

## Indigenous Knowledge About Disaster in Folk Prose Narratives of Indonesian Coast

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DOI: <https://doi.org/10.14710/jmsni.v6i1.13767>

### Abstract

Indonesian consists of various ethnic groups living in urban, rural, mountainous, and coastal areas. The people who inhabit each region have stories that describe the topography of the region and its culture. An example is people from coastal areas. The location of their residences which are close to the ocean makes them experts in recognizing natural signs and disaster characteristics from the sea. Their knowledge is shared with the social environment by verbal. One type of oral tradition originating from the natives is folk prose narratives such as legends, fairy tales, and stories of the origin of a place. This study aims to explore indigenous knowledge in folk prose narratives from the Indonesian coast. The results showed that the knowledge contained in folk prose narratives was how to recognize disaster signs from the sky (roaring wind, lightning flashes, pitch-dark sky, black cloud, and very heavy rain), disaster signs from the sea (low tides, hurricanes), ways to save yourself (climbing trees, climbing hills, and going to higher ground), and disaster prevention (not killing animals and cutting down trees carelessly). The conclusion is indigenous knowledge about disasters in folk prose narratives from the Indonesian coast is how to recognize natural signs, how to save themselves, and mitigation. The findings in this study are that Indonesian ancestors had knowledge in making flying vehicle and making fish feed on natural ingredient (chicken feathers).

**Received:**

March 1, 2022

**Revised:**

June 7, 2022

**Accepted:**

June 7, 2022

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**Keywords:** Indigenous Knowledge; Prose Folklore; Disaster; Coastal; Indonesia.

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### Introduction

Indonesia is known for its diversity of tribes that occupy several islands. Each ethnic group has its unique characteristics according to its territory. It can be seen from their philosophy of life, customs, indigenous knowledge, and culture. One of their ways to live up the culture is through word of mouth. Oral traditions produce a variety of folklore which becomes the collective memory of the people in each tribe. Those in villages and towns have different stories. Tribes in mountainous areas also have different folklore from those on the coast. People in mountainous areas generally have stories related to agriculture, plantations, land animals, landslides, or disasters from the mountains. Those who live on the coast will have folklore about the life of fishermen, marine animals, shipping, sea voyage, or disasters from the sea.

Danandjaja (1995) explains that the meaning of folklore can be seen from the words folk and lore. Folk is the people. People in Indonesia are natives or immigrants who have lived in Indonesia for generations, both in urban and rural areas. Lore is part of a culture that is spread through oral tradition. According to Danandjaja (2007) examples of folklore themes in Indonesia are social status (kings, aristocrats, commoners), jobs (farmers, fishermen, traders, breeders, show performers, school teachers, pedicab drivers), religion or beliefs that exist in all ethnic groups, people living in various regions (mountains, coastal, rural, urban), and the lives of Indonesians in abroad. Furthermore,

Danandjadja (2007) explains the types of folklore in Indonesia referring to the division made by Jan Harold Brunvand (1968) namely oral folklore, partially oral folklore, and non-verbal folklore. Oral folklore is folk language, traditional expressions, traditional questions, folk poetry, folk prose narratives, and folk songs. Partially oral folklore can be seen from the actions of people who believe in the occult such as ritual ceremonies. Non-verbal folklore is material (architecture of traditional buildings, traditional clothing, etc.), and non-material (motion or sound as a signal to communicate).

Nakata et al. (2005) said, folklore is not just a story or a topic of conversation among the community because it contains knowledge of the locals. Indigenous knowledge is also implied in folklore, proverbs, folk songs, cultural values, beliefs, rituals, customary laws, and regional languages. Indigenous knowledge also exists in health, horticulture, forestry, agricultural systems, animal husbandry, and fisheries. An example of the relationship between knowledge and oral tradition is given by Cashman and Cronin (2008) who consider that oral traditions in New Zealand and the United States are important lessons for society. Volcanoes in New Zealand are part of Maori cosmology and mythology. Volcanic eruptions that occur repeatedly become their collective memory which is told to the younger generation. This story is a way of documenting events for hundreds of years. The younger generation learns about disasters that have occurred through stories from their ancestors, including learning how to recover from the effects of disasters. Folklore from the mountains is also owned by people in the north-western United States. There are a Tacobud story and a Wyeast story that provide details about volcanic activity. These are such as a means of transferring hazard warnings for decades so that the public was more alert and prepared for future eruptions.

