TRADITIONAL KNOWLEDGE SYSTEM OF WATER AND COASTAL ENVIRONMENT FOR CULTURAL RESILIENCY AND SUSTAINABLE DEVELOPMENT IN GUIMARAS

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ABSTRACT Traditional Knowledge System is vital in maintaining stability in the physical, socioeconomic and cultural ecosystem. They provide backgrounds in the operation of human interaction and adaptation to the environment, especially for resources sustainability. This study was conducted to identify water bodies, the traditional method of catching fish and other marines/water resources, its preservation, fishlore, and other practices which have kept the sustainability of the water resources in Guimaras Island. The research design used was qualitative. Most of the fishermen learned from their fathers and grandfathers that the Island is rich with unique features and habituated by equally important organisms. The water bodies surround and within Guimaras, the Panay Gulf (facing Suba Malawig), Visayan Sea, and Guimaras Strait (area of Siete Picados), with major river system Mantangingi, Sibunag, and Cabano. In these fishing grounds locals use baroto "boat" for fishing and traveling, traditional fishing methods of catching fish and other water resources were " Pangurantayan" used to catch "tabagak" (anchovy), "Pamanggal" used to catch crab, fish and shrimp using circular hand-woven bamboo, "Pang-agihis" method of catching freshwater shell (agihis), "Panangub" method of catching freshwater shrimp, crab "alimango", and "Pamunit" method of catching fish using "bunit" (Hook) that proved to be sustainable, used by the locals to acquire aquatic resources from the shore down to the sea. Other marines and water resources available were Dugong "sea cows", Banagan "Lobster", Lumba-Lumba "Irrawaddy Dolphin", Pawikan "marine turtles" and Pulang Pasayan "red shrimp" which is believed to be enchanted. A traditional way of fish preservation was common practice in the island known as pamulad "sun drying" to form uga "dried fish" and steamed cooking techniques for crabs. Folklore and beliefs were associated with the sea and other resources were feared species, and precautionary measures like panuob "fumigation ritual" and other fishing rituals are performed for bounty catch before fishing. Some practices related to water and coastal environment of Guimaras Island are tultul-making, the process of producing a solid rock salt tablet, seaweed farming, and salt making. The collection of traditional knowledge of water and coastal environment in Guimaras Island are integral among the locals which have been learned from personal experiences of the elders and handed down to succeeding generation through knowledge transfer which ensure the perpetuation of the resources.

Keywords: Traditional Knowledge System, water, coastal environment, cultural resiliency, sustainable development, Guimaras

INTRODUCTION

Background of the Study

Guimaras is an island province of the Republic of the Philippines located in the Western Visayas region. It lies in the Panay Gulf, southeast of Panay Island. It is separated from Panay Island by Iloilo Strait (1.5 n.m.wide) and from Negros Island by Guimaras Strait (6 n.m.wide). Guimaras Province includes the islands of Guimaras, Inampulugan, and many small islands, covering approximately 605 km. The major fishing ground is the Guimaras Strait, which covers 7,120 km and is 18 m deep on average. Over 60% of the cities and municipalities in Guimaras Province face the sea. The population of the island is about 151,000 persons, with about 28,000 households. The province is basically agricultural, including fisheries. Its major industries are tourism, fruit processing, coconut processing, fish farming, handicrafts, mining, and lime production. Municipals surveyed in this study include Jordan and Nueva Valencia.

Guimaras is surrounded by bodies of water for navigation, fishery, and habitat of different marine organisms. Natives of the island use banka "boat," either motorize or not, to navigate the island and to explore as well as to fish. The Island is rich with unique features and habituated by equally important organisms. Most of the fishermen learned from their fathers and grandfathers that this place was abundant with fish and other sea creatures.

'Traditional Knowledge Systems' as defines by the United Nations University" is a Traditional knowledge or 'local knowledge' is a record of human achievement in comprehending the complexities of life and survival in often unfriendly environments. Traditional knowledge, which may be technical, social, organizational, or cultural was obtained as part of the great human experiment of survival and development." Laura Nader stated that studying Traditional Knowledge Systems (TKS): "The point is to open up people's minds to other ways of looking and questioning, to change attitudes about knowledge, to re-frame the organization of science — to formulate a way of thinking globally about traditions."

Traditional Knowledge System (TKS) is the know-how of the people, gathered through day to- day walk of life, to overcome the hurdles and tap the potentialities from their immediate neighborhood. In fact, TKS evolved in a specific location within certain physical and sociocultural environment, where it reflects people's specific knowledge, understanding as well as observational and experimental information about their dwelling environments, along with skill and technology to design a lifestyle in that specific environmental context.

Objectives of the Study

This study was conducted to traditional knowledge system on water and coastal environment specifically to identify water bodies, the traditional method of catching fish and other marines/water resources, its preservation, fish lore, and other practices which have kept the sustainability of the water resources in Guimaras Island.

MATERIAL AND METHODS

The research design used in the study was qualitative to identify traditional knowledge on water and coastal environment. The informants of this study were the identified locals' age ranging 60 years old and above, a residence of Guimaras that were engaged in catching fishes and other practices willing to participate in the research. To gather the needed data, an interview guide prepared by the researchers was used. One-on-One Interview was conducted. It is a personal interview that is carried out with the informant at a time. This is purely a conversational method and invites opportunities to get details in depth from the informant. A qualitative observation was also done to gather systematic information on the site and during the actual act of the informant. Qualitative use subjective methodologies to gather information on specific area. Narrative analysis was to analysis collected data which was done by reformulation of stories presented by the informants taking into account the context of each case and different experiences of each respondent.

