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Unveiling the cultural practices of salted seafood preservation in Bantayan Island, Cebu, Philippines

ABELLO, Charisse Elizabeth[1]; ALMADEN, Claire[2]; TEAÑO, Aurea[3]; INOCIAN, Reynaldo [4]; LOZANO, Elena[5]

[1] 0000-0009-3605-9913; Madridejos National High School. Bantayan, Cebu, Philippines. abellocharisseelizabeth@gmail.com
[2] 0000-0000-3406-4350; Social Sciences Department, Cebu Normal University. Cebu City, Cebu, Philippines. clairetubianosa@gmail.com
[3] 0000-0002-0073-1789; Bantayan National High School. Bantayan, Cebu, Philippines. teanoaurea24@gmail.com
[4] 0000-0003-2958-2027; Doctor of Education, Social Sciences Department, Cebu Normal University. Cebu City, Cebu, Philippines. inocianr@cnu.edu.ph.
[5] 0000-0006-2773-6212; Doctor of Philosophy in Biology, Biology Department, Cebu Normal University. Cebu City, Cebu, Philippines. lozanoe@cnu.edu.ph.

A B S T R A C T

Unveiling the cultural practices of salted food products, the ingredients, packaging, and promotion responded to consumer demands. A qualitative descriptive design was used in the study. Interviews, questionnaires, observations, and field notes were also used as research techniques. Thirty (30) research participants were selected as salted seafood product makers through purposive sampling, and another ten (10) participants were selected through convenience sampling in Taboan Public Market for product validation. A thorough discussion of the cultural significance of producing salted seafood products such as *ginamos*, *amahong,* and *tinabal* was anchored on the generated themes. The unveiling of salted seafood products such as *ginamos, amahong*, and *tinabal* used sanitary processes and utilized localized ingredients and unsophisticated packaging. The Philippine Development Plan supported their flight to the rest of the world to achieve SDGs 1 and 2 in line with the goals of promoting salted seafood products from the fishing sector, as a reassertion of a unique Cebuano cultural identity that needs ardent government support and promotion for national and international trading. The use of the five foci in the policy brief supports local government officials in promoting the sustainable development of the production of salted seafood products of Bantayan and the rest of the country.

RESUMO

A pesquisa revelou as práticas culturais dos produtos alimentícios salgados, incluindo ingredientes, embalagens e promoção, em resposta às demandas dos consumidores. Utilizou-se uma abordagem qualitativa descritiva. Entrevistas, questionários, observações e notas de campo também foram empregados como técnicas de pesquisa. Trinta (30) participantes foram selecionados entre os produtores de frutos do mar salgados por meio de amostragem intencional, e outros dez (10) participantes foram selecionados por conveniência no Mercado Público de Taboan para validação dos produtos. Uma discussão aprofundada sobre o significado cultural da produção de frutos do mar salgados, como ginamos, amahong e tinabal, foi ancorada nos temas gerados. A apresentação desses produtos, como ginamos, amahong e tinabal, demonstra a utilização de processos sanitários, ingredientes locais e embalagens simples. O Plano de Desenvolvimento das Filipinas apoiou a expansão desses produtos para o resto do mundo, visando alcançar os ODS 1 e 2, em consonância com os objetivos de promoção de frutos do mar salgados provenientes do setor pesqueiro, como uma reafirmação da identidade cultural única de Cebu, que necessita de forte apoio e promoção governamental para o comércio nacional e internacional. A utilização dos cinco focos no documento de política apoia os funcionários do governo local na promoção do desenvolvimento sustentável da produção de frutos do mar salgados em Bantayan e no resto do país.

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Introduction

The ocean is a significant source of income in the Philippines (Aspi et al., 2023). The archipelagic landscape of the Philippines provides this advantage, making fishing possible (Malayang, 2021). The country's tropical climate produces abundant fishing areas (Boquet, 2017). The fishing industry is undeniably one of the imperative components of livelihood in the country (De Jesus, 2025). In the Visayan region, fisheries trade shapes wider migration of historical and geographical contexts, making fisheries trade popular in maritime Southeast Asia (Fabinyi et al., 2018); however, fishing has declined (Templo et al., 2024), and has shown no positive effect in the Philippine economy (Aspi et al., 2023) for the last couple of years. According to the State of World Fisheries and Aquaculture Organization (2006), "43.5 million fishermen engaged in the fishing industry." Hence, this number indicates that fish products are produced in large quantities in the country, helping the Philippine population eliminate hunger under SDG 2 and poverty under SDG 1 (ISDM, 2024), despite its decline and economic repercussions.

Vis-à-vis, one of the most well-known seafood products consumed by the locals of Bantayan Island undergoes salting, preservation, and fermentation. The products of these processes are the fish paste, brined fish, and green mussels. The salting process is an essential component of food preservation (Amit & Rahman, 2017). Under this salting preservation process, seafood products are cleaned and brined to produce *ginamos* (fish paste), *tinabal* (brined fish), and *amahong* (brined green mussels). Preserved seafood products are an indispensable part of the Asian diet, particularly in the Philippines (Narzary et al., 2021). Its abundant nutrients and nourishing flavor make the products lucrative in the market. However, Amarra et al. (2021) argued that salted food products pose health risks of increased hypertension cases among Filipinos, especially when consumed in excessive amounts. Nevertheless, the cultural aspects of its production necessitate its preservation (Sumi, 2024) and moderate consumption to ensure healthy living.

Nonetheless, the young generation's lack of awareness and the inadequate literature on these salted seafood products remain its gaps. Hence, this context attributes low distribution and consumption of these products, especially their imbalanced perspective between the rich and the poor (Aspi et al., 2023; Templo et al., 2024). The polarization of this bias recognizes that local fishermen's craft on the island earn a lucrative income.

To what extent are traditional fish fermentation and salted seafood preservation practices still actively appreciated in Bantayan Island? Fermentation and salted seafood preservation practices are vibrant in the island as part of tradition. Drying fish is fully embedded in the island's daily life. Its process is common, requiring fishermen with full sunlight, especially during the summer, to dry fish, krill, and squid. As regards fermentation, little evidence proves that this is a primary process of preservation compared to the former. However, fish paste fermentation had high contamination in organic pollutants (Bucol et al.,

2025; Padayao et al., 2025). Their findings necessitate an urgent call for stakeholders to respond and find solutions to ensure the health conditions of the consumer public.

Hence, this study unveils the culture of salted seafood preservation in the process, ingredients, packaging, and system of promotion of *ginamos, tinabal,* and *amahong* in Bantayan, i.e., viable to establish a trademark and assertion of the Cebuano identity and pride of place in the region (Eslit, 2023; Lanaria, 2009; Lagahid & Puyo, 2016). The outcome of this study is very significant in showcasing the identity of the Cebuano people as makers of salted seafood products, especially the *Bantayanons* (the people of Bantayan) (Fernandez, 2019), reducing high contamination in the fermentation process through policy formulation.