Based on those explanations, it can be understood that the folk prose narrative has a function as a means of storing knowledge about the environment, including about natural disasters and how to deal with them. Another function of folklore is explained by Olajide (2010) who considers folklore have a role in developing the listener's confidence, training the instinct to survive, fostering a patriotic spirit, supporting moral development, and increasing concern for the environment. A similar explanation was also stated by Sukmawan and Setyowati (2017) that folklore is useful for practicing critical thinking skills, practicing communication skills, building awareness of environmental protection, enriching cultural literacy, and fostering respectful behaviour towards nature. Indonesia also has folklores that present environmental messages such as disasters (occurring because of human greed for nature), and human efforts to prevent them. Kanzunnudin et al. (2018) exemplify the Rembang Regency in Central Java which has folk prose narratives entitled "*Pantangan Menanam Kedelai, Talas, dan Ketan Hitam* (Taboo of Planting Soybeans, Taro, and Black Glutinous Rice)"; "*Putri Cempa* (Cempa Princess)", and "*Asal Mula Desa Pamotan* (The Origin of Pamotan Village)". All of these stories teach the behaviour of loving the environment, not excessively utilizing natural resources, and not destroying nature to prevent disasters.

Based on these quotes, it can be seen that several countries (New Zealand, America, and Indonesia) have folk prose narratives about disasters. Each story is useful as a source of knowledge about nature, natural disasters, and how to face them. Therefore, research on disaster implied in folklore is an important thing to do so that we can collect indigenous knowledge about it behind the folklore. The importance of comparing folklore from different countries was conveyed by Ahi, Yaya, and Ozsoy (2014) which gives the reason that it is useful to analyse folklore from different cultures so that different knowledge is obtained. America, North American Indians, Australia, Tahiti, Japan, Africa, England, Ireland, and Malaysia have a cultural heritage in the form of folklore about nature and the environment. The results of the analysis prove that in folklore there is an explanation of the picture of nature, human interaction with nature (good and bad behaviour), and what will happen if humans maintain or destroy nature.

Apart from the countries mentioned by Ahi, Yaya, and Ozsoy (2014), Indonesia also has folklore that contains local knowledge. Indriana et al. (2021) mention that Indonesian folklores containing knowledge about disaster mitigation are *Timun Mas* (East Java), *Rawa Pening* (Central Java), and *Nyi Roro Kidul* (Yogyakarta). *Timun Mas* provides information on the reclamation of the ex-mud land. *Rawa Pening* gives lessons about the cleanliness of the lake area so that the water does not overflow. *Nyi Roro Kidul* teaches tsunami mitigation by creating a mangrove forest. Thus, in the

folk prose narratives, there are values of traditional knowledge about disaster mitigation that can be contextualized in today's efforts as a strategy to survive in disasters. Another Indonesian folklore about disaster mitigation is the story of *Smong* from Aceh. According to Rahman, Sakurai, and Munadi (2017), *Smong* have been passed down from generation to generation through different media. The story of the tsunami in Simeulue (1907) is still recorded in people's memories to this day. They took lessons about the tsunami phenomenon and how to save themselves. *Smong* folklore is now starting to be integrated with knowledge management, disaster management, and government policy systems to strengthen local community resilience in managing tsunami risk.

From several Indonesian folklores about the disaster, we argue that Indonesia still has other stories that contain knowledge about marine disasters and how to face them. Therefore, this study aims to explore folklores that contain indigenous knowledge about disasters from the Indonesian coast. The limitation of this research is oral folklore in the form of folk prose narratives (legends, fairy tales, and stories of the origin of the formation of a place). The selection of boundaries is determined based on Lindahl's (2012) explanation that legends involve belief, both for those who tell the story or those who listen. For some listeners, legends influenced his thoughts and influenced his way of life. Thus, legends are not merely stories that are exaggerated by society, but also contain knowledge that can be used in life. Based on this explanation, the formulation of the research problem is "What Indigenous Knowledge Is Relating to Disasters in the Folk Prose Narratives from Coastal Indonesia?".

## Method

This study aims to explore the types of indigenous knowledge of prose folklores. We collected 40 books on Indonesian folklore and selected 25 books to analyze. The remaining (15 books) were not analyzed because they have the same content as the other books, only different publishers. The selection of books as a source of folklore was carried out based on the explanation of Moezzi, Janda, and Rotmann (2017), that "folklore does not have absolute or standard characteristics because it develops in certain communities and is preserved by telling stories. Narrated stories are not only about real life but can also be in the form of magic stories or stories beyond the human mind. Sources of stories can come from experiences, social phenomena, fantasies, assumptions, and even conjectures of possibilities. However, in the modern era, folklore has been widely recorded, documented, and made into animated videos".

