



Analysis of Ecolexicons *Tuo* (Tuak) in Nias Language

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ARTICLE INFO	ABSTRACT
Received: 11 Aug 2025	This study examines the ecolexicon of <i>tuo</i> (palm wine) in the Nias language as a reflection of the close relationship between language, environment, and culture in Nias Island, Indonesia. This study employs a qualitative approach to analyze the data. All data were collected in Nias Regency and Gunungsitoli City through observations and interviews with sap tappers and <i>tuo</i> consumers, and other documents such as dictionaries, books, and articles related to the study were used as supporting data. The analysis applies the grammatical framework of Bundasgaard (2000) (2000) to classify <i>tuo</i> lexical items into grammatical categories and to interpret their cultural and ecological meanings. The findings reveal 61 <i>tuo</i> lexical items in the Nias language. These include 19 lexical items for types of <i>tuo</i> , 26 lexical items referring to its natural sources (particularly coconut and aren palm), and 39 lexical items related to tools and the management of <i>tuo</i> . Grammatically, the ecolexicon consists of seven nouns, nineteen verbs, and eight adjectives that describe the qualities, processes, and functions of <i>tuo</i> in daily life. The study also shows that <i>tuo</i> lexical items are embedded in Nias proverbs and song lyrics, which encode moral teachings, social norms, and communal values such as self-control, solidarity, prudence, and respect for others. Overall, the <i>tuo</i> ecolexicon functions not only as a linguistic resource but also as a carrier of cultural identity and ecological knowledge. The study underscores the urgency of documenting and preserving this ecolexicon in the face of modernization and the declining use of traditional vocabulary among younger generations.
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1. Introduction

Indonesia is a culturally diverse country that possesses a wide range of traditionally produced alcoholic beverages, commonly known as *tuak* (palm wine). These traditional

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alcoholic drinks are generally produced through fermentation processes that utilize natural ingredients such as glutinous rice, coconut sap, or aren palm sap, often combined with ready-made yeast (Navianti et al., 2018). The fermentation process requires a considerable amount of time, and a longer fermentation period is believed to enhance the quality of the beverage by increasing its alcohol content (see Adnyana, 2020).

As a country with rich cultural plurality, Indonesia is home to many ethnic communities that produce traditional alcoholic beverages not only for consumption but also for medicinal purposes, daily livelihood, and various cultural functions (Ananda & Nabila, 2022). Several well-known traditional alcoholic beverages in Indonesia include *Tuak* from Toba and Tapanuli, *Tuak Nifaro* from Nias, *Lapen* from Yogyakarta, *Arak* from Bali, *Ballo* from Makassar, *Sopi* from Maluku and East Nusa Tenggara, and *Cap Tikus* from Manado and Minahasa (Muhid, 2021). These beverages are deeply embedded in local traditions and reflect the close relationship between language, culture, and the natural environment.

Tuak is one of the traditional alcoholic beverages that is still widely found in various regions of Indonesia and Southeast Asia, including Nias Island. It is an intoxicating drink produced through the fermentation of sugary liquids or fruits and is often referred to as arak, as it contains alcohol. Across the Indonesian archipelago, *tuak* is commonly produced by traditional communities and functions as both a cultural and economic resource (Widianindya et al., 2026).

Focusing on Nias Island, this study examines *tuo*, a traditional palm wine that holds a central position in the cultural life of the Nias people. *Tuo* is one of the most popular traditional beverages among the Nias community and is frequently consumed as a refreshing drink. In addition to its role as a daily beverage, *tuo* serves as a source of income, as it is widely sold in markets and small local stalls. Moreover, cultural ceremonies among the Nias people are considered incomplete without an abundant supply of *tuo*, and social interaction is often marked by gatherings in small stalls where people drink *tuo* while engaging in conversation (see Ndruru & Umiyati, 2017).

From a linguistic perspective, *tuo* represents more than merely a beverage; it is a lexical item that reflects traditional habits, cultural values, and the interaction between language and environment. In this context, *tuo* is examined as part of an ecollexicon, which refers to a set of lexical items that describe environmental, cultural, and ecological contexts (Rahmawati & Widayati, 2021; Suardiana et al., 2025; Widanti, 2022). A lexicon refers to the vocabulary of a language, encompassing information related to the meaning, form, and usage of words (Crystal, 2008). Thus, the ecollexicon of *tuo* provides insight into how language encodes ecological knowledge and cultural practices within the Nias community.

The ecollexicon of *tuo* specifically refers to a traditional fermented beverage made from coconut sap or aren palm sap that plays an important role in the social and cultural life of the Nias people. *Tuo* is commonly used in customary and religious ceremonies, including weddings, funerals, and major cultural celebrations (Tarigan et al., 2020). Beyond ceremonial functions, *tuo* also serves as a symbol of friendship, harmony, and

social cohesion among community members. The lexical item *tuo* in the Nias language represents a deeply rooted cultural tradition that has been preserved for centuries and reflects the cultural richness and values associated with its production and consumption.

Furthermore, the ecolexicon of *tuo* illustrates the strong relationship between the Nias community and their natural environment. The production of *tuo* relies heavily on locally available natural resources, demonstrating ecological knowledge passed down through generations. Understanding the ecolexicon of *tuo* therefore allows for a deeper appreciation of Nias cultural heritage and offers insights into how traditional practices continue to evolve amid modern social and economic changes.

