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Patorani local knowledge system in fisheries resources conservation education in Galesong District South Sulawesi

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Abstract

The development of fishery resources is realized through one of the pillars of development, namely pro-environment (restoration and preservation of the environment) in the order of conservation and rehabilitation of marine resources. This study aimed to investigate and describe *patorani* culture, which is the local fishermen's knowledge of conserving fishery resources. This research used the qualitative descriptive method with a phenomenological approach by using several sets of data, including the preliminary studies. The data were collected through literature review, observation, and preliminary survey, and then they were analyzed based on understanding and public opinion through a qualitative approach. The informant is a *patorani* fisherman who act as the *papalele*, *punggawa*, and *sawi*. Primary data sources and data collection techniques are obtained mostly from participation observation, and in-depth interviews with *patorani* fishermen families. The data obtained were analyzed componential through three stages, namely data reduction, data presentation, and data verification. The results of this study showed that Galesong society still practices *patorani* culture in the utilization of coastal resources and maritime transport, including: 1) knowledge related to ceremonial preparation of fishing activities, 2) the use of technology fishing gear, 3) knowledge about the existence of spear fish, 4) knowledge in fishing activities, and 5) knowledge of the fishing voyage *patorani*. The fisherman's knowledge of *patorani* culture was derived from hereditary experience. *Patorani*'s knowledge comes from empirical reality as a result of interaction with the environment, both with the human environment itself and the natural environment of the sea. Finally, the local knowledge system of *patorani* can systematically support education on the conservation of aquatic biological resources, especially fishery resources.

Keywords: local knowledge; conservation education; *patorani*; fishery resources

1. Introduction

The Indonesian government has increased conservation in the coastal, waters, and small island areas every five years (Ministry of Maritime Affairs and Fisheries, 2014). This conservation attempt has achieved relatively satisfactory results. In 2020, this conservation received more optimum results, in which the conservation of 881,581.36 ha resulted in 189.72% realization from the determined goal. The achievement of the target exceeding the plan signifies greater cooperation between the government and local communities in maintaining, managing, and conserving the potential coastal and marine resources. This conservation is also carried out in Takalar Regency, Indonesia, especially in Galesong District, in the conservation of fishery resources with a potential of 6.5 million tons of capture fisheries (H Hasriyanti, Fatchan, Sumarmi, & Astina, 2016).

The actions (behavior) of local communities reflect their culture that has been practiced continuously in certain ways following their ancient tradition, resulting in principles, systems,

and patterns in maintaining balance and sustainable management of the environment and resources (Reyes-García & Benyei, 2019). All activities related to taboos, prohibitions, and manifestations of tradition express messages from local community behavior carrying tangible meaning for the preservation of coastal resources, especially fisheries (Yenrizal, 2017). Besides, local culture is also manifested in various values and meanings in every behavior of the community.

The term 'local' emphasizes not only astronomical boundaries and geographical spatial characteristics but rather to the establishment and implementation of culture (habits) as a whole and continues beyond the administrative boundaries without being limited by the strictest border lines to other cultures (Syarif, Hasriyanti, Fatchan, Astina, & Sumarmi, 2016). Also, local culture can be defined as the culture (tradition) owned by the indigenous people (inlander) as a heritage (Vogt et al., 2016). The local culture in Indonesia has become the cultural heritage that belongs together as a single unit of the nation's cultural wealth.

Historically, the people of South Sulawesi, Bugis, Makassar, and Mandar Tribes, were known as tenacious sailors. With immense maritime aspirations, fishing or hunting activities in the wide ocean became their main livelihoods, especially for people living in coastal areas (Norken, Suputra, & Arsana, 2016). Additionally, each region has a local knowledge system for preserving, managing, and maintaining its fishery resource potential with the creation of traditional technology. These conventional technologies are adapted to shipping and marine environmental conditions in their coastal areas. The technologies facilitate coastal fishermen communities in conserving resources, resulting in difficulties in leaving the marine environment and working in other economic sectors on land (Setyowati, Juhadi, & Kiptida'iyah, 2017). Understanding the local *patorani* system carried out by coastal communities in Galesong District, Takalar Regency, as a form of conservation education, helps us identify the process of managing marine resources, especially fishery resources, based on local wisdom and local culture. *Patorani* knowledge expresses characteristics of someone's history and learning experience by explicitly recognizing the elements affecting their life (H Hasriyanti, 2022).