We searched the internet by keywords *cerita rakyat dongeng pesisir bencana pdf*. The keywords was written in bahasa to get Indonesian folklore while pdf was used to filter it in pdf form. We chose pdf containing ebook from government institutions. We found (1). *Antologi Cerita Rakyat Pulau Buru* (Anthology of Buru Island Folklore); (2). *Cerita Rakyat Buton dan Muna di Sulawesi Tenggara* (Folklore of Buton and Muna in Southeast Sulawesi); (3). *Antologi Cerita Rakyat Batubara* (Anthology of Batubara Folklore); (4). *Kalaharu: Kumpulan Cerita Rakyat Jawa* (Kalaharu: Javanese Folklore Collection) from <http://repositori.kemdikbud.go.id/> and (5). *Cerita Rakyat dari Jawa Barat: Dalem Boncel* (Folklore from West Java: Dalem Boncel) from <https://labbineka.kemdikbud.go.id/>. Those two addresses are from The Ministry of Education, Culture, Research, and Technology database. Tittle (6). *Putri Tujuh* (Seven Princesses) was found from website of Purwakarta Education Office, <https://disdik.purwakartakab.go.id/>.

The 7th to 25th titles we get from purchased books. Those are (7). *Kumpulan Dongeng Rakyat Nusantara: Bacaan Penunjang Pelajaran Bahasa dan Sastra Indonesia* (Collection of Nusantara Folk Tales: Reading Support for Indonesian Language and Literature Lessons); (8). *Kumpulan Cerita Rakyat Nusantara: Legenda, Mitos, Fabel, Epos, Dongeng* (Collection of Indonesian Folklore: Legends, Myths, Fables, Epos, Fairy Tales); (9). *Kumpulan Cerita Rakyat Nusantara: Legenda, Dongeng, Fabel, Epos, Mitos&Sejarah* (Collection of Indonesian Folklore: Legends, Fairy tales, Fables, Epos, Myths&History); (10). *Dongeng Pengantar Tidur: Cerita Rakyat Nusantara 33 Provinsi* (Bedtime Stories: Nusantara Folklore of 33 Provinces); (11). *Kumpulan Cerita Rakyat Nusantara: Lengkap dari 34 Provinsi* (Collection of Nusantara Folklore: Complete from 34 Provinces); (12). *Kumpulan Cerita Asli Indonesia Edisi 4* (Collection of Original Indonesian Stories 4<sup>th</sup> Edition);

(13). *Kumpulan Cerita Asli Indonesia Edisi 8* (Collection of Original Indonesian Stories 8<sup>th</sup> Edition); (14). *Kumpulan Cerita Asli Indonesia Edisi 10* (Collection of Original Indonesian Stories 10<sup>th</sup> Edition); (15). *Kumpulan Cerita Rakyat 33 Provinsi dari Aceh sampai Papua* (Collection of Folklore from 33 Provinces from Aceh to Papua).

Other books are (16). *Kumpulan Cerita Rakyat Nusantara Lengkap Disertai Kumpulan Dongeng-Dongeng Mancanegara* (Complete collection of Nusantara folklore accompanied by foreign fairy tales); (17). *Cerita Rakyat Nusantara Edisi Lengkap dari 34 Provinsi* (Nusantara Folklore Complete Edition from 34 Provinces); (18). *Cerita Bergambar: Kumpulan Dongeng Cerita Rakyat Nusantara* (Picture Stories: Collection of Nusantara Folklore&Fairy Tales); (19). *Kumpulan Cerita Rakyat Nusantara* (Nusantara Folklore Collection); (20). *Dongeng Nusantara Pilihan dari 34 Provinsi* (Selected Nusantara Fairy Tales from 34 Provinces); (21). *Kumpulan Lengkap Cerita Rakyat Nusantara: Dongeng, Legenda, Fabel, Mitos, Epos* (Complete Collection of Nusantara Folklore: Tales, Legends, Fables, Myths, Epos); (22). *Dongeng, Legenda, & Cerita Rakyat Nusantara Plus Pesan Moral* (Tales, Legends, & Folklore of the Nusantara Plus Moral Messages); (23). *Kumpulan Cerita Rakyat Nusantara: Edisi Lengkap Dongeng, Legenda, Mitos, Fabel, Epos* (Collection of Indonesian Folklore: Complete Edition of Fairy Tales, Legends, Myths, Fables, Epos); (24). *Kumpulan Cerita Rakyat Nusantara* (Nusantara Folklore Collection); and (25). *Kumpulan Cerita Rakyat Nusantara: Legenda, Mitos, Fabel, Epos, Dongeng* (Collection of Nusantara Folklore: Legends, Myths, Fables, Epos, Fairy Tales).

