SOLI-SOLI (TYPHALATIFOLIA) OF LAKE DANAO SAN FRANCISCO, CENTRAL PHILIPPINES AS AN INDUSTRY AND AS A FESTIVAL EMBLEM: ITS STATUS, PROCESSING AND PROPOSED CONSERVATION OPTIONS FOR SUSTAINABILITY

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ABSTRACT

Soli-soli (Typhalatifolia) a plant found abundantly in Lake Danao, San Francisco, Cebu was studied as an industrial resource, its processing and a festival emblem of the fiesta celebration of Pacijan Island. This is a descriptive study where a questionnaire was used as a tool for gathering the data given to the weavers of solisoli, festival organizers, LGU officials, selected inhabitants and tourists of Pacijan Island. Results showed that soli-soli plant was converted into bags, belts, caps, and mats. Tourists usually buy them because of their unique material. The soli-soli was processed by harvesting the young soli-soli plant. Then this is dried under the heat of the sun for 2-3 days depending on the intensity of the heat. They are then cleaned and made into strip and tanned at different colors. Then weaving will commence depending on the desired articles to be made. Gender composition on the soli-soli industry is dominated by the females at 60% and males at 40%. Marketing of the soli-soli products was done locally and some were brought to nearby provinces like Cebu City and Ormoc City. Mats topped among the saleable articles followed by bags, hats, fans, slippers and ropes. Results further showed that soli-soli festival is done every third Sunday of March in San Francisco where it depicts the soli-soli plant which abounds around Lake Danao and a freestyle street dancing competition using the soli-soli plant as the dominant material for the costumes of the participants. Extraction of soli-soli is heavy from January to June for making articles for the incoming fiesta and during summer for many tourists are expected to visit Camotes Islands during this time. Problems of soli-soli industry are limited marketing potential, financing, and product development of the soli-soli products.

Keywords: Soli-soli, Typhalatifolia, festival emblem and Pacijan

INTRODUCTION

Lakes are natural impoundments which are body of waters surrounded by land masses. Pacijan Island of Camotes group of Islands has lake called as Lake Danao. They provide water of some human activities near the area and it provides source of food for humans and other animals especially those living far from the sea. Lakes are bodies of standing water surrounded by land (Palma 2005p.1). It is also an inland body of water that occupies a depression (Castillo, 2005 p.10). Lakes have played a significant role in man's social, cultural and economic activities and as an ecosystem it support different biological communities which are biotic and abiotic.

Lakes aside from having a natural resources have been subjected to aquaculture where fish cages and pens are being constructed where different species of fishes are being stocked and fed with various feeds grown up to marketable sizes or into breeders for reproduction. Lake Danao is not exempted from this although this was judged as the second placer for the greenish and cleanest lake throughout the Philippine archipelago. However, the culture of fishes in Lake Danao has been controlled by different agencies in order to maintain its national status and title as the cleanest and greenish lake throughout the Philippines.

Lake Danao is a picturesque eight- shaped inland body of water with an area of 649 ha with a 1-acre (4,047 sq.m.) islet at the middle. It is the largest and longest lake in the Visayas (Tanduyan and Bontia, 2001). It is surrounded by six out of 15 barangays in the town of San Francisco, Cebu.

San Francisco was established as a municipality in 1963 (Socio-economic Profile of San Francisco, Cebu, 1996) with 15 barangays. It is located in the Pacijan Island, one of the three islands comprising the Camotes group of islands. San Francisco is 38 nautical miles from Cebu City and has a total land area of 9,982 has.

The lake supplies water to the rice fields in Sitio Danao and Patabog. Its shoreline ranges from rocky to soft mud. The type of soil is coarse, silty and sandy. The depth of the water ranges from 27-290C. Water has a pH of 8.5-9.0. Salinity ranges from 0-0.5 ppt. The lake water is free from pollutants, except for some allochthonous materials (Station Profile of Carmen Lake Danao Fishery Complex/Research Station for Freshwater Fisheries Development Zone, Union, San Francisco, Cebu. 1995).

It has no definite inlet and outlet, but it is presumed that a subterranean spring supplies water to the lake. Assorted vegetation such as hydrilla, water lily, water hyacinth, and kangkong "Ipomaeaaquatica are found in the lake. "Soli-soli", Palawan nipa and coconuts grow along the periphery of the lake. The "suli-suli" plant present in the lake are made into different articles like mat, hat, centerpiece, bags of different styles, wall décor and doormats to enhance the cottage industry of the inhabitants. The lake is a tourist attraction where boat trips could be for recreation. Majority of the households living nearby the lake catch fish in the lake for food and for the market. The lake is also used for bathing and washing of clothes. Lake Danao was adjudged as the Cleanest Inland Body of Water for CY 1996 by the Department of Interior and Local Government (DILG) on September 30, 1996 (Tanduyan and Bontia 2001). An Award of Recognition to Lake Danao as the 1996 Cleanest Lake of Region VII was given by the Committee on Presidential Awards for the Cleanest Inland Bodies of Water in the Philippines for Region VII on December 11, 1996. An award for excellence was conferred to Lake Danao as a national finalist in the 1996 Search for the Cleanest Inland Bodies of Water. This lake is a potential area for cultivation of fishes in pens and cages.

