

TEDDUNG E BEDDHIH: EXPLORING THE RELATIONSHIP OF LOCAL WISDOM AND COASTAL ENVIRONMENT MADURA THROUGH CULTURAL ECOLOGY

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Abstract.

Teddung E Beddhih is a form of local wisdom in the form of the practice of sleeping on the sand in Sumenep, Madura, which reflects the close relationship between traditions and the geographical conditions of the region. This research employs a cultural ecology approach to identify the core elements of Madurese community culture that have adapted to their natural environment and to describe how the management of natural resources has been integrated into health-promoting traditions. The study was conducted in the Madurese community of Legung Timur village, Sumenep, Madura, using qualitative methods including interviews, observations, and library research. The study aims to explore the local wisdom of Teddung E Beddhih, a traditional practice believed to promote health benefits. It investigates how this tradition reflects the interaction between cultural practices and the coastal environment of the Madurese community. The research reveals that Teddung E Beddhih is deeply intertwined with both the coastal environment and local cultural practices. It demonstrates that the tradition has evolved in response to, and in harmony with, the region's geographical conditions. This study is expected to provide insights into the application of cultural ecology to local wisdom, with Teddung E Beddhih serving as an embodiment of sustainable development.

Keywords: Teddung E Beddhih, Cultural Ecology, Local Wisdom, Health Benefits

INTRODUCTION

Humans are intrinsically connected to their environment. Anthropologically, humans have evolved and adapted to their natural environments. Possessing both rational and instinctive abilities, they have created 'culture' as an adaptive system to maintain their relationship with nature. (Daeng, 2008). Therefore, a concept emerged that underlines the close relationship between humans, nature, and culture. This concept describes a triangular relationship, where the three elements influence and interact with each other in the formation of culture. In this case, humans create their culture to overcome conditions in their natural environment or vice versa, and nature forms the culture of humans living in that natural environment (Bruce, 2007).

Culture developed in response to humans' need to survive in different environments. Since the beginning of civilization, humans have created various ways to meet basic needs, such as food, shelter, and protection from the weather. Through interaction with nature, humans develop tools, techniques, and social systems that enable them to survive. According to Malinowski, as quoted in Koentjaraningrat (1987), all human activities or activities in the elements of culture are intended to satisfy a series of several human beings' instinctive needs related to their entire lives. Thus, each society develops a unique



culture based on its environment. Adapting to this environment gave birth to the concept of "geoculture", a culture formed due to the influence of geographical conditions.

The adaptive responses create geographical cultures influenced by the environment. For example, there is a tropical culture (a culture that develops in tropical areas), a subtropical culture (a culture that develops in communities living in subtropical areas), and a polar culture. Likewise, geological conditions shape cultures, there is a mountain culture (a culture of people living in mountainous areas), a coastal culture (a culture that develops in coastal communities), a continental culture (a culture that develops in communities living on continental plates), and so on (Indrawardana, 2012).

Culture plays an essential role in the process of adaptation in society to their local environment conditions. Therefore, cultural ecology is the result of human adaptation to its social environment by adapting biologically and culturally for humans for adaptation and continuity (Yanti, 2020). Through traditions, rituals, and values passed down from generation to generation, culture creates a unique identity that defines the way of life of the local community. This is then known as local wisdom. According to Ridwan (2007), local wisdom is a human effort to use reason (cognition) to act and behave towards something, an object, or an event in a particular space. One of them is coastal communities, which possess valuable traditional knowledge that has been successfully applied in managing natural resources sustainably. This knowledge about marine ecosystems, natural cycles, and wise resource management practices has helped coastal communities adapt to a dynamic environment.

Madura, an island in eastern Java, has a unique culture that sets it apart from other ethnic groups. Madura Island has four regions: Bangkalan, Sampang, Pamekasan, and Sumenep In society, Madura is known to have a distinctive, unique, stereotypical, and stigmatic culture. The term distinctive refers to the understanding that the Madurese ethnic entity has a cultural specificity that is not similar to the ethnography of other ethnic communities (Hasan Alwi, 2001). Madurese cultural wisdom is formed and influenced by geographical and topographical conditions, thus giving rise to the community's social practices, traditions, and customs in their daily lives. This cultural wealth is reflected in various aspects of Madurese life, including customs, language, art, and social values passed down from generation to generation.