We analyzed the text documents using a Content-Driven Document Analyzes approach. Guest, Namey, and Mitchell (2013) said document analysis on qualitative data is useful for research that aims to select documents and analyze their contents. Content-Driven Document Analyzes can be used in research that aims to export content in documents, describe themes, and describe them inductively. This approach does not have strict and standard rules in determining the codes, items, or themes. Researchers can capture certain themes when reading the contents of the document. Based on that suggestion, we repeatedly read the 25 books of original Indonesian folklore collections to obtain qualitative data. We analyzed contents in the books to identify coastal folklores about disasters, and found 7 folklores that fit the purpose of the study. The seven folk tales were rewritten in the form of a short narrative. We described the themes of indigenous knowledge about disaster behind each story. The results of the analysis are complemented by citations from other relevant research results.

## Results and Discussion

Folklore completes with people who have strong oral traditions. They will tell the events they have seen and experienced to others, including about environment and natural phenomena around them. This habit makes the content of story finally heard by the wider community. Children, teenagers, adults, and the elderly hear the same story. In the end, the story content is retold to their posterity. The content eventually becomes folklore that is told from generation to generation. Even though it is a story, folklore is an embodiment of phenomena or events experienced by the community. This is as Briggs and Naithani (2012) said that folklore is actually a "simulation of phenomena" that occur in society. Various events experienced by the community are told to other community members. This story is heard and believed by them. The knowledge in the story is practiced by the community in daily activities. Thus, folklores contain local knowledge which is generally traditional about nature and becomes part of their culture.

According to Bray and Martinez (2015), traditional knowledge is what people know and can do. This knowledge is obtained from past experience, learned, believed, and practiced in a social environment. They also believe that local knowledge is useful for the future. An example is climate change. They study climate change patterns, remember their characteristics, become valuable lessons, and use them to predict the weather. If in the future climate change occurs, they already understand the actions that must be taken because they have memories of disasters. Martinez, Costas, and Ferreira (2020) gave another example, namely the collective memory of the Ria Formosa people about disaster in 1872. Stories about floods and storms have been preserved for hundreds of years in their mind.

The memory becomes a lesson to increase awareness of disaster risks around them. The story is also a source of ideas for risk reduction management. The incident made them aware of the importance of making coastal defenses so that they could repel the brunt of the waves. They rely heavily on their knowledge and experience to cope with storms, inundation, and erosion. Based on this explanation, it can be understood that stories from the community about disasters hundreds of years ago are still relevant to today's life. The events of flooding and storms from the sea that they experienced in 1872 became an evaluation material to prevent a worse impact if the same disaster happened again.

Thus, it can be concluded that folklore also stores knowledge from the people who experience it or from the people who live in that area. According to Grydehøj (2013) research on folklore was also conducted in the northern sea area of Shetland, England. On that coast, there are various kinds of folklore studied by anthropologists, archaeologists, and philologists. People in Shetland have myths and supernatural beliefs in fairies, mermaids, and other supernatural beings. Fairies are considered as creatures that can protect them while demons are evil supernatural beings who will interfere with their lives. Grydehøj said if the subjects of folk beliefs (fairies, mermaids, etc.) may actually never exist in real life. However, activities that reflect a belief in all of them are invaluable. They avoid certain activities that can harm the nature in which fairies and mermaids reside. This action is a real action to protect nature. Thus, myths or beliefs become symbolic meanings of attitudes to preserve nature so that disasters do not occur.

Indonesia also has folklores about disasters from the coastal area. Folklore comes from the people on several islands. Sumatera has the legend of *Asal Mula Danau Toba* (the Origin of Lake Toba), the tale of *Nyiru dan Lesung Ajaib Ibu Si Lancang* (Nyiru and the Magical Mortar of Mother's Si Lancang), and the fable of *Ayam dan Ikan Tuna* (the chicken and the tuna). There is also a fairy tale about animal friendship in Sulawesi that tells of Monkey and Chicken (*Monyet dan Ayam*). The Maluku Islands have the legend of *Asal Usul Telaga Biru* (the Origin of Blue Lake), the tale of *Buaya Telaga Tanusang* (the Tanusang Lake Crocodile), and the story of *Persaudaraan Nusalaut dan Ambalau* (the Brotherhood of Nusalaut and Ambalau). Each of these folk prose narratives contains knowledge of disaster or calamity.

### ***Asal Mula Danau Toba* [The origin of Lake Toba]**

North Sumatera has a legend about the formation of one of the most famous lakes, Lake Toba. It is said that there was a young man named Toba who caught a nice fish. When brought to the house, the fish turned into a beautiful girl. Toba fell in love and proposed to her. The girl accepted the proposal on one condition that Toba would not tell anyone that she was a fish incarnate. If these conditions are violated, there will be a disaster. Toba agreed. They married and had a son. They named him Samosir. When he makes a big mistake, his father loses his temper. Subconsciously Toba said, "You are a son of a fish woman, can't be advised by human". Hearing that his wife immediately ordered Samosir to run to the hills. After his son reached the top of the hill, she turned into a fish and threw herself into the river. The sky suddenly darkened, lightning flashed, and rained heavily for days. The river can no longer hold water. The overflowing water flooded the valley around the river. Under the woman's words that there will be a disaster, the flood will spread. Miraculously the flood circled the hill where Samosir was located. People believe this is an attempt by the mother who has become a fish to save her child. She regulates the flow of water so as not to drown the hill. From this story, the people named the puddle *Danau Toba* (Toba Lake). The hill where Samosir saved himself was named *Pulau Samosir* (Samosir Island).