The Nias community has historically maintained a close connection with nature, and *tuo* is one of the traditional products inherited from their ancestors (Cowley, 2018; Nash & Mühlhäusler, 2014). This beverage fulfills multiple functions, including use as traditional medicine, a source of daily income, and a cultural drink served in ceremonial and social contexts. The presence of *tuo* in social life contributes to strengthening kinship ties among the Nias people. However, the tradition of producing *tuo* is currently facing challenges due to the increasing influence of externally produced alcoholic beverages, which has led to a decline in local production of *tuo* from coconut or aren sap. As a result, there is a risk that this cultural heritage may gradually disappear, particularly as younger generations become less familiar with traditional production methods and the cultural significance of *tuo*.

In the Nias tradition, *tuo* exists in several varieties that reflect differences in production processes and quality. These varieties include *tuo* nifaro (distilled palm wine), *tuo* sataha (non-distilled palm wine), hogo duo (high-quality palm wine), and *tuo* ni eso (mixed palm wine). These distinctions further demonstrate the richness of the ecolexicon associated with *tuo* in the Nias language (see Renjaan, 2014).

Several previous studies have explored eco-linguistic topics related to traditional beverages and environmental lexicons. These include Ndruru (2022) on the ecolexicon of gowirio in North Nias; Bagiada (2019) on the palm wine lexicon in Mambal Village, Badung, Bali; Genua et al. (2018) on the ecolexicon of Nijo in Lio, Flores; Luardini et al. (2019) on ethnomedical of Kalimantan Community; Nurwahyuni et al. (2023) on form and meaning of the ecolexicons in the Oral Literary Text of Guyub Spoken Tolaki Language; and Sadra and Kasni (2023) on Forms of the Ecolexicon of Khazanah Nominal and Bali Verb. These studies generally employ qualitative descriptive methods to analyze ecolexicons related to environmental and cultural practices.

Based on these previous studies, similarities and differences can be identified with the present research. The similarity lies in the focus on eco-linguistic phenomena, particularly ecolexicons, and the use of qualitative approaches. However, the present study differs in that it specifically concentrates on the ecolexicon of *tuo* in the Nias language, with an emphasis on its cultural values, social practices, and community efforts to preserve this tradition.

This study is therefore significant because the ecolexicon of *tuo* in the Nias language has not been examined in previous research. Moreover, *tuo* represents an important

element of Nias cultural identity that must be preserved to protect local wisdom embedded in the language, particularly the ecolexicon related to traditional beverages. Accordingly, the objectives of this study are as follows:

1. To identify the lexical items related to *tuo* (palm wine) in the Nias language.
2. To examine the social practice dimensions associated with the ecolexicon of *tuo* in the Nias language

2. Literature Review

Ecolinguistic studies in Indonesia show significant development in mapping the relationship between language, environment, and local culture through the documentation of eco-lexicons in various speech communities (Døør & Jørgen, 1993; Eliasson, 2015; Mbete, 2013; Subiyanto, 2013). Widanti (2022) explains that the eco-lexicons related to the idea of “green” used by the school community reflect ideological, biological, and sociological relationships between language and the natural environment where the community interacts. These lexicons appear as nouns, verbs, phrases, and nominal phrases such as black bamboo or playing Jegog. The findings also demonstrate that the school’s environmentally oriented learning system shapes ecological social practices among its members. A related study was conducted by Ndruru (2022), who examined the eco-lexicon associated with *gae* (banana) in the Nias language. Through the documentation of 57 lexicons consisting of nouns, verbs, and adjectives, the study shows that social change and the reduced use of the Nias language contribute to the gradual decline of traditional vocabulary that once played an important role in daily cultural life.

Research on the linguistic and environmental relationship in Nias was also carried out by Gaho (2022), who analyzed the lyrics of the song “Elefu.” The lexicons identified include fauna such as *sökha* (wild boar), *elefu* (freshwater fish), and *katömbi* (water crab). These lexicons function as eco-texts that reflect the ecological closeness of South Nias communities to their environment. The study also shows that cultural texts such as songs can serve as effective tools to preserve local languages at a time when language competence among younger generations is declining. Meanwhile, Abida et al. (2023) investigated eco-lexicons in East Java and found that lexicons related to flora, fauna, and ecological concepts represent the local wisdom of communities who live in mountainous, riverine, coastal, and agricultural regions. The study also notes that many traditional terms have begun to shift due to modernization and increasing cultural contact with global influences.

In media discourse, Yuniawan et al. (2024) analyzed eco-lexicons in conservation news. The results show that mass media construct environmental issues through lexicons that carry biological, sociological, ideological, and cultural meanings. The study extends the framework of Lindø and Bundsgaard (2000) by adding a cultural dimension to ecolinguistic analysis. It also recommends the use of conservation texts as educational materials to strengthen environmental literacy in schools and universities. Research on eco-lexicon sustainability was conducted by Lubis and Widayati (2022), who examined 239 rice-field eco-lexicons in Barus Malay. With a sustainability rate of more than 95

percent, the study shows that the close connection between the community and agricultural environments still supports the vitality of traditional eco-lexicons. At the same time, some terms are slowly being replaced by modern vocabulary as social and technological changes occur.

Another study by Abi et al. (2022) documented 71 flora and fauna eco-lexicons in the Baikeno language of Timor-Leste. These lexicons reflect biological and sociological aspects of the community. However, not all contain ideological elements. The study highlights the impact of foreign language dominance in reducing the use of traditional lexicons and emphasizes the importance of documenting eco-lexicons for language preservation and regional language education.

In summary, the literature demonstrates that eco-lexicons function not only as linguistic units. They also represent cultural values, ecological knowledge, and social practices that arise from human interaction with the environment (Nash, 2016). Documentation of eco-lexicons in environmentally oriented schools, agrarian societies, coastal communities, and indigenous groups in Nias and Timor-Leste reveals that ecological vocabulary carries intergenerational knowledge that reflects local identity. However, modernization, migration, and shifts in language usage threaten the continuity of local eco-lexicons.

