

ARAT SABULUNGAN AS A SACRED ECOLOGY: SUSTAINABLE CONSUMPTION AND CLIMATE CHANGE ADAPTATION AMONG THE MENTAWAI TRIBE

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Abstract

Climate change and consumption of sustainable resources are global issues internalized in the Sustainable Development Goals (SDGs). In fact, local wisdom has accommodated the concept of sustainable development. However, local wisdom is currently less involved in the SDGs. This research seeks to ensure that local wisdom, including the Mentawai Arat Sabulungan (AS), can support SDGs 12 and 13 in Indonesia. The purpose of this research is to explore the position and role of the AS, to analyze the correlation between the AS and the SDGs mission to address climate change and sustainable resource consumption, and to formulate efforts to implement national SDGs points 12 and 13 through a cultural approach. The research method used is qualitative research by collecting data through interviews, observation, and literature studies. The results of this study are: First, AS is the belief system of the Mentawai people as an ecological awareness that is based on sacred values and functions as a religious principle, social norm, and environmental conservation. Second, the AS concept of sacred ecology has relevance to the SDGs on sustainable consumption and efforts to deal with climate change. Third, the strategy for implementing SDGs points 12 and 13 can be carried out by localizing it.

Keywords: Arat Sabulungan, Climate Change, Sustainable Consumption, Cultural Strategy

INTRODUCTION

The current global challenges are the exploitation of natural resources, unsustainable consumption, and activities that threaten climate change. *Global Footprint Network Report (2022)* shows an increase in the ecological footprint, which is the pressure on the Earth from human activities consuming natural resources, which has tripled since 1961. Additionally, according to the World Meteorological Organization's report (2022), the Earth's surface temperature in 2021 increased by 0.85°C compared to the average annual temperature from 1951 to 1980. This concern has given rise to the Sustainable Development Goals (SDGs) or sustainable development program as a global project for human and planetary well-being and peace, encompassing 17 global goals with 169 measurable targets (Badan Pusat Statistik, 2016). Two of these goals include Goal 12, which focuses on responsible consumption and production, and Goal 13, which addresses climate change. Both goals are related to the Earth's aspect, emphasizing the importance of development oriented towards environmental preservation and conservation (Zheng *et al.*, 2021).

However, SDGs are often considered modern products designed to achieve sustainable living. Until now, research and policy-making regarding sustainable development have mainly focused on environmental and economic perspectives, with less attention given to culture (Zheng *et al.*, 2021). However, cultural aspects are crucial as they serve as sources of identity and societal resilience, guaranteeing sustainability in development (United Nations, 2019). In reality, Indonesia has implemented the concept of environmental conservation within the belief systems of local communities, including the Baduy, Adat Pipitak, Anak Dalam, and other indigenous tribes. One of the notable examples is the Mentawai tribe, the oldest surviving tribe since 500 BC, with their local belief system called Arat Sabulungan (AS). The word "arat" means tradition, and "sabulungan" comes from the word "bulung," which means leaf (Delfi, 2014). AS is the local belief system of the Mentawai tribe, which believes that all objects, such as trees and natural phenomena, possess spiritual and soulful power (Glossanto, 2019). For the Mentawai tribe, AS serves as a philosophy of life and a set of values that reflect their interactions with others, the environment, and the supernatural world (Mulhadi, 2008). The livelihood of the

Mentawai tribe relies on the forest, making forest conservation of utmost importance.

The existence of AS is still implemented and upheld today. The determination to protect nature and ensure the community's survival is evident in their efforts to preserve AS despite the challenges of modernization and the official religious consensus in Indonesia. This consensus has led to the Mentawai tribe's struggle to maintain their beliefs, as evidenced by the arrest and burning of all traditional *sikerei* equipment due to the legalization of Decree No/167/PROMOSI/1954 (Coronese, 1986). However, the prohibition of AS does not affect the way the Mentawai tribe, particularly those on Siberut Island, interact with the forest (Arman *et al.*, 2018). AS followers still compromise with local officials to remain on their ancestral land and participate in modernization programs (Hammons, 2016) while preserving the values of AS. This uniqueness of the Mentawai tribe lies in their openness to external influences, which prevents them from abandoning AS. This statement is supported by Osman *et al.* (2021), who demonstrate that traditional leaders (*sikerei*) have an open attitude towards change and interaction with communities and development on Siberut Island. Despite their open-mindedness, the Mentawai tribe still maintains their environment. This is evident in the Mentawai region, where approximately 82% of the area is still covered by forests (Arman *et al.*, 2018).

Until now, government programs have not sufficiently involved local wisdom in SDGs. However, AS can potentially contribute to implementing SDGs 12 and 13. The research addresses the insufficient involvement of local wisdom in the Sustainable Development Goals (SDGs) and emphasizes the potential contribution of AS in supporting SDGs 12 and 13. The study seeks to demonstrate that indigenous knowledge, including AS held by the Mentawai community, can support the implementation of SDGs 12 and 13 in Indonesia. According to Marfai (2022), cultural dimensions are not just additional pillars of sustainable development but also represent a community's identity, signifying their systems, cosmology, and environmental epistemological frameworks that can support sustainable living. This aligns with the analytical framework of sacred ecology, which recognizes the correlation between

sacred cultural aspects and cultural practices in preserving the environment (Fikret Berkes, 2012).