The legend teaches us how to recognize the signs of disaster and how to save ourselves. Implicitly, the conditions put forward by the fish woman to keep her secret and the threat of disaster if violated teach us not to act arbitrarily against nature. Destruction of nature will lead to disaster. The dark sky, lightning flashes, and very heavy rain for days are lessons to stay alert for disasters when nature has given a sign. The command from a mother to her son (Samosir) to run to the hills is knowledge to go to a high place when a disaster occurs from the sea. Several informants from the research of Yulianto et al. (2021) also admit that they will run to high places when there is a disaster

from the sea. When the disaster occurred, the community around the coast immediately made spontaneous evacuation efforts by going to hills, mountains, and fields in a number of locations in Palu City.

Sukmawan and Setyowati (2017) also discusses folklore about disasters that are packaged in the legend of *Asal Mula Danau Tes* (the Origin of Lake Tes) from Bengkulu. This story is about a man (named *Si Pahit Lidah*) who cut down trees in the forest to turn it into rice fields. He threw all the remaining soil into the river. He has been reminded by the community and elders of *Kutai Donok* Village not to cut down too many trees and not to throw the soil into the river. They explained that his actions would clog the river and could drown the village. People's concerns have finally become real. The pile of soil eventually formed an island that stopped the flow of the river. The floodwaters drowned the whole village. The village turned into a lake. Similar to the legend of the Origin of Lake Toba, the legend of the Origin of Lake Tes also teaches us not to destroy nature. The damaged nature can turn the village into a lake because the village is flooded.

### ***Nyiru dan Lesung Ajaib Ibu Si Lancang* [Nyiru and the magical mortar of mother's Si Lancang]**

The folklore about the origin of a place is also owned by Riau Province. There are a poor mother and child in Kampar Village. Her son, Lancang, decided to wander to get a lot of money. He then became so rich that he could buy a ship. His ship loaded valuables such as silk, musical instruments, and pottery. Lancang turned out to be very arrogant man. When he sailed near the Kampar, his mother recognized him and insisted on meeting him. Lancang refuses to meet his mother. His mother was sad and took heirloom (*lesung*) at home. She rode the mortar (*lesung*). Suddenly it floated. While in the air his mother prayed to God so that her son must be punished. Suddenly there was a storm and a typhoon in the sea. Lancang's ship crashed into the reef. The contents of the ship scattered. *Gong* (musical instrument) fell in the river. The river was named Ogong (now in Kampar Kanan District). The silk cloth that was still folded was also blown away by the wind and fell to the ground. Residents look at the place Lipat Angin (Fold Wind) because the silk that was still folded and carried by the wind flown on it. Lipat Angin is now part of the Kampar Kiri district. The pottery which was thrown from the ship fell to the ground and shattered. This incident also inspired the name of the place, Pasubillah. *Pasu* means a vessel (a place for water from pottery) and *Bilah* means split.

The occurrence of storms and typhoons in the story becomes knowledge for us to be alert for disasters when the sea is not as calm as usual. Stronger storms are capable of destroying ships. A hurricane can blow everything in it. Therefore, if we feel there is a strong wind around the sea, we should be prepared to find a safe place of refuge. Easily recognizable features of marine cyclones were presented by Ma et al. (2021), typhoons are characterized by high sea temperature rise, strong winds, and turbulence. If we see these signs, we should be vigilant because hurricanes have the potential to damage the ecosystem in and around the sea. A hurricane that blows up the village also has the potential to damage residents' houses. In addition to local knowledge about disasters, the stories of *Nyiru dan Lesung Ajaib Ibu Si Lancang* also indicate that Indonesian ancestors were able to make a flying vehicle. This can be seen from a mortar heirloom named *Lesung* which is used by the mother to fly around the air. The story of the mortar that can fly is similar to stories about ancient vehicles such as UFOs (Unidentified Flying Objects). The research of Khan, Ghori, and Sana (2013) tells the story of the manufacture of a vehicle which can fly by a scholar from India named Shivkur Bauji Talpade. He created a flying saucer-shaped vehicle because he was inspired by an ancient text (7000 years old). The text of the *Vimanaka Shastra* that he read contains an explanation of the divine vehicle (*Vimana*) that can fly. Talpade's experimental flight vehicle successfully hovered in the air for 18 minutes in 1895.