Review of related literature

Preservation process

Food preservation is a process of food management. In food preservation, spoilage and loss of food quality are prevented, allowing for storage and longer shelf life (Joardder & Masud, 2019). Though there are many ways to preserve food, fermentation is one of them. In Asia, fermented foods could eliminate wastage and reduce hunger (Fusco et al., 2017). Consumers' daily diet is associated with fermented foods (Steinkraus, 1994; Rul et al., 2022). The popularity of fermented foods is not only a keystone to flavor but also to the naturally expensive processes of freezing and canning (Olympia, 1992). It is pointed out that excessive research and development regarding fermented foods is inadequate. The food industries in the Philippines are usually found in the countryside, depending on the season, and capital insufficiency. These salted/fermented products are consumed in the area where they are produced (Olympia, 1992).

Fermentation processes bloom in households and refinements, which depend on the practitioner's observation. Microorganisms are found in the fermentation process and physical and chemical fluctuations in the seafood products (Behera et al., 2019; Han et al., 2022; Bucol et al., 2025; Padayao et al., 2025). Several changes in odor, color, and taste are recognized, resulting in distinct ingredients and conditions placed on the seafood products. This situation happens when trial-and-error experimentation is used in most fermented seafood production, with a lack of structured processes and monitored systems to ensure the process. Thus, its quality depends on the person who processes it (Olympia, 1992).

Regarding Olympia's argument, she concludes that two groups divide the fermented fishery products in the Philippines. The first group comprises salt concentrations for 15-20 percent of the finished product. Fish paste or *ginamos* in the Visayas, Luzon's *bagoong*, and fish sauce or *patis* also comprise this salt concentration. *Ginamos* and *patis* are frequently used as seasoning or condiments in other salted food products (Olympia, 1992). The Taboan Public Market in Cebu City is one of the biggest dried fish markets, selling salted seafood products. Dozens of cans/vats containing *ginamos, amahong*, and *tinabal* are delivered and sold in this

market. The continuous fermentation of Bantayan Island determines the volume of supply of these seafood products.

Preparation of the fish paste

In most Southeast Asian countries, people's diet includes preserved foods, especially fermented fish. In the Philippines, these include *ginamos, tinabal, and amahong*. The characteristics of these *ginamos* may differ in places of production and consumption across the islands. Culturally, in some regions of Luzon, people ferment fish pastes and mince them with or without added color. In Pangasinan and Ilocos provinces, fish paste is processed completely or partially fermented (Arquillano, 2019). In the Visayas and Mindanao regions, fish paste is also fermented in the absence of liquid to harden the fish, and edible salt is present (Olympia, 1992).

Fish paste is a salted and fermented krill or fish (Sarangam & Priya, 2019). Krill is a tiny shrimp about 1.5 cm long if fully grown, but the one used in *ginamos* is the smallest. This is also known as shrimp paste (*hipon in pink shown in Figure 1*) in other parts of the country/fish paste (*ginamos*) in the Visayas region, particularly the islands of Panay and Negros. The *ginamos* can be eaten as a side dish with steamed okra (lady's finger), kangkong (Chinese spinach), and favorite green mangoes. It can also add flavor by mixing it with a favorite dish like *pinakbet* (mixed veggies sautéed with fish or shrimp sauce), *apan-apan* (a Filipino dish with water spinach sautéed with minced fish sauce and other ingredients), and *kare-kare* (a Philippine stew savored with peanut sauce). As a side dish, the easiest way to prepare the *ginamos* is to add *kalamansi* (lime) juice to remove their stench.

Figure 1.

Pink Krill Paste ready for Sale

Photo Provenance of Lozano and Lozano (2026) and cropped photo from ChatGPT (2026)

The production of *ginamos* includes any of the following: anchovies (a family of sardines), krill, clams, oysters, and other particular shellfish. Rinsed thoroughly with fresh water, these marine life resources are soaked with salt. Drained fish are mixed with salt depending on the amount of preparation and volume. These are fermented for four months or more until reaching a rich flavor and aroma (Olympia, 1992). Though *ginamos* are salty, neutralization and adjustment are done to suit customers' tastes and preferences by adding vinegar or kalamansi (lime) juice to tame the pungent smell. To make it even tastier, one can

add minced onions, tomatoes, garlic, ginger, and chillis. Fish paste is generally consumed as a flavoring or seasoning and can be eaten unheated or fully cooked. This is prepared with onions and garlic as an appetizer with green mangoes or tomatoes. In coastal regions, fish paste is eaten with vegetables and serves as a source of nutrients (Olympia, 1992). For common people who seldom meet both ends meet, fish paste can be their viand for a simple meal, while others use this as an appetizer.

Fish paste is characterized by its reddish-brown color, sufficient saltiness, and a slightly cheese-like odor. Similar products of these Cebuano *ginamos* are the *trassi* of Indonesia, *belachan* of Malaysia, *kapi* of Thailand, *ngapi* of Burma, and *nam-ca* of Vietnam (Sanchez, 2008). These salted seafood products convey a cultural bond–a tapestry of Southeast Asian identity, similarity, and sustainability, despite their name variations.

Calanoga in Sanchez (2008) stressed that the traditional fermented fish, termed *tinabal,* is a popular Visayan delicacy made from a local fish called *molmol* (Scarus spp.). Calonaga continued that fermented fish is similar to fish paste except for the preparation process (Sanchez, 2008). The *tinabal* has a taste that differs from other fermented fish products, such as Pangasinan's *bagoong*.

Fish salting preparation

The preparation of *tinabal* is set for a whole year. Such preserved fish is likely named *molmol*, *aliyakyak,* and *loro*, various names by the locals of a parrot fish (Scaridae), and *buntogon* (Macropharyngodon negrosensis) (Calonaga in Sanchez, 2008). The distinction of fish in brine or *tinabal* from other fermented seafood distinguishes its rare flavor and aroma. Its acceptability depends on the consumers who taste it. In Indonesia, the acceptability of *tempeh* also depends on the consumers who adopt it (Sanchez, 2008).

The fish paste process depends on the fish microflora that carries bacteria. In this process, several bacteria on the fish gill surface and skin are normally saprophytic; pathogenic strains also exist when the fish is injured or when adverse environmental or physiological conditions prevail (Bisset in Sanchez, 2008). Evidence shows that fish microflora is directly related to the condition of the aquatic environment (Venkataraman in Sanchez, 2008).

The *tinabal* preparation method, like the other traditional fermented foods, varies with the maker. The quality of the product depends on the kind and concentration of salt used in its production. Fish processed with high-purity salt is soft and yellowish-white. Impurities in the salt: magnesium or calcium at one percent concentration or greater, impart a bitter and strong taste to the product (Mendoza in Sanchez, 2008).