RESULTS AND ANALYSIS

Water Bodies surround and within Guimaras

The water bodies surround and within Guimaras, the Panay Gulf (facing Suba Malawig), Visayan Sea, and Guimaras Strait (area of Siete Picados), with major river system Mantangingi, Sibunag, and Cabano. This water bodies provide a bountiful source to the locals.

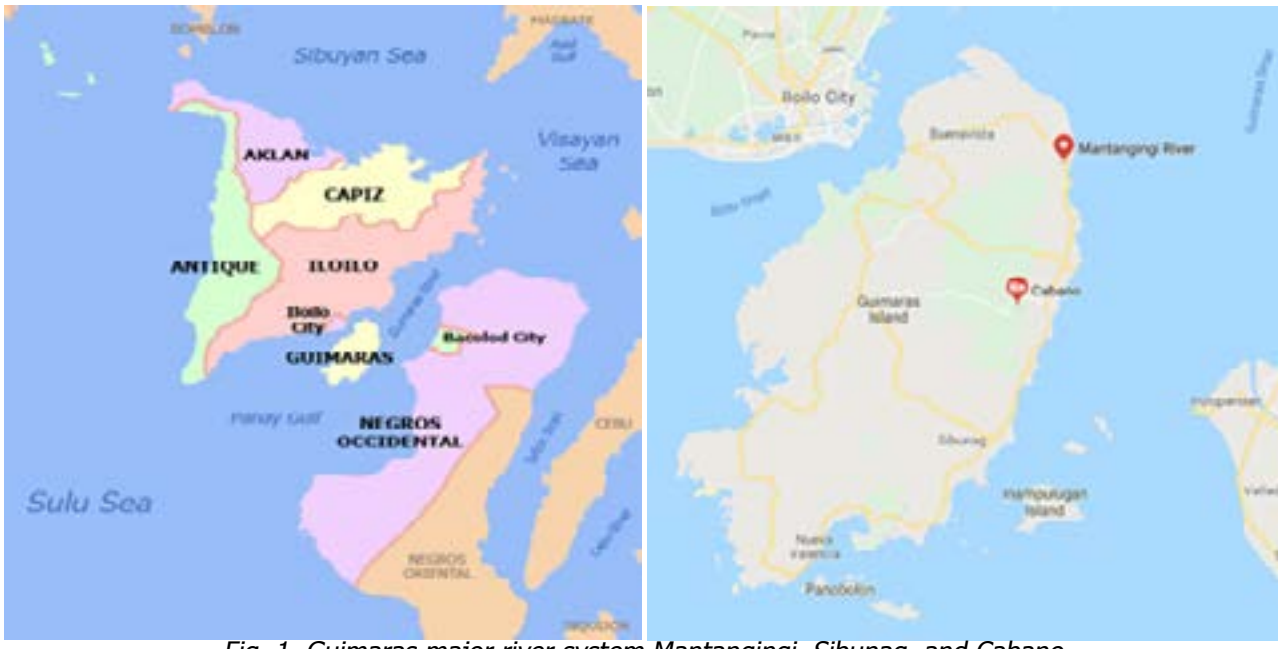

Fig. 1. Guimaras major river system Mantangingi, Sibunag, and Cabano.

SietePicados "Las Islas De Siete Picados"

Island specifically Barangay San Miguel, Buenavista, Guimaras Siete Picados is a place where a lot of fishers goes to catch fish, most of the people who catches fish came from Barangay, Magsaysay, Sawang, Zaldivar, Tacay, Taminla, Getulio, Navalas, Bacjao and other near Barangays.

People of the surrounding Barangay considered fishing as a source of their food and livelihood to support the needs of their families. Traditionally, fisher folks within the Island of Guimaras get its source near the small islets of Siete Picados. It is believed that the seven islets served as the niche of different marine organism that was found in the surrounding water.

Fig. 2. Siete Picados Island located at Baranggay San Miguel, Buenavista, Guimaras

Suba Malawig

Suba Malawig is a river which stretches to approximately two km up to the boundary of Barangay San Roque and Barangay La Paz. At the right of the river, nearing the end point is the islet called "Bantigue Daku", adjacent to it, it is another islet called "Bantigue Gamay". These two islets were named after the Bantigue Trees which are abundantly growing in this area.

Suba Malawig was traditionally known to all fishermen to be a Fishing ground where a lot of fish lived in extending along the coastal water of La Paz and San Roque Nueva Valencia. This place was known by the people living on that place to be a good fishing ground since they learned it from their fathers and grandfathers through regular convoying during fishing.

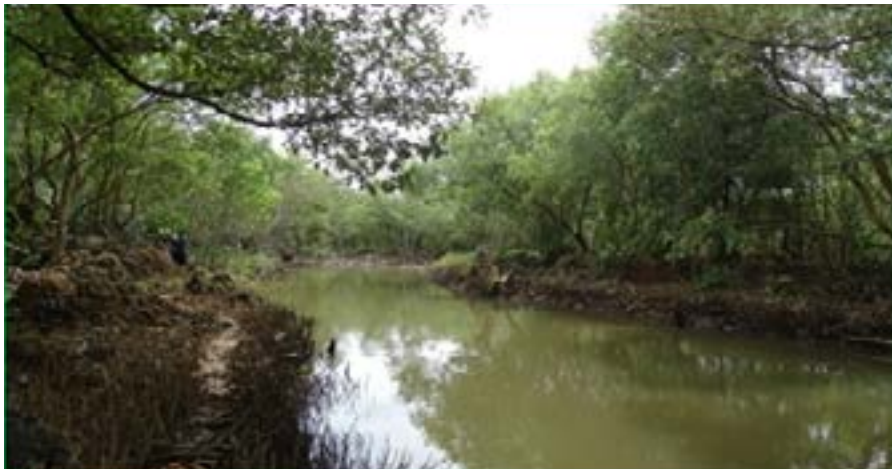

Fig. 3. The Suba Malawig.