Today the world's biomass is composed overwhelmingly of plants, which not only underpin almost all food webs, but also modify climates and create and hold down soil, making what would otherwise be stony, sandy masses habitable for life (Odum, 1971).

Cattail known as *Typhalatifolia*, is a tall perennial herb, characterized by a creeping rootstock; long, flat leaves; flowers in dense cylindrical terminal spikes; and brown, cylindrical fruit with a velvety surface.

(www.illinoiswildflowers.info/wetland/plants/cattail.htm)

There are 15 species of cattail, all classified in the genus Typha of the cattail family Typhacea. The *Typhalatifolia* is locally known and called as soli-soli in Camotes Islands and found in Lake Danao of San Francisco, Cebu, Philippines. They have been regarded by the San Franciscohanon as one of the valuable plants in the municipality which were converted into cottage industry articles which augments the income of the fisher folk. (https://en.wikipedia.org/wiki/Typha)

The soli-soli plant was studied as an industrial resource and a festival emblem of the fiesta celebration of Pacijan Island in which its municipality is San Francisco, Cebu. Our former Governor: Hon Gwendolyn Garcia is a tourism oriented governor where she develops the tourism industries in Cebu Province. She required each town mayor of the four municipalities of the Cebu province to prepare social activities, foods, delicacies, ecotourism activities to entertain visitors as she organized Suroy-suroy Sugbo as one of the activities of the province bringing visitors throughout the Cebu province to visits the unique features of each municipality.

San Francisco opted to name the activity as soli-soli festival having soli-soli plant is endemic in Lake Danao and can be converted into souvenir items. This is done every 3rd Sunday of March year.

Objectives of the Study

- 1. To determine the status of soli-soli festivals in Camotes Islands in terms of:
 - a. Storyline of the activity;
 - b. Criteria for judging and the participants?
- 2. To find out the different processing technique of soli-soli plant applied by the different sectors in the community:
 - a. Articles/Items produced
 - b. Salability of the products
 - c. Product development
- 3. To find out the plans of the municipality in order to conserve and preserve the two plants for sustainability:
 - a. Plant protection and conservation
 - b. Plant development

Materials and Methods

Study Site

This study focused on soli-soli plant as an industry and festival emblem of the municipality of San Francisco, Cebu, Philippines. San Francisco is part of Camotes Island which is located in 10° 37′ to 10º 43′ 10″ north and 124º 24′ 40″ to 124º 29′ 4″ East. The western most Island of Pacijan is entirely within the political jurisdictions of the municipality of San Francisco while the eastern most and smallest island of Ponson belongs to the municipality of Pilar. The island Poro is split between the municipalities of Poro and Tudela. The islands belong to the Province of Cebu.



Figure 1. Map of Camotes Islands in Cebu, Philippines



Figure 2. Map of San Francisco municipality where Lake Danao is located



Figure 3. Aerial view of Lake Danao is located



Figure 4. Soli-soli plant (Typhalatifolia) in Lake Danao

RESULTS AND DISCUSSIONS

Storyline and Profile of the Soli-soli Festival

SOLI-SOLI FESTIVAL is an annual dance festival in the Municipality of San Francisco which falls every 3rd Sunday of March. This celebration is a thanksgiving to Patron Saint Joseph for the bountiful harvest of Soli-soli, a tall grass that grows in the swamps of Lake Danao. This grass is then woven into mats, hats, bags and backpacks which had been a source of income for the locals of the barangays inbounding Lake Danao.

Soli-soli is found in Lake Danao occupying to ¾ parts of the muddy areas in the lake. They are found abundantly on the Northern Poblacion and in Brgy. Union. It is called in the mainland Cebu as "lampanayog"; Apiling in Mindanao and Soli-soli in Camotes Island.

Criteria for Soli-soli Festival

Table 1. Guidelines for the Costumes and Props

Guidelines for the Costume	Guidelines for the Props
Discretionary in accordance of the	Use of soli-soli as the dominant
context of the theme	material

Table 1 presents the props or costumes for the festival that it is discretionary on the part of the contingents but the props should be dominantly of partially made out of the soli-soli plant.