Sacred ecology theory is an interdisciplinary field that combines religion, culture, and ecology (Fikret Berkes, 2012). The theory acknowledges the significance of religious beliefs and culture in shaping attitudes towards the natural environment, and it strives to bridge the gap between spiritual practices and environmental concerns.

One example of the relationship between sacred ecology and religion is the concept of Tri Hita Karana in Balinese Hindu beliefs, which recognizes the interdependence of humans, nature, and the divine (Roth & Sedana, 2015). This philosophy has guided Balinese culture and environmental practices for centuries, promoting sustainable agriculture, water management, and forest conservation.

Indigenous knowledge systems also play a crucial role in sacred ecology. For instance, the Maasai community in Kenya and Tanzania has a deep spiritual connection to their land, reflected in their traditional pastoral practices that promote biodiversity and prevent desertification (Leal Filho *et al.*, 2017). Similarly, the Bishnoi community in Rajasthan, India, follows strict environmental laws based on their religious beliefs, such as prohibiting the cutting of green trees and killing animals (Mago *et al.*, 2022).

Another important aspect of sacred ecology is the recognition of the spiritual and emotional benefits of nature. Research has shown that exposure to nature can positively impact mental health and well-being (Pretty, 2004). Sacred ecology fosters a deeper connection between humans and the natural world, leading to greater empathy and more substantial environmental concern (Mago *et al.*, 2022).

Sacred ecology theory is an essential field of study that recognizes the interconnections between religion, culture, and ecology. It highlights the significance of indigenous knowledge systems, the role of women in environmental conservation, and nature's emotional and spiritual benefits. By fostering a deeper connection between humans and the natural world, sacred ecology can help promote a more sustainable future. Previous research has been conducted on AS and the cultural principles of the Mentawai tribe, including studies by

Yolanda & Willis (2018) on the Mentawai tribe's culture in forest management and studies Simatupang (2017) on the role of local wisdom in the Batak tribe's potential to achieve the three pillars of sustainable development. The hope is that this research provides new insights into the extent to which the values of AS correlate with SDGs 12 and 13, using the framework of sacred ecology, and initiates cultural strategies for the implementation of sustainable development in Indonesia.

Based on the above background, the objectives of the research are to map the position and role of AS in the Mentawai tribe, analyze the concept of sacred ecology concerning the connection between AS and SDGs on responsible consumption and production and climate change mitigation, and formulate efforts to implement SDGs 12 and 13 through a cultural approach.

METHOD

The research was conducted in Madobag Village, South Siberut, Siberut Island, Kepulauan Mentawai Regency, West Sumatra. The location was chosen because Arat Sabulungan is a prevalent traditional cultural practice. The research was carried out from June to September 2022. The qualitative research method was employed, with data collection through in-depth interviews, observations, and literature study. In-depth interviews and observations were conducted from June 17th to June 24th, 2022, in Kepulauan Mentawai Regency. The purposive sampling technique was used for in-depth interviews with various stakeholders, including *sikerei* (Mentawai indigenous leaders), Mentawai cultural activists, the Chairman of the Mentawai Cultural Education Foundation, expert lecturers in Mentawai culture, the Department of Mentawai Culture, the Department of Environmental Affairs of Mentawai, and the Regional Planning and Development Agency of Mentawai. Direct observations regarding AS were carried out in the remote areas of Siberut Island that still maintain AS, specifically in Buttui Hamlet, Madobag Village, South Siberut, and Kepulauan Mentawai Regency. Additionally, a literature review was conducted to explore relevant studies.

Data processing involves descriptive-analytical methods with a phenomenological interpretive approach. The philosophy of value theory (Sartini

& Ahimsa-Putra, 2017) was employed to explore the philosophy and local wisdom of the Mentawai tribe. The theory of sacred ecology (Fikret Berkes, 2012) was used to correlate AS with SDGs goals 12 and 13. The data was analyzed in the following steps: 1) Data Reduction: Identifying theories and studies related to the concept of values, the role of AS, and the concept of local wisdom within AS, and subsequently identifying the correlation between the concept of AS and sustainable development through an analysis of the objectives and targets of goals 12 and 13; 2) Categorization: Categorizing various aspects found in the data, such as the role of AS for the Mentawai tribe, forms of local wisdom in AS Mentawai, and their correlation with sustainable development; 3) Synthesis: Searching for a common thread among the findings from interviews, observations, and literature study, exploring how the concept of AS embraced by the community can correlate with the mission and objectives of sustainable development goals 12 and 13. Based on this correlation, the research aims to formulate strategies for implementing sustainable development using a local cultural approach; 4) Conclusion: Summarizing the findings and analysis of the interconnectedness between the concept and position of AS for the Mentawai tribe, the local wisdom within AS, and its relevance to SDGs.