Sumenep is the largest district in Madura Island, around 1998.54 Km2, which is unique in its local wisdom. The coastal community of Sumenep has local wisdom, which is a view of life and a set of knowledge, as well as several life strategies carried out by the local community in answering problems experienced in community life. The cultural practice carried out from generation to generation by the community from the coastal area of Sumenep is *Teddung E Beddih*, precisely in Legung Timur Village. In Madurese, *Teddung* means sleep, and *Beddih* means sand. In a more extended sense, *Teddung E Beddih* is a cultural practice of the Legung Timur community, where people sleep on the sand daily. The residents of Legang Timur Village are also known as the "Penduduk Kasur Pasir" because instead of using mattresses made of sponge or kapok, the residents fill their bedrooms, yards, and living rooms with sand.

Teddung E Beddih is still carried out today by the Legung Timur community mainly because this cultural practice is believed to impact their bodies positively, such as health and comfort. If we refer to cultural ecology, this cultural practice is inseparable from the environment in which the culture develops so that the community carries out these habits. In this essay, the author will discuss the relationship between the Teddung E Beddih practice patterns and the adaptive relationship of local communities with coastal ecology.



LITERATURE REVIEW

Cultural Ecology Theory

Cultural ecology theory, developed by Julian Steward, is an anthropological approach emphasizing the reciprocal relationship between humans and their environment. Steward argues that human culture is strongly influenced by the physical environment in which they live. In other words, a society's way of life, customs, and technologies are shaped by the challenges and opportunities offered by their environment. Culture serves as the medium through which humans adapt to environmental conditions and their changes (Fransiska et al., 2020).

Cultural Core and Ecological Adaptation

Julian H. Steward (1955), as the initiator of cultural ecology (Poerwanto, 2010), highlights the "cultural core"—a part of the cultural system highly responsive to ecological adaptation. The processes of adjustment to ecological pressures directly impact the core elements of a social structure. Cultural ecology understands the environment and culture as an inseparable unity that influences each other, albeit in varying ways (Abdoellah, 2012). Steward's cultural ecology theory identifies environmental factors such as climate, topography, and natural resources as key influences on human life. He observes how people develop technology and social systems to adapt to these environmental conditions. The concept of the "cultural core" underscores the formation of distinctive cultural patterns as a result of human adaptation to their environment (Steward, 1955).

Research on cultural ecology has been conducted by previous scholars, including the study *Cultural Ecology and Environmental Education: Lessons Learned from the Baduy Indigenous Community* by Bagja Waluya et al. (2022). This study explores culturally generated abilities and skills within the framework of human adaptation and environmental education. The findings highlight the cultural ecology of the Baduy indigenous community, their environmental education practices based on local wisdom, and the pedagogical experiences gained from local wisdom-based learning. The research underscores how environmental education integrates skill application and sustainable practices, both of which are fundamental principles in the way the Baduy people live.

Secondly, A. Lidya Tania et al. (2014) conducted a study titled *Community Social-Ecology Dynamics on Madak Culture of Coastal Region, West Sumbawa*. The aim of this research was to understand the social changes within the Madak community in West Sumbawa. The Madak practice is a traditional cultural activity performed by the Sumbawan people during low tide to collect marine organisms. The findings revealed a significant decline in the harvests obtained by the Madak practitioners compared to previous years. This decline is attributed to the increasing number of local residents and newcomers engaging in the Madak practice using environmentally harmful methods and tools.

Thirdly, Agung Wibowo, Suwarto, and Sugihardjo (2022) explored a tourism village development model based on cultural ecology on the slopes of Mount Lawu, Indonesia. This research aims to investigate a development model for mountainside tourism villages from an ecological perspective. The findings indicate that a tourism village development model rooted in cultural ecology—characterized by the development of social networks and local cultural potential—has effectively empowered local communities.

Based on the studies mentioned, while existing research on cultural ecology provides valuable insights into various communities, there has not been any exploration of the specific local wisdom of



the Madura coastal communities, particularly regarding *Teddung E Beddih*. Additionally, discussions about this tradition in various media are quite limited. Furthermore, many studies examine social changes or environmental education separately; this research will focus on understanding how local wisdom influences both environmental sustainability and social dynamics.