Several medium-sized fish were washed, eviscerated, split, and then soaked in a concentrated brine solution for two to three hours, drained, and mixed with salt at a 1:3 or 1:4 (salt: fish) ratio by weight (Calanoga in Sanchez, 2008). Brined fish is packed in containers and fermented for one to two weeks. In commercial production, fermented fish is stored for

several months to ensure better quality. The brined produce during *tinabal* fermentation is collected and processed into a seasoning known as *patis*.

Microorganisms in brined fish

The microbiological examination done by Calanoga reveals that a mixed type of fermentation occurs during *tinabal* production. The predominant lactic acid bacteria, such as *Pediococcus pentosaceus* and *Streptococcus equinus,* are present in the mixture from zero to 21 days of fermentation. Species of *Leuconostoc* and *Lactobacillus* are also found on the ninth day of fermentation. In addition, non-acidic and proteolytic bacteria belonging to *Bacillus, Staphylococcus, Pseudomonas, Alcaligenes,* and *Debaryomyces spp*. are also found in the early stage of fermentation (Calanoga in Sanchez, 2008).

Brined green mussels

The brined mussels, locally known as *amahong,* are another salted seafood favorite in the Philippines. Sold in any wet market or groceries in the country, it is best enjoyed with vinegar, bird's eye chili, calamansi, and tomatoes. The production starts with freshly harvested green mussels (*tahong),* which are a good source of iodine.

Packaging and labeling of salted seafood products

In Anilao, Iloilo City, the *ginamos* industry enhances production by ensuring quality, adding more ingredients, observing proper packaging, and labeling. The national and local governments give more emphasis on its development for sustainability. The price of *ginamos* varies at 70PHP for 200 grams, 50PHP for 150 grams, and 20PHP for 50 grams (Villalon, 2009). The most efficient way to introduce or promote this product globally is through export. The Philippines devotes 40% of its labor force to agriculture, which contributes to the production of shrimp, shellfish, fish, coconuts, and other crops. This production adds 20% of the country's Gross Domestic Product. Filipino fishermen attract businessmen to do business in sea products.

Research Methodology

Research design

A qualitative descriptive design with interviews was used in the study. Interviews with 30 selected fishermen of Bantayan Island, Cebu, Philippines, were conducted during their free time with their consent. Another 10 vendors at Taboan Public Market were interviewed to validate sales and consumer satisfaction with the salted seafood products. This investigation consisted of observation of the actual production of fish paste in three selected areas: Area A for the Making of *Ginamos*, Area B for the Making of *Tinabal*, and Area C for the Making of *Amahong*. Varieties of data collection techniques, such as unstructured interviews, participant observation, field notes, and secondary sources, were used.

Research environment

The study was conducted in two separate locations in the coastal towns of Bantayan Island, where *ginamos, amahong*, and *tinabal* producers lived, and the Taboan Public Market

in Cebu City was also visited as a center for fish paste trading from Bantayan Island for consistency and validation of production, distribution, and sales.

Research participants

The 30 research participants were identified by the barangay captain of the coastal barangays (villages) on Bantayan Island. They were the makers/producers and merchants of salted seafood products. Ten were constituted in *ginamos*, ten in *tinabal*, and another ten in *amahong* productions, respectively. These research participants were selected using purposive sampling with the following inclusion-exclusion criteria: (1) engaged in salted seafood production for at least 10 years; (2) aged 30 years and above; (3) permanent residents of Bantayan Island; (4) selling and distributing salted seafoods to other places in the country.

The other set of research participants was the 10 salted seafood vendors at Taboan Public Market, who validated product quality and consumer sales. They were selected through convenience sampling on Saturdays and Sundays when the researchers did their marketing in the market.

Data gathering procedure

Actual participant observation was conducted among the three selected fish paste villages on the island and in Taboan Public Market. Investigations were conducted through interviews. Responses to interviews were videotaped and recorded. The results of the participant observations were noted in the field notes. Recorded interview transcripts were coded and categorized into emerging patterns. These patterns clustered the unveiling of natural salting processes of salted seafood products for culture documentation and preservation.

Research instrument

The Interview Guide consisted of unstructured questions for the two sets of research participants. To ensure credibility and dependability, this interview guide was inter-rated among three Social Science experts in one of the state universities in Region VII. The interview guide consisted of ten unstructured questions, one set for each of the *ginamos*, the *tinabal*, and the *amahong* makers. Answers to these interviews were audio-recorded. The results of the participant observations were reflected in the field notes and transcribed.

Data analysis

Data were analyzed using narrative analysis. The key informants' narratives were clustered in vignettes. The research participants' original lingua franca was retained and highlighted in different vignettes translated into English for international readers. Observable concepts and patterns were coded to establish meaningful features for discussions, which were highlighted in each sub-head in the presentation and discussion of the results.

Ethical considerations

Letters were given to the barangay chairmen with the approval of the concerned authorities for the research participants' access and the researchers' entry into the research

sites. The researchers met with the research participants, set an appointment, and agreed on the time and venue for the interview. Before the interview, the researchers asked the participants to sign a Letter of Informed Consent indicating their agreement regarding the study's terms and conditions. The research participants were not compelled to participate in the study. They had options to participate in the interview or not. A rapport was established among them. To protect the economic life of the research participants during the interview, the researchers distributed tokens of recognition and refreshments as a gesture of gratitude for their time and participation.

Results and discussion

A. The Ginamos Production Practices

Natural brining process of ginamos

The *ginamos* preservation follows the natural brining process using rock salt. Rinse the fish with seawater, then soak it to ensure its cleanliness and sanitation. The process varies according to the availability of the salt. The following narratives support this process:

"Sa paghimo ug ginamos, ilabi na sa daplin dagat, hugasan usa, human bubuan og asin nga binato, ukayon hangtod mahilis, unya ibutang sa usa ka banga kung daghan. Ibutang sa limpiyo nga garapon nga mabuak kung may mamalit nga ginagmay. Tabunan pag-ayo para dili udlon. Hinayon pag ukay nga dili madugmok" (KI's-A, C & D). (The production of fish paste, especially on the shoreline, involves washing the fish first with water, then mixing it with rock salt until the salt is melted. The brined fish will be placed in a clean jar for preservation if there are many. After everything is done, stir the mixture slowly to create the paste. The placement of this paste in a glass jar is intended for the customer to see and buy.)

After mixing, the finished product is transferred to a jar or a clean container. Contamination is avoided by covering them tightly to seal the container. The research participants' narratives elucidate the sanitation practice during the brining process. Their responses confirm that most Cebuano fishermen use a natural and tedious brining process. Their narratives show the importance of proper sanitation by rinsing the fish before its brining process. To ensure public safety, the indigenous fermentation process is imperative, having a comparison between the old and the new (Steinkraus, 1995). Common salt (sodium chloride) eradicates bacterial pathogenic reactions (Truong & Whitlock, 2021). Hence, using natural salt in the brining process prevents microbial contamination.

Figure 2.