### ***Ayam dan Ikan Tongkol* [Chicken and tuna]**

Still from Riau Province, there is a fable about the friendship between chicken and tuna. The chickens invite the fish to go to the coast for a thanksgiving party at the fishermen's house. The king of fish agreed on one condition that the rooster would crow at dawn because when the sun began to rise, the seawater would recede. If the seawater dries up, the fish cannot return home. The chickens agreed. The chickens and fish enjoyed the party until late at night. They were exhausted and fell asleep. They forgot the time. The dawn has passed. When they woke up, it was noon. Fish cannot return to the sea. They die on the shore. The king of fish blamed the chickens for breaking his promise. Since then the chicken and the fish are hostile to each other. Fishermen took the opportunity from this story. They use chicken feathers as bait to catch tuna. This method has proven to be effective. Fish will come quickly if their fishing rod or net is given feathers.

This story teaches us that receding seawater also has the potential for a calamity that endangers the lives of living creatures around it. Therefore, we need to keep the sea conditions stable so that fish, shellfish, and another marine biota do not become extinct. The impact of low tide on fish is explained by Whitfield and Cowley (2018), on November 15, 2017, in South Africa there was a mass fish death due to the collapse of the West Kleinemonde Estuary. The water suddenly receded, causing 20 species of fish to die. This incident is very detrimental to fishermen. The story of the *Ayam dan Tongkol* does not only provide local knowledge about the calamity of low tide, but also provides knowledge about fishing tricks that do not use explosives, poisons, and other hazardous materials. According to Betts et al. (2020) catching fish with chemicals damages fish habitat and impacts human health. Some people living near Nicaragua believe that their stomachaches, diarrhea, coughs, convulsions, and miscarriages are due to exposure to toxic river water.

In the story of *Ayam dan Tongkol*, exemplified the use of chicken feathers to lure fish. This indicates that chicken feathers are fish feed. A scientific explanation was given by Nursinatrio and Nugroho (2019) who agreed that chicken feathers could be an alternative to make fish feed. Although its price is cheap, fish feed from chicken feather flour still contains the protein. They experimented with giving Hydrolyzed Chicken Feather Meal (HCFM) for 84 days to red tilapia (*Oreochromis* sp.). The experimental results show that chicken feathers have an effect on fish weight gain and make fish healthier. Nutrient levels in chicken feathers were described in the study of Tesfaye et al. (2017), the nutritional components of chicken feathers consist of crude fat (0.83%), crude fiber (2.15%), crude protein (82.36%), and water (12.33%).

### ***Kera dan Ayam* [Monkey and chicken]**

Another fable about the friendship of animals comes from Southeast Sulawesi. Chicken and monkey often play together into the night. Once, their village ran out of food. An evil intention arose in the monkey's mind to eat the chicken. The chicken ran to the crab for help. Chicken and crab devise tactics to awake the monkey. They made a clay boat. They met the monkeys and told them that on the other side of the island there was an orchard. The three sail to the island. Chicken and crab play rhymes are equipped with boat pecking movements. Gradually the clay boat leaked. Before the ship sank, the chicken flew while the crab plunged into the sea. Chicken lands on a garden while crab swims easily. Both are safe. The leaking boat finally melted. The monkey almost drowned because he couldn't swim. Chicken and crab help the monkey. Finally, the monkey realized his mistake.

This story makes us aware of the traditional boat materials for sailing because the wrong materials can be disastrous for the passengers. Right materials for making traditional boats can be found in the research of Dewi, Damayanti, and Muslich (2020) which explains that "people in the *Kepulauan Riau* Province use various types of wood to make boats. *Meranti merah* (*Shorea* sp.), *laban* (*Vitex* sp.), *teak* (*Tectona Grandis*), *geronggang* (*Cratogeomys* sp.), and *nyirih* (*Xylocarpus* sp.) are woods commonly used for the main parts of boats (walls and boards). For accessories such as pegs, poles, and safety pins they use *alau* (*Shorea* sp.), *ulin* (*Eusideroxylon* sp.), *resak* (*Vatica* sp.), *sop-sop* (*Sapotaceae*), mangroves (*Rhizophoraceae*), *pung* (*Dichrostachys* sp.), *pung* (*Ormosia* *Subseraceae*), *ulin* (*Eusideroxylon* sp.), *tempinis* (*Sloetia* sp.) and *resak* (*Vatica* sp.). Fishermen in Java also use

various kinds of wood to make boats such as *teak* (*Tectona Grandis*), *merbau* (*Intsia sp.*), *bayur* (*Pterospermum sp.*), and *benger/bungur* (*Lagerstroemia sp.*) while the complementary parts are made of *pung* (*Dichrostachys Cinerea*), *laban* (*Vitex sp.*), *taritih* (*Parinari Corymbosa*), *albasia* (*Paraserianthes sp.*), *albasia merah* (*Albizia sp.*), *jeunjing* (*Paraserianthes Falcataria*), *waru laut* (*Thespesia sp.*), and *waru gunung* (*Hibiscus sp.*)”.