Traditional fishing methods of catching fish and other water resources

Traditional fishing methods

In these fishing grounds locals use baroto "boat" for fishing and traveling, traditional fishing methods of catching fish and other water resources.

Pangurantayan is a one of the method used to catch fish called tabagak using net. This has been one of the traditional methods and a source of food and livelihood of the people in the community. Along with this method, fishermen use Bangka and later was change to a motor Bangka with their nets and other equipment such as flashlight made of a small bulb and covered with plastic container used to give light during night time of fishing. They have started to use this fishing equipment since 2009 due to its convenience and its ability to last for a longer time compared to improvised light equipment such as torch light (sulo) which he used since 1980's until 2000's.

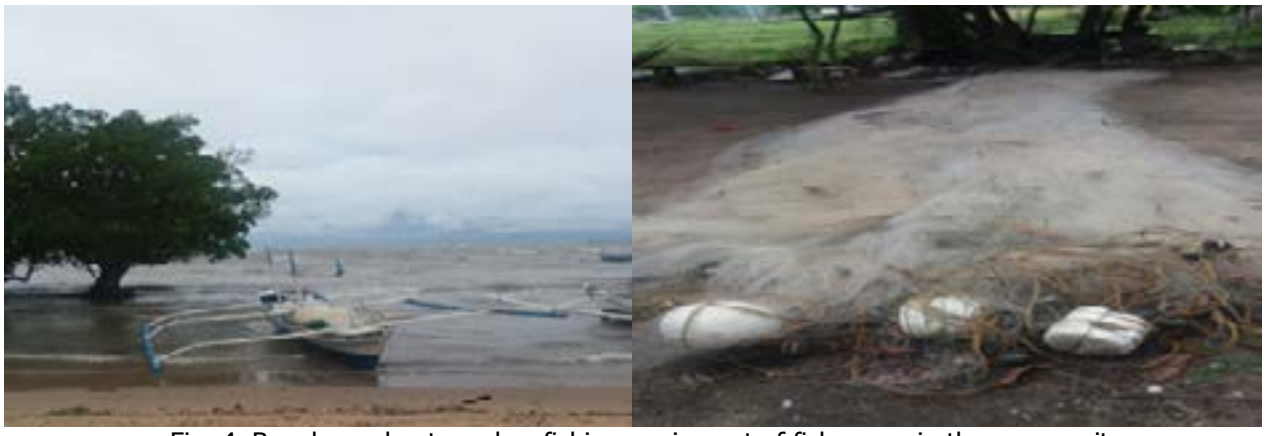

Fig. 4. Bangka and net used as fishing equipment of fishermen in the community.

Nowadays, when catching crabs new styles and techniques have evolved and are used by fisherman due to modern technologies. New equipment were discovered and some of the old practices were changed.

Fig. 5. Circular handwooden Panggal made of bamboo material.

Pang-agihis is a traditional method of getting freshwater agihis. This method does not use any gear, they only use their hands and feet to get the agihis. Agihis is a kind of shell that can be found on the shallow and muddy portion of the river. It is a 7-10 mm bivalve, a much sought-after supplemental feed for shrimp and a treasure for those who love seafood. It is a member of genus Potamocorbula, and it belongs to the species group of Corbula fasciata. Its shell can be provisionally identified as Potamocorbula sp. (Family Corbulidae).

Most of the time, they catch agihis in the morning and in the afternoon, so that it is not hot. During the catch, one should not be noisy in order for him to have plenty of catch.

Pang-agihis has been one of the traditional methods of catching fish and other crustaceans once the sea water is in low tide among the communities in the area ever since that the informant can remember. Pang agihis has been the alternative mode of sourcing of food and livelihood of the people in the community.

Fig. 6. The freshwater agihis found in the riverside

Panagub is a traditional method of catching freshwater orang (shrimp), alimango (crabs), isda (fish) and other freshwater creatures. Manugtagob is the person who uses a tinagub to catch freshwater orang (shrimp), alimango (crabs), isda (fish) and other freshwater creatures. The gear needed in this method is a tinagub which is made of bamboo strips and tied with balagon (vines).

The manugpanagud brings his tinagub on the Linab River of Brgy. Tanglad, Sibunag, Guimaras and rivers of Ravina to set up his tinagub on the mouth of the river, in order to trap the freshwater orang (shrimp), alimango (crabs), isda (fish) and other freshwater creatures. He sets it up in the morning and gets the tinagud in the afternoon. He is inspired by his family to practice panagob in order to provide for the needs of his family, for it is one of their sources of food.

Panagob has been one of the traditional methods of the communities in the area since time immemorial given that it's both a source of food and livelihood of the people in the community. The method is being learned by children from their parents through regular convoying and observation during panagob.