Therefore, ecolinguistic research plays an important role not only in linguistic documentation but also in preserving ecological wisdom embedded within traditional communities (Stibbe, 2015). These studies highlight the need for further research that focuses on eco-lexicon revitalization, integration into education, and deeper mapping of cultural values represented in ecological vocabulary.

3. Method

This study employs a descriptive qualitative approach aimed at providing an in-depth description of the ecolexicon of *tuo* in the Nias language. The qualitative approach was chosen because it is capable of uncovering meanings, cultural values, and social practices related to the tradition of producing and consuming *tuo* (see Subiyanto, 2013). The research was conducted on Nias island, particularly in Nias regency and Gunungsitoli city, in villages such as Gido and Idanogawo, where the tradition of tapping coconut and aren palm sap is still maintained. Data collection was also carried out within traditional communities and local markets to obtain information regarding the production, perception, and use of *tuo* in daily life.

The data sources consist of primary and secondary data. The primary data include lexical items and spoken expressions obtained from informants who work as sap tappers or community members who regularly consume *tuo*. The secondary data include Nias language dictionaries, books, articles, and documents related to the ecolexicon. Informants were selected through purposive sampling based on specific criteria such as knowledge of the *tuo* production process and involvement in local cultural traditions.

The research instruments include a list of questions, interview guidelines, and tools for observation and recording. Data were collected through online conversations using

WhatsApp, the observation method, and the interview method. The techniques used include non-participatory observation, note-taking, and audio recording (Zaim, 2014). The interview method was carried out through guided conversations using elicitation techniques to obtain deeper information about the *tuo* lexicon. All conversations were recorded and transcribed as research data.

Data were analyzed qualitatively and descriptively through several stages, including collecting lexical items related to *tuo*, classifying them based on grammatical categories such as nouns and verbs, and interpreting the semantic relations, cultural values, and social practices embedded within each lexical item (Miles et al., 2014). To enhance the validity of the findings, triangulation techniques were used by comparing interview results, observations, and information from experts or sap tappers.

The results of the analysis are presented using both formal and informal methods. The formal method is used to present data in the form of tables, diagrams, and illustrations that describe the grammatical categories and cultural dimensions of the *tuo* lexicon. The informal method is used to present descriptive explanations regarding the meaning and function of the lexicon in the daily life of the Nias community. The combination of these methods allows the findings to be presented in a more comprehensive, systematic, and accessible manner.

4. Results and Discussion

4.1 Lexical Items of Tuo (Palm Wine)

a. Lexicon of Naming the Types of Tuo

The naming of the different types of *tuo* is an important aspect recognized and expressed by speakers of the Nias language. Several types of *tuo*, such as *tuo nifaro* (distilled palm wine) and *tuo sataha* (raw or undistilled palm wine), play a significant role in Nias cultural traditions. These beverages are used in customary ceremonies, rituals, wedding celebrations, and as a source of daily livelihood among the Nias community. Understanding these lexical items is essential to remind younger generations and readers, especially the Nias community, that *tuo* carries cultural meanings, including strengthening kinship, maintaining traditional practices in marriage and ritual events, and serving various other social functions. The lexical items used to name the different types of *tuo* are presented in the table below.

Table 1. Lexical Items for Naming the Types of *Tuo*

No.	Lexicons for Naming Types of Tuo Nias		Biological Meaning			Grammatical Categories		
	Nias Language	Meaning	Animate		Inanimate	V	N	Ad
			Flora	Fauna				
1.	<i>Tuo</i>	palm wine	-	-	+	-	+	-
2.	<i>Tuo nifarö</i>	distilled palm wine	-	-	+	-	+	-
3.	<i>Tuo sataha</i>	raw palm wine	-	-	+	-	+	-

4.	<i>Tuo nohi</i>	coconut palm wine	-	-	+	-	+	-
5.	<i>Tuo nakhe</i>	aren palm wine	-	-	+	-	+	-
6.	<i>Högö duo</i>	first-quality palm wine	-	-	+	-	+	-
7.	<i>Tuo nomero sara</i>	palm wine number one	-	-	+	-	+	-
8.	<i>Tuo Ni Eso</i>	mixed palm wine	-	-	+	-	+	-
9.	<i>Tuo Saukhu</i>	hot palm wine	-	-	+	-	+	-
10.	<i>Tuo Nomero Dua</i>	palm wine number two	-	-	+	-	+	-
11.	<i>Tuo Nomero Tölu</i>	palm wine number three	-	-	+	-	+	-
12.	<i>Tuo Sa Feto</i>	bitter palm wine	-	-	+	-	+	-
13.	<i>Tuo Sa fusi</i>	white palm wine	-	-	+	-	+	-
14.	<i>Tuo Sami</i>	tasty palm wine	-	-	+	-	+	-
15.	<i>Tuo Soyo</i>	red palm wine	-	-	+	-	+	-
16.	<i>Tuo Sokafu</i>	cold palm wine	-	-	+	-	+	-
17.	<i>Tuo Sobiso</i>	strong or poisonous palm wine	-	-	+	-	+	-
18.	<i>Akua Desa</i>	village aqua	-	-	+	-	+	-
19.	<i>Idanö Silöitörö Alitö</i>	water that has not been heated	-	-	+	-	+	-