RESULT AND DISCUSSION

The Position and Role of Arat Sabulungan for the Mentawai Tribe

The Mentawai tribe inhabiting Siberut Island in the Mentawai Islands lives according to rules derived from the teachings AS. According to Maskota Delfi, a cultural academic of the Mentawai tribe, AS can also be referred to as "*arat buluat*." *Arat* can be translated as tradition, custom, or cultural values, while *buluat* translates to offerings. Offerings signify that the Mentawai people present a small portion of each ritual meal to the ancestral spirits and other inhabitants of the spirit world. These spirits are commonly divided into groups known as *sabulungan*. AS, derived from the ancestors' teachings, contains a collection of values encompassing the customary rules of the Mentawai people, commonly referred to as Kapuaranan Mentawai (Delfi, 2013). For the Mentawai tribe, AS is essential as a philosophy of life or worldview. Philosophy can be understood

as a conception of life or a worldview regarding reality as a whole or a view of the cosmos that concerns the essence, values, meanings, and purposes of the world and human life (Sartini & Ahimsa-Putra, 2017). This places AS in a central position in Mentawai culture. The following is a view expressed by a *sikerei* in an interview:

The term AS encompasses various meanings, such as customs, religion, celebrations, traditions, and others. Arat refers to customs, sabulungan to rituals, and bulung is derived from plant life. In short, it means customs derived from nature.

According to Berkes (2012), a significant aspect of sacred ecology is the emphasis on the sacred aspect, achieved through ceremonies and rituals to enhance the balanced relationship between human activities and fulfilling their needs. This sacred aspect is vital because indigenous communities relate to the land through reciprocity and gratitude towards their homeland. The connection between the sacred aspect and the understanding of human reciprocity is reflected in the local knowledge of the Mentawai tribe. AS, as the philosophical system of the Mentawai tribe, cannot be separated from the concept of sacred ecology, as this philosophical aspect serves as the foundation for the Mentawai people in preserving their environment and surrounding ecosystem. The environment is considered sacred to the Mentawai tribe because it represents the sacred world that needs to be maintained for balance.

As the core of Mentawai culture, AS plays a role in religious principles, legal systems, social norms, and environmental conservation. Firstly, AS serves as a religious principle. Religious values are considered the highest and absolute spiritual values sourced from human beliefs or convictions. The community believes AS to be a belief system acknowledging that the universe fundamentally consists of non-physical forces believed to be the driving forces of the empirical world. The Mentawai people believe that everything in nature or the environment has ruling spirits (*tai*), souls (*simagere*), spirits (*ketcat*), and powers (*bajau*). According to the *sikerei* in the interview, the Mentawai people recognize six types of ruling spirits in their lives: (1) *Taikamanua*, spirits that reside in the air and sky; (2) *Taikapolak*, spirits that reside on the earth; (3) *Taikabaga*, spirits that live beneath the surface of the ground; (4) *Taikalelu*, spirits that reside in and protect mountains and

forests; (5) *Taikabagakoat*, spirits that guard marine life; (6) *Taikabagat-oinan*, spirits that reside in rivers.

Additionally, for the Mentawai people, every living creature and natural element within them consists of *simagere* (soul). *Simagere* in humans, animals, and plants is absorbed from nature through food and other nourishment consumed by humans, animals, and plants for sustenance. In other words, *simagere* ensures the dynamic preservation of human, animal, and plant life (Tulius & Burman-Hall, 2022). Another cosmological concept of the Mentawai tribe is the belief in the existence of spirits (*ketcat*). According to the *sikerei*, *ketcat* only exists in living beings and cannot be found in non-living elements such as rocks, stones, water, rivers, etc. The *ketcat* of humans, animals, and plants have their realms and domains. The realm of the human spirit is called *Beu Lagai*, literally translated as the Great Village. According to the understanding of the Mentawai tribe, each object with a spirit is believed to emit a power radiance called *bajou*. According to Mentawai cultural scholars, this power radiance can lead to undesirable consequences if there is sudden contact between the *bajou* of something and the *bajou* of someone. Therefore, the Mentawai people try to avoid sudden contact because it can eventually cause illness if one's *bajou* is weaker than the others (Delfi, 2014). Concerning these religious principles, the Mentawai tribe always considers balance and the principle of caution.

Secondly, the role of AS as social norm. Norms can be defined as expected rules a society follows and is generally not explicitly stated. Norms are usually passed down through socialization, teaching individuals to behave appropriately within the community context. As the philosophy of the Mentawai tribe, AS has dimensions within the social system. According to Mentawai cultural scholars, AS also governs how Mentawai people act in social contexts. AS is considered a sacred heritage and serves as a norm for personal, family, and *uma* (clan) life, thereby unifying social and cultural life (Delfi, 2012).