Nguyen and Ross (2017) revealed that *patorani* comes from two terms, namely the words *tobarani* and *torani*. *Tobarani* is interpreted as a person who is brave. Therefore, up to now, *patorani* are those who are bold enough to navigate the wide ocean full of obstacles. In comparison, the word *torani* is a term or nickname for the type of fish targeted during the *patorani*.

Indonesia has various types of flying fish, ten of which are in the waters of South Sulawesi and eastern Indonesia. Flying fish or *torani* are marine resources that are highly sought by *patorani* because, apart from their edible trait, *torani* fish eggs offer high selling prices because they have export value. The most popular export destinations for *torani* fish eggs are Japan, Korea, and China, as they are used for medicinal purposes and healthy food (Thamrin, 2013). Consequently, the government and local communities present great interest in conserving these fishery resources using an existing local knowledge system.

In general, resource conservation education for coastal communities aims to regulate the pattern of community activities in a guided and structured manner, using inherent knowledge called *pangissengang* in treating nature. *Pangissengang* (knowledge) is a process of rationalizing actions in fishing communities patorani which is a need that has taken place in normative space where it originates from myths, belief systems, and social constructions that

are built based on habits enshrined in local shipping values. One of the regulated activities is the control of traditional, simple, and environmentally wise fishing gear that produces catches of high quality and quantity (Sufia, Sumarmi, & Amirudin, 2016). Therefore, the *patorani* is a manifestation of a form of environmentally-friendly conservation, especially in the area of *torani* fish hunting. *Patorani* conservation education has been designed and developed from time to time. Besides, it is reflected in every behavior or activity pattern of the local individuals and groups. Thus, this research aims to identify the context of *patorani* in fishery resources conservation through local knowledge for conservation education in Galesong District, South Sulawesi, Indonesia.

2. Method

This research was conducted in Palalakkang village, Galesong, Takalar District, South Sulawesi, Indonesia (Figure 1), by using survey methods, observation, literature review, in-depth interviews, and research focus suitability analysis through Focus Group Discussion (FGD). Besides, this study used a qualitative approach a phenomenological approach to produce descriptive data in the form of spoken and written data obtained from primary and supporting informants. Further, the data was also undergone primary and secondary data verification through data triangulation. The characteristics of the informants can be seen in Table 1.