Based on the Table 1 above, there are nineteen inanimate lexical items identified from the naming of different types of *tuo*. Several ecolexicons related to *tuo* refer to traditional beverages of the Nias community, each with distinct naming forms. Examples include *tua sobiso* (poisonous or strong palm wine) and *idanö silöitörö alitö* (water that has not been heated). *Tuo* has long been part of Nias cultural tradition and is consistently used in wedding ceremonies, customary rituals, and community gatherings. Although the word *tuo* generally refers to an alcoholic beverage, its various forms reflect multiple meanings and functions within Nias culture.

b. Lexical Items Referring to the Sources of *Tuo*

The Nias community taps coconut trees (*ohi*) and aren palm trees (*akhe*) to produce *tuo* (palm wine), both *tuo sataha* (raw palm wine) and *tuo ni faro* (distilled palm wine), each of which serves various traditional and social functions. The ecolexicon of Nias *tuo*

refers to a collection of words or vocabulary items that are part of the Nias language or its dialectal varieties related to *tuo*. Nias *tuo* terminology represents one of the linguistic varieties used by communities on Nias Island, North Sumatra, Indonesia. This ecollexicon includes a variety of words, phrases, and expressions used in daily communication by speakers of the dialect. It encompasses unique vocabulary and culturally distinctive terms that reflect the traditions and everyday life of the Nias people.

Tuo nohi (palm wine from coconut trees) and *tuo nakhe* (palm wine from aren palm trees) are two types of palm wine produced by tapping these trees. The sap collected from coconut trees (*nohi*) and aren palms (*akhe*) undergoes fermentation to produce *tuo sataha* (raw palm wine) and *tuo ni faro* (distilled palm wine). The lexical items related to the sources of *tuo* are presented in the table below.

Table 2. Lexical Items Referring to the Sources of *Tuo*: *Tuo Nohi* (Coconut) and *Tuo Akhe* (Aren Palm)

No.	Sources of <i>Tuo</i>		Biological Meaning			Grammatical Categories		
	Nias language	Meaning	Animate		Inanimate	V	N	Ad
			Flora	Fauna				
1.	<i>Ohi</i>	Coconut tree	+	-	-	-	+	-
2.	<i>Töla</i>	trunks	+	-	-	-	+	-
3.	<i>Likhe</i>	palm midrib	+	-	-	-	+	-
4.	<i>Wa'a</i>	root	+	-	-	-	+	-
5.	<i>Bulu</i>	leave	+	-	-	-	+	-
6.	<i>Banio</i>	Coconut fruit	+	-	-	-	+	-
7.	<i>Hakhi</i>	stem support	+	-	-	-	+	-
8.	<i>Sole</i>	Shell	+	-	-	-	+	-
9.	<i>Bua soköli</i>	Dried Fruit	+	-	-	-	+	-
10.	<i>So Halu</i>	Young Leaves	+	-	-	-	+	-
11.	<i>Tafi</i>	Fiber	+	-	-	-	+	-
12.	<i>Namohi</i>	a cluster of coconuts from one stalk	+	-	-	-	+	-
13.	<i>Uli</i>	Skin	+	-	-	-	+	-
14.	<i>Idanö Mbanio</i>	Coconut water	+	-	-	-	+	-
15.	<i>Balalu</i>	Young Coconut Fruit	+	-	-	-	+	-
16.	<i>Gendi-Gendi Nohi</i>	Coconut Fruit Stalk	+	-	-	-	+	-
17.	<i>Tandu Nohi</i>	Coconut Shoots	+	-	-	-	+	-
18.	<i>Wu'u-Wu'u Mbanio</i>	Small Coconut Fruit	+	-	-	-	+	-

19.	<i>Hunö</i>	Seed	+	-	-	-	+	-
20.	<i>Akhe</i>	Aren tree	+	-	-	-	+	-
21.	<i>Salari</i>	-	+	-	-	-	+	-
22.	<i>Banio Sawuyu</i>	Young Coconut Fruit	+	-	-		+	-
23.	<i>Nagole Jawu</i>	Coconut fiber		-	-		+	-
24.	<i>Sawu</i>	Kulit	+	-	-		+	-
25.	<i>Uwu</i>	-	+	-	-		+	-
26.	<i>Baya</i>	-	+	-	-		+	-

Based on the Table 2 above, there are twenty-six lexical items referring to the sources of *tuo*, beginning with *tuo nohi* (coconut palm wine) and *tuo nakhe* (aren palm wine). These lexical items include flora-related vocabulary such as *ohi* (coconut), *töla* (trunk), *likhe* (palm midrib), *wa'a* (root), *bulu* (leaf), *banio* (coconut fruit), *hakhi* (stem support), *sole* (coconut shell), *bua soköli* (dried fruit), *so halu* (young leaf), *tafi* (coconut fiber), *namohi* (a cluster of coconuts from one stalk), *uli* (skin), *idanö mbanio* (coconut water), *balalu* (young coconut), *gendi-gendi nohi* (fruit stalk), *tandu nohi* (coconut shoot), *wu'u-wu'u mbanio* (small coconut fruit), and *hunö* (seed). Other lexical items include *akhe* (aren palm), *salari*, *banio sawuyu* (young coconut fruit), *nogele jawu*, *sawu* (skin or husk), *uwu*, and *baya*.

c. Lexical Items for Tools and the Management of *Tuo*

The lexical items for tools and the management of *tuo* in Nias also include specific terms related to cultural traditions, beliefs, and values associated with the instruments used and the methods of processing *tuo* or natural resources within the Nias community. The ecollexicon of tools and *tuo* management reflects traditional knowledge that encompasses various tools and environmental management practices used by the indigenous people of Nias. The term “ecollexicon” refers to the combination of “ecology” and “lexicon,” highlighting the close relationship between nature and culture, particularly in the use of traditional tools and sustainable resource management practiced by the Nias people.

