

# PROVINCIAL FORESHORE DEVELOPMENT AND MANAGEMENT PLAN 2019-2028

Province of Zamboanga Sibugay



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# Acronyms

<b>A and D</b>	Alienable and Disposable Lands
<b>BFAR</b>	Bureau of Fisheries and Aquatic Resources
<b>CA</b>	Commonwealth Act
<b>CEPA</b>	Communication, Education and Public Awareness
<b>CENRO</b>	Community Environment and Natural Resources Office
<b>CFLC</b>	Community Fish Landing Center
<b>CLUP</b>	Comprehensive Land Use Plan
<b>COA</b>	Commission on Audit
<b>COMFAS</b>	Coalition of Municipal FisherFolks Association
<b>CRMP</b>	Coastal Resource Management Plan
<b>DA</b>	Department of Agriculture
<b>DAO</b>	DENR Administrative Order
<b>DAR</b>	Department of Agrarian Reform
<b>DENR</b>	Department of Environment and Natural Resources
<b>DILG</b>	Department of Interior and Local Government
<b>DOT</b>	Department of Tourism
<b>DPWH</b>	Department of Public Works and Highways
<b>ECA</b>	Environmentally Critical Area
<b>ECC</b>	Environmental Compliance Certificate
<b>EIA</b>	Environmental Impact Assessment
<b>EIMS</b>	Environmental Impact Monitoring System
<b>EMB</b>	Environmental Management Bureau
<b>EMP</b>	Ecotourism Management Plan
<b>EO</b>	Executive Order
<b>ESWM</b>	Ecological Solid Waste Management
<b>FA</b>	Foreshore Area
<b>FAMU</b>	Foreshore Area Management Unit
<b>FDMP</b>	Foreshore Disposition and Management Map
<b>FLA</b>	Foreshore Lease Agreement
<b>FLC</b>	Foreshore Lease Contract
<b>GIS</b>	Geographic Information System
<b>HLURB</b>	Housing and Land Use Regulatory Board
<b>LDIP</b>	Local Development Investment Plan
<b>LMB</b>	Land Management Bureau
<b>LGU</b>	Local Government Unit
<b>MAO</b>	Municipal Agriculture Office

<b>MENRO</b>	Municipal Environment and Natural Resources Office
<b>METT</b>	Management Effectiveness Tracking Tool
<b>MGB</b>	Mines and Geosciences Bureau
<b>MLGU</b>	Municipal Local Government Unit
<b>MOV</b>	Means of Verification
<b>MPA</b>	Marine Protected Area
<b>MPDC</b>	Municipal Planning and Development Coordinator
<b>MFZMC</b>	Municipal Foreshore Zone Management Council
<b>NCIP</b>	National Commission on Indigenous People
<b>NHA</b>	National Housing Authority
<b>NIPAS</b>	National Integrated Protected Area System
<b>NGA</b>	National Government Agency
<b>NGO</b>	Non-government Organization
<b>PD</b>	Presidential Decree
<b>PDRMO</b>	Provincial Disaster Risk Reduction and Management Office
<b>PENRO</b>	Provincial Environment and Natural Resources Office
<b>PFAMB</b>	Provincial Foreshore Area Management Board
<b>PFDMP</b>	Provincial Foreshore Development and Management Plan
<b>PHIVOLCS</b>	Philippine Institute of Volcanology and Seismology
<b>PPDO</b>	Provincial Planning and Development Office
<b>PNP</b>	Philippine National Police
<b>PPA</b>	Philippine Ports Authority
<b>PRA</b>	Philippine Reclamation Authority
<b>RA</b>	Republic Act
<b>SWOT</b>	Strength, Weakness, Opportunity, Threat
<b>TIEZA</b>	Tourism Infrastructure and Enterprise Zone Authority
<b>TWG</b>	Technical Working Group
<b>XAESFI</b>	Xavier Agricultural Extension Services Foundation Incorporated

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## Definition of Terms

**Alienable and Disposable** – are those land of the public domain which have been classified and declared as such and available for disposition under Commonwealth Act No. 141 as amended, otherwise known as the Public Land Act.

**Appraisal** - means an art of estimating the value of an adequately described property. It is not an exact science, but the opinion of value expressed must be educated, which means that the estimate should be supported by pertinent data as basis.

**Backshore** – the inner portion of the shore, lying landward of the high-tide shoreline. It is usually dry; being affected by waves only during storms.

**Beach** – an accumulation of sediment found along the landward margin of the ocean or a lake.

**Cliff** – are observed as resistant sedimentary, igneous and metamorphic rocks that may rise in several meters. These areas may be considered as forestlands if it has 18% of slope. Other cliff area are composed of soft earth materials like clay and name it *clayey cliff*.

**Climate** – The general weather condition usually found in a particular place. (Cambridge Dictionary)

The average course of condition of the weather at a place usually over a period of years as estimated by temperature, wind velocity and precipitation (Meriam-Webster Dictionary).

**Climate Change** – is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time (i.e. decades to millions of years). Climate change may refer to a change in average weather condition, or in the time variation of weather within the context of longer term average condition. Climate change is caused by factors such as [biotic](#) process, variations in [solar radiation](#) received by Earth, [plate tectonics](#) and [volcanic eruptions](#). (Wikipedia)

**Coastal Area** – is a band of dry land and adjacent ocean space (water and submerged land) in which terrestrial processes and uses, and vice versa, its geographic extent may relay include areas within a landmark limit of one kilometer

from the shoreline high water tide to include mangrove, swamps, brackish water ponds, nipa swamps, estuarine river, sandy beaches and other areas within a seaward limit of 200 meters isobath to include coral reefs, algal flats, seagrass beds and other soft-bottom areas (as defined by RA 8550).

**Coastal Processes** – refers to the wind, waves, currents and tidal movements.

**Development Activities** – are activities that involve all forms of improvement, construction and enhancement of land and other resources within the foreshore area that would likely have environmental impacts.

**Environmentally Critical Area** - an area that is environmentally sensitive and is so listed under Presidential Proclamation (Pres. Proc.) No. 2146, Series of 1981 as well as other areas which the President of the Philippines may proclaim as environmentally critical in accordance with Section 4 of P.D. No. 1586.

**Foreshore** - a string of land margining a body of water; the part of a seashore between the low-water line usually at the seaward margin of a low tide terrace and the upper limit or wave wash at high tide usually marked by a beach scarp or berm.

**Foreshore Management And Development Plan**- It is the guiding Framework for the Provincial Foreshore Council/ Board in accomplishing the goals in achieving the advancement of social economic in the quality of human life among all stakeholders thru a direction of efficient and effective highest and best utilization of Foreshore/ Coastal areas with the commitment to preserve and protect the environment by a sustainable industry as well as the ecological integrity of the Foreshore/Coastal and marine ecosystems shall be safeguarded also integrating climate change adaptation and disaster risk mitigation measures for the enjoyment of present and future generations. (Engr.Harry M.Villarin)

**Foreshore Lands** – The part of the shore which is alternately covered and uncovered by the ebb and flow of the tide.

**Foreshore Lease Agreement (FLA)** – is an agreement executed by and between the DENR and the applicant to occupy, develop, utilize and manage the foreshore lands. It may also cover marshy lands or lands covered with water bordering upon the shores or banks of navigable lakes or rivers.

**Foreshore Lease Application** – The type of application covering foreshore lands. It may also cover marshy lands or lands covered with water bordering upon the shores or banks of navigable lakes or rivers for commercial, industrial and other productive purposes other than agriculture.

**Government** – means the government of the Republic of the Philippines.

**Gravelly – sandy** – are areas of gravel sized sediments disseminated along a plain of sands, usually found along river mouths or on areas near rivers.

**High Tide** - the relative increase of sea water level due to the seasonal gravitational pull of the sun and the moon.

**Human Activities** – refers to the infrastructures, agriculture, residential and commercial areas.

**Indigenous Cultural Community** – means a group or tribe or indigenous Filipinos who have continuously lived as communities on communally-founded and defined land since time immemorial and have succeeded in preserving, maintaining, and sharing common bonds of languages, customs, traditions, and other distinctive cultural traits and as may be defined and delineated by law.

**Lands of the Private Domain** - refers to a land belonging to and owned by the state as a private individual, without being devoted for public use, public service or the development of national wealth.

**Littoral Owners** – titled land owners whose lot are adjacent to foreshore.

**Low Tide** – the relative decrease of sea water level due to the seasonal gravitational pull of the sun and the moon.

**Marine Sanctuary** – are areas offshore that are protected by laws.

**Marshy Land** – a wetland whose soil is inundated by water and whose vegetation is dominated by grasses or sedges.

**Muddy/ mangrove areas** – these areas are suitable for growing mangrove trees and other mangrove variety, soil can be observed with ample amounts of clay, coralline rocks and sands.

**Nearshore** – part of the offshore but immediately next to the foreshore.

**Offshore** – means the water, sea bottom, and subsurface from the shore or coastline reckoned from the mean low tide level up to the two hundred nautical miles (200 n.m.) exclusive of economic zone including the archipelagic sea and contiguous zone.

**Onshore** – means the landward side from the mean tide elevation, including submerged lands in lakes, rivers and creeks.

**Private Land** – refers to any land belonging to any private person which include alienable and disposable land being claimed by a holder, claimant, or occupant who has already acquired a vested right thereto under the law, although the corresponding certificate or evidence title or patent has not been actually issued.

**Public Land** – refers to the lands of the public domain which have been classified as agricultural land and subject to management and disposition or concession under existing laws.

**Quarrying** – means the process of extracting, removing and disposing quarry resources found on or underneath the surface of private or public land.

**Quarry Resources** – refers to any common rock or other mineral substances as the Director of the Mines and Geosciences Bureau may declare to be quarry

resources such as, but not limited to andesite, basalt, conglomerate, coral sand, diatomaceous earth, diorite, decorative stones, gabbro, granite, limestone, marble, marl, red burning clay for potteries and bricks, rhyolite, rock phosphate, sandstone, serpentine shale, tuff, volcanic cinders, and volcanic glass: Provided, that such quarry resources do not contain metals or metallic constituents and/or other valuable minerals in economically workable quantities: Provided, further, That on-metallic minerals such as kaolin, feldspar, bull quartz, quartz or silica, sand and pebbles, bentonite, talc, asbestos, barite, gypsum. Bauxite, magnesite, dolomite, mica, precious and semi-precious stones, and other non-metallic minerals that may later be discovered and which the Director declares the same to be of economically workable quantities, shall not be classified under the category of quarry resources.

**Relative Sea Level** – refers to the subsidence due to tectonic activity, change in water volume due to increasing temperature.

**Riparian Owner** – owner of the property adjoining foreshore lands, marshy lands or lands covered with water bordering upon shores or lands of navigable lakes or rivers, it embraces not only owner of lands on the banks of rivers but also the littoral owners, or the owners of lands bordering the shore of the sea or lake or other tidal waters (Lands General Circular No. 37, February 7, 1978).

**Rocky Coasts** – are characterized by beaches with cobble – boulder sized rocks from sedimentary, igneous and metamorphic origin.

**Sandy** – are plain areas of sand that may be white, gray to black depending on the parent rock in the environment. White sand are primarily made up of pieces of corals, shells and other calcium and silica materials. Gray sand can be a combination of coralline pieces and igneous derived-sands. Primarily black sand is of igneous origin.

**Sediment Budget** – refers to the transport and deposition of earth materials.

**Salvage Zone** – Lands measuring twenty (20) meters measured landward from the interior limit of the shoreline for easement purposes.

**Sustainable Development** – means meeting the needs of the present generation without compromising the ability of the future generation to meet their own needs.

**Timberlands** – land that is covered with trees that are grown in order to produce wood.



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Our sincerest thanks are due first to the members of the PFDMP Technical Working Group spearheaded by the CENR Officers of Districts I and II, For. Diomides M. Pablo of CENRO-Imelda and For. Dionisio B. Rago for CENRO-Kabasalan, who had exerted their best effort in gathering the vital data and information, conducting field assessment and site validation which are necessary inputs to the Plan and for the patience and great participation during the workshops;

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Lastly, our deepest thanks to all those who, in one way or another, contributed to the formulation of this Plan but we failed to mention;

And, above all, to our Almighty God whom we owe our knowledge and wisdom.