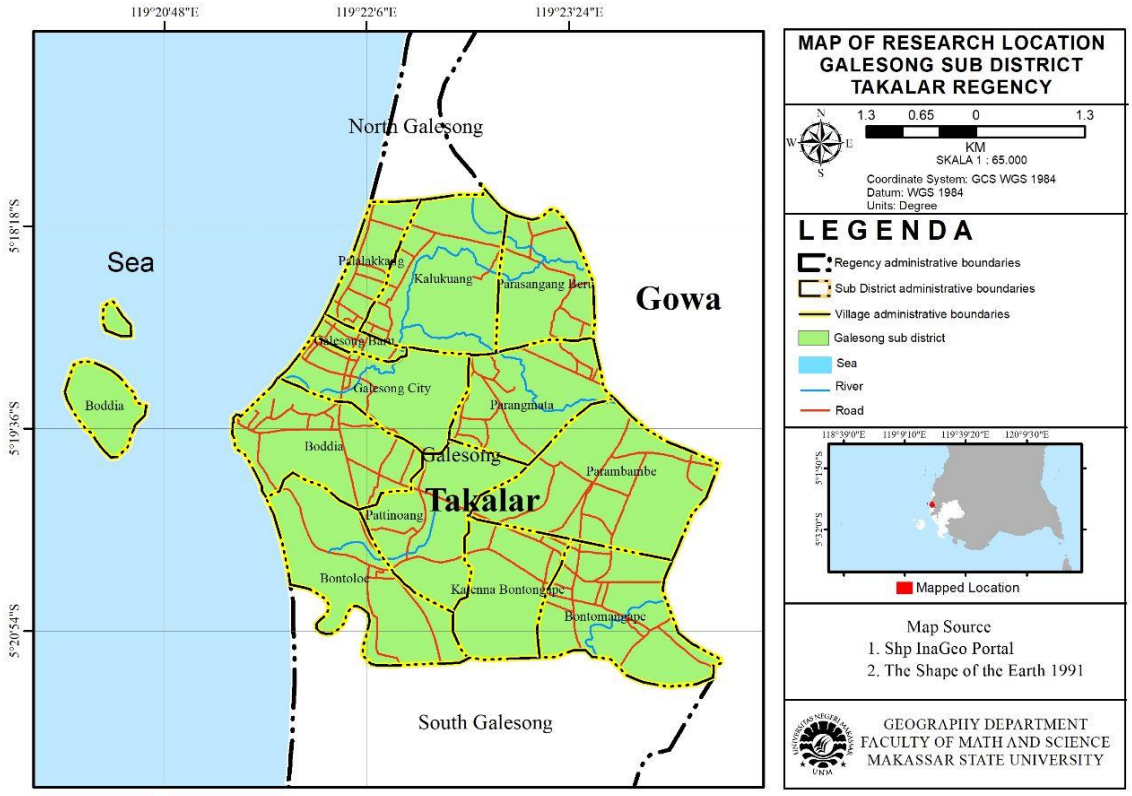

Figure 1. Map of Research Locations

Table 1. Characteristics of Informants

No	Informant Type	
	Key Informants	Supporting Informants
1	Papalele (land captain)	Head of Galesong District
2	Punggawa (sea captain)	Head of Palalakkang Village
3	Sawi (manpower/labor)	Member of the Patorani and Cultural Community

For the sampling technique, this study used purposive sampling based on the respondents' characteristics suitable to the research objectives. We determined sampling criteria for the selection of primary informants and supporting informants. The main informants were *papalele* (land captain), *punggawa* (sea captain), and *sawi* (manpower/labor), while supporting informants were cultural figures and community leaders. In the FGD process, all informants were involved in clarifying and verifying the data obtained in the field. Data analysis was revealed through the natural relationship between researchers and informants during the data collection process and after the data were collected entirely. Along with data collection, analysis (interpretation) was carried out to sharpen the observation focus and the data relevance to the main problems studied.

3. Results and Discussion

3.1. Research Locations

Takalar Regency has designated the fishing sector as the primary sector driving its economic growth, including in Galesong District. Its coastal morphology of ± 74 km has induced most of the local people in Galesong District to work in fisheries centers and fish processing production, while some others work as farmers (Tamba, 2011). Galesong District is the most extensive base of *patorani* fishermen. The number of *patorani,* until 2020, is shown in Table 1.

Table 1. Number of *Patorani* in Galesong District in 2017-2020

No	Fisherman Status	Year		Development Percentage (%)
		2017	2020	
1	Papalele	14	18	3.5
2	Punggawa	58	69	5.27
3	Sawi	532	634	5.21
	Total	607	721	100

Source: Central Bureau of Statistics of Takalar Regency (2019)

The environmentally friendly attitude is clearly manifested in one of the *patorani* knowledge. It is through the use of local and simple fishing gear, namely *pakkaja* (a fishing gear for fish *torani*) and *balla-balla* (catch tool to hold fish eggs *torani*). The *balla-balla* is designed in such a way that ensures the convenience of *torani* (flying fish) fish spawning on their favorite dry coconut leaves with a rough texture. After spawning, *torani* fish will be free to escape and breed to spawn again in the coming season (Danielsen et al., 2014). This process indicates the special communication established between *patorani* (fisherman who catches flying fish) and *torani* to ensure steady cooperation that allows the *patorani* to attain large quantities of fish and eggs (Arief & Agusanty, 2013). Meanwhile, *pakkaja* is a tool to limit the exploitation of *torani* fish, because its holes are adjusted to the size of *torani* fish, enabling the young fish to be released freely. Besides, education emphasizing a wise attitude toward the environment is essential for all stakeholders because it realizes mutually beneficial interactions between

humans and nature (Thompson, Lantz, & Ban, 2020). The *pakkaja* and *balla-balla* fishing gears are illustrated in Figures 2 and 3.