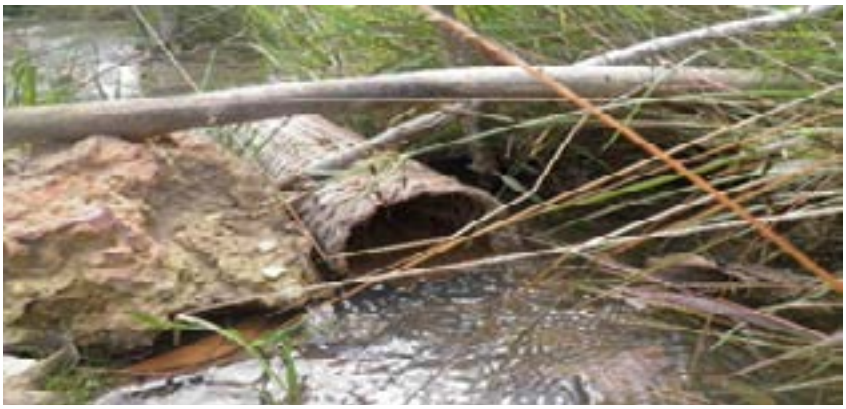

Fig. 7. Tinagub that were used to catch freshwater creatures.

Pamunit is a traditional method of catching fish with the use of bunit (Hook). This is popularly known as Hook and line method. The bunit is composed of the holder commonly made a bamboo pool, the line or nylon string where the hook (taga) is attached.

Nagapamunit is a person, who uses bunit, the bait being used was pinned on his taga (hook) were frog, locally known as lab-as nga paka nga bug ungan, and shrimp, locally known as orang. He sets up his bunit on the fishing area and waits until a fish or alimango was baited. He frequently caught alumna, luad-luad and alimango. He uses a non-motor banca equipped with a paddle, locally known as bugsay, made of Gemelina tree. He catches fish at the Cabano River.

Pamunit has been one of the traditional methods of catching fish in the communities in the area since time immemorial given that it's both a source of food and livelihood of the people in the community. Anybody can easily create their own hook and line gadget either by using indigenous materials such as bamboo pool as holder, nylon string and hook. Others are already using the commercially sold hook and reel. Pamunit became a hobby to some but to small fisher folks it is a form of livelihood for them.

Fig. 8. Pamunit

Other marines and water resources

Dugong 'Sea Cows'. Dugong (Dugong dugon) belonged to class mammalia. This sea mammal is herbivorous and thrived on diet seagrass. Dugongs graze on underwater grasses day and night, rooting for them with their bristled, sensitive snouts and chomping them with their rough lips. These mammals can stay underwater for six minutes before surfacing. They sometimes breathe by "standing" on their tail with their heads above water (National Geographic, 2018).

Dugongs sighted in Guimaras were still young. They were light brown in color, and do not have a well-developed snout. They were trapped in a fish pen in Taminla, Buenavista, Guimaras. The length is approximately between 1-2 meters. Another sighting was at San Lorenzo, Guimaras. It was pinkish-brown in color. It was believed by the locals that a captured dugong must sent back to the sea to avoid bad luck. No conservation program was implemented by the Department of Evironement and Natural Resources as of the moment.

Fig. 9. Dugong sighted in Guimaras Island.

Lumba-Lumba "Irrawaddy Dolphin (Orcaella brevirostris)". The Guimaras Sea is home to rare sea turtles likewise haven for rare Irrawaddy dolphin and dugongs. In Guimaras Island, the color and the shape of the head/mouth was described by the people to be at an approximate length of between 1-2 m long, black with brown tummy. It appeared during the last quarter moon between Roca Encantada and Tangab in Buenavista, Guimaras at 8 a.m, then they moved away, and, at 9-10 a.m, they returned back to the area. Lumba-lumba or "Irrawaddy Dolphin" was sighted along the coastal waters of Buenavista to San Lorenzo, Guimaras.

Lumba-Lumbas are still sighted in the area, within the same parameters as observed by the barrio folks, but not as frequent as the past years. Conservation and protection programs were not yet established to include areas with sightings of Irrawaddy dolphins for preservation and perpetuation of their species.

Irrawaddy dolphins are directly threatened in the area by means of getting themselves along with the daily catch or trapped in fishing gears. The solid wastes thrown in the water, and well as the presence of fast crafts also threaten their sightings due to the waves and sound that the fast crafts create, as the dolphin are sensitive.

Fig. 10. The Lumba-lumba (Irrawaddy Dolphin) sighted along the coastal waters.

Banagan. Lobster (Panulirus sp.), locally known as banagan, is a highly-priced marine crustacean both in local and international markets. It is trapped using bottom gill nets, and the availability of supply is dependent on a day's catch.

In Guimaras, spawning of lobsters peaks in October. Young lobsters are found in the local coral reef areas during low tide. Lobsters are difficult to catch because of their small size, spiny body and swift movement. In San Miguel, Buenavista, Guimaras, it was observed that the fishermen focused their activities in catching lobsters. Both big and juveniles were caught and are being marketed. Fisher folks use bangka to go to the sea and dive-in to capture the lobster within the area of Siete Picados in Buenavista, Guimaras, and back to the shore or buying area as early as 7:00 o'clock in the morning until 10:00 A.M. or until such time that the lobster buyers would go home, which signals that no more fishermen would be selling their catch.