Produced Ginamos in Pails and in Sealed Bottles, Ready for Sale

Photo Provenance of Lozano and Lozano (2026); cropped photo from ChatGPT (2026); and Teaño (2026)

How prevalent are these traditional preservation practices among local households and producers today? As of today, these traditional brining preservation practices are prevalent in the island. The island's fishing community is still vibrant, as distributors of salted seafood products to the community and local and international tourists on the island. Fewer freshwater sources on the island maintain a high salt concentration that affects seafood production and preservation. The island location and distance from the mainland of Cebu contribute to salt concentration, which affects the taste and quality of the seafood products. The ingredients in *ginamos* production are small fish from the local fishing communities, and rock salt made on the island of Panay. What fish species are commonly used in the production of the current salted and fermented seafood of Bantayan Island? The fish commonly fermented in *ginamos* is the bilabid, scientifically named *Stolephorus*.

"Naa ra diri makit-an ang mga gamitunon sa paghimo ug guinamos, nagdepende sad sa mga kuha namo nga isda ug ang asin makit-an ra diri sa among dapit" (KI-A). "Ang asin nga among paggamiton kay rock salt gikan sa Panay unya ang isda kay bilabid, tornos, baodnon, lupoy nga bag-ong kuha unya ang butangan kay dako nga banga ilabi nag daghan kayo" (KI- B, C & D). (In fish paste production, the ingredients are available on the island. Sometimes, the supply of these ingredients depends on the available catch found on the island. The rock salt to be used is sourced from the island of Panay, while the fish, like the *bilabid* (*Stolephorus*), *tornos* (Stolephorus baganensis), *baodnon* or *dulong* (Clupedae), *lupoy* (*Spratelloides gracilis*), which are freshly caught, are mostly brined in big jars, especially if there is a large volume.) What factors influence their selection of these fish? The availability of these fish from the ocean is one of its factors. Another is the small size of these fish, which is commonly used in production. The products' taste and aroma during the fermentation and mincing of spices justify their irresistible taste.

These narratives and factors conform to the simplicity, originality, and authenticity of *ginamos* ingredients. The best place to buy dried fish and *ginamos* is in Taboan Public Market (We Love Cebu, 2013). The narratives also state that some ingredients are transported from

other provinces in Cebu, depending on the availability of the supply in the local area. The Cebuano people are delighted with salted seafood because of the vast ocean surrounding them, a factor that justifies fishing as the main source of living (Ting, 2011). This information reveals that it is easier for *ginamos* producers in Cebu to find ingredients because these are available in the vicinity of the island and its neighboring Panay Island.

Recyclable and unsophisticated packaging of ginamos

The packaging of *ginamos* preservation is unsophisticated; it varies depending on how this is done. This is re-joined by these narratives:

"Ang kasagaran gyud nga pagamiton namo nga sudlanan sa ginamos kay kung gikan pa diri sa himoanan kay banga dayon ibalhin dayon sa mga taro kung dad on nas merkado dayon ang mga manindahay sa merkado ilaha na ibalhin sa mga balde-balde nga gagmay dayon ang uban ana kay ibutang ug mga botelya" (KIs-A & B). (The most common containers used in fish paste production are jars. When these jars are transported to the market, the suppliers will transfer them to covered large tin containers, which will be placed in several covered small pails and bottles for repacking to different middlemen.)

To brine *ginamos*, recyclable materials such as empty bottles, clay jars, and oil tins are commonly used. Before the transfer to the marketplace, *ginamos* makers place them in empty tin containers; the seller transfers them to a pail, and then some are placed in glass mason jars and displayed in the market for sale. Food packaging prevents product deterioration and maintains its quality and safety from chemical, biological, and physical spoilage (Marsh & Bugusu, 2007). When packaging preserved foods, *ginamos* producers use mason jars to ensure safety and lasting consumption. Choosing the right container for the *ginamos* ensures prevention, i.e., free from any contamination that causes harm to consumers' health. Once the container is contaminated, the *guinamos* can cause botulism. Botulism is a common foodborne illness caused by damage to food packaging. When a container is damaged, Clostridium botulinum, a bacterium, can be absorbed, causing sickness. Air and dampness inside the container can cause bacterial contamination (Nauman et al. 2022).

Ginamos livelihood for local patronization, but less promotion for the global market

The patronization of *ginamos* is not exclusive to Bantayan Island residents; neighboring islands, such as Leyte and Masbate, also patronize them. The narratives of the research participants supported this:

"Muari raman ang mga taga Cebu para muangkat ibaligya sa Taboan, mas mahal na ang presyo didto" (KI-A). "Usahay ang mga nagamos na sulod sa duha ka semana among iduso ngadto sa Leyte o di gani sa Masbate, mag sakayan lang mi" (KI-B). (Cebu residents will come to buy fish paste and sell it at Taboan. The price of fish paste is high. Sometimes, the brined fish in two weeks, were bought and sold to the islands of Leyte or to Masbate through a sailboat.)

The narratives validate the rich marine resources of the Visayan Islands. The Visayas group of islands in the middle of the Philippine archipelago is surrounded by rich waters, abundant in marine and land products that can be seen in the different Visayan cuisine (Fabinyi et al., 2018; Boquet, 2017). People in various places in the country consume *ginamos*. They visit the island where it is massively produced because of its salty taste, which is best paired with rice. However, some people on the island do not buy the product because they know how to make it themselves. The key informants also emphasize the consumption of this fish paste product by Filipinos abroad, yet it is still partially identified by some foreign countries. Even the Philippine Government has indicated that AFF products have resulted in low competitiveness due to poor compliance with product standards.

"Naa man sad ug ginamos sa gawas, akong iyaan man gani nga naa sa Lebanon basta muuli magda ug ginamos inig balik aron ipanghatag sa mga kaubang Pinoy ngadto" (KI-D). (There are fish pastes offshore. My aunt, who lives in Lebanon, when she returns to Lebanon, she would bring bottles of fish paste and give these to her friends.)

Granted that the *ginamos* paste has become known nationwide and in some parts of the world where Filipino relatives live. Still, it is undeniable that the product promotion in the global market is inadequate.

B. The Tinabal Production Practices

The hygienic salting process of tinabal

Salting is the oldest method in preserving and dehydrating fish; it draws out moisture and prevents bacterial growth (Sarangam & Priya, 2019; Eaglescliffe, 2017; Horner, 19917). The brining process of *tinabal* is one of the most efficient ways to prevent the growth of microorganisms. Like the *ginamos*, the preservation of *tinabal* follows a brining process using the native salt. On the first day, the fish is rinsed with seawater, dissolved, thoroughly mixed, and soaked with salt. On the second day, the fish is soaked with rock salt and covered with plastic in a wooden barrel. The following narratives support the hygienic process:

"Sa unang adlaw, hugasan ang isda ug tubig dagat, bubu-an ug asin hangtud mahilis, ukayon, pasagdaan aron mawala ang kalangsa sa isda. Sa ikaduha ka adlaw, habwaon ang isda nga hinumulan sa tubig dagat ug ibalhin sa kahon nga binanigan sa asin. Banus-banuson pagbutang ang asin ug isda hangtod sa mapuno ang kahon ug tabunan ug bagang plastik" (KI's-A, B, C & D). (On the first day, wash the fish with sea water, pour in the salt until it melts, stir, and let it soak until the slimy spell of the fish dissipates and is gone. On the second day, offload the soaked fish and transfer it to a box at the top of a layer of salt. This step is repeated several times, depending on the number of fish to be soaked. When the container is filled, it is sealed with plastic.)