### ***Asal Usul Telaga Biru* [The origin of blue lake]**

Folklore from the coast of North Maluku is the story of a girl's heartbreak named Majojaru from Mamuya village. She has a lover (Magohiduuru). Her beloved boy went abroad to earn a lot of money so he could propose to her. One year passed but there was no news from Magohiduuru. Majojaru went to the pier to wait for her lover to come home. She asked the crew about how he was. One of them explained that Magohiduuru pass away due to a work accident. Majojaru was very sad. She leaned under a tree and cried incessantly. Her tears flooded where she sat until she drowned. The place turned into a lake. Residents who were surprised by the presence of the lake immediately reported to the leader. He beats *dolo-dolo* (bamboo drum) to gather residents. They also hold a traditional ceremony for safety so that the lake does not turn into a disaster. They then agreed to give the name *Telaga Biru* (Blue Lake) because of its clear blue color.

This story provides knowledge about how to communicate using traditional tools to warn of danger. *Dolo-dolo* is one of *kentongan* (communication tools) made of bamboo. Indonesian call it *kentongan*. It is also made from wood. People will beat *dolo-dolo* or other forms of *kentongan* to make announcements and call people to gather. The distinctive sound produced by it will be an alarm for residents that something has happened in their area, including a disaster. Kehinde et al. (2014) explain that the use of traditional communication tools is also part of African culture. They use drums, gongs, and bells to gather mass, give a signal of information or as warning alarms. Kuncari and Setiawan (2021) said that “*kentongan* is a traditional communication tool made of bamboo or wood. Some Indonesians in Java, Bali, and Lombok are also still familiar with and use it to this day. The types of bamboo used to make it were *ori* (*Bambusa Blumeana*), *petung* (*Dendrocalamus Asper*), *apus* (*Gigantochloa Apus*), and *wulung* (*G. Atroviolacea Widjaja*). The types of wood used for *kentongan* are jackfruit (*Artocarpus Heterophyllus Lam.*), *jati* (*tectona grandis*), coconut (*Cocos Nucifera L.*), mahogany (*Swietenia Mahagoni*), and *sengon* (*Albizia Chinensis*)”.

### ***Buaya Telaga Tanusang* [Tanusang lake crocodile]**

Another story from the coast of Maluku comes from the Tanusang area. It is said that there was a man named Basirun. He has a garden near the foot of Mount Tarawesi. One day, the most of his gardens were badly damaged. He suspects that his garden has been damaged by humans or animals. Basirun decided to make a *sunnga* (trap made of bamboo). Its tip is shaped like a spear. After setting the trap, Basirun returned to his house. The next day Basirun saw a crocodile caught in his trap. He killed a crocodile. Just as Basirun had killed him, there was a roar from the sky. The wind was blowing hard. Lightning strikes. Instantly, the sky seemed to be pitch black. Dark clouds cover the entire surface of the earth. Not long after, it rained very hard. Typhoon blows hard from the foot of Mount Tarawesi. The Tanusang area is flooded. Houses washed ashore. From the coast, two large waves appeared that directly hit Lala village and Ubung village. Everyone panics. They tried to save themselves. Some climb a sago tree. Some run towards Namlea. As a result of the incident, the Tanusang area turned into a lake. Residents call the place *Telaga Tanusang*. The lake water flows to the beach. Despite the dry season, the lake water is never dry.

The story of the *Buaya Telaga Tanusang* provides a lot of knowledge about the natural signs of a disaster. Rumbling sounds, lightning flashes, black sky, dark clouds, strong winds, and very heavy rain are signs given by the sky. The signs given by the sea are typhoons, storms, and big waves. All these natural signs should not be ignored because they can have a very bad impact. Heavy rain can cause flooding. Storms and typhoons can create big waves which at any time can turn into a tsunami.



This disaster can cause flood, houses washed into the sea, and many casualties. People on the islands of Ria Formosa are also aware of natural signs that a disaster will occur, as in the result of the research of Martinez, Costas, and Ferreira (2020) that the residents recognize that their place of residence is a disaster-prone area. They get the awareness from frequent events such as coastal erosion, tides, and storm surges. It became knowledge about natural signs which have the potential to be catastrophic. This teaches them to take disaster prevention actions such as cleaning beaches, restoring sand dunes, making artificial reefs, and making waterways.