Thirdly, the role and position of AS as a principle of environmental conservation. According to interviews conducted with Maskota Delfi, *sikerei*, cultural activist, and manager of Mentawai cultural centers, the core importance of AS is related to the reverence for nature and the

environment. This is reflected in the philosophy of "*isulei lek buttet, makataiat bagkat*" (when a leaf falls, the roots have been damaged). For the Mentawai tribe, leaves, representing nature have the characteristic of leading humans towards balance in achieving well-being. This view is based on the geographical conditions of the Mentawai, which are remote and isolated, making the future of the Mentawai tribe full of challenges and living following the laws of nature. This perspective is essential concerning environmental conservation principles based on local wisdom. Environmental ethics refers to a formal framework that emphasizes practices related to the relationship between humans and nature (Marfai, 2022).

AS, as the core philosophy of the Mentawai tribe, can foster ecological awareness based on sacred values. The manifestation of sacred ecology in AS provides the strength to not violate rules and prohibitions that hold sacred value. AS becomes a self-regulating mechanism in complying with all teachings within the belief system. When adhered to, AS becomes a powerful controller of behaviour, which is then related to the ethical norms of the Mentawai tribe. The power of sacred values becomes an effective self-control mechanism. In other words, the philosophy of AS implies an ecological consciousness based on sacred values, instilling the ethical concept that the environment is connected to the sacred aspects of culture. Based on this, exploring sacred ecology and its relevance to SDGs 12 and 13 can be traced through the forms and cultural practices that emerge and develop within the Mentawai tribe.

In conclusion, AS holds a central and sacred position within the culture of the Mentawai tribe. It encompasses traditions, rituals, and cultural values that shape their lives. AS serves as a religious principle, guiding their spiritual beliefs and recognizing the presence of non-physical forces in the natural world. It also acts as a set of social norms, uniting individuals and fostering community cohesion. Additionally, AS plays a vital role in environmental conservation, emphasizing the sacredness of nature and the need to maintain balance and respect for the environment. Overall, AS is the core philosophy of the Mentawai people, influencing their religious, social, and environmental perspectives and reflecting their deep connection to their cultural heritage and the natural world.

The correlation between the values of Arat Sabulungan (AS) and the Sustainable Development Goals (SDGs) 12 and 13

Traditional knowledge that is not directly connected to the "scientific" world essentially contains practical elements of reverence by positioning itself in harmony with nature. This factor also makes local wisdom more ecologically oriented than market interests (Susilo, 2008). Through their traditional mindset, the Mentawai community deeply respects nature through ecological wisdom as a way of life. Even though their intention may be to preserve group customs, they also contribute significantly to the importance of environmental conservation. In this regard, an analysis of sacred ecology regarding natural resource and environmental management systems can be realized through an adaptive framework from a social humanities perspective, which includes the accumulation and transmission of knowledge, institutions and social norms, mechanisms of cultural internalization, and cosmological concepts (Berkes, 2000).

The first aspect of sacred ecology is the *accumulation and transmission of knowledge* within the Mentawai community. This process involves how the community adapts and passes down knowledge through learning (Berkes, 2000). Since the Mentawai people do not have a written system, accumulating and transmitting knowledge to preserve their cultural history relies on oral traditions, such as folklore and folk songs (Tulius & Burman-Hall, 2022). One example is the folk song or *leleijo* titled "Teteu Amusiat Loga" (The Grandfather, the Screaming Squirrel). According to Tulius (2020), this song reflects how the Mentawai people understand the changes in the surrounding environment. The song tells the story of how God/*Taikalelu*, as the spirit owner of the tree, becomes angry. In line with this perspective, Senatung (2005) explains that the song signifies that every activity the Mentawai people engage in, relating to nature and their environment, must be done by seeking permission from the spirits and cannot be done casually.

Another example is the legend of "Si Bajak Si Kelak Kulit," which depicts the life of an ordinary human who gains a unique ability, an invulnerable body like iron and steel that sharp objects cannot harm due to the power of nature. This story conveys the importance of maintaining a balance

between humans and nature (Ramadhani et al., 2017). These folk songs and legends are integral to the Mentawai's oral tradition and transmit ecological knowledge and wisdom from one generation to the next. They provide insights into the Mentawai people's deep connection with the natural world and their understanding of the need to live harmoniously.

The second aspect is *the social and cultural structure* of the Mentawai community. The social and cultural structure of the Mentawai people revolves around the Uma, a communal house that serves as the home for clans descended from the same ancestors. Typically, clans build their Uma on ancestral land to preserve communal land and the surrounding natural resources (Tulus & Burman-Hall, 2022). The normative system within the Uma can be described as egalitarian, as the Mentawai people do not recognize caste or hierarchical divisions, and there is no authoritarian leadership because all community members have equal status or egalitarianism (Coronese, 1986). Consequently, regarding sustainable resource consumption, the Mentawai people emphasize the importance of the sharing principle when obtaining hunted animals or garden produce. According to cultural academics, the foundation of this equal status is crucial for the collective use of natural resources. Moreover, egalitarianism can be understood as equality between humans and nature. This concept of equality implies that humans need to treat nature with the same respect and responsibility as they do with their fellow human beings.