## MESSAGE OF THE REGIONAL EXECUTIVE DIRECTOR



I would like to extend my gratitude to our stakeholders who willingly support and provide assistance to us in our mandate to formulate and prepare a **Provincial Foreshore Development and Management Plan** to achieve our goals and/or objectives for the proper management of our foreshore areas in Region IX.

With the leadership of the Provincial Environment and Natural Resources Office on the implementation of the preparation of the plan, it is our best interest to provide a guiding framework to the constituents who are living and generating income within the foreshore areas. It is with high hopes that the **Provincial Foreshore Development and Management Plans** of the three provinces of Region IX will be adopted and implemented by the different stakeholders.

I look forward to the effect of the formulation the plan that will greatly contribute to the proper management, development and utilization of our natural resources specifically within foreshore areas.

**FORESTER CARLITO M. TUBALLA**  
Regional Executive Director- DENR IX

## Executive Summary

This Provincial Foreshore Development and Management Plan is formulated by the Provincial Environment and Natural Resources of Zamboanga Sibugay with the technical assistance of the PFDMP Technical Working Group composed of the personnel from the CENRO District I and CENRO District II. This PFDMP is being prepared in line with the provision of DAO No. 2004-24, otherwise known as the “Revised Rules and Regulations Governing the Administration and Management of Foreshore Lands.” The Order mandates to accelerate the country’s development and the need to conserve and protect the natural resources and the coastal environment. And, this Plan outlines foreshore development and management measures and strategies to be implemented in the coastal areas of the province.

The primary purpose of this Plan is to protect the ecological and heritage aspects of the foreshore areas of the thirteen (13) coastal municipalities of Zamboanga Sibugay. Moreover, it is aimed at developing the resources, establishing and improving the facilities/utilities in the foreshore areas so that it could contribute to the economic development of the coastal municipalities.

The following are the specific objectives of the PFDMP:

- a. To provide immediate and long-term direction with vision for the foreshore;
- b. To lay a guiding framework for the use and development within foreshore both present and future;
- c. To give a guide for immediate and future management, works programming and fund allocation;
- d. To identify any current and future management problems/issues;
- e. To instill awareness and understanding among stakeholders and the entire community regarding foreshore problems; and
- f. To have a defined, prioritized and with responsibilities implementation plan and cost estimates for future management.

Management recommendation, actions and timeframe for proposed activities have been provided in Chapter r of this PFDMP.

It shall be the responsibility of the provincial/local officials and other stakeholders in the coastal municipalities to implement this Plan.

# Chapter 1

## Introduction

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### 1. Background and Rationale

The Provincial Foreshore Management and Development Plan is being formulated in line with the provision of DAO No. 2004-24, otherwise known as the “Revised Rules and Regulations Governing the Administration and Management of Foreshore Lands.” The Order mandates to accelerate the country’s development and the need to conserve and protect the natural resources and the coastal environment.

The Department of Environment and Natural Resources mandates Provincial Local Government Units to formulate a foreshore management and development plan in order for them to draw a guiding framework on the best management scheme to be adopted in a specific environment particularly on the identification of the highest and best use (legally permissible, ecologically viable, economically valuable, socially acceptable and compatible with adjacent land uses) of a particular area in the foreshore. And, to map out the current uses of the lands adjacent to the sea with the aim of better management and regulation.

The Province of Zamboanga Sibugay composed of sixteen (16) municipalities of which thirteen (13) are coastal, needs to have a management and development plan for its foreshore in order to maximize the utilization of its resources for the economic benefits of its coastal communities. Moreover, it is also aimed at resolving the current issues, concerns and challenges in every coastal municipality that needs intervention and mitigation. Among the major issues are: presence of informal settlers, mangrove and beach forest degradation, garbage collection and disposal are not strictly observed, presence of illegal fishpond operators, illegal construction of structures, unauthorized utilization and reclamation of some foreshore areas, quarrying in foreshore areas and other related issues.

### 2. Scope of the Plan

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The Provincial Foreshore Development and Management Plan covers the period of ten (10) years, i.e. 2019-2028. The planning requires the participation of all the stakeholders in all the planning stages inasmuch as this is vital to the identification of the significant features and realities that characterizes the coastal zone.

This Plan covers the thirteen (13) coastal municipalities of the Province of Zamboanga Sibugay. Seven (7) municipalities in District I, namely: Buug, Malangas, Payao, Alicia, Olutanga, Mabuhay and Talusan and six (6) municipalities in District II, such as: Siay, Kabasalan, Naga, Ipil, R.T. Lim and Tungawan.

### 3. History of the Planning Process

The process and methodology employed in the PFMDP formulation are shown below:

Activities	Date	Particular Items Taken Up
1. Preparatory activities	Mar. 12, 2018	PFMDP Orientation
2. Profiling and Mapping	April 16, 2018 to June 8, 2018	Secondary data gathering and preparation of thematic maps
3. Foreshore Data Assessment	June-May, 2018	PFMDP Process Data Requirements
4. Situational Analysis	June-May, 2018	Guidelines for Situational Analysis Review of Thematic Maps Identified FA Assets, Assessed Stakeholders and Institutions Identified Problems, Issues & Concerns Zoning of Foreshore Areas Allocation of Foreshore Areas
5. Drafting of the Plan	August 1, 2018 to Nov. 9, 2018	Chapter 1 - Introduction Chapter 2 – Area Profile Chapter 3– Foreshore Situational Analysis



## Chapter 4 – Problems, Issues and Concerns

## Chapter 5 - Plan

6. 1 <sup>st</sup> Presentation of the Draft Plan to the PENRO TWG	October 15, 2018	Presentation and discussion of the Plan
7. PFDMP presentation to coastal municipalities	Nov. 13, 2018	Discussion and critiquing of the Plan
8. Review of Final Draft	3rd week of Nov. 2018	

**4. Objectives of the Plan**

- g. To provide immediate and long-term direction with vision for the foreshore;
- h. To lay a guiding framework for the use and development within foreshore both present and future;
- i. To give a guide for immediate and future management, works programming and fund allocation;
- j. To identify any current and future management problems/issues;
- k. To instill awareness and understanding among stakeholders and the entire community regarding foreshore problems; and
- l. To have a defined, prioritized and with responsibilities implementation plan and cost estimates for future management.

**5. Legislation Phase**

The Provincial Foreshore Development and Management Plan shall be legitimized when all the stakeholders and other concern sectors in the

coastal municipalities shall have been consulted and when the Technical Review Committee of DENR-IX has reviewed the Plan.

After the technical review of the Plan, PENRO – Zamboanga Sibugay shall endorse it to the Sangguniang Panlalawigan for approval and adoption.

## Chapter 2

### Area Profile

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#### 2.1 Provincial Background

Zamboanga Sibugay belongs to the Zamboanga Peninsula Region IX (formerly Western Mindanao) and was a part of the third district of Zamboanga del Sur. By virtue of Republic Act No. 8973, it was created dated February 24, 2001 during the term of Congressman George T. Hofer, the Founding Father of the province. It has two congressional districts: comprise 16 municipalities namely Imelda, Diplahan, Buug, Malangas, Alicia, Payao, Mabuhay, Talusan and Olutanga (District-I) and Tungawan, R.T. Lim, Ipil, Titay, Naga, Siay, Kabasalan (District-II). Three municipalities are inland, such as Imelda, Diplahan and Titay while the thirteen are coastal areas surrounded by Sibuguey River (in the middle), the largest bay in the province. Alicia borders two bays, Dumanguillas in the east and Tantanang in the south. On the other hand, Buug and Malangas border Dumanquillas Bay (Zamboanga del Sur) to its eastern border, the great Moro Gulf to its south and the Celebes Sea beyond. Ipil is its capital town.

It is geographically located at 7°48'N 122°40'E. It borders Zamboanga del Norte to the north, Zamboanga del Sur to the east and Zamboanga City to the southwest. From the southwest lies the mountain range which divides Zamboanga Sibugay and Zamboanga del Norte. This mountain range is interrupted by Titay Valley in the northwestern part of the province. To the south lies Sibuguey Bay in the Moro Gulf.

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The province can be reached by land, air and water transport. The most commonly and frequently used is land transportation in the mainland and water transportation for inter-island movement, particularly to and fro the island municipalities of Olutanga, Mabuhay and Talusan.

From Zamboanga City to the junction of Ipil, Zamboanga Sibugay, the national road network interconnects two provinces of Zamboanga del Norte in the western part (crossing the municipalities of Liloy, Leon Postigo, Sindangan, Manukan, Jose Dalman, Roxas and Katipunan and the cities of Dipolog and Dapitan) and in the east, Zamboanga del Sur. This same road goes beyond Pagadian City (the provincial capital of Zamboanga del Sur) towards the other major centers of Mindanao, such as Iligan City, Cagayan de Oro City, and Davao City, among others. Through the interior road section within the Municipality of R.T.Lim (Zamboanga Sibugay) from the national road connects the west coast municipalities of Sibuco, Sirawai, Siocon, Baliguian in Zamboanga del Norte. From Ipil to Zamboanga City (North), it has an estimated distance of about 135.2 kilometers; 130.2 kilometers to Pagadian City (Zamboanga del Sur), and approximately 176.1 kilometers to reach Dipolog City (Zamboanga del Norte).

To reach the province from Zamboanga City, travel time takes about three (3) hours by land and about four (2) hours if travel by sea, but there is no regular schedule for sea trip. Through inter- island vessel or motor bancas from Ipil takes about four hours trip; and about six hours of navigation from Olutanga to Zamboanga City. Entrant to the island is through Barangay Guicam (Municipality of Alicia) which is about 54 kilometers from Ipil. Travel time along this route is more than two hours and largely dependent on public utility vehicles. Main access to the islands is through a single barge, cruising a distance of 480 meters and ferrying all cargoes, passengers, all types of land transport vehicles and similar others) from Guicam to Barangay Hula-hula, Municipality of Mabuhay - a 10 minute-trip more or less and vice versa.