Figure 2. *Pakkaja*

Figure 3. *Balla-balla*

Similar to other local communities, the *patorani* also have a distinct knowledge system based on their beliefs, hunches, smells, hearings, and sights applied in their actions on land and at sea. This practice enables the robust survivability of a custom, culture, and tradition in a community until now, making modernization and external influence incapable of transforming people's understanding that has been patterned in the form of knowledge and habit (Chakravartty & Sharma, 2013). The local people's traditional knowledge can be observed in their ability to local discernment local wisdom in the form the natural circumstances for sailing and catching *torani* fish.

Our interview result with one of the *patorani* living in South Galesong District suggested a number of forms of local culture introduced by the *patorani*. He explained that in the process of catching flying fish in the ocean, they (*patorani*) maintain the water condition and their fish resources. Besides, they also have specific rules for preserving coastal conditions, such as maintaining the existence of mangroves and not damaging corals (using traditional fishing gear) while also keeping the quantity of coastal and marine resources. These resources include flying fish, sea cucumbers, milkfish, shrimp, seaweed, and shellfish. Additionally, the informant

also described several forms of local culture as outlined in *patorani*'s fishing regulations, namely: (1) control of fishing gear, (2) fishing pauses, (3) rotation of fishing grounds, (4) distribution of FADs, (5) distribution of fish larvae, (6) increase number of mangrove sprouts, (7) limit fishing areas with mangrove areas to avoid sedimentation that can disturb the mangroves, and (8) open milkfish and shrimp ponds on a regular basis. All forms of *patorani* activities are stipulated in customary rules and the rules of the Galesong community. Further, those rules containing prohibitions and obligations must be obeyed by *patorani*, if they want to complete their activities at sea safely. The central goal of *patorani* is the conservation of coastal and marine resources, as can be observed from the ongoing practice of *patorani* and the benefits intensely felt by the local community. Therefore, *patorani* can maintain its existence to this day, along with the customary rules being patented in their rituals.

In addition, our informants also stated that besides being regulatory references in their livelihood activities, the local people are also required to implement *patorani* knowledge in the water areas. *Patorani* knowledge contains meanings and values that should be obeyed by the people. If they violate those values and regulations, then they will get sanctions from tribal chiefs and nature. Sanctions from tribal chiefs in the form of not being allowed to go to sea in certain water areas, and sanctions from nature in the form of skin diseases if they are determined to enter areas that have been violated.

In addition, our observation results indicated that *patorani* fishing practice was established based on knowledge containing rules and magical values related to sciences (*pangngissengang*). Mysterious things happen, for instance, if the *patorani* don't carry out the ceremony before going to sea, then there are things that will hinder them from leaving, such as a family member suddenly get seriously ill, the fishing gear that was made was never finished, and they have difficulty getting *sawi* (labor). These values represent the actions of the fishing community in ancient times, which later became a habit. Besides, the result of the interview also found that the community consisted of *papalele, punggawa*, and *sawi* who always interacted with each other while working together in managing coastal and marine resources, especially fisheries. Traditionally, they managed these resources through a culturally based environmental ethic that synergized with group dynamics. Cultural environment refers to the maintenance of traditional knowledge systems that lead people's thoughts, behavior, and fishing gear following their local culture.

In the end, our data analysis results suggested that the behavior and actions can be identified through two stages, namely, understanding individual actions and understanding group actions. The group's behavior can be identified through the cultural meanings of the symbols used by the group members. Meanwhile, individual behavior can be understood through rational actions in their behavior patterns. The results of our FGD also showed that the trust among the fishermen groups is enhanced through their experience and habits in applying two types of knowledge (*erang*). Those two areas of knowledges are knowledge of the ins and outs of shipping (*erang passimombalang*) and knowledge of fishing methods and technology (*erang pakboya-boyang*).

3.2. Form of *Patorani* Local Knowledge

Patorani culture is unique because its fishing process is carried out in the dry season using very traditional tools. The use of this traditional tool is closely related to the preservation

of coral reefs, as their primary goal is to preserve the fish habitat (Martin, Suharjito, Darusman, Sunito, & Winarno, 2016). Coral reef preservation is accomplished by shielding them from the effect of modern, potentially damaging instruments. Economically, *patorani* is very profitable because it uses the available local materials, ensuring the use of environmentally friendly fishing gear. The survival of this local culture is induced by its ability to recognize beneficial physical phenomena, such as the phenomena related to human interaction with the physical nature, in maintaining the preservation of aquatic biological resources in the Galesong District.