The purpose of this ecollexicon is to introduce and preserve knowledge about traditional tools and natural-resource management practices that have been an integral part of Nias life for centuries. It also serves as a valuable learning resource for younger generations, enabling them to understand their cultural heritage and to support environmental conservation and sustainability efforts in the region. The lexical items related to environmental tools and *tuo* management are presented in Table 3 below.

Table 3. Lexical Items for Tools and the Management of *Tuo*

No.	Tools and Management of Old		Biological Meaning		Grammatical Categories		
	Nias language	Meaning	Animate	Inanimate	V	N	Ad
1.	<i>Fato</i>	Axe	-	+	-	+	-

2.	<i>Fesu</i>	Rope	-	+	-	+	-
3.	<i>Lewu'ö</i>	Bamboo	+	-	-	+	-
4.	<i>Eu</i>	Wood	+	-	-	+	-
5.	<i>Belewa</i>	Machete	-	+	-	+	-
6.	<i>Naha Worino</i>	Cooking Place	-	+	-	+	-
7.	<i>Ono Nekhe</i>	Knife	-	+	-	+	-
8.	<i>Bele-Bele</i>	Jerrycan	-	+	-	+	-
9.	<i>Hele-Hele</i>	Bamboo Water Channel	-	+	-	+	-
10.	<i>Tafti</i>	Filter	-	+	-	+	-
11.	<i>Koro</i>	Ladle	-	+	-	+	-
12.	<i>Boto-Boto Duo</i>	Palm Wine Bottle	-	+	-	+	-
13.	<i>Galasi Duo</i>	Palm Wine Glass	-	+	-	+	-
14.	<i>Alitö</i>	Fire	-	+	-	+	-
15.	<i>Kukusa</i>	Drum	-	+	-	+	-
16.	<i>Taba</i>	Cutting	-	+	+		-
17.	<i>Khai</i>	Tapping	-	+	+		-
18.	<i>Sirege</i>	Jerrycan	-	+		+	-
19.	<i>Mogale Tuo</i>	Selling Palm Wine	-	+	+		-
20.	<i>Sokhai Tuo</i>	Palm Wine Tapper	+	-	-	+	-
21.	<i>Naha Worino Tuo</i>	Palm Wine Distillation Place	-	+	-	+	-
22.	<i>Lafo Duo</i>	Palm Wine Stall	-	+	-	+	-
23.	<i>Sowöli Tuo</i>	Palm Wine Buyer	-	+	-	+	-
24.	<i>Sanaba Akhe</i>	Aren Palm Tapper	+	-	-	+	-
25.	<i>Manöi</i>	Climbing	-	+	+		-
26.	<i>Sanaba Tuo Bajihulö Wongi</i>	Morning Palm Wine Tapper	+	-	-	+	-
27.	<i>Samadu Tuo</i>	Palm Wine Drinker	+	-	-	+	-
28.	<i>Simabu</i>	Drunkard	+	-	-	+	-
29.	<i>Mangehao</i>	Making	-	+	+		-
30.	<i>Eja'i</i>	Tree-Climbing Tool	-	+	-	+	-
31.	<i>Mangofuloi</i>	Collecting	-	+	+		-
32.	<i>Manu'a Tuo</i>	Measuring Palm Wine	-	+	+		-
33.	<i>Mamazawa Tuo</i>	Lifting Palm Wine	-	+	+		-
34.	<i>Manasa Naha Duo</i>	Cleaning the Palm Wine Area	-	+	+		-

35.	<i>Sanai Eu</i>	Wood Gatherer	+	-	-	+	-
36.	<i>Sondino Tuo</i>	Palm Wine Distiller	+	-	-	+	-
37.	<i>Embe</i>	Bucket	-	+	-	+	-
38.	<i>Si Mabu-Mabu</i>	Daily Palm Wine Drinker	+	-	-	+	-
39.	<i>Mananu Tuo</i>	Palm Wine Credit Buyer	+	-	-	+	-
40.	<i>Nikhai</i>	Tapped Coconut Tree	+	-	-	+	-
41.	<i>farö</i>	Distiller	-	+	-	+	-
42.	<i>findakö</i>	Transferring	-	+	+		-

Based on the Table 3 above, there are forty-two lexical items related to the tools and management of *tuo*. These lexical items include *fato* (axe), *fesu* (rope), *lewu'ö* (bamboo), *eu* (wood), *naha worino* (cooking container), *belewa* (machete), *ono nekhe* (knife), *belebele* (jerrycan), *hele-hele* (bamboo water channel), *tafi* (filter), *koro*, *boto-boto* (bottle), *galasi* (palm wine glass), *alitö* (fire), *kukusa* (drum), *taba* (to cut), *khai* (to tap), *sirege* (jerrycan), *mogale tuo* (to sell palm wine), *sokhai tuo* (to tap palm wine), *naha worino tuo* (palm wine distillation place), *lafo duo* (palm wine stall), *sowöli tuo* (palm wine buyer), *sanaba akhe* (aren palm tapper), *manöi* (to climb), *sanaba tuo bajihulö wongi* (coconut tree tapper in the morning), *samadu tuo* (palm wine drinker), *mangehao* (to make or produce), *eja'i* (tool used for climbing trees), *mangofuloi* (to collect), *mamazawa tuo* (to carry or lift palm wine), *manasa naha duo* (to clean the palm wine processing place), *sanai eu* (person who gathers wood), *sondino tuo* (person who distills palm wine), *embe* (bucket), *si mabu-mabu* (a person who drinks palm wine every day), *mananu tuo* (a person who buys palm wine on credit), *nikhai* (tree that will be tapped), *faro*, and *findakö* (to move or transfer).