METHOD

The method that was used in this research is qualitative, taking data through the interview, observation, and library research. Qualitative research is multimethod in focus, involving an interpretive, naturalistic approach to its subject matter. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (Denzin and Lincoln, 1994). The location of the study was conducted in Legung Timur Village, Batang-Batang District, Sumenep Regency. This place was chosen by the researcher because it has a unique tradition that is not owned by other places. The tradition is sleeping on the sand. The sampling technique uses snowball random sampling, namely, the determination of informants is determined by the previous informant.

1.1. Sample/Participants

Nazir (2013: 240) defines a sample as a group of individuals possessing specific predetermined qualities, known as variables. A sample, therefore, is a subset of the population, selected to represent the characteristics and traits of the whole. In this particular study, the population examined was Legung Timur Village, located in Batang-Batang District, Sumenep-Madura Regency, East Java Province. The sample was selected using purposive sampling, in which units are chosen based on specific criteria.

1.2. Instrument(s)

In this qualitative research on the cultural ecology of Teddung E Beddih, the instruments used included in-depth interviews, participatory observation and document analysis. In-depth interviews were conducted with key informants, such as community leaders and local practitioners, to explore their understanding of the relationship between culture and the environment. Participatory observation allows researchers to be directly involved in the daily activities of the community, so as to understand the social and cultural contexts that influence their interactions with nature. In addition, document analysis, such as historical records and local policies, provided additional perspectives on developments and changes within the Teddung E Beddih cultural ecosystem. This combination of instruments supported the collection of holistic and in-depth data, which is essential for generating valid and meaningful findings.

1.3. Procedures

The stages of qualitative research in the study of Teddung E Beddih's cultural ecology can be divided into several steps. First, identification of the problem and research objectives, which includes understanding the interaction between the community and their environment. Second, data collection through participatory observation, in-depth interviews and documentation studies to gain a comprehensive perspective. Third, data analysis using a thematic approach, identifying patterns and meanings that emerge from cultural and ecological interactions. Furthermore, validation of findings is done through triangulation of data sources and discussions with informants. Finally, the preparation of a research report that presents the findings and socio-cultural implications as well as recommendations for sustainable development.



RESULTS & DISCUSSION

The Cultural Practice

Legung Timur Village is about 27.7 kilometers from Sumenep Regency. Located in Batang-Batang District, this village has an area of approximately 368.63 hectares with a population of about 5,201 people, including 1,884 families (Secondary Data of Legung Timur Village, Batang-Batang District, 2022). Like the surrounding areas, as coastal residents, most of the residents of Legung Timur work as fishermen. The houses in Legung Timur Village are typical, except for one thing. Each bedroom is equipped with a square sand pool measuring approximately 2 x 2 meters, which functions as a bed, which they call a "sand mattress".

Sleeping on the Sand may sound strange to some people. However, for the residents of Legung Timur Village, Sumenep Regency, Madura, sleeping on the Sand is a unique tradition that has been going on for hundreds of years, known as *Teddung E Beddhih*. *Teddung* in Madurese means sleep, and *Beddhih* is Sand, *Teddung E Beddhih* literally means 'sleeping on sand. For the residents of this village, sand has become an integral part of their lives, not just a decoration for the beach. They believe sand is connected to the earth, where humans come from, as recognized by several sources who are officials in the Legung Timur village.

Until now, this culture has been maintained by the village community. However, according to the statement of the local Village Head, not all villagers follow this culture. Most are only those who live in areas closer to the beach. The community keeps this tradition alive because of material and non-material factors. Materially, people keep using sand mattresses because they find them comfortable. According to residents, sleeping on the sand is much more comfortable than sleeping on mattresses sold on the market. With the hot weather of the coastal area, sleeping on a mattress feels cooler. Non-materially, in the culture of the sand mattress village community, they still uphold the values of politeness, cooperation, respecting guests, and greeting each other between neighbors. The community welcomes visitors in a friendly manner and proudly introduces their sand mattresses.

The locals of Legung Timur are highly social, and their sense of community is reflected in their daily routines. Instead of staying inside, they often spend time on their terraces or in their yards, where they can interact with neighbors. Whether chatting, cooking, or taking care of their children, these activities are commonly done together in open spaces, reinforcing their close-knit relationships. Even children and teenagers frequently sleep outside on the sand, side by side with friends and neighbors, making their homes and yards communal spaces for both rest and socializing.