The brining process of *tinabal* reflects cleanliness. It is imperative to maintain hygiene because poor hygienic practices in food service could cause foodborne illnesses (Kibret &

Abera, 2012). The hygienic practices in *tinabal* preservation are important to prevent food poisoning.

Figure 3.

Produced Dried Tinabal made of Tuloy, Ready for Sale

Photo Provenance of Junsay (2025), cropped from her Facebook post and the Wikipedia (2026)

The disparity of the locally generated ingredients of tinabal

The main ingredient of *tinabal* is the *tuloy* fish (Sardinella gibbosa) in the local area, as shown in Figure 3. Rock salt is another local ingredient of *tinabal,* in its regular use. The following narratives support the ingredients:

"Rock salt ang gamiton ug tuloy nga isda ang kasagaran nga tinabalon" (KI's-A, B & C). Di gyud mugamit ug iodized nga asin kay mupait ang tuloy nga isda kanang mapalit lang sa merkado nga asin" (KI-D). (Rock salt is used mostly in brining *Sardinella gibbosa*. Iodized salt is not used in the brining because the brined fish would taste bitter. Rock salt is the ordinary salt that is commonly sold in the market.)

The ingredients of *tinabal* are found in the local area where the makers live. This product is popular in the Visayas; it retains its original shape even after its process (Pinoyentre, 2009). The ingredients of *tinabal* depend on available resources in the area. There are two types of fish commonly used in the product. The *molmol* fish, named *Scaridae*, and the *indangan* fish, locally known as *isda sa bato,* named *Acanthuridae*. These types of fish are brined with salt in the area before their delivery to the Taboan Public Market. Figure 4 shows its finished products.

Figure 4.

Produced Wet Tinabal made of Molmol and Indangan, Ready for Sale

Photo Provenance of Lozano and Lozano (2026) and cropped photo from ChatGPT (2026)

"Asin ang gamitonon ug ang tinabalon nga isda kay kasagaran mga molmol ug indangan, kung wala isda sa bato" (KI-B). (Rock salt is a basic ingredient in brining *Acanthuridae* if the supply of *Scaridae* remains insufficient.) This response elucidates that *tinabal* preservation shows a variety of fish used as local ingredients.

Unsophisticated packaging of brined tinabal

The *tinabal* packaging is usually in a wooden barrel. When the salt melts, it is transferred into a plastic container or a mason jar with seals to prevent leakage.

"Ang gamiton namong sudlanan sa tinabal nga naa pas proseso kay kahon nga kahoy dayon ug magsugod nagayg kahilis hilis ang asin nga magtubig na kay ibalhin na siyag planggana aron masawod ug di mausik kay sa nagkahilis ang asin nagpadayon ang pagtabal sa mga isda" (KI's-A, B, C & D). (A wooden box is used to contain the brining process of fish until the salt starts melting, the water drips into the wooden container. This is the perfect time to transfer the brined fish to a basin to contain the melted salt to continue the brining process.) The *tinabal* makers use a wooden barrel to prevent dampness and contamination. They also use other containers or plastic boxes for product storage. Salted fish creates moisture, dissolves, and forms a saturated pickle in the barrel or in the wooden container (Ranken et al., 1997).

The limited promotion of tinabal and its local popularity

One of the locally demanded salted seafood products is the *tinabal*. The *tinabal* is a fish brined with a salt solution (Sphoer, 2009). The people of Cebu not only patronize this salted seafood product, but the people of Samar and Panay Islands also demand it. The following narratives support the limited promotion of *tinabal*:

"Basta mangisda mi sa Panay ang among dal-on nga lima ka kahon dali lang gyud mahalin kay ila man pud ibaligya ngadto" (KI-A). "Sus ang taga Samar maoy kusog mukaon aning tinabal tuyuon gyud ug ari ang Bantayan para mupalit" (KI-C). "Ang mamalit gyud ani kasagaran kay kanang mga taga bukid kanang layo sa dagat, ila dayun ni sagulan ug utan bisaya" (KI-D). (When fishing in Panay, we bring five boxes of brined fish, which can easily be sold there. People from Samar are the patrons of these brined fish; some visit Bantayan to buy this product. Those who regularly buy these are the people from the upland areas who are far from the coastlines, and they garnish it with fresh vegetable soup.) There are also consumers from other coastal and interior areas of Samar and Panay provinces. These narratives elucidate how the makers sell their products to other places in the Visayas. It shows that traders who traverse the Visayan Sea, Guimaras Strait, and the Samar Sea would arrive at Taboan Public Market to buy these salted seafood products.

"Kutob lang ang among tinabal sa Tabo-an, dili man mukaon ang mga taga ubang lugar ani kay parat ra kayo" (KI-B). (Our brined fish are found in Taboan; some people in other places do not eat *tinabal* because it is salty.) This narrative emphasizes the product's local exportation, which is limited only to the Taboan Public Market. This market has been the

home of salted seafood products, with affordable prices (Roymksh23, 2016). The narratives visualize *tinabal* as a locally exported product within its vicinity.

C. The Amahong Production Practices

The hygienic salting process of fresh amahong

The *amahong* preservation uses green mussels (*Perna viridis or Perna canaliculus*), locally known as *tahong,* as shown in Figure 5. In the brining process, rock salt is used. Remove the muscles from the green mussels' valves, rinse them with seawater, and soak them. Put an amount of salt and mix all the ingredients in a clean bottle. The processes similarly undergo sanitation. The following narratives support the process:

"Ukbon ang bag-ong tahong nga kinuha ug hugasan ug tubig dagat ang unod. Ibutang sa usa ka planggana ug bubuan ug asin dayon ukayon hangtod sa mahilis ang asin ug magsabaw sabaw. Unya ibutang sa usa ka limpyo nga garapon ug tabunan aron dili udlon" (KI'-A, B, C & D). "Ang pagahimoon nga amahong kay dapat bag-ong kuha nga tahong ug siguroon nga walay red tide" (KI-B). (Open the valves of the green mussels and remove their muscles. Wash them with salt water, and place them in a clean basin. Pour rock salt into the muscles and mix it with the salt until it melts. Place the soaked muscles in a clean bottle and cover to prevent contamination. It is ensured that green mussels are freshly harvested, more especially during non-red tide seasons, to prevent food poisoning.)

Figure 5.