4.2 Forms, Categories, and Grammatical Meanings of Tuo Lexical Items in the Nias Language

In examining the forms, categories, and grammatical meanings of *tuo* lexical items in the Nias language, the grammatical framework proposed by Lindo and Bundsgaard (2000) is used to identify the lexical forms of *tuo* within the categories of verbs, nouns, and adjectives. Based on the data analysis, the *tuo* ecolexicon includes grammatical categories such as nouns, verbs, and adjectives.

a. Noun Category Lexical Items of Tuo

The analysis of noun-category lexical items related to *tuo* (palm wine) in the context of ecolexicon studies provides a deeper understanding of the role, meaning, and cultural significance of these terms within Nias society. The noun-category forms of the *tuo* ecolexicon are presented in Table 4 below.

Table 4. Noun-Category Lexical Items of *Tuo*

No.	Nias Language	Meaning	Grammatical category			Grammatical Form	
			N	V	Adj	Basic	Derivative
1.	<i>Högö</i>	Head	+	-	-	+	-
2.	<i>farö</i>	Distiller	+	-	-	+	-
3.	<i>Nomero</i>	Number	+	-	-	+	-
4.	<i>Sara</i>	One	+	-	-	+	-
5.	<i>Zua</i>	Two	+	-	-	+	-
6.	<i>Sobiso</i>	Poisonous	+	-	-	-	+
7.	<i>Idanö</i>	Water	+	-	-	+	-

Based on the Table 4 above, there are eight lexical items categorized as nouns along with their grammatical classifications. This description illustrates that *tuo* has long been embedded as a cultural tradition within Nias society.

a. Verb-Category Lexical Items of *Tuo*

In analyzing the verb category of *tuo* (palm wine) in the context of ecolexicon studies, the focus is on how the term is used as a verb or in action-related contexts. Although *tuo* generally refers to a traditional Nias beverage, the verb category analysis investigates how related lexical items function as verbs that describe actions or activities associated with the production or consumption of palm wine. The verb-category forms of the *tuo* ecolexicon are presented in Table 5 below.

Table 5. Verb-Category Lexical Items of *Tuo*

No.	Nias Language	Meaning	Grammatical category			Grammatical Form	
			N	V	Adj	Basic	Derivative
1	<i>Khai</i>	Tapping	-	+	-	+	-
2	<i>Morino</i>	Cooking	-	+	-	-	+
3	<i>Mofazawa</i>	Lifting	-	+	-	-	+
4	<i>Manöi</i>	Climbing	-	+	-	-	+
5	<i>Mobadu</i>	Drinking	-	+	-	-	+
6	<i>Mangofuloi</i>	Collecting	-	+	-	-	+
7	<i>Mofindrakö</i>	Transferring	-	+	-	-	+
8	<i>Man(t)aba</i>	Cutting	-	+	-	-	+
9	<i>Mowöli</i>	Buying	-	+	-	-	+
10	<i>Moadu</i>	Mixing	-	+	-	+	-
11	<i>Mofamawa</i>	Selling	-	+	-	-	+
12	<i>Moi tou</i>	Descending	-	+	-	+	-
13	<i>Mofazökhi</i>	Making	-	+	-	-	+
14	<i>Mogale</i>	Selling	-	+	-	-	+
15	<i>Mofasao</i>	Delivering	-	+	-	-	+
16	<i>Su'a</i>	Measuring	-	+	-	+	-
17	<i>Moböbö-böbö</i>	Tying	-	+	-	-	+
18	<i>Mangehaosi</i>	Cleaning	-	+	-	-	+

Table 5 above, there are eighteen lexical items classified as verbs within the *tuo* ecolexicon in the Nias language. Furthermore, according to their grammatical forms, all verb-category lexical items fall under the category of derived words, totaling twenty-six lexical items. Through these aspects, the analysis of verb-category *tuo* lexical items in ecolexicon studies provides a deeper understanding of how these terms function as verbs and how actions related to *tuo* production and consumption form an integral part of the culture and daily life of the Nias community.

a. Adjective-Category Lexical Items of *Tuo*

In ecolexicon studies, the analysis of adjective-category lexical items related to *tuo* (palm wine) focuses on how these terms are used as adjectives or function descriptively within the cultural and everyday context of the Nias community.

Table 6. Adjective-Category Lexical Items of *Tuo*

No.	Nias Language	Meaning	Grammatical category			Grammatical Form	
			N	V	Adj	Dasar	N
1.	<i>Aisö</i>	Sour	-	-	+	+	-
2.	<i>Afeto</i>	Bitter	-	-	+	+	-
3.	<i>Ami</i>	Delicious	-	-	+	+	-
4.	<i>Azi-Azi</i>	Overly sweet	-	-	+	+	-
5.	<i>Mohua</i>	Aromatic	-	-	+	+	-
6.	<i>Aukhu</i>	Hot	-	-	+	+	-
7.	<i>Sökhi</i>	Good	-	-	+	+	-
8.	<i>Okafu</i>	Cold	-	-	+	+	-

Table 6 above shows eight *tuo* lexical items categorized as adjectives. The adjective-category lexical items represent basic lexical forms classified according to their grammatical properties. Through these aspects, the analysis of adjective-category *tuo* lexical items in ecolexicon studies provides a deeper understanding of how these terms describe the quality, characteristics, and cultural value of *tuo* within the context of Nias society.