Taboos and prohibitions are necessary forms of religious norms and sanctions in the conservation and management of resources (Firket Berkes et al., 2000). The Mentawai community has prohibitions known as *kei-kei*, which play a role in sustainable consumption. The activity of clearing new fields accompanied by land burning is believed to anger the ruling spirits. Moreover, land burning kills valuable tree seedlings and leads to the burning of forests in neighbouring communities. If this happens, the landowner who caused the fire may face customary fines. Prohibitions on opening land in sacred forests, areas around hilltops, and areas around springs or river sources also adhere to conservation principles. According to the *sikerei*, rivers are crucial for daily life activities such as bathing, cooking, drinking, and performing rituals. Customary regulations strictly forbid anyone from

polluting or contaminating the river, including using chemicals that harm the environment. Opening land in these areas is feared to disrupt the central ecosystem and potentially damage the vital springs for the community's livelihoods. Sacred forests also hold significant economic and cultural value for indigenous communities (Marfai, 2022).

The social norm reflected in the tradition of *tulou* or customary fines in the Mentawai community is noteworthy. According to cultural scholars, the *tulou* proceedings serve not only as a means of proving guilt or innocence but also as an opportunity for offenders to defend themselves. An individual will be subjected to *tulou* after undergoing a customary trial if they engage in specific actions, including polluting and contaminating rivers, causing forest fires that affect the lands of other communities, theft of any kind such as forest products on communal land, livestock, crops, and traditional equipment, as well as encroachment on land, such as clearing forests for new fields or settlements. *Tulou*, as a customary rule, directs the Mentawai community to preserve the environment and refrain from exploiting natural resources recklessly. The Mentawai people recognize that others have ownership and interests that supersede their own. All valuable possessions can be used as payment, except for items related to ceremonies or offerings for ancestors, as well as arrows and bows (Senatung, 2005).

In conclusion, the social and cultural structure of the Mentawai community, centred around the *Uma* and guided by egalitarian norms, plays a significant role in their sustainable resource consumption and environmental practices. Emphasizing equality and sharing within the community fosters a sense of responsibility towards nature and encourages harmonious relationships between humans and the environment. Additionally, taboos and prohibitions, such as *kei-kei*, further promote conservation by prohibiting activities that harm the ecosystem, ensuring the protection of sacred forests, rivers, and other natural areas. The tradition of *tulou*, as a form of customary fines, serves as a mechanism for maintaining social order and holding individuals accountable for actions that could harm the environment and communal resources. Together, these aspects of social and cultural structure contribute to the Mentawai community's ecological wisdom and sustainable

practices, aligning with conservation and environmental stewardship principles.

The third aspect is the sacred ecological dimension through *cultural internalization mechanisms*. According to sacred ecology, rituals and customary ceremonies are important cultural mechanisms for the adaptive management of natural resources. Rituals help communities remember rules and interpret signs of ecosystem changes (Firket Berkes et al., 2000). The Mentawai community has several rituals related to maintaining ecological balance, including *panaki* or permission-seeking rituals, *punen* or festive rituals, and *alak toga* or marriage customs.

Firstly, *panaki*, or the permission-seeking ritual, is performed to seek permission from the ruling spirits (*tai*) before engaging in activities such as land conversion for cultivation, hunting, and utilization of natural resources. According to Mentawai cultural practitioners, *panaki* ensures that humans are granted a path or safety when carrying out these activities. The purpose of *panaki* is to seek the smooth flow of activities and to avoid any disturbances. According to the traditional leader of Dusun Buttui, the *panaki* ritual involves reciting prayers to the ancestors or spirits and offering small offerings such as chickens, fish, or cigarettes, which are placed in the vicinity of the intended activity. If further examined, *panaki* holds values related to environmental conservation. This is because the Mentawai people believe that nature is not inherently owned by humans but by the ruling spirits (*tai*). When humans excessively and recklessly exploit natural resources, the ruling spirits may become angry, leading to natural disasters. Therefore, humans should not arbitrarily exploit natural resources. The prayers recited by the *sikerei* during *panaki* are as follows:

Teteu mai simalose kasikamone, anai kai ulelek, kusaka kai sateteunu simatei keccat, legen manua areu ake kap paoget'oget, ake kap kejek mai, gailo ngagga karai, sateleunu bapangisei kap."

Translation: "Grandfathers and grandmothers who have authority here, we seek permission to stay, we seek permission to take something, grant us good weather and keep us safe from all dangers, provide us with sustenance, whatever amount it may be, as long as we are here, do not harm us."

Secondly, *punen* (custom festivals) are held throughout the year depending on their purposes,

such as wedding celebrations, birth celebrations, funerals, healing ceremonies, peace ceremonies, pre-land opening ceremonies, crafting ceremonies, the inauguration of new *sikerei*, and others. According to the *sikerei*, during *punen*, there are taboos that the members of the *uma* must observe. These taboos involve restrictions and prohibitions on the use of natural resources. These restrictions contribute to a more balanced ecosystem in Mentawai. It means that even during *punen* or festivals, the surrounding environment must still be considered. Through *punen*, the Mentawai people learn obedience in managing their desires and living with sufficiency. This impacts the Mentawai community, particularly in consuming natural resources excessively and responsibly. One type of *punen* is *punen sinuba*, which correlates with sustainable resource consumption. This ceremony is performed after catching fish using poisonous tuba roots (Senatung, 2005).