Produced Amahong from Green Mussels, Ready for Sale

Photo Provenance of Lozano and Lozano (2026) and cropped photo from ChatGPT (2026)

These responses entail the sanitary process of *amahong,* ensuring food safety and preventing food contamination. The proper brining process can be achieved by observing the proper salting techniques. Salting is a technique for preserving food; salt can preserve most foodstuffs for months and even years (Meggaito, 2014). Aside from preventing bacterial growth, the salting technique is important to preserve food longer.

The insufficiency of local ingredients of amahong

The archipelagic landscape of the Philippines provides coastlines for fishing, where Filipinos produce fermented seafood products for daily consumption (Jane, 2011). One of these

fermented seafood products is the *amahong*, which is fermented using rock salt available in the area. These ingredients depend on the availability of the resources.

"*Ang mga gamitonon sa paghimo ug amahong kay asin ug tahong. Ang tahong kay gikan sa among panagat ug ang asin kay mapalit ra sa among dapit." (KI's-A&B) "Wala man mi puhonan sa tahong nga gamiton kay manginhas raman mi diha sa daplin" (KI-C). "Tahong ang klase sa kinahason ang lami pag-amahongon unya saglan ug daghan asin, pwede ra pud butangan ug luy-a para mohumot" (KI-D).* (The common ingredients in making *amahong* are rock salt and fresh green mussels' muscles. No capital investment is needed in *amahong* production because the respondents only glean green mussels from the coasts during low tides. These green mussels are delicious for making *amahong*. Their muscles are mixed with several amounts of salt and ginger to make them aromatic.)

The significance of Bantayan's geographical setting produces local ingredients for *amahong* preservation and production. These responses show not only the common ingredients of rock salt and *tahong,* but also the process of *amahong* fermentation and production. What if the respondents run out of *tahong* supply on the island? According to them, *tahong* can also be sourced from the neighboring island of Masbate and the town of Asturias, Cebu.

"Asin ug tahong ang gamiton para sa paghimo ug amahong. Gikan sa Masbate ug Asturias ang mga tahong nga among gamiton ug ang asin kay mapalit ra diri sa among lugar" (KI-B). (Salt and green mussels are the ingredients in *amahong* production. The island of Masbate and the town of Asturias are sources of green mussels in *amahong* production.)

This response supports the localization of production and economic principles, the supply and demand of resources. If the community runs out of resources for *amahong* production, then their producers import ingredients from Masbate and Asturias. The supply and demand of *amahong* production and consumption are not being altered or sacrificed. Essentially, this is sustainability.

The safety packaging of amahong in glass and mason jars

The packaging of *amahong* is unsophisticated, but it uses a hygienic glass mason jar or bottle for flavor absorption and microbial contamination during the fermentation process.

"Ang amahong kay ibutang man lang nag garapon bitaw kanang parehas sa sudlanan sa kaong para magpabilin ang lasa ug dili makaput ang kagaw" (KI's-A, B, C & D) "dali ra makita nga nadaot naba ang sulod" (KI-C). (The *amahong* can be placed in a glass bottle or a *kaong* bottle to preserve its taste, prevent contamination, and clearly see if it is spoiled.)

This narrative concerns the long-lasting taste of the food. Glass bottles are less likely to allow air or other microbes to contaminate the fermentation process and to preserve the product's flavor longer than other packaging. Microbial contamination occurs when a glass container is broken (Stanpac, 2016). During packaging, the *amahong* producers prefer to use

mason jars to ensure food safety and lasting flavor and aroma. Glass is resilient and has zero chemical contact, ensuring product safety, strength, aroma, and flavor (Coles & Kirwan, 2011).

Production of amahong for local consumption

The promotion of *amahong* is limited only to Visayan areas. When demand is high, *amahong* ingredients are sourced from the vicinal islands of Bantayan. Bantayan producers distribute the products to residents of Leyte and Samar. On special occasions, the wives of foreign visitors also buy *amahong* when there is no supply of fish in the market.

"Ang among himuon nga amahong pangkunsumo lang ta gyud na tam-an mupalit man pud ang mga kasilinganan" (KI-A). "Mag himo gyud mig daghan nga amahong kay ang katunga kay naay mupalit para ibaligya sa merkado, ang katunga kay angkaton sa mga taga Leyte ug Samar namo nga mga paryente" (KI-B). "Kusog gyud ang palit labi na summer ug Sinulog. Ang mga asawa sa foreigner magtultol sa pagpalit" (KI-C&D). (We make *amahong* for consumption only, but our neighbors also need to buy this (KI-A). We produce more of the *amahong* because half of it is for sale in the market, and the other half will be intended for our relatives in Leyte and Samar (KI-B). More sales of *amahong* during the summer season and the Sinulog festival celebration. The wives of foreigners also love to buy this product (KI-C & D).

The narratives show that *amahong* is basically good family subsistence, typical in a subsistence economy. It feeds both inbound and outbound relatives, including neighbors. Distribution of this product to Taboan Public Market and to other provinces and regions of the country occurs when demand is high. Definitely, consumption is local. In many homes, the *amahong* fits Filipino tastes and preferences and is served in some restaurants as a native Filipino cuisine (Thompson, 2008).

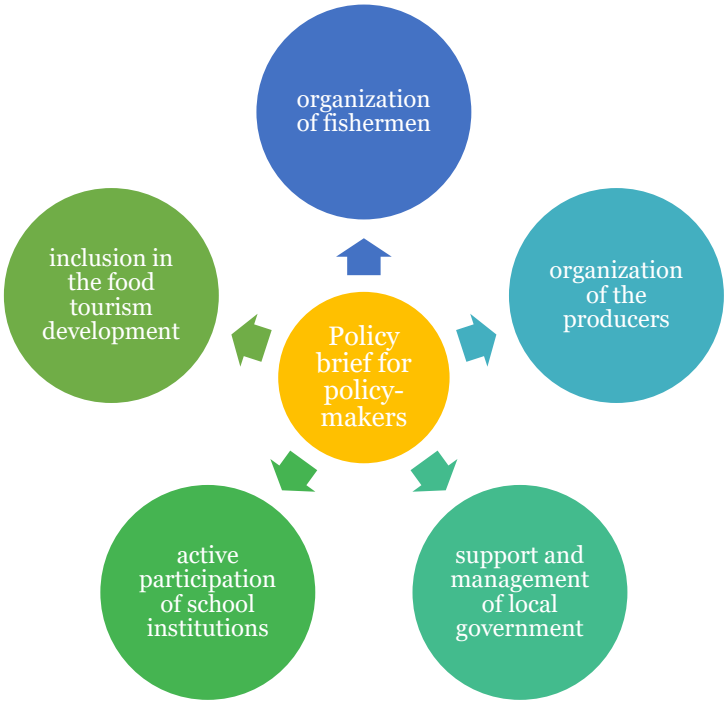
Policy brief for policy-makers

Based on the study findings, the policy brief is an ardent response to the cultural preservation of brined fish, krill, and green mussels on Bantayan Island. This policy brief emphasizes the island's historical background as a fishing village that serves as a basis for its cultural preservation. This is shown in five foci as illustrated in Figure 6.