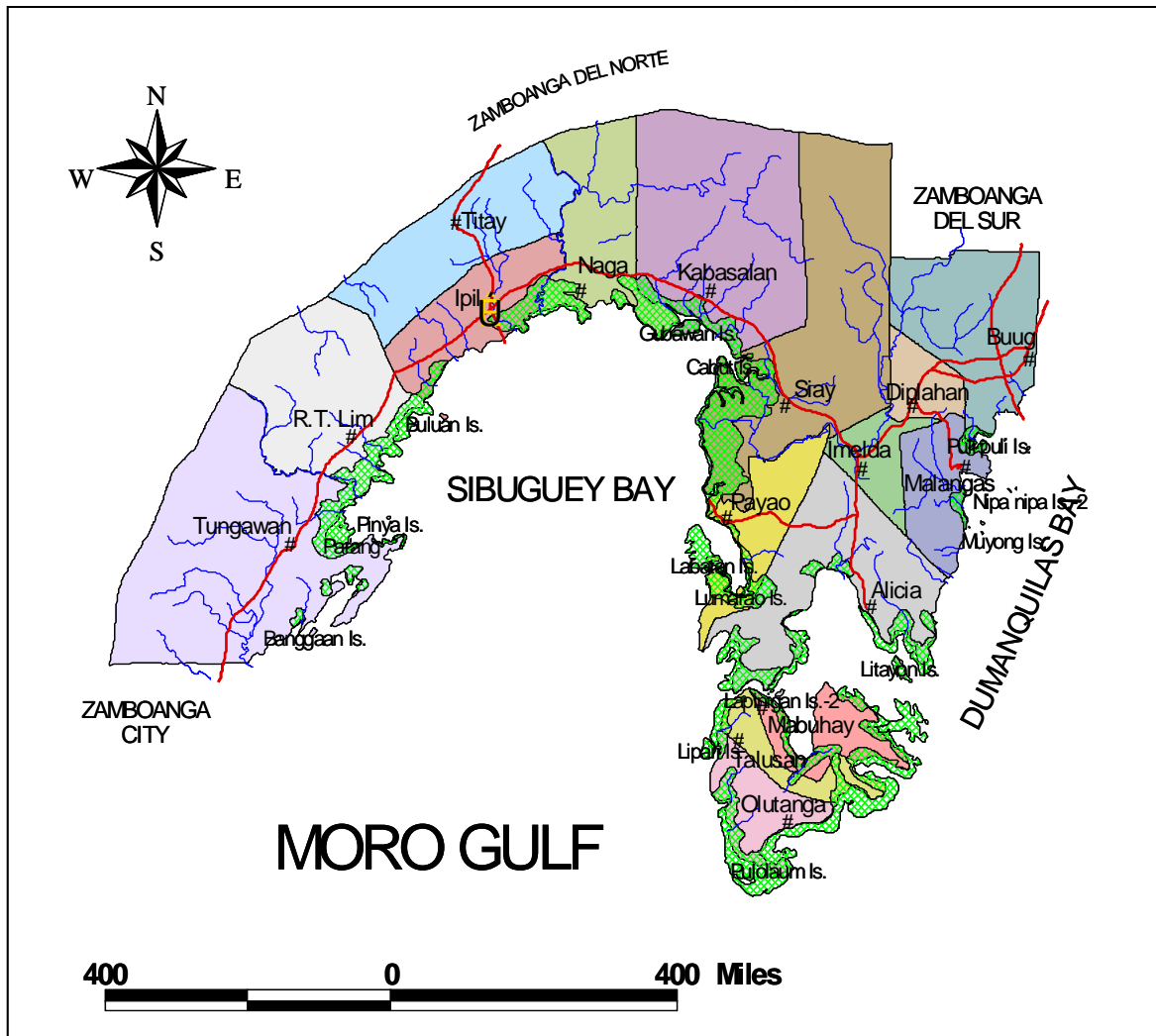
Figure 1 – Administrative Map of Zamboanga Sibugay Province

## 2.2 Land Area and Classification

### Land Area

The province has a total of 389 barangays and an aggregate land area of 360,775 hectares (3,607.75 sq. km.).

Table 1. List of Municipalities and Corresponding Land Area and



No. of Barangays by District in Zamboanga Sibugay

Municipality		Land Area (in has.)	No. of Barangays
District I:			
1.	Alicia	* 18,308	27
2.	Buug	*13,406	27
3.	Diplahan	*25,551	22
4.	Imelda	* 8,512	18
5.	Mabuhay	*8,285	18
6.	Malangas	*23,553	25
7.	Olutanga	*11,330	19

8.	Payao	*24,566	29
9.	Talusan	* 5,816	14
	<b>Sub-District Total :</b>	<b>*133,511</b>	<b>199</b>
	District II:		
10.	Siay	*31,366	29
11.	Kabasalan	*28,920	29
12.	Naga	*24,630	23
13.	Ipil	*24,160	28
14.	Titay	*35,293	30
15.	R.T.Lim	*30,000	26
16.	Tungawan	*47,328	25
	<b>Sub-District Total :</b>	<b>*221,448</b>	<b>190</b>
	<b>Province Total</b>	<b>*360,775</b>	<b>389</b>

Sources of Data: \*National Statistical Coordination Board (NSCB) and Department of Budget & Management (DBM),

CY 2013 \*PPDO, Sibugay

Zamboanga Sibugay's land use is diversified which is primarily based on existing crops in the vicinity and/or market opportunities and not on soil suitability.

Table 2. General Land Classification, By Hectare and  
Percentage Share of the Total Provincial Land

Total Land Area: 360,775		
Alienable & Disposable Lands (Government-owned & Private Lands in Hectares)		% Share to Total Land Area
Agriculture	169,013.00	46.85 %
Untitled A & D Lands	30,732.93	8.52 %
<b>Non-Alienable &amp; Disposable</b>		
Forestland/ Timberland	155,684.07	43.15 %
Fishponds	5,345.00	1.48 %
		<b>100.00%</b>

Source of Data: PPDO and Provincial Agriculture of Zamboanga Sibugay

Table 3 below shows a more detailed distribution of existing land uses of the province.

Table 3. Area Distribution of Land Uses, Zamboanga Sibugay

Land Use Category	Area (in hectare)
<b>I. PRODUCTION LAND USE</b>	
<b>1. Crop Lands</b>	<b>172,665.87</b>

1.1 Rice	36,899.00
5. Mining Areas	4,116.00
5.1 Metallic	
5.2 Non-Metallic	-
6. Industrial Areas	-
7. Tourism Areas	2.50
7.1 Beaches	-
7.2 Small Island	180.00
8. *Openland	
II. PROTECTION LAND USE	
1. NIPAS Areas	16,396.00
1.1 Natural Park	-
1.2 Protected Landscapes/Seascapes	14,831.00
1.3 Resource Reserves	-
1.4 Natural Biotic Areas	1,565.00
2. Non-NIPAS Areas	
2.1 Residual 2 <sup>nd</sup> Growth Forest	39,590.00
2.2 *Mangrove	-
2.3 Fresh Water Swamps	1,208.00
2.4 Lakes and Other Inland Water Bodies	669.00
2.5 Buffer Strips	-
III. BUILT - UP AREAS:	2,950.00
1. Settlements	2,700.00
2. Military & Civil Reservations	250.00
IV. – PRODUCTION FORESTS	-
4.4 Community-Based Forestry	16,941.00

Sources of Basic Data: OPAG (Sibugay), DA RFU IX, PCA IX and DENR IX

\*Assumed to be part of production, protection and built-up areas.

Sea farming and mining activities are done within the foreshore and forestland areas respectively; hence figures are not included in the area of computation.

## 2.3 Topography and Slope

The topography of the province is relatively rugged. Majority of its area are hilly lands and mountains with steep slope. Wide stretches of flatlands are located along the coastlines, valleys and low-lying areas. Upland valleys and plains, foot slopes and plateaus are presently planted to coconut and annual crops but are also suited for fruit trees cultivation.

## 2.4 Soil and Soil Suitability

The predominant soil type of the province is clay. The stone content and soils in the slope area have low fertility due to leaching and low organic material content. Perennial crops are extensively grown in many areas. Antipolo Clay Loam is the most common type of soil all over the component municipalities

## 2.5 Water Resources

Sibugaynon households access water for drinking from different sources, such as: shallow and deep wells and springs.

Zamboanga Sibugay has one water district based in Ipil (the provincial capital). As of January 2015, the said water district has catered a total of 2,985 active households residing in twelve nearby barangays (with service connections), including business /commercial establishments in the central town. Inadequate supply of water has been a perennial problem in Ipil ever since. In fact, more or less 15 percent of the households living far from downtown Ipil could hardly access water during dry season despite some improvements undertaken by the water district itself in collaboration with the local government units (municipal and provincial levels).

The other municipalities in the 1<sup>st</sup> and 2<sup>nd</sup> districts have their own municipal water systems. Generally, majority of the barangays within the province are served with Level I and II water systems. Per survey of Integrated Provincial Health Office of Zamboanga Sibugay in 2012 and 2013, 78.80% and 76.24%, respectively, of the total households in the province have access to potable water supplied by different level types. Only 21.20% in 2012 and 21.16% in 2013, of the total households in has no access to potable water. Below is the distribution of households by type of water system.

Table 4. Percentage Distribution of Households by Type of Water System

Type	% of Household Users	
	Year 2012	Year 2013
Level I	28.39	25.22
Level II	31.06	32.82

Level III	19.35	20.80
Total	78.80	78.24

Source: Integrated Provincial Health Office

## 2.6 Demographics

As shown in Table 5, the total population of the Province of Zamboanga Sibugay in year 2015 was 633,129 which had an annual average increase of 1.53% over that of 2010 which is 584,685. The total population of the coastal municipalities comprises 82.61% of the total population or equivalent to 523,110 while the three (3) inland municipalities have a total population of 110,119 or 17.39% of the total.

Moreover, Table 5 shows that the total population of District I in 2015 was 298,669 or it comprises 47% of the total population of the province while District II had 337,460 population or equivalent to 53%. The breakdown of the population of the municipalities by barangay are reflected in the municipal profiles which are in the annexes of this Plan.

Table 5 below shows the comparative population of Zamboanga Sibugay Province in year 2015 and 2010 by municipality, viz:

Table 5. Population by Municipality, 2015 and 2010

Municipality	Population		% of Increase/ Annum	%age to Total (2015)
	2015	2010		
<b>District I:</b>				
Alicia	36,013	34,895	0.60	5.7
Buug	36,634	35,969	0.35	5.8
Diplahan	32,428	31,215	0.73	5.1
Imelda	28,018	27,903	0.08	4.4
Mabuhay	36,870	33,093	2.08	5.8
Malangas	33,380	31,243	1.27	5.3
Olutanga	33,671	28,717	3.08	5.3
Payao	31,686	29,755	1.20	5.0
Talusan	29,969	25,268	3.30	4.7
sub-total	298,669	278,258		
<b>District II:</b>				
Siay	41,572	38,229	1.61	6.66
Kabasalan	44,336	41,421	1.30	7.00
Naga	38,541	37,814	0.31	6.10
Ipil	74,656	64,939	2.69	11.8
Titay	49,673	46,456	1.28	7.80
R.T.Lim	43,646	37,216	3.08	6.90
Tungawan	42,030	40,552	0.68	6.66
sub-total	337,460	306,627		
<b>TOTAL</b>	<b>633,1299</b>	<b>584,685</b>	<b>1.53</b>	<b>100.00</b>

Source: National Statistics Office



Table 6-18 shows the population of the coastal barangays in each coastal municipality in year 2015.

Table 6. Population of Coastal Barangays of Buug, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
1. Buug	1. Bawang	1,079
	2. Pamintayan	1,185
	3. Pulo	560
	4. San Jose	360
Total Population of Coastal Barangays		3,184
Total Municipal Population		36,634
Percentage of Total Coastal Population Over Municipal Population		8.69

Table 7. Population of Coastal Barangays of Malangas, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District I		
2. Malangas	1. Bacao	821
	2. Dansulao	1,405
	3. Kigay	2,042
	4. Lipacan	1,352
	5. Logpond	494
	6. Mabini	1,303
	7. Palalian	460
	8. Poblacion	8,233
	9. Sinusayan	771
	10. Tackling	844
	11. Tigabon	906
Total Population of Coastal Barangays		18,631
Total Municipal Population		33,380
Percentage of Total Coastal Population Over Municipal Population		55.81

Table 8. Population of Coastal Barangays of Payao, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District I		
3. Payao	1. Balian	1,225
	2. Balogo	559
	3. Binangonan	629
	4. Bulawan	3,148
	5. Dalama	565
	6. Guiwan	2,078
	7. Kima	1,166
	8. Kulasian	996
	9. Kulisap	864
	10. Labatan	1,699
	11. Mayabo	265
	12. Minundas	593
	13. San Roque	434
	14. Silal	737
	15. Talaptap	351
	16. Poblacion	4,809
Total Population of Coastal Barangays		20,118
Total Municipal Population		31,686
Percentage of Total Coastal Population Over Municipal Population		63.49

Table 9. Population of Coastal Barangays of Alicia, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District I		
4. Alicia	1. Bagong Buhay	567
	2. Bella	1,472
	3. Concepcion	1,383
	4. Dawa-Dawa	2,621
	5. Gulayon	1,242
	6. Ilisan	619
	7. Kawayan	2,062
	8. Lambuyogan	1,244
	9. La Paz	1,449
	10. Lapidawan	803
	11. Litayon	1,039

	12. Naga-Naga	1,814
	13. Pandan-Pandan	1,316
	14. Poblacion	3,978
	15. Sta. Maria	951
	16. Sto. Niño	1,098
	17. Talaptap	1,450
	18. Tampalan	1,187
	19. Tanjung Muslim	903
	20. Timbang-Timbang	1,111
Total Population of Coastal Barangays		28,309
Total Municipal Population		36,013
Percentage of Total Coastal Population Over Municipal Population		78.61