Thirdly, the tradition of *alak toga* is a form of dowry given by men to women about to get married. According to the information from the source, the value of *alak toga* is determined after an agreement is reached between the parents of the groom and the bride. It includes livestock, taro, sago, coconut palm, durian trees, and other daily necessities. Using natural resources as dowry forms the basis of conservation principles in the culture of planting trees and caring for livestock. When further examined, in the long term, the culture of tree planting derived from *alak toga* will encourage communities to cultivate fields with various tree species, creating an ecosystem similar to a primary forest ecosystem (Senatung, 2005). In addition to its environmental conservation value, tree ownership can also become a person's social status within the social structure of the Mentawai community.

In conclusion, the sacred ecological dimension in the Mentawai community is manifested through cultural practices and rituals that serve as essential mechanisms for the adaptive management of natural resources. The *panaki* ritual, seeking permission from the ruling spirits, emphasizes that humans should not exploit resources recklessly, as it may anger the spirits and lead to natural disasters. The *punen* festivals, accompanied by restrictions on resource use, promote a balanced ecosystem and teach the value of living in harmony with nature. The tradition of *alak toga*, involving

the exchange of natural resources as dowry, fosters conservation principles and encourages tree planting and livestock care. These cultural practices contribute to ecological conservation and shape the social structure and status within the Mentawai community. Overall, the sacred ecological dimension in Mentawai reflects the deep understanding and respect for the interconnectedness between humans and nature, promoting sustainable resource management for the benefit of both present and future generations.

The final aspect of sacred ecology is the *cosmological concept* in the Mentawai community, as reflected in Arat Sabulungan. Cosmology encompasses the fundamental beliefs related to faith, ethics, and the observation of structures that generate knowledge and understanding (Firket Berkes et al., 2000). Schefold (1988) describes the Mentawai cosmology as divided into three domains: the sky, the earth, and the underworld. The Mentawai people also have a concept of dualism in life, distinguishing between the physical and spiritual worlds. The physical world includes humans, animals, plants, rivers, mountains, bodies of water, the sea, the land, and so on.

Meanwhile, the spiritual world refers to the unseen side of nature known as *ulaumanua* (Tulius & Burman-Hall, 2022). The domain of *ulaumanua* is uncertain and unknown but can encompass the universe, including the domains of humans and spirits. Based on this understanding, the physical world can be seen to correlate with the *ulaumanua*.

Based on dualistic Mentawai cosmology, it is essential to maintain a balance between the physical and non-physical worlds through cultural practices and rituals. The concept of cosmology essentially teaches the importance of balanced human relationships. Through this concept of balance, the Mentawai people constantly strive to practice rituals that create a harmonious coexistence between the physical and spiritual worlds. This means that the role and significance of sacred ecology within the Mentawai community is an effort to maintain a balanced life in the relational scheme between humans, nature, and spirits. This has implications for the utilization of resources that prioritize balance. When an imbalance occurs between these two worlds, it will inevitably lead to disasters for the community, both physical and spiritual. In summary, for the Mentawai people, well-being and the safety of life

are achieved through the harmony between the physical and supernatural realms, which also means preserving the environment and socio-cultural aspects.

The local wisdom of the Mentawai community underlying the AS principles is highly relevant when connected to the context of sustainable development regarding climate change mitigation through nature conservation principles and sustainable consumption. The essence of sustainable development values in points 12 and 13 supports the long-term sustainability of the needs of both the current and future generations (Badan Pusat Statistik, 2016). Based on this, an important keyword that is highly relevant in the connection between the AS concept and the values of sustainable consumption and climate change mitigation is the principle of nature conservation, which emphasizes long-term environmental management while considering future generations.

The local wisdom of the Mentawai community related to SDGs 12 and 13 can be traced according to the concept of sustainability, encompassing economic, ecological or environmental, and social aspects (Ahmad & Lutfi, 2020). The economic aspect in AS is realized through regulating production and consumption activities as integral parts of the Mentawai people's lives. For example, activities such as hunting, gardening, medicinal herb preparation, and sustainable utilization of natural resources. In AS, economic self-reliance and utilization based on visionary and responsible sustainability principles are indirectly taught. This signifies that AS guides the Mentawai community regarding essential economic activities that need to be balanced with their surroundings.

Additionally, the ecological aspect within the sacred values of AS plays a significant role in ecosystem conservation. Using forests following customary rules creates harmony between the community and its forested environment. Mistakes and damages in the utilization and management of the environment are believed to disrupt the balance between human life and the natural environment. Therefore, the environment must be utilized according to its functions to avoid errors. This means that the role and significance of AS within the Mentawai community is an effort to maintain a balanced life in the relational scheme between humans, nature, and spirits. This has implications for the utilization of resources that

prioritize ecological balance. Lastly, the social aspect of sustainable consumption of natural resources in the Mentawai community cannot be separated from the community's involvement in adhering to customary rules.