3.2.1. Knowledge in the Ceremony Preparation (*Appakruru* and *Accaruk-caruk*)

The core activities in the preparation process of *patorani* consist of a salvation ceremony and asking permission from nature. These activities are carried out in two stages. In the first stage, the ceremony is carried out on boats that will be used in the *patorani* sailing to catch *torani* fish and collect the eggs. Meanwhile, the second stage is carried out along with the traditional structures of the *patorani*. The stages of the ceremony are summarized in Table 2.

Table 2. Stages of *Patorani* Ceremony or Ritual

Patorani Fisherman Ceremony or Ritual		Ceremony Purposes
Ceremony Stage	Ceremony Contents	
Appakruru Stage (Preparation)	The first stage in the ceremony is reading barazanji (holy verses) by people who have been appointed and ends with a prayer led by anrongguru (traditional teacher). All members of the ceremony are men, including the elders. They give a baca (mantra) to the traditional food in the ceremony, such as kaddo minya (yellow glutinous rice) and songkolo (glutinous rice), bananas, and incense. Later, the participants of the ceremony eat the food together. Those foods mainly contain elements of brown sugar and coconut, symbolizing a sweetener for sustenance for those who will go to sea. After the ceremony, participants of the ceremony leave the place.	The purpose of this ceremony is to maximize the people's readiness, both spiritual and physical, as well as the preparedness for equipment being brought to the sea.
Accaruk-caruk stage (Small Party before going to the sea)	The second stage of the ceremony is held on the beach in the vicinity of the patorani. This activity is only carried out by anrongguru and attended by several people to help stick woven bamboo on the beach. The woven bamboo contains food of songkolo and chicken wrapped in banana leaves that have been given prayers. Then, the food and sweet cakes are drifted away using a raft from a banana tree trunk after being given a mantra.	The purpose of this ceremony is to ask permission from the inhabitants of the ocean as the people will make a voyage in their territory. Through the ceremony, people beg to be kept away from natural disturbances and given safety during sailing until they return to land.

3.2.2. Knowledge of Making and Operating Fishing Pole

Patorani fishing gear technology was constructed and developed using scientific information from their ancestors, from generation to generation. The fishing gear technology development in the *patorani* community is not influenced by external technologies since the technology is always developed following local knowledge. The *bubu* and *pakkaja patorani* fishing gears are generally operated using boats with a size of 6-11 GT, a sail area of 35-70 m, and two engines with a power of 31-60 PK. As many as 30-55 *bubu* and *pakkaja* are brought with 20-45 kg nylon rope. Another fishing gear is a *balla-balla*. It is made from half-dried banana leaf midribs, which are arranged in such a way as to accommodate the survival and attachment of *torani* fish eggs on. In general, the operations of *pakkaja* and *balla-balla* are ordered as follows: 1) after the prayer for the fishing gear has been recited by *punggawa*, *sawi* then puts *pakkaja* and *balla-balla* floating *(ammanyu-manyu)* on the surface of the sea. 2) The 10-20 pieces of *pakkaja* and 20-30 pieces of *balla-balla* are dropped, depending on the estimated number of flying fish in that area. 3) Each *pakkaja* and *balla-balla* is hooked to "gosse" which is a type of seaweed with a distinctive smell that is favored by *torani*, thus inviting them to come to spawn (lay eggs). 4) The bottom of the *pakkaja* is tied to one to three *balla-balla,* which serve as a place for *torani* fish to lay eggs. 5) The attached coconut leaf on the outside of the *pakkaja* served as a marker that helped people find them during the control. The coconut leaves are used because they have a rough and sticky texture that enables *torani* to lay eggs. 6) The *pokkaja* is placed in the water first as it is heavier, while the *balla-balla* is placed and left to float near the surface of the sea, and sometimes it is partially submerged in the water. Both are placed in the water while tied to floating bamboo that acts as a marker. 7) The fishing gear was left *ammanyu-manyu* (to float) for 24 hours and controlled three times during that duration. The fishing gear must be removed after 24 hours. Meanwhile, the *balla-balla* should be replaced if they still want to continue to attain *torani*. In contrast, the *pakkaja* tools do not need to be replaced because their bamboo and rattan material is strong and durable, while *balla-balla* are made from dry coconut leaves, which are not durable. Furthermore, the outside of the *pakkaja* is also tied with coconut leaves as a marker of the floating point.