Table 10. Population of Coastal Barangays of Mabuhay, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District I		
5. Mabuhay	1. Abunda	847
	2. Bagong Silang	1,486
	3. Bangkaw-Bangkaw	1,958
	4. Caliran	2,813
	5. Catipan	1,245
	6. Ligaya	1,692
	7. Looc-Barlac	2,287
	8. Malinao	4,077
	9. Pamansaan	1,113
	10. Poblacion	4,582
	11. Punawan	1,405
	12. Sawa	2,917
	13. San Roque	1,479
	14. Sioton	710
	15. Sto Niño	1,159
	16. Taguisan	4,069
	17. Tandu Comot	1,511
Total Population of Coastal Barangays		35,350
Total Municipal Population		36,870
Percentage of Total Coastal Population Over Municipal Population		95.88

Table 11. Population of Coastal Barangays of Olutanga, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District I		
6. Olutanga	1. Calais	2,295
	2. Esperanza	1,089
	3. Galas	2,166
	4. Gandaan	1,285
	5. Looc Sapi	1,108
	6. Matim	822
	7. Pulo Laum	1,218
	8. Pulo Mabao	2,916
	9. San Isidro	818
	10. San Jose	1,205
	11. Sta. Maria	1,356
	12. Solar (Poblacion)	7,429
	13. Tambanan	2,233
	14. Villagonzalo	1,162
Total Population of Coastal Barangays		27,102
Total Municipal Population		33,671
Percentage of Total Coastal Population Over Municipal Population		80.49

Table 12. Population of Coastal Barangays of Talusan, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District I		
7. Talusan	1. Baganipay	2,038
	2. Cawilan	1,673
	3. Bolingan	823
	4. Bualan	1,167
	5. Florida	1,533
	6. Kasigpitan	1,630
	7. Laparay	3,014
	8. Moalboal	1,774
	9. Poblacion (Talusan)	9,919
	10. Tuburan	2,061
Total Population of Coastal Barangays		25,632
Total Municipal Population		29,969
Percentage of Total Coastal Population		

Over Municipal Population	85.53
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Table 13. Population of Coastal Barangays of Siay, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District II		
8. Siay	1. Balucanan	1,630
	2. Batu	3,718
	3. Laih	993
	4. Logpond	1,723
	5. Monching	4,239
	6. Salinding	2,031
	7. Siloh	1,811
Total Population of Coastal Barangays		16,145
Total Municipal Population		41,572
Percentage of Total Coastal Population Over Municipal Population		38.84

Table 14. Population of Coastal Barangays of Kabasalan, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District II		
9. Kabasalan	1. Cainglet	2,468
	2. Calapan	999
	3. Canacan	1,609
	4. Concepcion	3,228
	5. Dipala	813
	6. Lumbayao	2,773
	7. Nazareth	2,123
	8. Simbol	1,556
	9. Sta Cruz	1,391
	10. Salipyasin	2,336
	11. Timuay Danda	2,134
Total Population of Coastal Barangays		21,430
Total Municipal Population		44,336
Percentage of Total Coastal Population Over Municipal Population		48.34

Table 15. Population of Coastal Barangays of Naga, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District II		
10. Naga	1. Baluno	1,681
	2. Bangkaw-Bangkaw	788
	3. Gubawang	614
	4. Kaliantana	2,381
	5. La Paz	2,087
	6. Mamagon	1,955
	7. Poblacion	3,339
	8. Taytay Manubo	1,346
Total Population of Coastal Barangays		14,191
Total Municipal Population		38,547
Percentage of Total Coastal Population Over Municipal Population		36.81

Table 16. Population of Coastal Barangays of Ipil, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District II		
11. Ipil	1. Bangkerohan	4,247
	2. Buluan	3,175
	3. Caparan	1,393
	4. Magdaup	4,691
	5. Makilas	2,270
	6. Pangi	2,967
	7. Sanito	7,808
	8. Tenan	1,797
	9. Tiayon	3,282
	10. Upper Pangi	1,909
Total Population of Coastal Barangays		33,539
Total Municipal Population		74,656
Percentage of Total Coastal Population Over Municipal Population		44.92

Table 17. Population of Coastal Barangays of R.T. Lim, CY 2015

Municipality	Name of Coastal Barangays	Population 2015
District II		
12. R.T. Lim	1. Ali Alsree	2,414
	2. Gango	1,466
	3. Magsaysay	1,630
	4. President Roxas	2,380
	5. Silingan	1,467
	6. Tupilac	1,456
Total Municipal Population		10,813
Total Municipal Population		43,646
Percentage of Total Coastal Population Over Municipal Population		24.77

Table 18. Population of Coastal Barangays of Tungawan, CY 2015

	Name of Coastal Barangays	Population 2015
District II		
13. Tungawan	1. Baluran	2,027
	2. Libertad (Poblacion)	5,213
	3. Linguisan	1,088
	4. Looc Labuan	1,370
	5. Masao	1,017
	6. San Vicente	1,094
	7. Sto. Niño	1,436
	8. Taglibas	980
Total Municipal Population		14,225
Total Municipal Population		42,030
Percentage of Total Coastal Population Over Municipal Population		33.84

Table 19. Population of Coastal Areas, By Municipality  
Zamboanga Sibugay, 2015

Municipality	Total Population 2015	Total No. of Coastal Barangays	Population of Coastal Barangays 2015	Percentage of Coastal Population over Total Population
1. Buug	36,634	4	3,184	8.69
2. Malangas	33,380	11	18,631	55.81

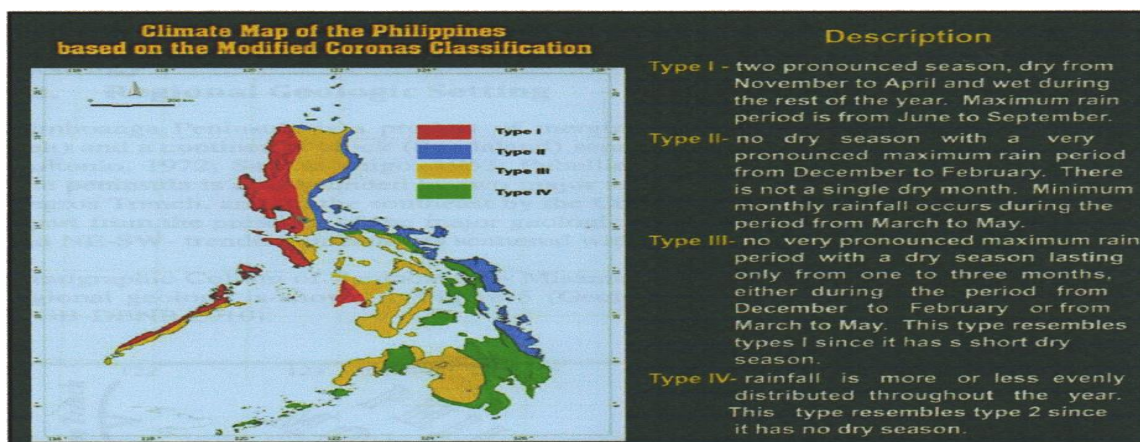
3. Payao	31,686	16	20,118	63.49
4. Alicia	36,013	20	28,309	78.61
5. Mabuhay	36,870	17	35,350	95.88
6. Olutanga	33,671	14	27,102	80.49
7. Talusan	29,969	10	25,632	85.53
8. Siay	41,572	7	16,145	38.84
9. Kabasalan	44,336	11	21,430	48.34
10. Naga	38,547	8	14,191	36.81
11. Ipil	74,656	10	38,539	44.92
12. R. T. Lim	43,646	6	10,813	24.77
13. Tungawan	42,030	8	14,225	33.84
<b>TOTAL</b>	<b>523,010</b>	<b>142</b>	<b>235,169</b>	<b>44.96</b>

As can be gleaned in Table 19 above, the total population of the thirteen (13) coastal municipalities in Zamboanga Sibugay is 523,010 which is 82.61% of the total provincial population of 633,129. Population of the 142 coastal barangays is 235,169 or 44.96% of the total population of the coastal municipalities.

## 2.7 Climate

The climate of the province is moderately normal (climate type III). Annual rainfall varies from 1,599 - 3,500 mm (63.0 - 137.8 in.). Temperature is relatively warm and constant throughout the year ranging from 22° – 35° Celcius (72° – 95° Fahrenheit). The province is situated outside the country's typhoon belt.

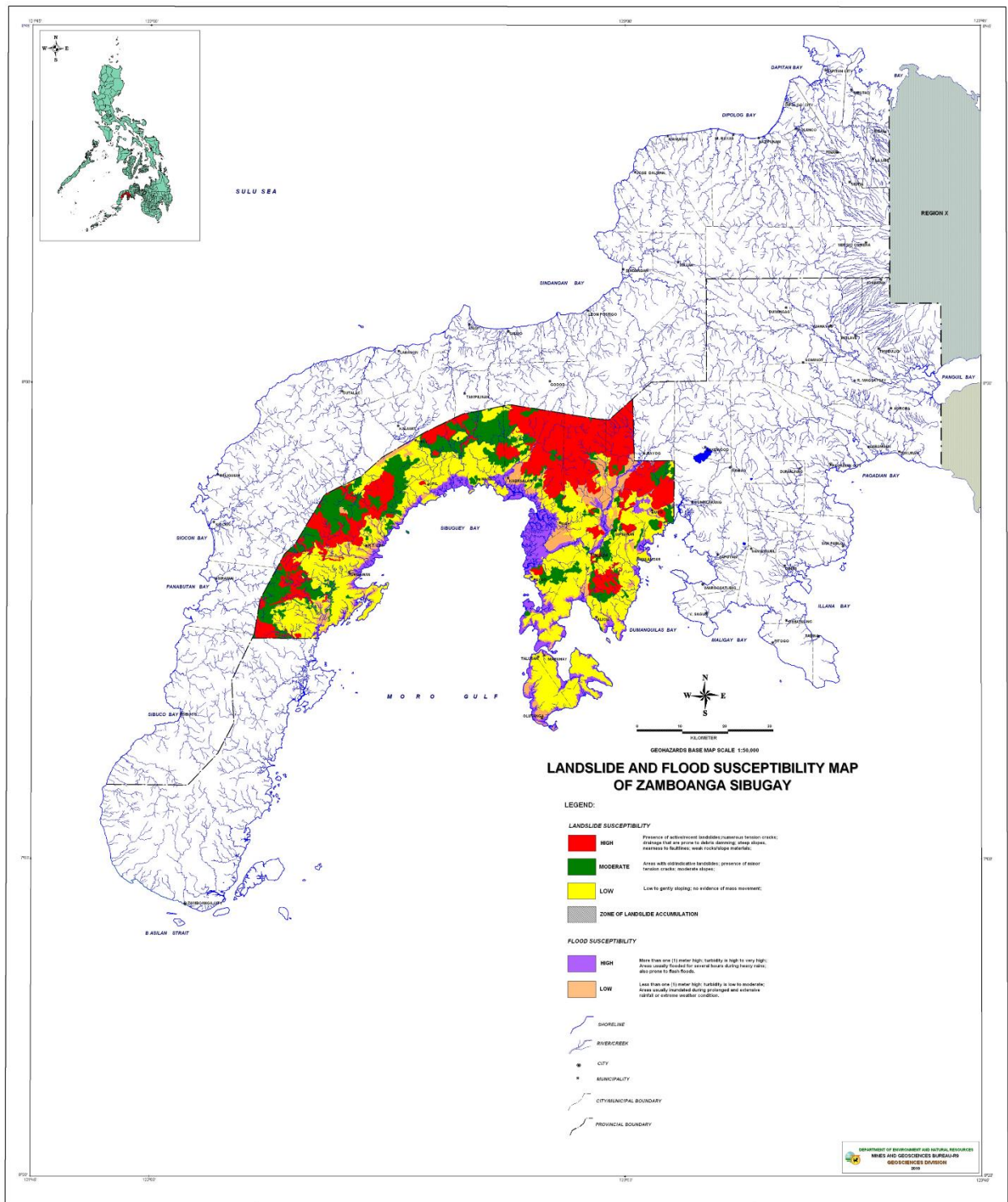
Figure 2 – Climate Map of the Philippines



## 2.8 Hazards



Figure 3 – Landslide and Flood Susceptibility Map of Zamboanga Sibugay



### **2.8.1 Flood**

As can be gleaned in the Landslide and Flood Susceptibility Map of Zamboanga Sibugay in the preceding page, the municipalities in Zamboanga Sibugay Province that are susceptible to flooding are Siay, Kabasalan, Talusan, Tungawan, R.T. Lim and Ipil. Flooding are experienced in these are during heavy rains specially in the flat areas of said municipalities, however, flooding is low.