Fig. 11. Banagan

Pawikan. One of the five marine turtles, locally called pawikan, found in the Philippines is the hawksbill turtle which is known scientifically as Eretmochelys imbricata. It is found throughout the Philippine archipelago which includes the Guimaras Island. Its natural habitat is the coral reefs which serve as nesting areas. Coral reefs are rich sources of food from which the hawksbill turtle gets its food. Its main diet consists of sponges, anemones, and invertebrates. In Guimaras, pawikans are sighted in different municipalities. Sightings of and captive pawikans in Getulio, Buenavista, Guimaras were sent to, cared for, and are protected in Nueva Valecia, Guimaras through the help of the Government Agency.

Pawikans are threatened in the area by bycatch when they accidentally get caught in fishing gears. Human exploitation for commercial purposes; marine pollution (debris dumped into the sea by humans); beach development; and shoreline erosion were observed as threats among them.

Fig. 12. Pawikan

Pulang Pasayan. Pulang pasayan in Pandaraonan, Nueva Valencia, Guimaras is also known as Tiniguiban Islet in the maritime charts is home to the rare species of scarlet-colored shrimps. Pulang pasayan is a specie of a shrimp that is colored red. Locals believe that the scarlet-colored shrimps found in the island are enchanted and refrained from consuming the brightly

colored crustaceans. Fisher folks would warn visitors from pointing the shrimps to spare them from being harmed by enchanted beings.

It has been believed by the people living in that place to be a "sapat nga mariit" kay tumalagsa lang ini makita tungod sa iya kolor, kag sila may pagpati nga kun ikaw magakaun sang ini nga sahi sang pasayan (because they are seldom seen due to their unique color, and the elders believe that when one eats these kind of shrimp), ikaw amu ang masinda (you are supernaturalistic). The island of Tiniguiban was privately owned by Mr. Jose Martinez.

The people in the island built a pond for the pulang pasayan to live in. They are "talan-awon sang mga tawo nga nagakadto sa Isla tungod isa ini sa pinakasahi nga sapat" (a sight for people who go to the islet because of their uniqueness).

Pulang pasayans in Guimaras are translucent to grayish in color, with a single red band. They thrive in a small pool-like area near the shore. Pulang pasayans showed distinct similarities with fresh water Red Cherry Shrimps, but researchers based the description on the available materials that they were able to gather from sources on the Internet, but no specific descriptions were available for the pulang pasayan of Guimaras.

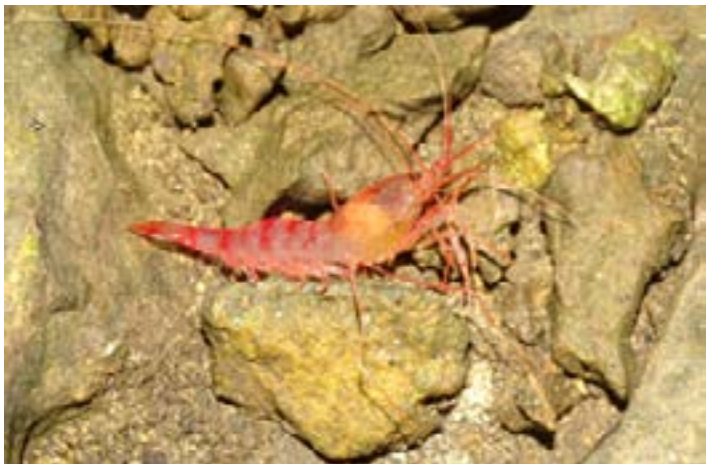

Fig. 13. Pulang Pasayan

Traditional way of fish preservation in the Island

Pamulad "sun drying". In completion of the process for sustainability of the resources, pagbulad was applied as a fish processing technique used to preserve fish with the use of kaping which is made of bamboo and tied with a rattan. It is done during a sunny weather in order to have a dried fish.

Tabagak was placed in a large container or box, locally known as tumanan for a period of 3-5 days wherein a container is closed. The containers contain saline solution where the fish body is allowed to imbibe the salt for preservation. After which, once ready, the fish are placed in bamboo-made sun-drying equipment which is locally called kaping. It is a bamboo slotted drying equipment wherein the fish are exposed to the sun and allowed the fish to dry for a period of one day or more depending upon the intensity of the heat of the sun.

The method is being passed on to children from their parents through regular convoying and observation during pagpangisda, panginhas and pamulad.

Fig. 14. Process of Pamulad

Steamed Cooking Techniques for Crabs. There are a lot of processing techniques practiced nowadays but in the previous years, people mostly used the steaming cooking techniques in order to preserve the catch they got to prolong the consummation of food. Steaming is a cooking process used by the key informants. They prepare the crabs to be steamed using a stainless pot. A pot made of nets designed according to pot size was placed inside the stainless pot to hold the crabs.

After the crabs were cooked, they are placed flat on a drying area made of net to be dried. The dry crabs are then placed inside a plastic container, which is then placed in a styro box added with ice for preservation before it was transported to the buyer.

Fig. 15. Steamed cooking techniques for crabs

Some practices related to water and coastal environment of Guimaras Island

Tultul. Tultul is a solid rock salt tablet only produced and manufactured by the Padohinog family residing in Hoskyn. It is one of the attractions in Guimaras Island and one of the bestselling products not just of the Municipality of Jordan, but of the entire province. Tul-tul is an intricate process of collecting and drying salt particles found in selected wooden and bamboo floatsom and jetsam found along the shoreline of Jordan particularly in Brgy. Hoskyn's by means of burning.