3.2.3. Knowledge of the Torani Position

Torani fishermen's local knowledge allows them to understand the existence of *torani* fish in the water by following natural signals and indicators, namely by observing: (1) the appearance of a sparkling light that looks very clear from the eyes of the observer (*patorani*), (2) the particular smell of *torani*, (3) the temperature of the waters checking by dipping the hands up to the elbows to determine the warmth of the seawater, since the *torani* mostly gather in warm water, (4) the presence of the type of bird with a duck beak which have red and black colors, and (5) the altitude level of the fish, if the flying fish jump higher (behavior of the fish), the *torani* are not laying eggs and they will surely stay away from the *balla-balla*, and vice versa (Baruah, Dutta, & Pravin, 2013).

3.2.4. Knowledge of the Fishing Activities

In using the *pakkaja* and *balla-balla* fishing gear, the boat is boarded in a state where the engine is not ringing, ensuring the tranquil ambiance of the waters. Previously, crossed straight or U-shaped bamboo was prepared as a float. Further, the *balla-balla* are tied to the bamboo

which was completely submerged in the water and covered with some coconut leaf midribs. The supervision of *pokkaja* and *balla-balla* is carried out 2-3 times in a span of 24 hours. During the control period, the *patorani* fishermen sing "porn" songs with philosophy from a beautiful girl who is a daughter of the king and has been unsuccessful in marriage, then later turns into a *torani*. By singing that song, the *torani* is expected to come from all directions to meet her future husband**.**

3.2.5. Knowledge in Sailing

Patorani's knowledge of sailing is presented in the shipping knowledge matrix, as listed in Table 4. The matrix clearly accentuates the importance of preserving *patorani* because it contains values and meanings as outlined in several rituals, such as dances, songs, pornographic conversations, poetry, and prayer. The *patorani* becomes the basis for local communities in managing their resource since it can guide conservation education to maintain the potential of sustainable resources. Further, the *patorani* believe they have the power to summon flying fish to their nets while still paying attention to the taboos. In general, the *patorani* has a lot of uniqueness, reflecting a life filled with various traditional ceremonies related to livelihood systems, beliefs, and local knowledge that have not been widely disclosed. Additionally, their behaviors in managing and preserving their habit have facilitated *Patorani* survival. Their survival is also supported by a large number of students from coastal areas inside and outside South Sulawesi. These students observe the decline in marine resources caused by the local government's low management and attempts to improve coastal communities' living.

The interaction process of *patorani* fisherman contains local values that can be adopted as learning in interacting with the natural environment. In every social group, there are norms that are constantly maintained and utilized as a tool to access and regulate natural resources (Joa, Winkel, & Primmer, 2018). Every local community has its own norms and rules that distinguish them from other individuals and groups (Maridi, 2015). Accordingly, the *patorani* community shows wise conservation through local human knowledge in organizing the environment.

The *patorani* hunt for fish and *torani* eggs is carried out based on their knowledge and understanding, which synergize with nature, especially in the ocean. The knowledge is called *erang passimombalang* (knowledge of shipping) and *erang pakboya-boyang* (knowledge of fishing technology). From a deeper exploration, the *patorani* fishing gear is not comparable to the unexpected challenges in the natural conditions. Further, the strength of *patorani* lies in its two primary knowledge capable of aiding the sailing processes. Some theories state that the strength of the fishing community is not established by their behavior destroying the marine environment but by their power to synergize with the forces of nature (Thondhlana & Shackleton, 2015). *Patorani* knowledge becomes a manifestation of the goals of local people, namely the wise usage of *torani,* in which they should not catch *torani* excessively to ensure their long survivability.