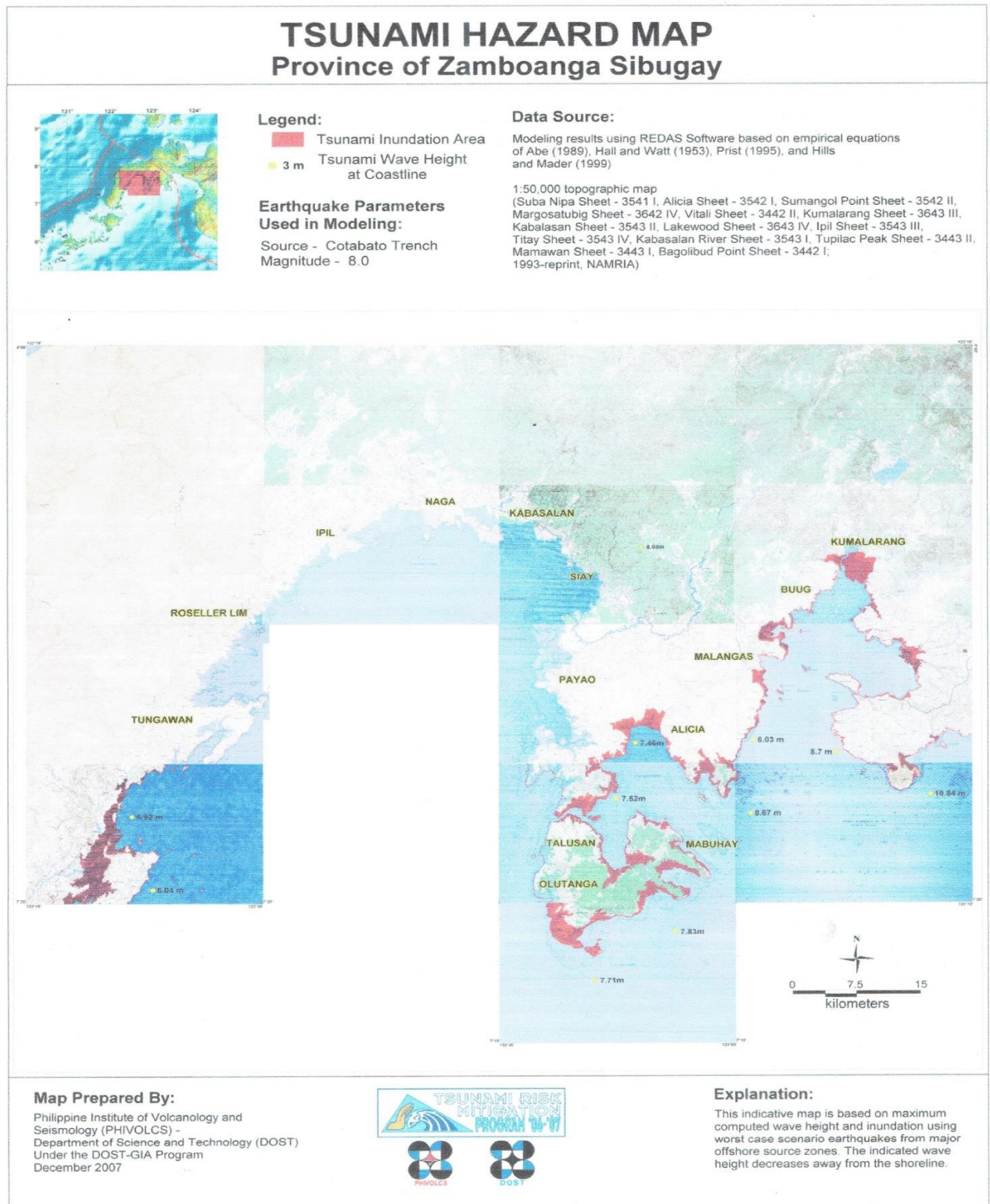
### **2.8.2 Landslides**

During rainy season, the occurrence of landslides is high in the municipalities of Diplahan, Imelda, Buug (small portion), Kabasalan, Tungawan and R.T. Lim.

### **2.8.4 Tsunami**

As can be seen in the Tsunami Hazard Map of Zamboanga Sibugay shown in the succeeding page, the municipalities that are prone to tsunami are Alicia, Buug, Malangas, Mabuhay, Payao, Olutanga and Talusan.

Figure 4 – Tsunami Hazard Map, Province of Zamboanga Sibug



## 2.9 Road Network and Classification

### Road Network and Circulation

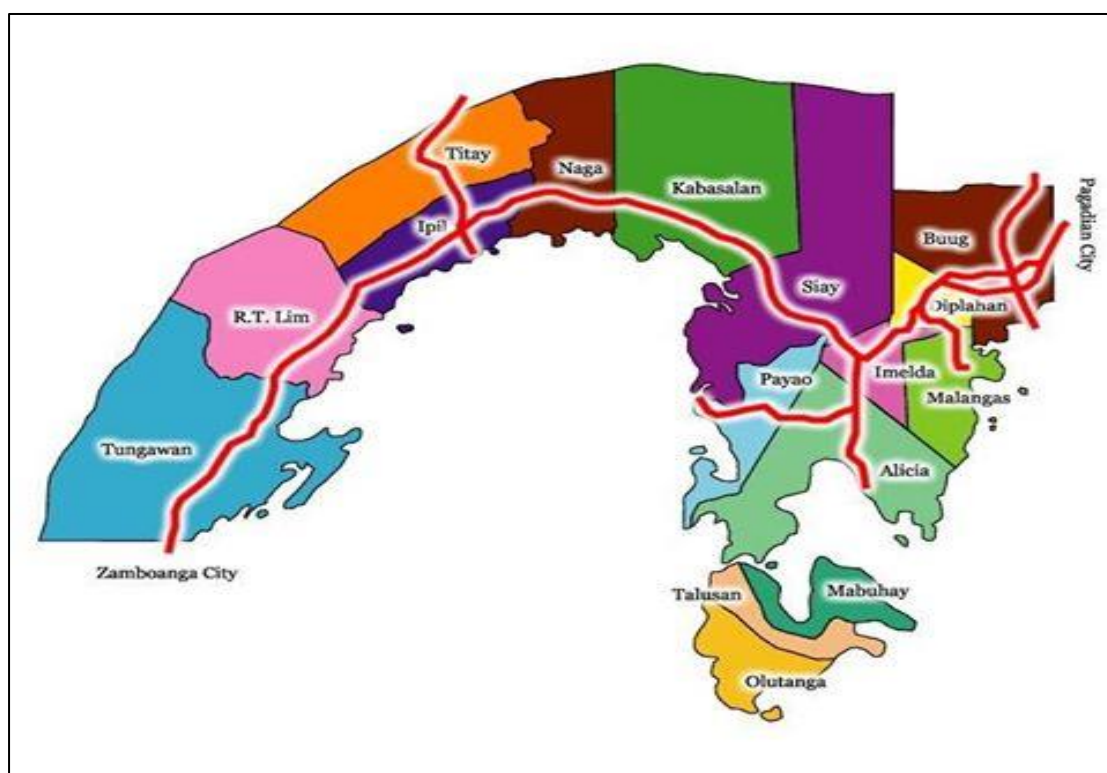
Per records of the Provincial Planning and Development Office, as of CY 2012, the provincial road network totaled to 342,900.00 kilometers (length) distributed in the sixteen (16) municipalities. Barangay roads serve as farm-to-market roads and access to remote barangays.

By land, it has three (3) major linkages to urban centers, namely the cities of Pagadian, Iligan and Cagayan de Oro in the east, to Dipolog City in the north and in the west to Zamboanga City. The Province of Zamboanga Sibugay, strategically at the center, links the two other provinces of Zamboanga del Sur and Zamboanga del Norte and the chartered City of Zamboanga.

From the junction of Ipil, Zamboanga Sibugay, the road leads toward the Province of Zamboanga del Norte crossing the municipalities of Liloy, Leon Postigo, Sindangan, Manukan, Jose Dalman, Roxas and Katipunan and the Cities of Dipolog and Dapitan.

Hilly and mountain areas of the province can be reached through motorcycle/habal-habal. Bus Terminals exist in 12 municipalities, except the Municipalities of Payao, Alicia, and island towns of Olutanga, Talusan and Mabuhay.

Figure 5. National Road Network in the Province of Zamboanga Sibugay



Note: Red line is the national road

## 2.10 Transportation



Ipil, the capital town of Zamboanga Sibugay, plays a strategic role in the region as a transport hub and service center being at the crossroad of the cities of Zamboanga, Dipolog and Pagadian.

### **2.10.1 Air Transportation**

The Province of Zamboanga Sibugay has a, government-owned feeder airport which is located alongside the highway in Barangay Sanito, Ipil with a distance of two (2) kilometers from the town center. As of the present, it is not yet open for commercial use but it serves as a landing area for choppers and airplanes of the Armed Forces of the Philippines (AFP) and very important persons /national dignitaries.

The said airport when fully operational will cater travelers, like investors/businessmen, government employees and other individuals coming from the municipalities of Baliguian, Sirawai, Siocon (all of Zamboanga del Norte), three Sibugay island municipalities (i.e. Talusan, Mabuhay and Olutanga), the remaining thirteen (13) Sibugay mainland towns and even nearby towns of Zamboanga del Sur like Bayog, and Lakewood.

For moving goods and people to the major urban centers outside of the province, such as Manila, Cebu and Davao, Zamboanga International Airport serves as the fastest means. Other businessmen and government officials and employees tap secondary airports like Dipolog City and Pagadian City for having direct flights from Manila (vice versa) and to other major areas.

There are some private chopper type planes coming from other places that deliver prawn fry to some fishpond operators in the capital town and adjacent municipalities.

### **2.10.2 Water Transportation**

Within the province, sea transportation system is the only means of transporting goods and people from the mainland (consists of thirteen component municipalities) to the island municipalities of Olutanga, Mabuhay and Talusan using the provincial barge traversing Barangay Hula-Hula (in Mabuhay) to Sitio Guicam in Alicia.

Previously, the only means to reach these three islands is through motor boats and bancas. Recently, access to these islands is through a single barge ferrying all cargoes, passengers, all types of land transport vehicles and similar others) to and fro through the point of entry situated in Barangay Guicam. Municipality of Alicia cruising a distance of 480 meters that connects Barangay Hula-hula, Municipality of Mabuhay incur expensive transportation cost and at times riskier. Most of the time, the barge facility is not available when it undergoes repair. There are light/small sea crafts but these could be

very risky for commuters during bad weather. Travel time along this route is more or less 10 minutes and largely dependent frequently on public utility vehicles allowing six to eight trips daily except night schedule, hence the difficulty in transporting fresh farm and marine products to any market outlets. Besides, transportation cost is high.