In addition to the bedroom, the terraces and yards of homes in Legung Timur are also filled with sand. However, the type of sand used varies. For bedrooms, the villagers use a finer, higher-quality sand that is purchased from sand collectors and transport services, unlike in the past when they would gather it themselves. This special sand is sourced from deeper layers beneath the surface, ensuring it remains uncontaminated by sunlight, human footprints, or animal activity. The process of obtaining the sand involves digging to a certain depth to find the best quality, which is then brought home, dried, and prepared for daily use. This long-standing practice has earned the villagers the nickname "sand people."

On the other hand, the sand in their homes is typically replaced about once a year to maintain its cleanliness and comfort. While many villagers, especially those near the shoreline and from families who have followed this tradition for generations, continue to uphold the practice, others are becoming less familiar with it. As time passes, this unique aspect of Legung Timur's culture may fade. However, for those who remain deeply connected to it, the practice is more than just a tradition—it is a necessity and a way of life, one they have known since birth, as many were even born directly on the sand. This fusion of practicality and cultural heritage makes Legung Timur distinct, preserving a profound connection between the people and their coastal environment



Cultural Ecology of Legung Timur People

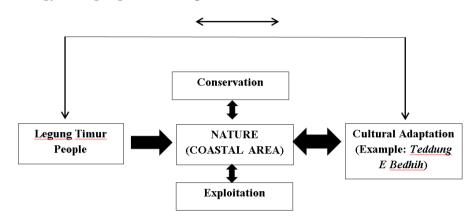


Figure 1. Framework of Cultural Ecology (Steward 1977. Sutton Anderson. 2020)

Cultural ecology primarily studies human adaptation to the environment. Aristotle (Azmi, 2018, pp. 78-79) described humans as social beings (zoon politikon), always living in communities. The livelihood of the Legung Timur villagers is closely tied to their natural surroundings, with most villagers working as fishermen. According to a 2015 survey, 72.78% of the village's population is a fisherman and the rest are farmers being the primary livelihoods. Beyond providing employment, the natural environment offers essential resources such as food, water, and materials for shelter. As a result, the people there are deeply connected to the natural environment they inhabit.

A unique cultural practice in Legung Timur is *Teddung E Bedhih*, where villagers integrate sand into their daily lives, using it for sleeping, cooking, and relaxing. This practice is not only a part of their routines but also holds cultural significance. Villagers believe that sand has health benefits, such as relieving fatigue and soothing skin irritations. The tradition reflects their deep bond with nature, where sand serves both practical and symbolic roles in their lives. This custom has been passed down for generations, reinforcing the community's cultural identity.

The emergence of the *Teddung E Bedhih* culture can be seen as nature's way of providing both material and non-material shelter to the local community. Villagers carefully select and maintain the sand they use in their homes, ensuring its purity by purchasing finer, uncontaminated sand from suppliers, a shift from the older practice of gathering sand themselves. This sand is sourced from deeper layers beneath the surface, avoiding exposure to sunlight, human activity, and animal footprints. It is filtered and replaced annually to maintain cleanliness and comfort, reflecting the community's commitment to preserving this cultural practice even in the face of modern conveniences.

Because of their constant connection to nature, human existence and the way they adapt to their environment enable them to create tools essential for their daily needs, including survival. Cultural ecology has facilitated various adaptation processes across different societies. The Teddung E Bedhih tradition is one such form of human adaptation to the coastal environment. The coastal areas of Legung Timur District tend to have higher temperatures due to the greater air pressure at low altitudes, such as beaches, compared to highlands like mountains and hills. This higher air pressure compresses air molecules, causing an increase in temperature. According to local residents, sleeping on the sand feels cooler because sand can absorb heat.



Performing daily activities on the sand has become deeply ingrained in their lifestyle, reflecting their adaptation to their natural environment. Even in modern times, despite the availability of modern homes, the tradition of using sand beds remains a prominent practice among the locals. Many residents, even those with modern houses, continue to use sand bedding in their bedrooms and living rooms, demonstrating the enduring significance of this cultural practice.