4.3 Social Practice Dimensions of *Tuo* Lexical Items in Nias Proverbs

Within the framework of ecolexicon studies, the social practice dimension of *tuo* (palm wine) lexical items in the form of Nias proverbs offers valuable insights into the cultural, traditional, and moral values embedded in Nias society. Proverbs containing *tuo* reflect the community's broad understanding and lived experiences associated with this beverage.

Speakers of the Nias language often use proverbs to convey messages. Individuals who frequently use proverbs are considered more *acua-cua* (clever or articulate) in communication. The use of proverbs commonly occurs during *orahua* (formal meetings or customary gatherings) in traditional ceremonies. These proverbs typically involve lexical choices that include animate and inanimate terms to describe human behavior,

attitudes, or character traits. *Tuo* lexical items are also often used metaphorically as a point of comparison to human qualities.

Several examples of Nias proverbs that contain *tuo* lexical items are presented in the following table.

Table 7. Proverbs Containing *Tuo* Lexical Items

No.	Nias Language Proverbs	Meaning
1.	<i>Böi badu tuo ba wehasu-hasu</i>	Do not make decisions when you are emotional
2.	<i>Nenu tuo la'o faholo, nenu tölu la'o mo'usu</i>	Drinking palm wine brings pleasure; drinking excessively brings destruction.
3.	<i>Alawa luo afeto duo, aisö nidanö mbanio</i>	Something good, if not done at the right time, will feel bland and meaningless
4.	<i>Hulö La'ewa nidanö ba ifuli fahalö-halö</i>	The sense of brotherhood is very strong and difficult to break, even though many challenges exist in the lives of siblings
5.	<i>Noibadu giö mbae</i>	He has drunk monkey urine
6.	<i>Noibadu nidanö silo itöro alitö</i>	He has drunk water that has not been heated
7.	<i>Noibadu nidaö sobiso</i>	He has drunk poisonous water
8.	<i>Abu'a gömö, löna abu'a li</i>	A debt may be repaid, but hurtful words are hard to forget

In Table 7 above there are eight proverbs that contain *tuo* lexical items. The following section presents an explanation of Nias proverbs that use *tuo* lexical items in the Nias language.

1. *Böi badu tuo ba wehasu-hasu*
V Konj

“Do not make decisions when you are emotional”

The lexical item found in the proverb above is *badu tuo* (to drink palm wine). Morphologically, *badu tuo* consists of *badu* (to drink), which functions as a verb, and *tuo* (palm wine), which functions as a noun. The Nias proverb *Böi badu tuo ba wehasu-hasu* carries an important meaning in the context of decision-making and emotional control. Literally, the proverb can be translated as “do not make decisions when you are emotional.”

In Nias culture, *tuo* is often associated with togetherness and celebration, but it can also become a source of conflict when consumed excessively or in inappropriate circumstances. Therefore, this proverb serves as a reminder that decisions made during moments of strong or unstable emotions are likely to be unwise. The meaning of the proverb encourages individuals to maintain self-control and avoid making important decisions when experiencing anger or emotional disturbance. This is because decisions made under emotional conditions are often irrational and may lead to mistakes or future regret. Thus, the proverb emphasizes the importance of remaining calm and exercising wisdom when facing difficult situations or conflict.

2. *Nenu tuo la'o faholo, nenu tölu la'o mo'usu*
N

“Drinking palm wine brings pleasure; drinking excessively brings destruction”

The Nias proverb “*Nenu tuo la'o faholo, nenu tölu la'o mo'usu*” carries an important meaning related to the consumption of *tuo* and its consequences. Literally, the proverb can be translated as “drink palm wine and go enjoy yourself; drink three and go to your death.” The meaning of this proverb serves as a warning about the dangers of excessive palm wine consumption. Specifically, it states that drinking *tuo* for pleasure or in small amounts may not be harmful, but consuming it in large quantities can be fatal. The proverb illustrates that while drinking *tuo* may provide enjoyment or entertainment, lack of self-control can lead to serious consequences, including death. Therefore, this proverb emphasizes the importance of maintaining balance and setting limits when consuming *tuo*, as well as restraining oneself from excessive behavior.

3. *Alawa luo afeto tuo, aisö nidanö mbanio*
N

“Something good, if not done at the right time, will feel bland and meaningless”

The Nias proverb “*Alawa luo afeto tuo, aisö nidanö mbanio*” carries a profound meaning regarding the importance of doing something at the right time. Literally, the proverb can be translated as “if something good is not done at the right time, it will taste bland and become meaningless.”

The meaning of this proverb serves as a reminder that good actions or efforts lose their value or effectiveness when they are not carried out at the appropriate moment. In the cultural and everyday context of the Nias community, this proverb teaches the importance of time discipline and the need to appreciate time when performing actions or completing tasks.

The proverb can also be interpreted as an emphasis on the importance of seizing opportunities at the right moment and not wasting the chances that come. It implies that missed opportunities may never return, and actions taken outside the proper timing may not yield optimal results.

Overall, this proverb conveys values related to acting with courage at the right time, appreciating opportunities, and recognizing the significance of timing in achieving success and reaching one’s goals.

4. *Hulö La'ewa nidanö ba ifuli fahalö-halö*
N Konj

“The sense of brotherhood is very strong and difficult to break, even though many challenges exist in the lives of siblings”

The Nias proverb “*Hulö la'ewa nidanö ba ifuli fahalö-halö*” carries a deep meaning about the strength of family bonds and solidarity among relatives or members of a close-knit community. Literally, the proverb can be translated as “family ties are strong and

difficult to break, even when many challenges arise in the lives of those who are related.” The meaning of this proverb emphasizes the strength of relationships and emotional connections among individuals who share blood ties or close kinship. It conveys that although there may be many challenges or conflicts among family members or within the community, the emotional bonds and unity that have been established are difficult to break. This proverb reflects the values of solidarity, mutual support, and harmony within familial or communal relationships. It illustrates that despite differences or problems that may occur, strong family ties continue to hold individuals together and help them overcome obstacles or challenges in life. Overall, this proverb teaches the importance of maintaining close family relationships, supporting one another, and staying united when facing difficulties or trials.

