argue that Indigenous knowledge should be integrated into educational practices because it provides valuable foundations for environmental stewardship and sustainable development. For the Taikat people, schools and churches could become important sites for cultural revitalization if local language, customary history, ecological knowledge, and traditional values are incorporated into community education programs.

These findings suggest that the cultural sustainability crisis facing the Taikat people does not involve the complete disappearance of culture but rather the transformation of the conditions under which culture is reproduced and transmitted. Customary land tenure, kinship systems, ecological knowledge, and cultural practices continue to exist, yet the social spaces supporting their transmission are becoming increasingly constrained. Abas et al. (2022) identify modernization, land-use change, and weakening intergenerational knowledge transfer as major threats to Indigenous conservation systems and local wisdom. The Taikat case illustrates that preserving culture requires maintaining the social and ecological environments in which cultural knowledge remains meaningful and practiced.

The broader implication of this study is that Taikat cultural sustainability should be understood as a form of biocultural sustainability. Ecological systems, customary land tenure, kinship institutions, language, and traditional knowledge are interconnected elements of a single cultural landscape. Gauthier et al. (2025) argue that Indigenous worldviews centered on kinship with the Earth offer valuable ethical frameworks for addressing contemporary environmental challenges and strengthening human–nature relationships. In the Taikat context, such principles are reflected in customary respect for forests, rivers, ancestral territories, and ecological balance. Strengthening cultural sustainability therefore requires simultaneous support for language revitalization, customary land protection, Indigenous education, and the recognition of traditional governance institutions. The future resilience of Taikat culture will depend not only on the community's capacity to maintain its traditions but also on the extent to which external institutions acknowledge Indigenous knowledge, territorial rights, and cultural values as essential foundations of sustainable development.

Conclusion

The Taikat people's cultural sustainability is deeply rooted in their ecological relationship with forests, rivers, sago groves, gardens, and customary territories. Their culture is expressed through daily interactions with the environment. These interactions shape livelihood, identity, spirituality, and local

knowledge. The environment is therefore not merely a physical space. It is a cultural foundation that sustains Taikat life. This confirms that Taikat identity is fundamentally biocultural.

Customary land and kinship remain central foundations of Taikat social life. The keret or clan system regulates access to land, inheritance, marriage relations, and resource use. It also organizes social responsibility within the community. Customary land is therefore more than an economic asset. It is a source of identity, memory, and collective belonging. When customary land is weakened, Taikat social and cultural continuity is also threatened.

Modernization has created both opportunities and pressures for the Taikat people. Formal education, market expansion, religion, migration, and state administration have changed traditional ways of life. These changes provide access to services and wider social networks. At the same time, they weaken language use, ecological knowledge, and customary authority. The future of Taikat cultural sustainability depends on protecting land, language, and local knowledge. It also requires integrating Taikat cultural values into education and development policies.

Limitations

The limitations lie in the narrow geographical focus on the Taikat people in Keerom, Papua, the limited scope of quantitative data, and restricted access to certain sacred or sensitive cultural knowledge. The ethnographic approach provides deep cultural understanding, but it does not allow broad generalization to all Indigenous communities in Papua. Some cultural practices may also change over time due to modernization, migration, education, religion, and economic transformation. Community narratives remain central in explaining cultural sustainability, yet they may differ across age groups, clans, gender, and social positions. Further research with longitudinal data, wider surveys, and comparative Indigenous cases would strengthen the analysis of cultural change and sustainability.

Declarations

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Consent to Participate declaration

Informed consent was obtained from all participants involved in this research prior to data collection. Participation was voluntary, and all participants were informed about the objectives of the research, the nature of their involvement, and their right to withdraw at any stage without consequence. Interviews and observations were conducted with respect for local customs, cultural values, and community protocols. Confidentiality and anonymity were maintained where requested, and all information was used solely for academic purposes with the permission of the participants and relevant customary authorities.

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Clinical trial number

Not applicable.

Availability of Data and Materials

The datasets generated and/or analyzed during the current study are not publicly available but are available from the corresponding author on reasonable request.

Author contributions

***Simon Abdi Kari Frank** served as the principal investigator and was responsible for conceptualizing and designing the study, conducting fieldwork, collecting ethnographic data, analyzing the findings, and writing the manuscript. **Usman Idris** contributed to data analysis, assisted in manuscript preparation, and provided critical feedback during the writing process. Both authors reviewed and approved the final manuscript.*

Ethical declaration:

*Ethical approval for this study was obtained from the Research Ethics Committee of the Faculty of Social and Political Sciences, Cenderawasih University (Approval No. 0001/UN20.1.3/DT/2025). The approval was granted and signed by the Chair of the Research Ethics Committee, **Marlina Flassy, Ph.D.** All research procedures complied with the ethical standards for social science research. Informed consent was obtained from all participants prior to data collection, and confidentiality, anonymity, and cultural sensitivity were maintained throughout the study.*

Consent to Publish

Consent to publish was obtained from all participants involved in this research. Participants were informed that the research results may be published in academic form, including anonymized interview excerpts and

aggregated research findings. No personally identifiable information is disclosed in the manuscript, and all informants are presented using coded identifiers to protect their privacy and confidentiality.

Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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