Table 2. Guidelines for the Composition of Participants

Guidelines for the Composition of Participants					
Elementary Category		High School/ Brgy. Category		ategory	
Dancers	Drummers	Props men	Dancers	Drummers	Props men
60-100	20	20	60-100	20	20

Table 2 presents the composition of the participants that is limited only to 60-100 members of the dancers and only 20 props men and drummers. This is through to all elementary and high school participants.

Table 3. Guidelines for the Number of Composition of Contingents

Guidelines for the Number of Competitors		
Elementary Category	High School/ Brgy. Category	
Min. 4 competitors	Min. 4 competitors	

Table 3 presents the guidelines for the number of compositions of the contingent. Only a minimum of 4 elementary, high school and barangay category competitors.

Table 4. Guidelines for the time allotment for street dancing and ritual performance

Guidelines for the Time	Guidelines for the Time	Guidelines for the
Allotment for the Street	Allotment for Ritual	Concept
Dancing	Performance	
Progressive and the	Minimum of 5 minutes,	Depicting on the legend
contingents are given	maximum of 7 minutes	or history of Lake Danao
maximum of 3 minutes	including entrance and	and religious concept of
to perform special	exit	San Francisco, Cebu
presentation in front of		
the Saint Joseph Church		

Table 4 presents the time allotment for street dancing and ritual performance in which in for street dancing progressive and the contingents are given maximum of 3 minutes to perform special presentation in front of the Saint Joseph Church. For the ritual minimum of 5 minutes, maximum of 7 minutes including entrance and exit and for the concept it should depict the legend or history of Lake Danao and religious concept of San Francisco, Cebu.

Table 5. Guidelines for the concept storyline

Guidelines for the Concept storyline
Depicting on the legend or history of Lake Danao and religious concept of San
Francisco, Cebu

Table 5 presents the concept of the storyline in which it should depict the legend or history of Lake Danao and religious concept of San Francisco, Cebu.

Table 6. Guidelines for drumbeat, dance steps and space dimension

Drumbeat	Dance steps	Approximate
		Performance Space
		Dimension
Basic drumbeat is used	Basic dance steps are	50 m x 20 m
and the accompaniment	also used but have	
is live.	variations depicting	
	Filipino culture and	
	traditions	

Table 6 Revealed the guidelines of the drumbeat, dance steps and the performance space distance. The basic drumbeat is used and the accompaniment is live. The basic dance steps are also used but have variations depicting Filipino culture and traditions. The performance dimension must be 50 m x 20 m.



Figure 5. Street dancing and actual presentation depicting the different story lines of soli-soli festival by the dancers with their costumes and props

Preparation of Soli-soli prior to Processing

The young soli-soli are the ones mostly harvested. Then this is dried under the heat of the sun for 3-2 days depending on the intensity of the heat. They are then cleaned and made into strips and tanned at different colors. Then weaving will commence depending on the desired articles to be made.



Figure 6. The drying soli-soli (*Typhalatifolia*)



Figure 7. The thoroughly dried soli-soli ready for weaving into different articles



Figure 8. Actual weaving of soli-soli into mats



Figure 9. Almost done woven soli-soli mat

Table 7. Articles made by the soli-soli weavers out of soli-soli plant

Soli-soli Products	Sales / Monthly	Remarks
1. Mats	P 1,920.00-5,760.00	Based from 2-5 mats made per
		day@ P40.00/pc.
2. Hats	P 800.00-1,000.00	Depending on order basis
3. Fan	P 240.00-800.00	Newly- created articles. Needs
		to be perfected for quality
4. Rope	P 250.00-500.00	This is a component for bag
		making
5. Bags	P 1,500.00-3,000.00	



Figure 10. soli-soli for making mats



Figure 11. Finished product of soli-soli mats



Figure 12. Soli-soli products (hats and bags)



Figure 13. The vending of soli-soli mats in San Francisco public

Table 8. Gender participation in soli-soli industry

GENDER	FREQUENCY	%
Male	60	40.27
Female	89	59,73
Total	149	100%

Table 8 present the gender participation. This industry is a female dominated activity

DISCUSSION

Soli-soli as a Festival Emblem

Soli-soli being the dominant plant which are converted into articles are the ones chosen by the Municipality of San Francisco as the festival emblem. This is based on the fact that this plant as abundant throughout the year where sustainability of the raw material is not considered as a problem since once the grass is taken it will regrow immediately.

Component of the Props

The props being used during the festival should be that most of the component used is the soli-soli plant as the dominant material.

Festival Participants

The participants of the festival (in Table 2) reflects that it is only participated by elementary, high school and barangay contingents.

There are no college category because there is only one university in the Municipality of San Francisco which is the Cebu Technological University, San Francisco, Cebu.

Articles Produced out of Soli-soli

Mats and bags are the dominant articles derived from soli-soli plant. These are the ones highly demanded by the people.