This attachment to sleeping on sand has shaped a unique cultural pattern in the community. Many villagers find it difficult to adapt to regular mattresses when traveling, often bringing sand with them to maintain their comfort. This cultural trait is passed down through generations, as parents introduce the tradition to their children through daily practices at home. The influence of this custom is so strong that children from Legung Timur often face challenges adapting to life outside their village, for example when they have to move at Islamic boarding schools, where sleeping on regular mattresses is required. In response, some schools in Sumenep allow these children to bring sand with them during the initial adjustment period.

The meticulous care with which the people of Kampung Pasir maintain their sand mattresses also highlights their dedication to preserving this tradition. The process of filtering sand, often done once or twice a year, ensures the comfort and cleanliness of the sand used in homes. In addition to its cultural significance, sand plays an important role in environmental conservation, helping to prevent flooding and absorbing water from the highlands. This connection to nature extends beyond sand use, as the community also engages in coastal protection efforts, such as planting mangroves to prevent erosion.

The Teddung E Bedhih culture, passed down through generations, exemplifies the reciprocal relationship between humans and nature. This tradition not only shows how the community has adapted to their environment but also emphasizes the importance of conservation. The villagers' deep bond with sand has shaped their customs and daily practices, creating a distinctive cultural identity that has earned them recognition as the "sand people." This unique tradition sets the Legung Timur community apart in the coastal region, making their cultural practices a symbol of adaptation and environmental harmony.

Traditional Values

Teddung E Beddih tradition in Sumenep Madura is more than just a habit of sleeping on the sand. Behind the simple practice that has been maintained until today, this tradition holds noble ethical values that have been passed down from generation to generation by coastal communities. Firstly, Attachment with Nature, sleeping on the sand directly connects humans with nature. The Sumenep community who carry out this tradition feel a close relationship with the surrounding environment, especially with the sea and the coast, they realize that nature has provided its benefits to be used wisely. They utilize the abundance of sand for sleeping because it is considered to have properties that can nourish the body and provide peace of mind.

Secondly, Simplicity of Life, this value emphasizes the significance of living without excess. In coastal communities, there's no reliance on extravagant sleeping arrangements; instead, residents find comfort and joy in resting directly on the sand. This connection to simplicity extends beyond just sleeping, as community members engage in various activities such as studying, playing, and cooking right on the sandy shores. Their ease in embracing these simple pleasures highlights a broader lifestyle characterized by modesty and authenticity. This value is evident in the everyday lives of coastal inhabitants, who generally adopt a straightforward and unpretentious way of living, reflecting their appreciation for the essentials rather than material wealth.

Thirdly, Cooperation and Harmony, although the Teddung E Beddih tradition is carried out individually, the value of cooperation and harmony remains strong in its implementation. People collaborate with each other in various activities, such as preparing beds made of sand, cleaning the



surrounding area, and keeping the beach clean. This cooperation reflects the spirit of togetherness and mutual help, which is at the heart of the tradition. Each individual contributes in their own way, but the result is a clean and orderly environment, and a harmonious atmosphere within the community.

Spiritual Aspect

Teddung E Beddih also contains spiritual aspects that are highly valued by coastal communities in Sumenep Madura. They believe that this tradition is not just a physical activity, but also has a deep meaning relating to their soul and their relationship with nature. This practice is considered a means to be grateful for God's resources and to harmonize with the surrounding environment.

Firstly, Connection with the Universe. Sleeping on the sand is not just about choosing a place to rest, but is also seen as a deeply spiritual practice. Sand, as an element of the earth, is believed to have a unique energy, which can help balance the energy in the human body. By lying on the sand, individuals feel a closeness to nature, which provides a sense of calm and harmony. This belief underlines the close relationship between humans and nature, where each element is considered to have an important role in creating balance in daily life.

Secondly, Self-Purification. Teddung E Beddih has an important self-purification dimension, both physically and spiritually. In this practice, sand is considered to have the ability to absorb, so it is believed to eliminate negative energy attached to one's body. By resting on the sand, individuals seem to undergo a process of purification, where they cleanse themselves of any physical or mental impurities that may disturb their peace of mind. This activity not only serves as a ritual, but also reflects the human endeavor to reach a holier state and find inner peace. As such, it is an important means of strengthening the connection between body, mind and nature.