Upon gathering the dagsa, along the shoreline, the Padohinog family will start a fire in a rock-and-sand pit deep enough for them to do the firing process. Later on pile of woods and bambooes they have gathered as dagsa would be added on top of the fire one batch after the other. They pile a dagsa one batch over another for five consecutive days until the lowermost portion will produce pure and fine ash through continuous firing. The dagsa that they choose from are those plants or tree parts which they found along the shoreline particularly the bamboo parts and other wooden particles which adrift along the shoreline of Brgy. Hoskyn, Jordan, Guimaras

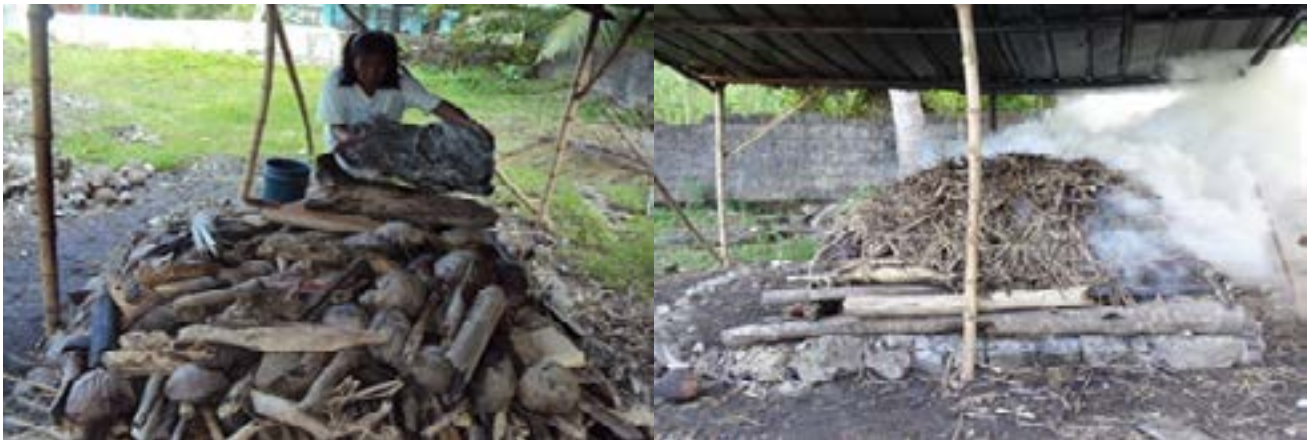

Fig. 16. Piling of bambooes and woods for firing process of making Tultul

On the sixth day, the collected ashes shall be poured with saltwater while being exposed to open air for cooling down. When the ash is already cool, they collect it and put it inside plastic sacks. If the ash is deemed to be enough, it is gathered in two large kaings or bamboo containers, which are then placed on an elevated platform.

Fig. 17. The process of collecting ashes poured with saltwater to cool it down (left) and gathering of cooled ashes in two large kaings which is placed in elevated form (right).

Seawater is then poured over the first kaing to wash down the salt from the ashes. A pail then catches the strained saltwater. The second bamboo container will be poured over by the earlier strained saltwater from the first container. This process is repeated over and over again until the saltiness is deemed to be enough by a secret mixture/chemical which only the producer knows it.

Fig. 18. Pouring of seawater to wash down salt from the ashes.

The next step involved is a hurnohan or a molder made out of large cooking oil tin containers. The strained saltwater from the second kaing is poured into these hurnohans, which have live fire below them. While the cooking goes on, small amounts of this strained saltwater is continuously added to the container. This goes on until the moisture from the solidified salt has completely evaporated. The finished product, called a bareta, is then left in the pan.

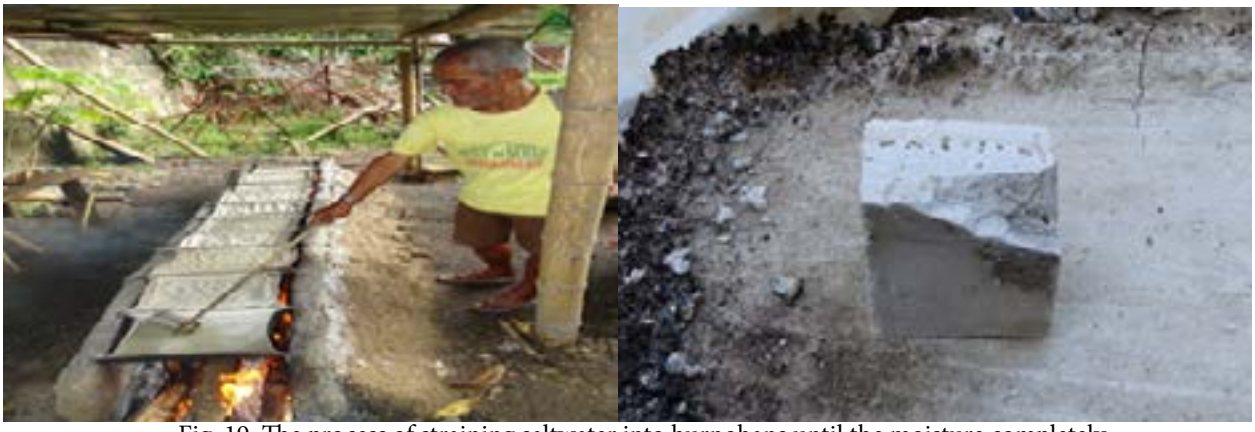

Fig. 19. The process of straining saltwater into hurnohans until the moisture completely evaporated (left) and the bareta (right).