In addition to telling the signs of a disaster, the story of the *Buaya Telaga Tanusang* also tells how to save ourselves by climbing trees and running to higher ground. Yulianto et al. (2021) explain that when a disaster occurs, people will automatically try to escape, save themselves, and evacuate. Likewise with the people around the beach. They immediately fled to higher ground when a disaster came from the sea. This action reflects the need for an evacuation site. Another lesson from the tale of the *Buaya Telaga Tanusang* is taboo on killing animals indiscriminately because animals also play a role in maintaining the natural ecosystem. The same folklore also exists in Thailand. Research by Lakul and Tularak (2017) explains the legend of Kumphawapi. It is said that albino animals are incarnations of gods so they should not be killed or eaten because it will cause heavy rains, floods, and villages will be drowned underwater. The submerged village turned into a large lake in Sakon Nakhon province named Nong Han Lake. The two folklores make us aware that humans need nature and animals. Humans cannot live well if nature is damaged and there are no animals. It is as Touwe (2020) admits that fish mortality also has an impact on coral reef damage. Factors causing damage to coral reefs are illegal coral reef mining, fishing using explosives or poisons, water pollution from waste (industrial, agricultural, and household), and fish exploitation. He advises so that humans can live side by side with nature by applying the value of local wisdom. Maluku Province has a *Sasi Laut* (local law) that regulates the use of resources in the sea and its surroundings. Thus acts of exploitation and natural pollution can be minimized because there are sanctions for perpetrators of nature destruction.

### ***Persaudaraan Nusalaut Dan Ambalau* [Nusalaut and Ambalau brotherhood]**

The Coastal Maluku has a tale about the formation of islands. On Nusalaut island, live brother and sister who live in two different villages. The younger is in Usailo, while the older is in Waeselano. In Usailo, there is a breadfruit tree. It was inherited from their ancestors. The brother told her that it is a sacred tree that should not be cut down carelessly because it would cause disaster. When the older went home, the younger cut down the tree. At night, while everyone was fast asleep, the land in Usailo village suddenly split open. The earth shook violently. Usailo and Waiselano have been separated. Several chunks of land from Usailo were transformed into new islands such as Maulana (Malona), Kelang, Manipa, Buano, and Ambalau. The younger brother's house is on the island of Ambalau while the older remains on the island of Nusalaut.

This folklore teaches us that cutting down trees carelessly will result in disasters such as landslides or the splitting of the ground. Very strong shaking from deep in the earth will make the land hemisphere widen. The land that was constantly splitting apart eventually turned into several islands. Thus protecting nature is something that must be done. The importance of protecting nature is implied in the *Timun Mas* folklore. Sukmawan and Setyowati (2017) explained that *Timun Mas* was a girl who was about to be eaten by a giant. She uses some magical items (cucumber seeds, needles, salt, and shrimp paste) to save himself from it. He threw each of the magical objects. Cucumber seeds turned into a vast cucumber field, needles into a bamboo forest, salt become the sea, and shrimp paste be quicksand. The giant sank in a sea of quicksand. Giant is a symbol of disaster while magical items are symbols of nature. The moral message from this story is that if humans are friendly with nature, then disasters can be avoided.

## **Conclusion**

Folk prose narratives from the Indonesian coast containing indigenous knowledge about disaster are *Asal Mula Danau Toba* (the Origin of Lake Toba), *Nyiru dan Lesung Ajaib Ibu Si Lancang* (Nyiru and the Magical Mortar of Mother's Si Lancang), *Ayam dan Ikan Tuna* (the chicken and the tuna), *Monyet dan Ayam* (Monkey and Chicken (*Monyet dan Ayam*)), *Asal Usul Telaga Biru* (the Origin of Blue Lake), *Buaya Telaga Tanusang* (the Tanusang Lake Crocodile), and *Persaudaraan Nusalaut dan Ambalau* (the Brotherhood of Nusalaut and Ambalau). The indigenous knowledge implicated in the folklores is how to recognize signs of disaster (dark skies, lightning flashes, and heavy rain, hurricane, low tide, rumbling from the sky, lightning flashes, pitch-dark skies, black clouds, strong winds.), how to save yourself (run to the hills, climbing trees), and mitigation (by communicating using traditional tools as a sign of danger, not to kill animals, and not cutting down trees indiscriminately). This study found that the folk prose narratives from the Indonesian coast contain not only indigenous knowledge about nature and disasters but also knowledge about the traditional vehicle and fishing trick. Indonesian ancestors were able to make flying vehicle and making cheap natural fish feed (chicken feathers).

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