5. *Noi badu giö mbae*
 V N
“He has drunk monkey urine”

The Nias proverb “*Noibadu giö mbae*” carries a unique meaning within Nias culture and is often used to refer to someone who is drunk and causing a disturbance. Literally, the proverb can be translated as “he has drunk monkey urine.” The underlying meaning of this proverb is to express a situation or action that leads to disappointment or discomfort. It depicts an undesirable or unpleasant situation, often associated with something bothersome or disappointing. The use of “drinking monkey urine” in this proverb likely symbolizes something considered disgusting or unfit for consumption, thereby creating a sense of discomfort or displeasure for those who experience or witness it. The proverb is commonly used to mock or criticize someone who behaves foolishly, irrationally, or in a ridiculous manner. Overall, this proverb teaches the importance of being aware of one’s words and actions when not fully conscious, particularly when intoxicated, and serves as a reminder to avoid causing trouble or conflict when under the influence.

6. *Noi badu ni-danö siloitöro alitö*
 V N
“He has drunk water that has not been heated”

The Nias proverb “*Noibadu nidanö silo itöro alitö*” carries a deep meaning within the cultural and everyday context of Nias society. Literally, the proverb can be translated as “he has drunk water that has not been heated.”

The meaning of this proverb is to describe an action or event that results in negative or harmful consequences because the person failed to consider potential risks or outcomes. It portrays carelessness or negligence in making important decisions, which eventually leads to problems or difficulties. In Nias culture, drinking water that has not been heated serves as a metaphor for actions taken without assessing possible dangers or consequences. It reflects behaviors that are careless, hasty, or unwise in dealing with

certain situations.

This proverb conveys a moral message about the importance of caution, consideration, and proper preparation before taking important actions or making significant decisions. It teaches the need to evaluate potential risks and consequences, and to avoid impulsive or poorly considered actions.

Overall, the proverb highlights values of wisdom, prudence, and thoughtful judgment in everyday life. It underscores the importance of not acting hastily or making decisions without considering the risks and consequences involved.

7. *Noi badu ni-daö so-biso*

V

“He has drunk poisonous water”

The Nias proverb “*Noibadu nidaö sobiso*” carries a profound meaning and is often used to convey advice or a warning. Literally, the proverb can be translated as “he has drunk poisonous water.” The meaning of this proverb is to indicate that someone has done something inappropriate or harmful. It is commonly used to refer to individuals who enjoy causing commotion or creating trouble. In the cultural context of Nias society, drinking poisonous water symbolizes a dangerous act that can lead to harm or even death.

8. *Abu'a gömö, löna abu'a li*

N

“A debt may be repaid, but hurtful words are hard to forget”

The Nias proverb “*Abu'a gömö, löna abu'a li*” carries a deep meaning about the consequences of hurtful remarks or insults. Literally, the proverb can be translated as “a debt can be repaid, but painful words are difficult to forget.” The meaning of this proverb is to express that although financial debts can be settled or resolved, hurtful words or insults directed at someone are difficult to erase from memory. The proverb illustrates how harsh or painful words can leave a lasting mark on a person’s mind and heart, even long after the incident has passed.

In the cultural context of Nias society, this proverb teaches about the power of words and their impact on interpersonal relationships. Hurtful remarks or insults can cause deep emotional wounds that are not easily healed, even after apologies or efforts are made to repair the relationship.

This proverb also reflects the importance of being careful with one’s speech and maintaining kindness in interactions with others. It teaches the need to avoid using offensive or hurtful words that can damage relationships and to be mindful of the potential impact of our speech.

Overall, the proverb conveys values related to caution in speaking, respect for others’ feelings, and the importance of restoring relationships damaged by harmful words. It reminds us that although debts may be repaid, the wounds caused by words can be difficult to erase.

5. Conclusion

There are several conclusions that can be drawn. Firstly, diversity of ecolexicon: The study shows that the *tuo* tradition in Nias is rich in ecolexicon, consisting of various vocabulary items, phrases, and expressions related to the production process, consumption, and cultural meanings associated with the beverage. Secondly, Its Significant Role in Nias Culture: The ecolexicon of the *tuo* tradition plays an important role in the daily life and social activities of the Nias community. *Tuo* functions not only as a consumable beverage but also as part of cultural identity, rituals, and cultural expression. Thirdly, the Importance of Cultural Preservation: The study highlights the importance of preserving and protecting the *tuo* tradition and its ecolexicon as part of Nias cultural heritage. Preservation efforts are vital not only for maintaining cultural continuity but also for enhancing understanding, appreciation, and cultural identity among the Nias people. A total of sixty-one *tuo* lexical items were identified in the Nias language. In terms of grammatical categories, the *tuo* ecolexicon consists of seven nouns, nineteen verbs, and eight adjectives. Furthermore, from the perspective of social practice, *tuo* lexical items are used by the Nias community in the form of proverbs as well as in song lyrics that are orally transmitted.

Conflict of Interest

The author declares that there is no conflict of interest in the writing of this scientific article.

Authors' contribution

The authors made substantial contributions to the conception and design of the study. The authors took responsibility for data analysis, interpretation and discussion of results. The authors read and approved the final manuscript

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