The *ginamaos, tinabal, and amahong,* mentioned in the study highlight this policy brief that includes the following: (1) organization of fishermen who are responsible for the fish and green mussel catch, which are needed in the brining process to ensure its sustainable supply distribution vital in its productions; (2) organization of producers who are responsible in the brining process; (3) support and management of local government in the cultural preservation and promotion in salt production of fish, krill, and green mussels; (4) active participation of the school institutions in the awareness and integration of the culture of brining of fish in the instructional process; and (5) inclusion of the culture of fish and green mussel salt production in food tourism development of the island.

Figure 6.

Five foci of the policy brief



Note: Policy brief to be sent to lawmakers in the Local Government Unit and Congress to improve fish paste production in the country

Conclusion and recommendation

The unveiling of salted seafood products such as *ginamos, amahong,* and *tinabal* follows a sanitary process, localized ingredients, and unsophisticated packaging. The production supports the subsistence economy of Bantayan Island for family consumption and vicinal distribution in nearby islands and regions in the Visayas. The sustainability of resources depends on the island's supply and that of the other vicinal islands. Reciprocity of importation of rock salt and green mussels is evident. The local producers' aspirations for their salted seafood products to the rest of the world are supported by the Philippine Development Plan in line with the goals of promoting products from the fishing sector. This dream is a reassertion of the significance of Cebuano fishing culture in a maritime country like the Philippines. The policy brief's five foci provide opportunities for sustainable growth and development in the production of salted seafood products in Bantayan Island. This policy brief can also serve as a blueprint for sustainable development in other regions of the Philippines and ASEAN to promote the production of their salted seafood products, too.

Hence, the following recommendations promote the realization of these noble aspirations:

1. Online advertisements and endorsements of salted seafood products to renowned chefs in the country and abroad, showcasing Filipino dishes.

2. The localized ingredients of salted seafood products may be given improvisation to dynamically cope with the different tastes and preferences of the consuming public, such as providing several variants taken from the local condiments and spices in the island.

3. The unsophisticated packaging needs redesigning to fit national and global standards and for safer consumption, such as labels and branding.

4. Enhance the sanitation of the production of seafood products and in the public market where the products are sold.

5. Likewise, the call for product advertisements will necessitate the enhancement and improvement of the salted seafood industry in the Philippines.

6. Local government officials shall implement the five foci in the policy brief for the sustainable development of the salted seafood industry in Bantayan and in the Philippines.

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REFERENCES

Amarra, M., Capanzana, M. V., Gironella, G., & De Los Reyes, F. (2021). Identification of foods to monitor the sodium content of processed foods using nationally representative consumption data for developing a sodium reduction program in the Philippines. *J Nutr Food Sci, 11*(10), 829.

Amit, S.K., Uddin, M.M., Rahman, R. et al. (2017). A review on mechanisms and commercial aspects of food preservation and processing. *Agric & Food Secur, 6*(51). https://doi.org/10.1186/s40066-017-0130-8

Arquillano, NE (2019). Profiling of Bagoong Production. *PSU Journal of Education, Management and Social Sciences, 2*(1), 52-58. https://ijsemss.psu.edu.ph/index.php/1/article/view/65/61

Aspi, A. M., Suan, S. G. M., & Camaro, P. J. C. (2023). The Effect of the Blue Economy on Philippine Economic Growth. *International Journal of Research in Engineering, Science and Management, 6*(12), 14-26. https://journal.ijresm.com/index.php/ijresm/article/view/2876

Behera, S.S., Ray, R.C., Das, U., Panda, S.K., Saranraj, P. (2019). Microorganisms in Fermentation. In: Berenjian, A. (eds) *Essentials in Fermentation Technology. Learning Materials in Biosciences*. Springer, Cham. https://doi.org/10.1007/978-3-030-16230-6_1

Boquet, Y. (2017). 7107 Islands. In: The Philippine Archipelago. *Springer Geography. Springer*, Cham. https://doi.org/10.1007/978-3-319-51926-5_2

Bucol, L.A., Romano, E.F., Wong, A.R. *et al.* Microplastics and organic pollutants in marketed seafood products: a risk assessment in the Central Visayas, Philippines. *J Food Sci Technol* (2025). https://doi.org/10.1007/s13197-025-06441-6

Coles, R. & Kirwan, M. (2011). *Food and Beverage Packaging Technology*, 59-83. Blackwell Publishing Ltd. https://onlinelibrary.wiley.com/doi/book/10.1002/9781444392180#page=152

De Jesus, I.C. (2015). Globalizing Food and a Tale of Two Revolutions: Labor, Gender, and the Environment. In: *Social Justice in the Globalization of Production*. International Political Economy Series. Palgrave Macmillan.https://doi.org/10.1057/9781137434012_6

Eaglescliffe, B. (2017, December 26). Food Preservation: Drying, Salting, or Freezing Fish. https://delishably.com/sauces-preserves/food-preservation-fish-drying-salting-freezing-any-benefit-to-do-all-three

Eslit, E. (2023). The Role of Cebuano in the Global Linguistic Landscape: An Exploration of Its Internationalization. Preprints. https://doi.org/10.20944/preprints202306.1865.v1

Fabinyi, M., Dressler, W., & Pido, M. (2018). Access to fisheries in the maritime frontier of Palawan Province, Philippines. *Singapore Journal of Tropical Geography, 40*(1), 92-110. https://doi.org/10.1111/sjtg.12260

Fernandez, D. G. (2019). "Chapter 4 Food in Philippine History". In Tikim*: Essays on Philippine Food and Culture*. Leiden, The Netherlands: Brill. https://doi.org/10.1163/9789004414792_006

Fusco, V., Oguntoyinbo, F., Franz, C. M. (2017). Fermentation to Improve Food Security in Africa and Asia, In: Editor(s): Alexandru Mihai Grumezescu, Alina Maria Holban, In *Handbook of Food Bioengineering, Soft Chemistry and Food Fermentation*, pp. 337-378. Academic Press. https://doi.org/10.1016/B978-0-12-811412-4.00012-6.