### 2.10.3 Land Transportation

Table 20. Existing Transport Facilities

Types of Transport Available	Major Transport Companies	Remarks
Bus	Rural Transit, Inc.	Utilized for inter-municipal and regional accessibility
Tricycles	Individually - owned	Commonly used for intra-municipal accessibility
Motorcycles /Habal-habal, Van, Jeepneys,	Individually - owned	For access to other municipalities and within the municipality

Source: Provincial Planning & Development Office (PPDO)

### 2.11 Economy

The leading industries are in the areas of semi-processed rubber, rice and corn milling, ordinary food processing, wood and rattan furniture making, dried fish and squid processing, and home-made food processing. New industries include concrete products, garments, wax and candle factories, lime making, and other home and cottage industries.

Major crops produced include rice, corn, coconut, rubber, fruit trees, vegetables, tobacco coffee, cacao and root crops. Livestock and poultry productions are predominantly small scale and backyard operations. Coal mining in large and small scale and precious metal mining in small scale category are likewise present in some areas of the province.

Table 21. Poverty Threshold, Zamboanga Sibugay, 2012 & 2015

	Poverty Threshold Indicators		
	Zamboanga	Region IX	Philippines

Poverty Incidence Among Families in (First Semester, in Percent)	Sibugay					
	2012	2015	2012	2015	2012	2015
	36.8	35.8	36.9	30.9	22.3	21.1
Per Capita Poverty Thresholds (First Semester, in Pesos)	8,160	10,197	8,881	10,338	9,385	10,969

Source of Data: NSCB, IX

In 2015, the per capita poverty threshold in Zamboanga Sibugay increased by Php2,037 or 24.97% (from Php8,160.00 in 2012 to Php10,197 in 2015). This means that the minimum income required to meet food and non-food basic needs went up by 24.97%. Given this information, there is very minimal improvement in eradicating poverty despite of the government's provision of conditional cash transfer to all poor households in order to cross the poverty line. Seen as the triggering factors for this sluggish change are the rate of increase in the prices of food, gasoline and other commodities and string of devastating typhoons and flash floods that hit the agricultural sector between 2012 and 2015 which damaged irrigation systems, rice crops and farms.

Approximately, 35.8% of the families in the province live in poverty. The poor families are predominantly engaged in subsistence farming with few immediate options for employment outside of agriculture. Price of commodities keeps on changing that greatly affects the small farmers' economy. Usually during harvest season, the price of rice remains low and cannot match the ever-increasing cost of farm inputs, forcing them to rely or resort to informal lending from trading capitalists /financiers to continue farming.

It can be said that the major cause of poverty is the underperforming agricultural sector, where a substantial number of the rural poor are engaged in subsistence production. A closer look will reveal the income earning potential of farming families is often constrained by a low agricultural output and lack of alternative sources of earnings.

## 2.12 Agriculture and Development Sectors

The total agricultural land of the province is approximately 187,603 hectares or 52 percent of its total land area of which 169,013 or 0.90 % are actually utilized. Zamboanga Sibugay's primary commodities are rubber, coconut, rice and corn which thrive abundantly throughout the province. Among the top priority commodities, rubber is the most lucrative crop occupying an area of 70,180 hectares. Rubber is sold in semi-processed form, known as rubber crumbs, to final processors in Yokohama, Manila, China, Malaysia and India. Also, considering its increasing coverage and production, seaweeds, calamansi, cassava, abaca, cacao, banana, mango and coffee are also considered emerging commodities.

The province is categorically identified for calamansi production because of its topography and fertile land with favorable agro-climatic condition suited for calamansi farming. In terms of production, calamansi tops as the commercial crops than the rest of the emerging products.

Table 22. Products and Volume, 2015

Champion Products	Volume of Production (In Metric Tons))
1.Rubber	1,053,850.5
2.Palay	172,351.00
3.Coconut	1,913.18
4.Corn	3,657.61
*Fish Production	26,324 (as of April 2013)

Sources: Office of the Provincial Agriculture\* NSCB-PSA

On the side note, households in the rural areas engaged in backyard livestock production (e.g. carabao, cattle, horse, swine goat, chicken, etc.) as their secondary source of income.

Table 23. Emerging Crops

Emerging Crops	Volume of Production (In Metric Tons)
1. Seaweeds	46,520.51
2. Abaca	912,555
3. Cassava	589.35
4. Calamansi	314,849
5. Banana	250,020
6. Mango	79,456
7. Coffee	1,575
8. Cacao	1,087.80

Source: Office of the Provincial Agriculturist

Development efforts are geared towards alleviating the lives of the rural communities through increasing production and enhancing marketing strategy in the agri-fishery sector with integration on livestock production ( e.g. poultry, cattle, goat and chicken) along the areas of genetic materials, control and eradication of animal diseases, people empowerment, and sustainable development, specifically on



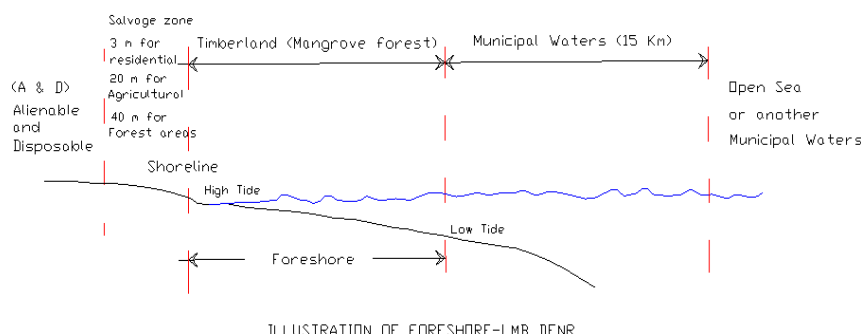
environmental protection and proper management from loss of soil fertility, and depletion of water resources.

# Chapter 3

## Foreshore Situational Analysis

### WHAT IS FORESHORE?

According to the Philippine Fisheries Code of 1998 “string of land margining a body of water, the part of a seashore between the low waterline usually as the seaward margin of a low tide terrace and the upper limit of wave wash at high tide usually by a beach scarp or berm.”



### WHAT IS FORESHORE DEVELOPMENT AND MANAGEMENT PLAN?

It is the guiding Framework for the Provincial Foreshore Council/ Board in accomplishing the goals in achieving the advancement of social economic in the quality of human life among all stakeholders thru a direction of efficient and effective highest and best utilization of Foreshore/ Coastal areas with the commitment to preserve and protect the environment by a sustainable industry as well as the ecological integrity of the Foreshore/Coastal and marine ecosystems shall be safeguarded also integrating climate change adaptation and disaster risk mitigation measures for the enjoyment of present and future generations. (Engr.Harry M.Villarin)

### 3.1 Current Foreshore Situation

#### 3.1.1 District I

District I of the Province of Zamboanga Sibugay comprises seven (7) coastal municipalities, namely: Buug, Malangas, Payao, Alicia and the three (3) island municipalities – Talusan, Mabuhay and Olutanga.