Health-Tourism Potential

Teddung E Beddih, which has great traditional value and spirituality, is believed to have health benefits for the local community. As such, there is a great opportunity to develop this practice into a health tourism destination. This development will not only help in preserving the valuable local culture, but also contribute significantly to the economy of the local community. Through activities such as cultural festivals, art exchanges, and the development of culture-based creative industries, it not only keeps cultural heritage alive, but also creates sustainable economic opportunities (Sari, et al. 2022).

However, from the health side, there are some doubts and speculation about the hygiene of sleeping on the sand before doing the observation. Logically, sand is identical with the ground which is the cleanliness is questioned. People probably get some diseases such as respiratory disease, itchy, allergy, etc. But, the sand (golden sand) utilized by Legung Timur villagers as the sand mattress is different from the sand on the beach. According to Suyami (2012: 99-109) in her scientific research at Culture and History Journal (Jantra: Jurnal Sejarah dan Budaya) Vol. VII No. 1 2012, it proves that after done the laboratory test of the sand which Legung Timur villagers use as a sand mattress, it known that the sand contains:



Table 1. The Laboratory Test of Legung Timur's Sand

NO	SAMPLE CODE	PA RA ME TE RS	MEASUREMENT RESULT (%)			METHOD
			I	II	III	
1.	Pasir Madura	A12 O3	7,1002	6,9941	7,3124	Atomic Absorption Spect
2.		CaO	8, 3421	8,2364	8,3421	-
3.		Fe2 O3	2,7898	2,6931	2,7575	-
4.		MgO	0,0575	0,0619	0,0590	-
5.		Pb	0,0058	0,0060	0,0052	-
6.		Zn	0,0246	0,0236	0,0241	-
7.		Cu	0,0018	0,0018	0,0017	-
8.		SiO2	73,4177	72,475 9	74,3595	-

(Source: Culture and History Journal Vol. VII No. 1 2012)

Among the chemical elements contained by gold sand, there are several elements that provide benefits to the human body. The first is Calcium Oxide (CaO), the CaO element chemically has heat release energy which causes a warm effect on the media. This warm energy has a positive effect on blood circulation which will normalize the body's metabolism, thus improving health. The second is Zinc (Zn) and Copper (Cu) in the sand which are antibacterial substances. The third is Silica (SiO2) which is an absorbent material for harmful chemicals such as carbon dioxide (CO2) and other radical substances, both inside and outside the body.

From the research, it is evident that Teddung E Beddih has significant health benefits, which opens up great opportunities for development as a health tourism village. According to Hamzah and Irfan (2018), a tourist village is an area with a certain area and has a unique potential for typical tourist attractions, as well as a community that can create a combination of tourist attractions and supporting facilities, so as to attract tourists to visit, including the growth of accommodation facilities provided by the local community. With findings showing positive effects on health, especially for joint diseases and stroke, the village may attract tourists seeking a holistic and revitalizing experience. The development of a health tourism village through Teddung E Beddih will not only promote traditional practices rich in cultural value, but also have a positive impact on the local economy. It can create



jobs, increase community income, and encourage the sustainable preservation of cultural heritage.

CONCLUSIONS

The Teddung E Beddih tradition, where villagers of Legung Timur Village sleep on the sand, reflects their unique adaptation to the coastal environment. The sand, not only used for its comfort and cooling effect, is also believed to offer health benefits, such as relieving fatigue and soothing skin irritations. This practice, which has been passed down for generations, signifies a deep connection between the villagers and their natural surroundings, particularly the sea and the beach. Despite modernization, many locals continue to uphold this tradition as part of their cultural heritage.

Research shows that the sand used by the villagers contains beneficial elements like calcium oxide, zinc, and copper, which contribute to better blood circulation and have antibacterial properties. This discovery presents an opportunity to develop the village into a health tourism destination, combining cultural preservation with economic growth. By promoting *Teddung E Beddih* as a health-based attraction, the community can both safeguard their tradition and enhance local livelihoods through sustainable tourism.

To complement these approaches, further research is needed, including anthropological studies to document the cultural and historical value of this tradition, and an assessment of the economic potential to design a sustainable health tourism development strategy. In addition, an assessment of the environmental and social impacts of tourism development is also important to ensure that the preservation of traditions can go hand in hand with environmental sustainability and community well-being.

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