Han, J., Kong, T., Wang, Q., Jiang, J., Zhou, Q., Li, P., ... Gu, Q. (2022). Regulation of microbial metabolism on the formation of characteristic flavor and quality formation in <u class="uu">the</u> traditional fish sauce during fermentation: a review. *Critical Reviews in Food Science and Nutrition, 63*(25), 7564–7583. https://doi.org/10.1080/10408398.2022.2047884

Horner, W.F.A. (1997). Preservation of fish by curing (drying, salting, and smoking). In: Hall, G.M. (eds) *Fish Processing Technology*. Springer. https://doi.org/10.1007/978-1-4613-1113-3_2

ISDM (2024, October 25). *What Are SDGs? A Comprehensive Guide to Sustainable Development Goals*. ISDM.* https://www.isdm.org.in/blog/sustainable-development-goals-comprehensive

Lagahid, PAY & Puyo, NMA (2016). Sugboanong' Taras: A Glimpse of Cebuano Personality. *Philippine Journal of Psychology, 49*(1), 73-94. https://www.pap.ph/file/pjp/pjp2016-49-1-pp73-94-lagahidpuyo-sugboanongtaras._a_glimpse_of_cebuano_personality.pdf

Lanaria, L. L. (2009). Lawas: An Anthropo-Theological Discourse On The Body In A Cebuano-Visayan Language Context. *Philippine Quarterly of Culture and Society, 37*(1), 55–82. http://www.jstor.org/stable/29792666

Jane. (2011, May 17). *Luggage with a special kind of stink*. http://lolako.com/tag/visayan-ginamos/

Joardder, M.U.H., Masud, M.H. (2019). A Brief History of Food Preservation. In: Food Preservation in Developing Countries: Challenges and Solutions. Springer, Cham. https://doi.org/10.1007/978-3-030-11530-2_3

Kibret, M., & Abera, B. (2012, March 22). The Sanitary Conditions of Food Service Establishments and Food Safety Knowledge and Practices of Food Handlers in Bahir Dar Town. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3437977/

Malayang, BS III (2021). On the Archipelagic Ecology and the Economy of the Philippines. *Asian Journal of Agriculture and Development, 18*(2), 86-100. doi:10.22004/ag.econ.316787.

Marsh, K., & Bugusu, B. (2007). Food Packaging—Roles, Materials, and Environmental Issues. *Journal of Food Science, 72*(3), R39-R55. https://doi.org/10.1111/j.1750-3841.2007.00301.x

Meggaito, R. (2014, October 28). The Science of Salting: How to Preserve Food with Salt. https://www.finediningloversmanila.com/stories/salting-how-to-preserve-food/

Narzary, Y., Das, S., Goyal, A.K. et al. (2021). Fermented fish products in South and Southeast Asian cuisine: indigenous technology processes, nutrient composition, and cultural significance. *J. Ethn. Food (8)*33. https://doi.org/10.1186/s42779-021-00109-0

Nauman K, Jaspal MH, Asghar B, Manzoor A, Akhtar KH, Ali U, Ali S, Nasir J, Sohaib M, Badar IH (2022). Effect of Different Packaging Atmospheres on Microbiological Shelf Life, Physicochemical Attributes, and Sensory Characteristics of Chilled Poultry Fillets. *Food Sci Anim Resour*, *42*(1), 153-174. doi: 10.5851/kosfa.2021.e71.

Olympia, M. S. (1992). *Applications of Biotechnology to Fermented Foods*. National Academic Press.

Padayao, F. R. P. A., Acosta, O. B. L., Ramos, R. I., Sanchez, R. M. T. S., Padayao, M. H. R. A., Yee, J. C., ... & Quilantang, N. G.(2025). Bioactivity screening and chemical profiling of Halymenia durvillei fermented by indigenous seaweed-associated Bacillus species.*The Microbe, 8*(0), 1-12, https://www.sciencedirect.com/journal/the-microbe

Pinoyentre. (2009, December 2). How to Make Tinabal (Visayan Salted/Fermented Fish). http://www.pinoy-entrepreneur.com/2009/12/02/how-to-make-tinabal-visayan-saltedfermented-fish/

Ranken, M.D., Kill, R.C., Baker, C. (1997). Food Packaging. In: Ranken, M.D., Kill, R.C., Baker, C. (eds) *Food Industries Manual*. Springer, Boston, MA. https://doi.org/10.1007/978-1-4613-1129-4_16

Roymksh23 (2016, November 15). "Taboan Public Market-Low Prices for Salted Fish". https://www.tripadvisor.com/ShowUserReviews-g298460-d1818289-r438176343-Taboan_Public_Market-Cebu_City_Cebu_Island_Visayas.html

Rul, F. et al. (2022). Underlying evidence for the health benefits of fermented foods in humans. *Food and Function, 0*(9). https://pubs.rsc.org/en/content/articlelanding/2022/fo/d1fo03989j/unauth#!divCitation

Sanchez, P. C. (2008). *Microorganisms and Technology of Philippine Fermented Foods. Institute of Food Science and Technology, College of Agriculture*. University of the Philippines.

Sanchez, P. C. (2008). *Philippine Fermented Foods*. The University of the Philippines Press.

Sarangam, S. & Priya, KSC. (2019). Range of Fermented Fish Products Across the Globe: Scope, Uses, and Methods of Preparation. In: Goyal, M.R., Suleria, H.A.R., & Kirubanandan, S. (Eds.). (2019). *Technological Processes for Marine Foods, From Water to Fork: Bioactive Compounds, Industrial Applications, and Genomics* (1st ed.). Apple Academic Press. (p.34). https://doi.org/10.1201/9780429425271

Sphoer, A. (2009). *Protein from the sea: technological change in Philippine capture fisheries*. University of California.

Steinkraus, K. (1994). Nutritional significance of fermented foods, *Food Research International, 27*(3), 259-267. https://doi.org/10.1016/0963-9969(94)90094-9.

Steinkraus, K. (1995). Handbook of Indigenous Fermented Foods, Revised and Expanded (2nd ed.). *CRC Press*. https://doi.org/10.1201/9780203752821

Sumi, A. (2024). Beyond Salt as Food: Artisanal Salt Making of the Pochury Nagas. In: Kanungo, A.K., Smith, C., Choksi, N. (eds*) Transformative Practices in Archaeology*. Springer, Singapore. https://doi.org/10.1007/978-981-97-3123-7_13

Templo, E. B., Hernandez, C. N., Abioda, L. A., Gumban, G. G., & Libo-on, R. M. (2024). Sustainability and viability of community-based coastal tourist destinations: A working example of a local community in Aklan. *Central Philippine University Multidisciplinary Research Journal, 4*(1), 42-55.

Thompson, J. W. (2008). *The Philippines: an investment opportunity*. University of California Center for Research and Communication.

Ting, G. (2011). Cebuano. *Sugbuanong Bisaya*. http://www.ethnicgroupsphilippines.com/people/ethnic-groups-in-the-philippines/cebuano/

Truong LN, Whitlock BD. (2021) Efficacy of compressed sodium chloride (CSC) against E. coli and Candida auris in minutes and methods improvement for testing. *Sci Rep*. *11*(1), 149. doi: 10.1038/s41598-020-79212-2.

The State of World Fishers and Aquaculture (2006). 2007 Un Report. Electronic Publishing Policy and Support Branch. Communications Divisions, FAO. https://www.fao.org/4/a0699e/a0699e.pdf

Villalon, K. M. (2009, October 29). *The Ginamos of Anilao*. www.thenewsoftoday.info/2009/10/29/the.ginamos.of.anilao.html

Welovecebu (2013, February 13). Danggit: Cebu's Best Dried Fish Pasalubng. *Food and Restaurant*. https://welovecebu.com/danggit-cebus-best-dried-fish-pasalubong/