## 1. Municipality of Buug

Figure 6.a - Administrative Map of the Municipality of Buug

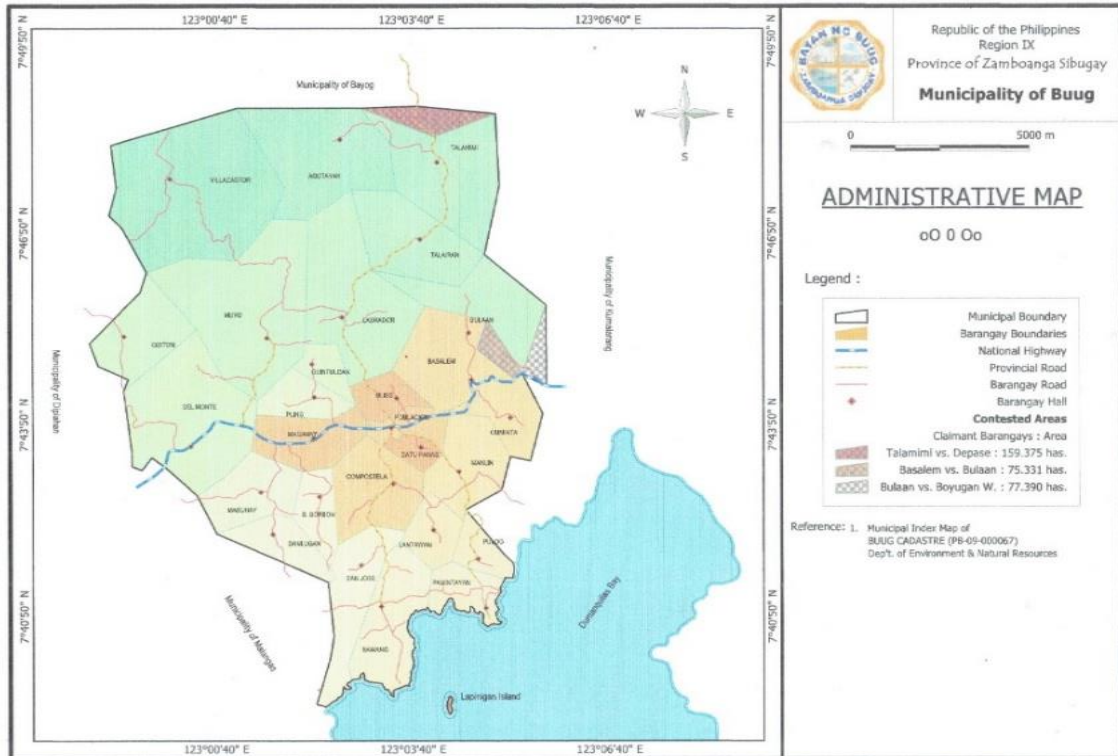


Figure 6.b -Foreshore Basemap of Buug

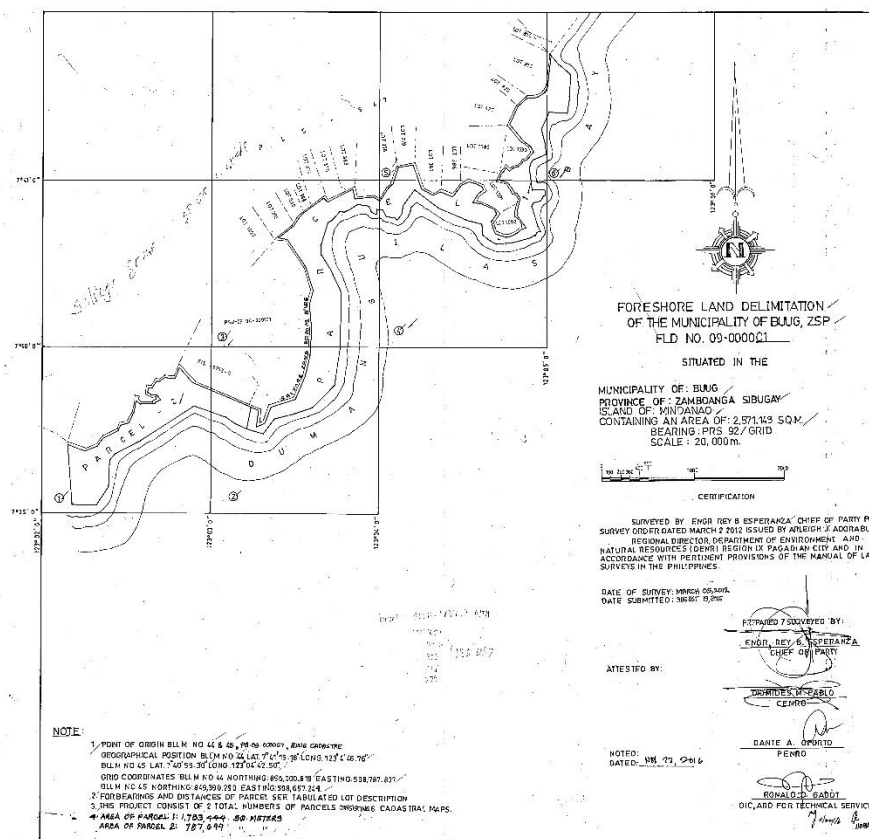
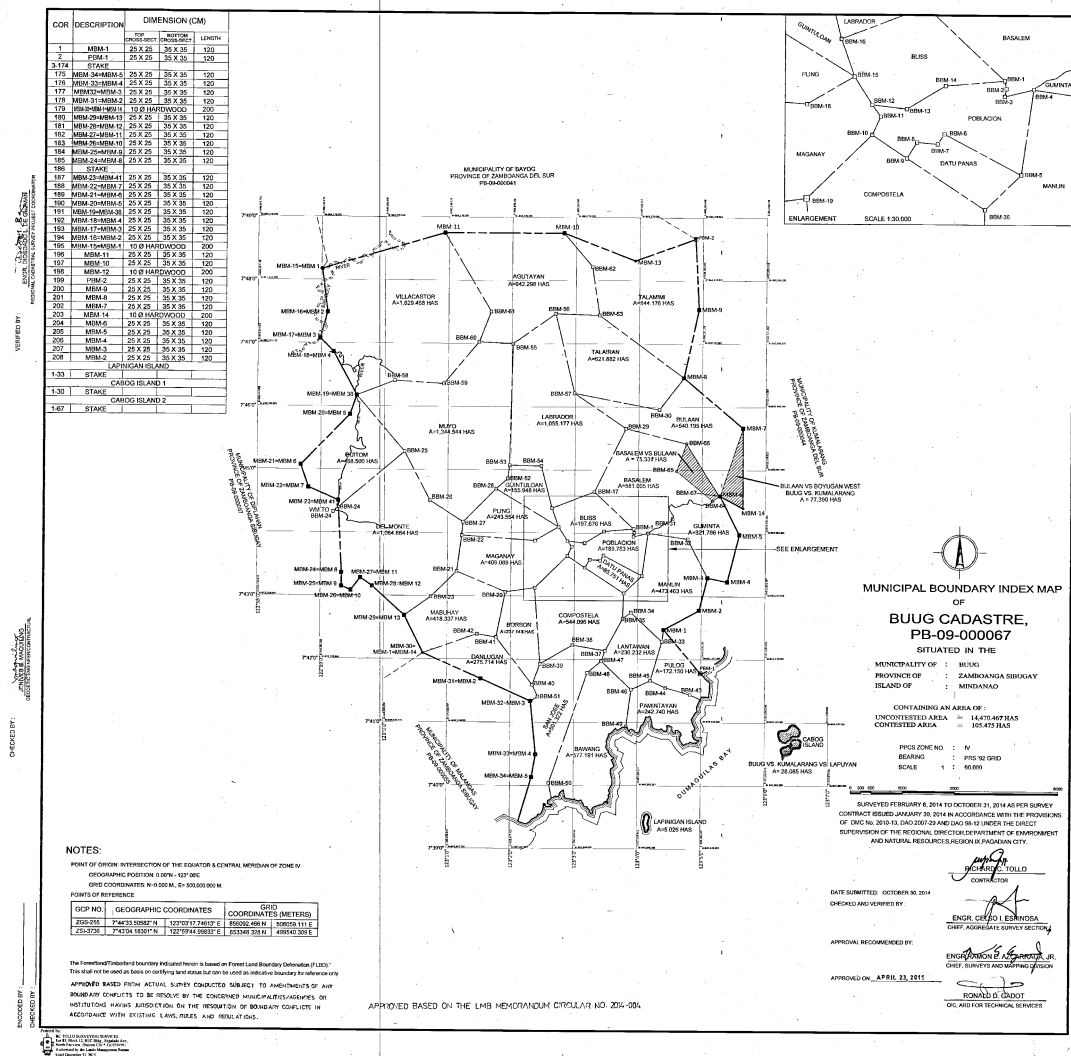


Figure 7 - Municipal Boundary and Index Map of Buug



Buug has four (4) coastal municipalities: Bawang, Pamintayan, Pulog and part of San Jose. The coastal resources of the municipality are the following:

#### a. Coral Reefs

The percentage of coral cover at Lapinigan Island is 32.5% and still in fair coral condition. Lapinigan Island is under Barangay Bawang and this is the only area where coral reef is present. The substrates of the entire coral area are mostly sandy/muddy. The 41% sand and silt are mainly due to dead corals brought about by suffocation due to heavy siltation in the area.

Thirteen (13) coral species were identified in Lapinigan Island, Barangay Bawang, Buug, Zamboanga Sibugay, with Montipora (Pore Coral), Porites (Hump coral), Fungia and Heliofungia (Mushroom coral) as the most abundant species.

#### b. Seagrass Communities.

The coastal waters of Bawang and Lapinigan Island registered a total of five (5) species of seagrass growing on the different substrate ranging from purely sandy substrate, to mixed substrates of sandy-muddy and sandy dead corals. The species identified in the two (2) areas are *Cymodoceras serrulata* (Toothed seagrass), *Halodule pinifolia* (fiber strand seagrass), *Enhalus acoroides* (Tropical eelgrass), *Thalassia hemprichii* (Turtle grass) and *Syringodium isoetifolium* (Syringe grass).

*Thalassia hemprichii* is the dominant species in the area of Bawang registering 92 shoots per square meter while Lapinigan Island has a monospecific stand with *Cymodoceras serrulata* registering 157 shoots per square meter.

Several species of fish and macro invertebrates is observed thriving in the seagrass beds of Bawang and Lapinigan Island. Among the most common fishes found in the seagrass beds belonged to family Siganidae (rabbit fish), Scaridae (mol-mol), Pomacentridae (Wrasses and Damsel Fish), Nemipteridae (Bream fishes), and Apogonidae (Cardinal fish). Different species of starfish are present in the area and various shells are also found in the areas such as *Nerita* sp., *Cypraea* sp., *Strombus* sp. and *Pectina pecten*. Swimming crab (Kasag) is also observed inhabiting the area.

### c. Mangrove Forests

Most of the mangrove stands in the municipality of Buug are either rectangular or irregular in configuration. In Barangay San Jose, mangroves form narrow strips along the coastline protecting the inner portions cleared for aquaculture and the other barangays, the mangrove stand in only along coastline.

Nine (9) mangrove species belonging to four (4) families were recorded in the mangrove forest of Barangays San Jose, Bawang, Pulo and Pamintayan. The most diverse family is Rhizophoraceae comprising three (3) species, followed by the three (3) families with only two (2) species found in the area, namely: Aviceniaceae, Sonneratiaceae and Myrtaceae. List of all the mangroves species identified in the mangrove forest of four coastal barangays of Buug, Zamboanga Sibugay is shown below with corresponding local names:

Table 24. Mangrove Family and Specie/Common Name, Buug

Mangrove Family	Specie/Common Name	Scientific Name
Rhizophoraceae	Bakawan Lalaki Bakawan Babae Tangal/Tungog	Rhizophoraapiculata Rhizophoramucronata Ceripstagal
Aviceniaceae	Piapi Bungalon	Avicenniaofficinalis Avicenniamarina
Sonneratiaceae	Pagatpat Pedada	Sonneratia alba Sonneratiacaseolaris
Myrtaceae	Tinduk-Tindukan Saging-Saging	Aegicerascorniculatum Aegicerasfloridum

The species that are most common in all the 4 barangays in Buug include *Rhizophoraapiculata* and *Sonneratiacaseolaris*. *Sonneratia alba* and *Avicenniaofficinalis* is common in 3 barangays and *Rhizophoramucronata* and *aegicerascorniculatum* in 2 barangays. Species of *Aegicerasfloridum* (saging-saging) is only found in barangay Pamintayan and species of *Avicenia marina* is only found in Barangay San Jose.

Of the four coastal barangays of Buug, Pamintayan, registered higher densities per hectare with 2,357 trees per hectare, followed by barangay Bawang and Pulog with 2,300 and 1,750 trees per hectare. The lowest density was registered in barangay San Jose with 1,742 trees per hectare. In terms of basal area, Barangay San Jose registered the highest with 1,454.54 m<sup>2</sup> per hectare. The second highest was Bawang with 796.54 m<sup>2</sup> per hectare, followed closely by Pulog with 782.47 m<sup>2</sup> per hectare. Barangay Pamintayan, although high density (2,357 trees per hectare), registered only a basal area of 394 m<sup>2</sup> per hectare.

Regeneration of mangroves trees is approximately higher in barangay San Jose with 134 seedlings and 1,273 saplings per hectare, followed by Bawang with 211 seedlings and 811 saplings per hectare and Pamintayan with 250 seedlings and 660 saplings per hectare. Barangay Pulog registered the lowest regeneration species with only 133 seedlings and 356 saplings per hectare.

#### d. Seaweed

A total of eleven (11) species of seaweeds were noted in the municipal water of Buug. About 75% are economically important as sources of human food, animal feeds, fertilizer, medicine, psycocolloids and minerals.

The eleven species include *Acanthoporaspecifera*, *Actinitrchiafragilis*, *Corium Codium*, *Dicyota Dentate*, *Dicyotadichotoma*, *Gracilariasalicornia*, *Halimedamacroloba*, *Halimeda Tuna*, *Moemeris Van Bossae*, *Padinaminor* and *Halimeda Tuna*.

#### e. Reef Fish Communities

The fish visual census in the coastal water of Lapinigan Island, Barangay Bawang was carried out in water depth of 6-7 feet with a visibility of 5 feet. The survey revealed 2,068 individuals of fish in 250 square meter representing 13 species belonging to 11 families. *Chromis viridis* (Palata) was the dominant species with 1,991 individuals, followed by *Cheilodipterus Quinquilineatus* (Ibis) with 20 individuals. *Neoglyphidodon aureus* with 19 individuals and the least were *Halichoeresbiocellatus* (Labayan) and *Pomacentrus lepidogenys* with 1 individual.

In terms of Biomass, *Chromis viridis* (palata) registered the highest with 141.4g per 250 square meter followed by *Halichoeres melanurus* (Labayan) with 53.7g per square meter, *Pomacentrus brachilis* (Palata) with 26.7g per 250 square meter and the least was *Pomacentruspikei* with 0.1g per square meter.

#### f. Fisheries

Table 11. Existing Fishing Grounds and Aquaculture Production in the Municipality of Buug, 2016

Fishing Grounds	Barangay	Production		Post-Harvest Facilities				Product Market
		Volume (Metric Ton)	Value (In Pesos)	Type	Qty	Capacity	Status	
<b>Marine</b>								
	<b>Pamintayan</b>							
	Fish Cage	18.37	6,980,600	Motorized Boat	34	3 GT	O	Export
	New Look	1,055.82	42,232,800	Motorized Boat	29	3 GT	O	Local
	Fish Corral	315.21	12,608,400	Motorized Boat	45	3 GT	O	Local
	Gillnet	276.48	11,059,200	Motorized Boat	24	3 GT	O	Local
	Bubo	63.36	5,702,400	Motorized Boat	10	3 GT	O	Local
	<b>Pulog</b>							
	Fish Corral	143.07	5,722,800	Motorized Boat	3	3 GT	O	Local
	Fish Cage	0.82	311,600	Motorized Boat	5	3 GT	O	Export
	New Look	43.47	1,738,800	Motorized Boat	5	3 GT	O	Local
	Gillnet	178.46	7,138,400	Motorized Boat	21	3 GT	O	Local
	Bubo	21.12	1,900,800	Motorized Boat	13	3 GT	O	Local
	<b>Bawang</b>							
	Fish Cage	3.2	1,216,000	Motorized Boat	2	3 GT	O	Local
	Fish Corral	61.6	2,464,000	Motorized Boat	2	3 GT	O	Local
	Bubo	0.37	33,300	Motorized Boat	2	3 GT	O	Local

Notes: \* Status – Operational (O), Needs Repair (NR), Not Operational (NO)



The municipality has no port but just a mini wharf located at Sitio Margal and currently being utilized as fish landing by fishermen from the coastal barangays of Buug. It has a mini ice plant the primary purpose of which is to help fishermen preserve their fish catch and provision of ice.

There are three (3) beautiful beaches in the Buug – the Pamintayan Beach, Silupa Beach and the Pulog Beach. The Pamintayan Beach is facing the Municipality of Margosatubig, Zamboanga del Sur. It is developed by the riparian owner thereof by constructing small cottages made of nipa and bamboo and is collecting users' fee.