Table 4. Knowledge Matrix of *Patorani*

No	Informant Name	Information Given	Domain Information
1	Agung Dg. Taba *Papalele* (Army retainer)	All *patorani* believe in the existence of guardian spirits in fishing areas. They also believe that the spirit will be angry if the *patorani* commits an offense while sailing. Hence, they must avoid offenses by throwing out the betel leaf and tobacco that had previously been recited prayer by *Anrongguru* on the mainland.	Knowledge of sailing
2	H. Samsul Dg. Nyikko *Papalele* (Army retainer)	*Patorani* has excellent skills in determining departure times based on local observations. They depart in the eastern season, in March or April, based on the observation of the season through the *appakruru*. According to the experience, the day of departure is on Tuesday, Wednesday, Saturday, and Sunday.	Knowledge in observing the seasons and determining good days
3	Japar Dg. Mangngewa (*Sawi*)	*Patorani* activities in the ocean are strongly influenced by weather conditions observed through cloud monitoring. The gathering clouds signify shady whether that obligates the *patorani* to lower their fishing gear immediately.	Knowledge of clouds
4	Bakhtiar Dg. Jarre *Punggawa Tamparang* (Sea Punggawa)	*Patorani* knowledge generates local star marking terms to monitor their activities. The *tanra tellu* indicates heavy rain, the *wettuing* star indicates sailing time, and the *mono* indicates the condition of the sky.	Knowledge of seeing stars (*mamau*)
5	Darmawan Dg. Tawang	*Patorani* believes that during their activities in the ocean, they are always supervised by the guardian spirit of the ocean. In the event of lightning, they must stop their work to recite the mantra and pray for salvation. Lightning is interpreted as the power given by God to expel (pursue) disturbing spirits in the ocean that interfere with their activities.	Knowledge of thunder and lightning
6	Ismail Dg. Beta (elderly community)	*Patorani* must not interfere with or damage the *sapa* (coral cluster), as the area is believed to be a sacred area inhabited by guardian spirits. The presence of coral clusters can be observed through signs such as very bright reflections of the sun's rays, quite clear and warm water conditions, and the presence of birds looking for food.	Knowledge of coral clusters (*sapa*)
7	Rusdi Dg. Gassing *Punggawa Tamparang* (Sea Punggawa)	In the sea, there are many taboos for *patorani*. These taboos include the prohibition to call people on land, prohibition from whistling because it can invite strong winds, prohibition from dipping kitchen utensils because it can invite storms, prohibition from blocking the way of a fisherman when they want to get on a boat, prohibition from *takabbur* (arrogant) and disrespectful speaking because it invites sharks, and prohibition to prone while sleeping during sailing.	Abstinence (*pamali*)

Patorani knowledge system is a form of conservation education in the Galesong District. Initially, their *patorani* activities were oriented only to hunting for fish, but after some time, their activities were oriented to *torani* fish eggs because the eggs offered high selling prices (Hasriyanti & Syarif, 2021). Consequently, this situation forces them to maintain the knowledge that ensures proper interaction to support this excellent potential. The element of *cause* carries a powerful influence on the pattern of human behavior (Patiselano, Manusawai, Arobaya, & Manusawai, 2015). At the same time, the inner environment encompasses both immediate or immanent experiences, such as belief, and transcendental experiences, such as magic.

This is reinforced by a previous study (Sumarmi, 2015) reporting that in addition to the natural physical environment, humans have another complementary environment in life which is called the cultural environment. Therefore, the purpose of the *erang* (knowledge) is the completion of procedures and techniques for catching *torani* being carried out by the *patorani*, as well as the construction of guidelines for utilizing other coastal resources.

The matrix shows that the position of the local culture of *patorani*, examines the spatial aspect where humans live and how humans use it, studies the interrelationships between humans and their physical environment. Local knowledge of *patorani* as part of regional diversity studies, as well as studying regional frameworks and analysis of regions that have special characteristics and uniqueness. Other findings are also in the form of environmental phenomena, which cover two aspects, namely the physical aspects of human action and natural phenomena. Physical human action includes placing the order in the environment and humans as agents of environmental change.

4. Conclusion

Based on the results of this study, we concluded: 1) *patorani* local knowledge comes from traditional knowledge systems that are implemented based on patterns and practices through experience passed down to each generation, 2) the *patorani* local knowledge system's survivability is caused by its belief that generates principles, concepts, and ways to maintain a balance and sustainable management of the environment and resources, and 3) the *patorani* local knowledge can systematically support education on the conservation of aquatic biological resources, especially fishery resources.

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