Significance:

Tultul-making is a form of eliminating marooned wastes along the seashores. Through the gathering of dagsa, tultul producers help segregate the trash from Iloilo brought to the island by tidal action found adrift along the shoreline of Brgy. Hoskyn, Jordan, Guimaras. Brgy. Hoskyn faces Iloilo City and its geographical location is very ideal of catching whatever particles found adrift along sea waters separating Iloilo and Guimaras province.

History/Evolution:

Making tultul is about preserving a familial tradition and means of living that's been with the Padohinog family for more than a hundred years. According to Tatay Sirafin, the oldest person who practices the making of tultul in Guimaras, he actually didn't know when was the exact time when the process of tultul making begun. When Tatay Sirafin was a kid, his father Meliton Ganila said that tultul was cooked using the "buhos sang bunga" (areca or beettle nut palm leaves), which servde as cooking pan, and charcoal as fuel for cooking. This palm leaves base was hung in two bamboo poles and cooked using charcoal because, during that time, the cost of charcoal is very cheap and fire produce was easily manipulated/handled. This practice was witnessed by Sirafin's father from his grandaunt Polina Ganila.

When the tin-canned sardines became popular, the tin cans were used as cooking pans in exchange of palm peotle, with both charcoal and wood used as fuel. The advantage of using tin can is that it is easily heated, which hastes the solidification process of liquid salt during cooking. Moreover, it is more durable compared to palm peotle because the latter requires a measured amount of fuel in order for it not to burn.

On 1946, Rizaldo de Asis, the father of Sirafin's wife Emma de Asis Ganila, started his tultul production and introduced this newly discoveredsubstitute for a cooking pan and stove for tultul which is still being used until now. The cooking pan is made of mantiqulla/oil tin can brought from Iloilo City. The tin can measure 10" x 14" x 2" and is deformed into a square. The stove was made up from a pile of rocks which were covered with ash, which was taken after filtration. However, these were changed into concrete hallowblocks and this new design only used wood for fuel because it is more efficient and is cheaper than charcoal.

When Tatay Sirafin started his tutltul production in 1976, he also used the same design of cooking pan introduced by Rizaldo de Asis. At present, his niece Nanay Sherly Padohinog and her family are the only ones who prepare the material for tultul, and Tatay Sirafin only assists them in cooking.

Superstitious Belief

Hindi pwede magkadto ukon maglantaw sa pagluto sang tultul kung ikaw halin sa isa ka namatyan ukon may nalabayan nga patay nga sapat. (People cannot observed in the preparation process of Tultul once you have visited a wake of a dead person or even you have just seen along the way one dead animal).

Hindi pwede magkadto ukon maglantaw sa pagluto sang tutltul ang babayi nga may ara sang menstruation ukon ang mag-asawa nga nagpakighilawas sang nagligad lang nga gab-i asta sa tiempo sang pagluto. Suno sa mga katigulangan, nagakabuka ang asin pagkatapos luto kag may gahurma nga daw "monay" sa tableta sang tultul (A woman who has menstruation likewise cannot see and observe the Tutltul processing or a couple who have sex a night before because according to old folks' beliefs the Tultul once formed have developed a female organ shape in one of the products).

Seaweeds. Seaweed refers to several species of macroscopic, multicellular, and marine algae. The term includes some types of red, brown, and green algae. Seaweed can also be classified by use (as food, medicine, fertilizer, filtration, industrial, etc.). The varieties/species of seaweeds that can be found in the area were: cotonie (green and brown) and spynosom.

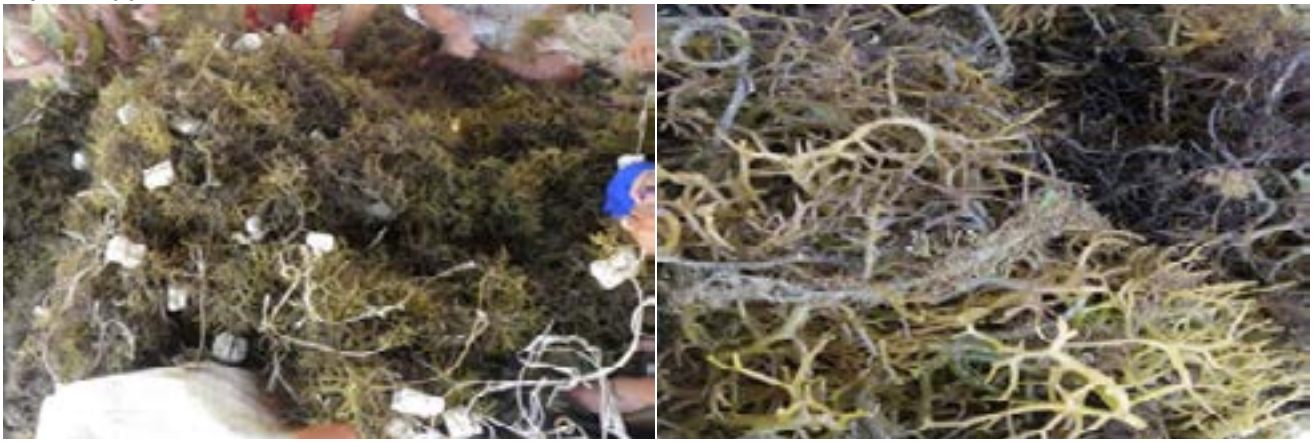

Fig. 19. Seaweeds

The informant added that "manami ang tubo sang seaweeds kon manami ang timpla sang tiempo kapin pa gid naga ulan-ulan. After the cultivation of seaweeds, ginatipon ini kag ginapanguha ang mga dalagko na kag ginaseparar ang gagmay pa para ihigot balik sa dagat gamit ang kawayan nga ginabugsok kag ginahigtan ang mga ini sang kalat."