Gender Participation of Soli-soli Industry

This is a female dominated industry since as per survey results, most of the men are engaged in farming and fishery activities; hence, the females did most in the industry.

Problems met by the Soli-soli weavers and LGU Tourism Council

- 1. Marketing of the products out of soli-soli is hard because only the domestic people usually buy the products.
- 2. They are not organized that is why prices of the soli-soli mats differs due to the desire of the weavers to be sold so that they can have money to buy the basic needs of the family.
- 3. Only the old soli-soli technology are being used and no other techniques applied.
- 4. The LGU Tourism Council has no funds to finance any development of soli-soli festival.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- 1. Soli-soli is one of the valuable plants in San Francisco which is considered as their festival emblem.
- 2. Soli-soli can be converted into articles like mats, bags, slippers, hats, fan, etc.
- 3. Festival activities of soli-soli are street dancing, ritual, best in group performance, best in costume and props.

Recommendations

- 1. The LGU officials of the municipality must establish marketing linkage so as to promote the soli-soli products to have livelihood sustainability.
- 2. LGU's should look for more funds to finance the proposed project facilities of the vital plant in the municipality.

REFERENCES

- [1] Araullo, DB. 2001. Aquaculture practices and their impacts on Philippine lakes In CB Santiago, ML Cuvin-Aralar and ZU Basiao (eds.). Conservation and Ecological Management of Philippine Lakes in Relation to Fisheries and Aquaculture. Southeast Asian Fisheries Development Center, Aquaculture Department, Iloilo, Philippines; Philippine Council for Aquatic and Marine Research and Development, Los Banos, Laguna, Philippines; and Bureau of Fisheries and Aquatic Resources, Quezon City, Philippines, 187 pp.
- [2] Castillo, L.V. Lake Ecosystem p.10 In Palma A.L.; Bartolome B, Castillo L. Darwin L. (2005). Basic Principles on the Management of Philippine Lakes. Bureau of Fisheries and Aquatic Resources. Quezon City, Philippines and Phil. Council for Aquatic and Marine Research and Development. Los Banos Laguna, 154 pp.
- [3] Guerrero III RD. 2001. Sustainable development of Philippine lake resources: An agenda for research and development, pp. 19-23. In CB Santiago, ML Cuvin-Aralar and ZU Basiao (eds.). Conservation and Ecological Management of Philippine Lakes in Relation to Fisheries and Aquaculture. Southeast Asian Fisheries Development Center, Aquaculture Department, Iloilo, Philippines; Philippine Council for Aquatic and Marine Research and Development, Los Banos, Laguna, Philippines; and Bureau of Fisheries and Aquatic Resources, Quezon City, Philippines, 187 pp.
- [4] Palma A.L. Introduction p.1 In Palma A.L.; Bartolome B, Castillo L. Darwin L. (2005). Basic Principles on the Management of Philippine Lakes. Bureau of Fisheries and Aquatic Resources. Quezon City, Philippines and Phil. Council for Aquatic and Marine Research and Development. Los Banos Laguna, 154 pp.
- [5] Platon RR. 2001. SEAFDEC Contribution to the ecological awareness of Philippine lakes, pp. 13-17. In CB Santiago, ML Cuvin-Aralar and ZU Basiao (eds.). Conservation and Ecological Management of Philippine Lakes in Relation to Fisheries and Aquaculture. Southeast Asian Fisheries Development Center, Aquaculture Department, Iloilo, Philippines; Philippine Council for Aquatic and Marine Research and Development, Los Banos, Laguna, Philippines; and Bureau of Fisheries and Aquatic Resources, Quezon City, Philippines, 187 pp.
- [6] Odum E.P. 1971. Fundamentals of Ecology. Thomson. Brooks/cole. 598 pp.
- [7] Tanduyan, SN. and PC. Bontia. 2001. Fish Culture in Cages in Lake Danao, Cebu, pp. 109-112. In CB Santiago, ML Cuvin-Aralar and ZU Basiao (eds.). Conservation and Ecological Management of Philippine Lakes in Relation to Fisheries and Aquaculture. Southeast Asian Fisheries Development Center, Aquaculture Department, Iloilo, Philippines; Philippine Council for Aquatic and Marine Research and Development, Los Banos, Laguna, Philippines; and Bureau of Fisheries and Aquatic Resources, Quezon City, Philippines, 187
- [8] www.cabi.org/isc/datasheet/54297
- [9] https://en.wikipedia.org/wiki/Typha
- [10] www.illinoiswildflowers.info/wetland/plants/cattail.htm
- [11] www.iucnredlist.org/details/164165/0
- [12] plants.usda.gov/core/profile?symbol=tyla
- [13] ww.pfaf.org/user/Plant.aspx?LatinName=Typha+latifolia
- [14] www.wildflower.org/plants/result.php?id_plant=TYLA