Moreover, the Mentawai people do not recognize social classes, authoritarian leadership, or feudal inheritance, as all community members hold an egalitarian position. This makes AS a form of sustainability collectively nurtured within an equal community. These three aspects are fundamentally interconnected.

The correlation between implementing local wisdom in AS and climate change mitigation is indirectly practised through the sacred ecology of AS, particularly concerning conservation behaviour and sustainable management of natural resources. The practice of AS in climate change can be demonstrated through control and conservation behaviours towards the environment. The local wisdom of the Mentawai community underlying the AS principles is highly relevant when connected to the context of sustainable development regarding climate change mitigation through nature conservation principles and sustainable consumption. The essence of SDGs values in points 12 and 13 supports the long-term sustainability of the needs of both the current and future generations (Badan Pusat Statistik, 2016). Based on this, an important keyword that is highly relevant in the connection between the AS concept and the values of sustainable consumption and climate change mitigation is the principle of nature conservation, which emphasizes long-term environmental management while considering future generations.

AS, as a sacred belief system of the Mentawai community, encompasses conservation principles and a harmonious relationship between humans, nature, and spirits. These principles align with the objectives of SDG 12 and SDG 13, which aim to ensure sustainable consumption and production patterns and take urgent action to combat climate change and its impacts.

SDG 12 focuses on responsible consumption and production, aiming to promote sustainable economic growth, minimize waste generation, and ensure efficient use of resources. The principles of AS, such as the long-term management of natural resources and the emphasis on balanced utilization, resonate with the objectives of SDG

12. The Mentawai community's practice of sustainable economic activities, such as hunting, gardening, and responsibly utilizing natural resources, reflects the values of AS and contributes to sustainable consumption practices.

SDG 13 addresses climate action, aiming to combat climate change and its impacts through mitigation and adaptation measures. The ecological aspect of AS, which emphasizes the conservation of ecosystems and the understanding of the interconnectedness between humans and the natural environment, is highly relevant to the objectives of SDG 13. The Mentawai community's belief in maintaining balance and harmony with the environment and their traditional knowledge of sustainable resource management contribute to climate change mitigation efforts.

By embracing the values of AS, the Mentawai community showcases a holistic approach to sustainable development, where the principles of nature conservation, responsible consumption, and climate action are interconnected. The correlation between the values of AS and SDGs 12 and 13 highlights the importance of incorporating local wisdom and cultural beliefs into global sustainability frameworks to foster effective and inclusive solutions for addressing climate change and promoting sustainable development.

Based on research analysis, the following indicators of the values of Arat Sabulungan (AS) are relevant to Sustainable Development Goals (SDGs) 12 and 13:

Indicators of AS Values Relevant to SDG 12: 1) Traditional Knowledge Preservation: AS emphasizes preserving traditional knowledge and practices related to sustainable resource management. This indicator involves documenting and safeguarding traditional ecological knowledge, indigenous practices, and sustainable agricultural techniques; 2) Natural Resource Management: The principle of nature conservation in AS reflects efforts towards sustainable management of natural resources. This indicator is related to efficient use, restoration of damaged ecosystems, and waste reduction; 3) Economic Empowerment: AS encourages the economic self-reliance of the Mentawai community by responsibly utilizing natural resources. This indicator includes sustainable production practices, poverty reduction, and community economic empowerment; and 4)

Consumer Awareness: AS values can contribute to higher consumer awareness of their consumption patterns' environmental and social impacts. This indicator encompasses waste reduction, using environmentally friendly products, and the promotion of sustainable lifestyles.

Indicators of AS Values Relevant to SDG 13: 1) Local Knowledge and Climate Change Adaptation: AS includes local knowledge of ecosystems and weather patterns that can contribute to climate change adaptation. This indicator includes adaptation strategies, increasing resilience to climate change, and knowledge of climate risk management; 2) Ecosystem Conservation: AS values support ecosystem preservation as an effort to reduce the impacts of climate change. This indicator encompasses sustainable forest management, biodiversity conservation, and restoration of degraded ecosystems; 3) Climate Change Mitigation: AS promotes climate change mitigation actions through sustainable resource management practices. This indicator includes reducing greenhouse gas emissions, using renewable energy, and improving energy efficiency; and 4) Community Resilience and Disaster Risk Reduction: AS values build community resilience and reduce vulnerability to climate-related disasters. This indicator involves implementing early warning systems, community-based disaster preparedness measures, and sustainable livelihood diversification.

In conclusion, the local wisdom of the Mentawai community, represented by the principles of AS, holds excellent relevance to the objectives of Sustainable Development Goals 12 and 13. The values embedded in AS, such as nature conservation, sustainable resource management, and a harmonious relationship with the environment, align with the goals of responsible consumption and production (SDG 12) and climate action (SDG 13). The indicators of AS values, including traditional knowledge preservation, natural resource management, economic empowerment, consumer awareness, local knowledge and climate change adaptation, ecosystem conservation, climate change mitigation, and community resilience, contribute to the realization of these SDGs. By incorporating the local wisdom of the Mentawai community into sustainable development initiatives, we can foster

inclusive and effective solutions for addressing climate change, promoting sustainable consumption, and ensuring the long-term well-being of both current and future generations.