It will take 3 months for the seaweeds to grow. Some people consume the seaweeds directly; some are processing it to make seaweed atsara and seaweed crackers, and some are also exporting it.

Fig. 20. Sun-drying Seaweed (left) and Seaweed atsara (right)

Seaweed culture has been identified as one alternative income generator for coastal communities. The General Impact of the Seaweed Industry. The municipality of Sibunag is successful with its project developing quite fast as expected. In less than a year, it was able to sell in big volumes and break into the markets of Cebu with its dried seaweed. The industry has steadily improved and has sustained the income sources of seaweed growers which started with 18 registered members in 2004 to 218 in 2006. As it was not much affected by the oil tragedy compared to other coastal barangays such as in Nueva Valencia, the industry complemented with the resiliency of the town folks is fast recovering and expected to exceed its past peak performance. Seaweed is consumed and exported by the people living near the coastal Barangay since it is both their source of food and livelihood. Seaweed production is a great help in improving the livelihood of the fisher folks especially during times that fish catch is not good.

The Philippine Rural Development Project (PRDP) in support of the seaweed farming in the community created additional employment for women and out-of-school youth and ensured sustainability of volume and quality of production.

Seaweeds are one of the traditional foods that can be found near the coastal Barangay of Sabang, Sibunag, Guimaras. Previously, it was planted to feed abalone shell as the demands for abalone shell was high in the previous years, with the decline on the demands of abalone shell from foreign costumers at the same time it opens the gate for another opportunity. Seaweeds growers shifted into selling dried seaweeds until today.

Seaweed growers in Guimaras Island are increasing production through a counterpart-funding scheme with the World-Bank supported Philippine Rural Development Project (PRDP). More than 400 seaweed growers from the towns of Sibunag, Nueva Valencia, San Lorenzo and Jordan are participating in P18.5-million initiative called the Guimaras Seaweed Production and Marketing Project under the enterprise component of the PRDP.

Salt Making. Salt is the number one go-to in terms of food preservation and preparation. In Barangay Sebaste, Sibunag, arirings (wind turbines) are devised. These arirings are made out of PVC sheets, wood, and timber. They are used to pull the water from the saltwater river towards where a community produces salt. The saltwater is then gathered in makeshift ponds called hay-angan, which are then connected to tubes leading to a shallow bubons (wells) called tuba-an.

Fig. 21. The images show the ariring (left) and fisher folks preparation of making salt.

Kahons (boxes) are dug in the ground and lined with cellophane to allow saltwater to dry. Each kahon can contain a balde (pail) or 5 liters of saltwater, approximately an inch high. All kahons are left to dry for 24 hours and are scraped with a non-toothed flat-ended rake called kagot. Each kahon makes 1/3 pail of salt, estimated to be half a ganta.

Fig. 22. The salt making in the kahons.

The scraped soft salt crystals are then stacked in a heap at an elevated papag lined with screen where they are left to dry for another 12 hours. The salt is then stored in a kamalig built of sawali and screen for further drying. It will be stored until the salt is sold or bought.

Even after hi-tech advances led to the beginning of more efficient processes in salt making in the province, older techniques are still observable on the present method used by the salt makers. The survival of the methods and practices was employed in the improved process of salt making in addition of locally-specific improvised equipment which are naturally available in the environment and economically sustainable.

Fig. 23. Storing of salt in kamalig for further drying.

Traditional knowledge includes the architectural method, tools and ways of production salt. While some of the tools and materials used have slight change for past years, others have been replaced with new ones for convenience and efficiency. The artisanal knowledge needed had been improved through the construction of improvised ariring and in general the salt making sustainability is dependent on the climate change as drying process was dependent with the sun if there is a continuous change in climate salt making will be increasingly in danger. Salt production will be less as compared to its demands from neighbouring provinces such as Negros Island and Iloilo.

Salt was considered as an additive and preservative in foods, it has been traditionally used by the people for food and later was used other forms. Salt making is one of the livelihoods among the people of San Lorenzo and Sibunag, Guimaras, significantly help their income as well as help other members of the community as part of the working force throughout the salt making process.

TRADITIONAL BELIEF:

Indi pwede ka pamayong kon naga pangsudsud sang asin kay, suno sa ila pagpati, ang payong nagapanghagad sang ulan (It is advised not to use umbrella when doing some activities in the salt farms because you are inviting rain).

CONCLUSION

The Guimaras Island is favored with aquatic resources that provides maintenance producing a solid rock salt tablet, seaweed farming, and salt making. A traditional way of fish preservation was common practice in the island known as pamulad "sun drying" to form uga "dried fish" and steamed cooking techniques for crabs. Folklore and beliefs were associated with the sea and other resources were feared species, and precautionary measures like panuob "fumigation ritual" and other fishing rituals are performed for bounty catch before fishing. Some practices related to water and coastal environment of Guimaraas Island are tultul-making, the process of producing a solid rock salt tablet, seaweed farming, and salt making. The collection of traditional knowledge of water and coastal environment in Guimaras Island are integral among the locals which have been learned from personal experiences of the elders and handed down to succeeding generation through knowledge transfer which ensure the perpetuation of the resources.

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