Strategies for SDGs 12 and 13 through a Cultural Approach

The concept of AS as local wisdom embodies values highly relevant to SDGs 12 and 13. This should be considered when implementing a cultural approach to SDGs on a national scale. So far, Indonesia has not had specific efforts to directly involve local wisdom in implementing SDGs, particularly about points 12 and 13, making it an urgent matter. In 2017, the Knowledge Sector Initiative (KSI), a collaboration between Indonesian and Australian government institutions, discussed the roadmap for cultural development in Indonesia, the dynamics of culture in development, and local knowledge as a development asset (Afandi, 2017). However, based on current research, no concrete steps have been taken. An essential concept in SDG cultural approaches is how sustainable development can collaborate with local culture. It is crucial to consider the relativity and diversity of cultural values from one community to another. It is crucial to reinstitute local wisdom in order to safeguard the environment. The local wisdom that has positive functions for the community is not formulated through scientific sanctification as either a subject or an object but through cultural learning (Susilo, 2008). Based on that, a strategy can be pursued by localizing sustainable development. This approach emphasizes that sustainable development should rely on centralized modernity and local wisdom. From a cultural perspective, localizing sustainable development aims to enable each local area to collaborate development with cultural values.

Efforts can be made to implement SDGs 12 and 13 through a cultural approach, especially by exploring relevant local wisdom with sustainable development in points 12 and 13. This exploration can be conducted through studies on cultural activities in communities relevant to sustainable development, such as sustainable resource consumption and practices or knowledge related to nature conservation that can prevent or warn of natural disasters. Through this exploration, cultural activities, traditional knowledge, and cultural practices indirectly support the

preservation of cultural heritage. Furthermore, the establishment of regulations by the executive branch is needed to accommodate the rights of indigenous communities to participate in cultural life and have extensive involvement with culture in various aspects. These regulations should involve diverse partnerships from various types of actors at all levels so that they can be implemented in specific communities and on a broader scale. Lastly, establishing dedicated regional institutions is necessary to facilitate localization development and monitor and evaluate their work. The model for implementing SDGs through a cultural approach can be summarized as follows: 1) Exploration and study of relevant cultural activities and practices related to sustainable development; 2) Formulation of regulations by the executive branch to accommodate the rights of indigenous communities and promote cultural involvement in development; and 3) Formation of regional institutions to facilitate localisation development and monitor its progress.

The model for implementing SDGs points explicitly 12 and 13 can utilize the Regional Council for Localizing Sustainable Development. This institution can be established under the auspices of the Regional Development Agency. In its implementation, this strategy needs to involve several stakeholders to support the achievement of SDGs 12 and 13 based on a cultural approach. Firstly, the Key Stakeholder (Government). The first effort by the Central Government is through the National Development Agency as the critical driver of SDGs implementation based on a cultural approach. They can create clear and detailed regulations on the necessary synergies to accommodate culture to implement SDGs. Furthermore, the central government also needs to consider the establishment of the Regional Council for Localizing Sustainable Development, which explicitly captures cultural aspirations within each region as a basis for sustainable development. Additionally, the regional council has a role in disseminating the role of culture in sustainable development to the community.

Secondly, the Primary Stakeholders are the community and cultural actors as the main actors in implementing development through a cultural approach within society. They are crucial in preserving and promoting local wisdom and

cultural practices aligned with sustainable development goals.

Thirdly, the Secondary Stakeholders (Academics/Researchers). Research related to development with a cultural approach is still limited in Indonesia, so efforts are needed to enrich the body of knowledge related to sustainable development with a cultural approach by academics and researchers. Through research and academic contributions, a deeper understanding of the cultural dimensions of sustainability can be achieved, leading to more effective and contextually appropriate strategies for implementing SDGs.

By involving these stakeholders and establishing the Regional Council for Localizing Sustainable Development, the implementation of SDGs 12 and 13 can benefit from local wisdom and cultural practices. This approach ensures that development efforts are tailored to each region's cultural contexts and needs, leading to more inclusive and sustainable outcomes.

CONCLUSION

Based on the above explanation, this research's conclusions can be summarized as follows. Firstly, Arat Sabulungan is a belief system of the Mentawai tribe that serves as an ecological consciousness based on sacred values and functions as a religious principle, social norm, and environmental conservation. Secondly, the analysis of sacred ecology includes the natural resource and environmental management system of the Mentawai tribe, which consists of knowledge accumulation and transmission, institutional and social norms, cultural internalization mechanisms, and cosmological concepts. This analysis is relevant to SDGs 12 and 13. Thirdly, the strategy for implementing sustainable development goals, specifically points 12 and 13, through a cultural approach can be achieved by adapting the concept of localizing sustainable development. In practice, the implementation strategy of SDGs points 12 and 13 through a cultural approach needs to involve key, primary, and secondary stakeholders.

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