The Silupa Beach in Sitio Silupa, Barangay Bawang, if well-developed, would be like Station 1 of Boracay Beach. The beach is oftentimes used by the local government of Buug as venue during the Search for Miss Tourism every month of February each year specifically during the search for “Best in Swimsuit.” It is also the favorite place for recreation by families during weekends. Opposite this beach is the Lapinigan Island, the fish sanctuary of the municipality.

Silupa Beach at Sitio Silupa, Bawang



Pulog Beach, Barangay Pulog

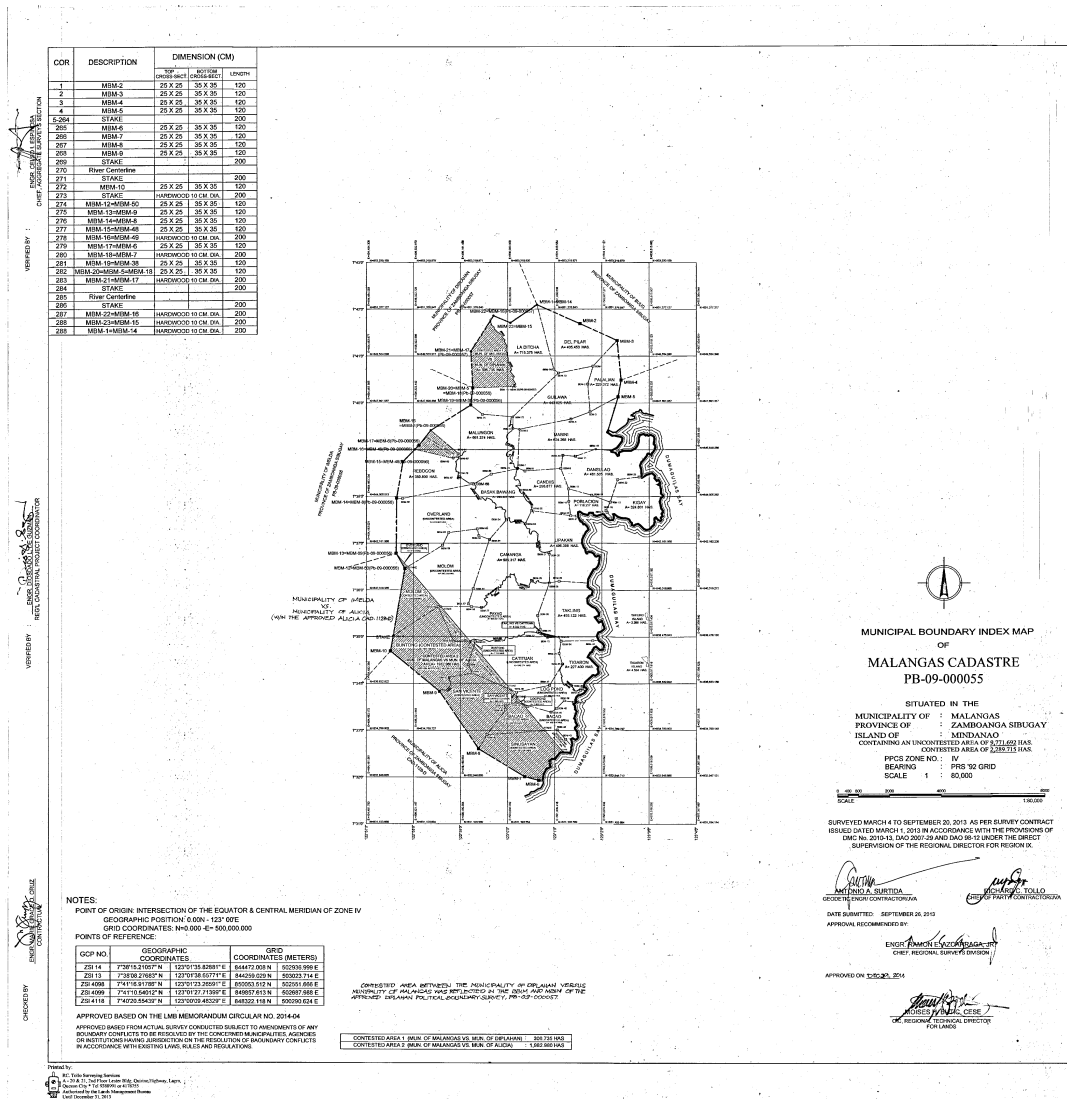


Pamintayan Beach at Barangay Pamintayan



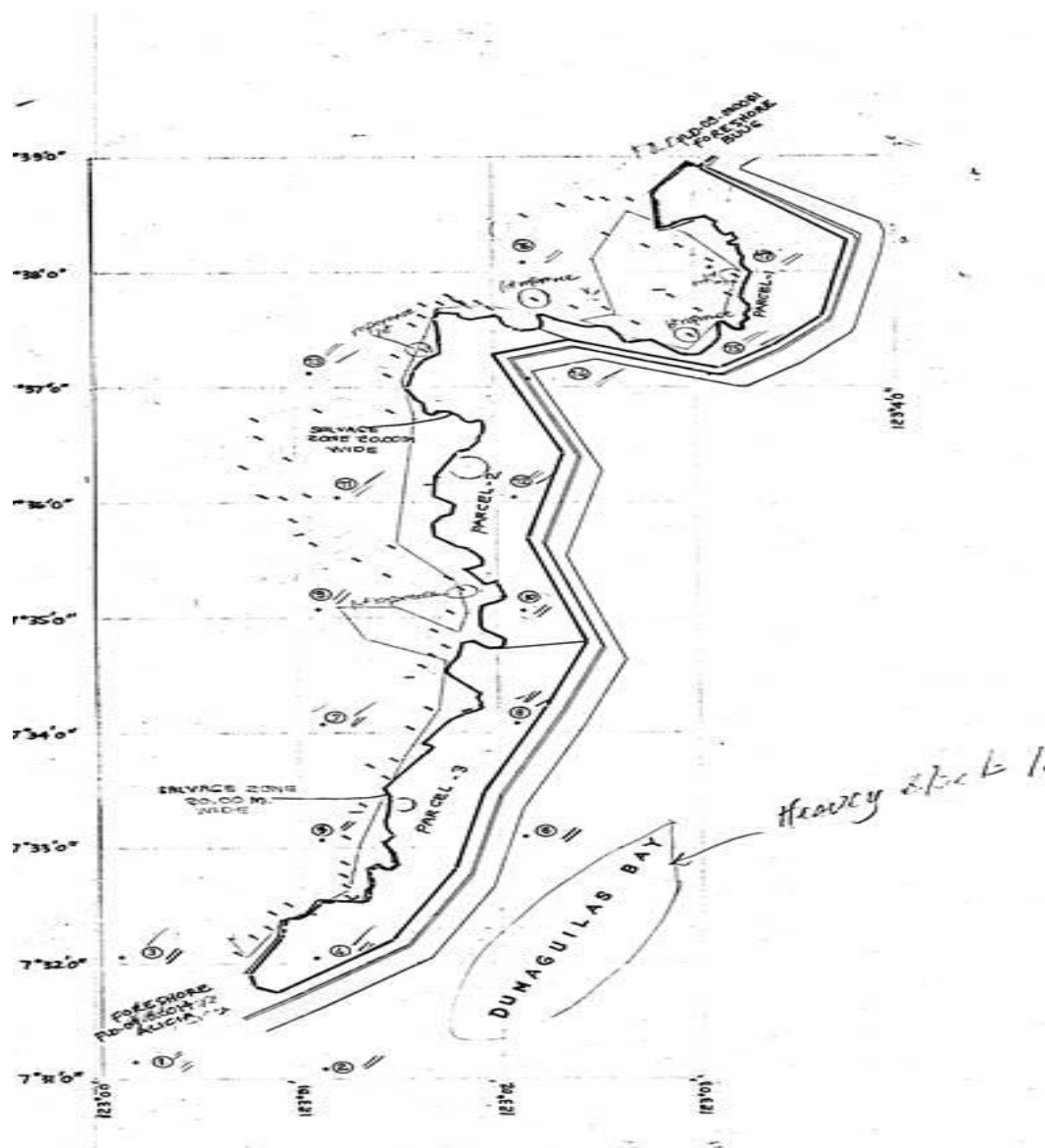
## 2. Municipality of Malangas

Figure 8 – Municipal Boundary Index Map of Malangas



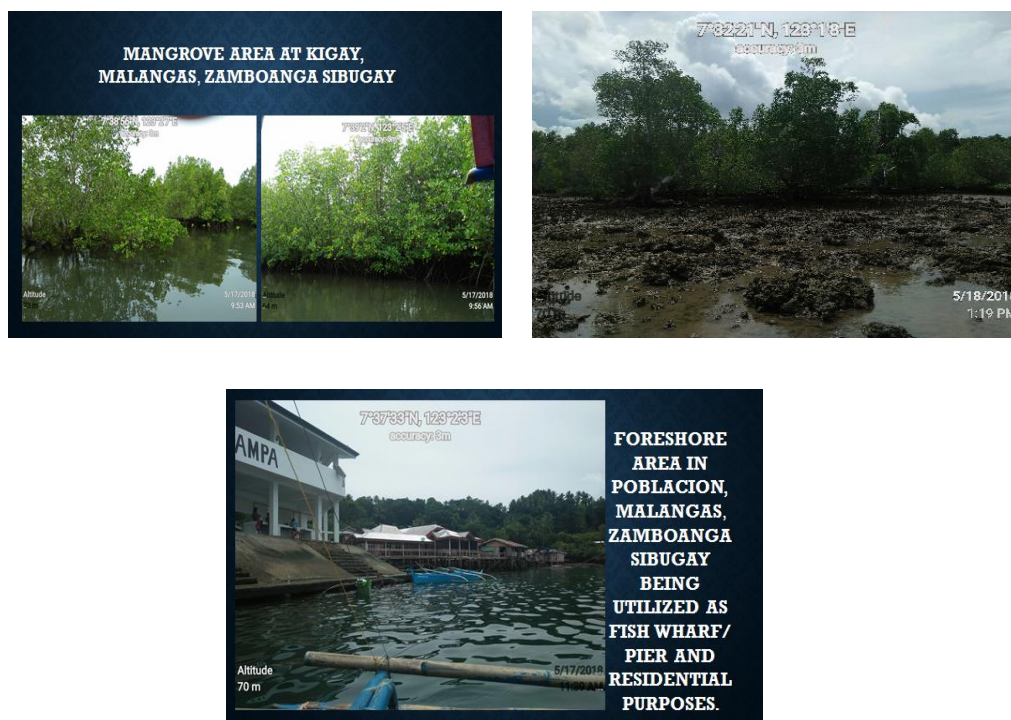


## Foreshore Basemap of Malangas



Malangas has a total coastline area of 36.80 kms. which covers eleven (11) coastal barangays, namely: Sinusayan, Bacao, Logpond, Tigabon, Tackling, Lipacan, Poblacion, Kigay, Dansulao, Mabini, and Palalian. Majority of the population in these coastal barangays are engaged in fishing. Per record of the municipality, there are 2,189 full time fishermen and 471 part time fishermen. These fishermen are using different types of fishing gears and they have 104 motorized boats and 489 none motorized boats used in different fishing activities.

The coastal resources in the Municipality of Malangas are fish, mangroves and seaweeds.



Presently, the foreshore in Barangay Poblacion has a municipal wharf and municipal fish port located adjacent the public market area at Poblacion. The municipal wharf was previously utilized by passenger vessels with the route Malangas-Zamboanga City and Malangas-Pagadian City. At present, only cargo ships of the coal company operating within the Municipality of Malangas dock in the said municipal wharf to pick up the stocks of coal for transportation to other places. Along the wharf area are residential houses that has made the seawater polluted due to the improper disposal of wastes.

Just like the other coastal areas in the 1<sup>st</sup> District of Zamboanga Sibugay, the foreshore areas of Malangas, including Barangay Poblacion, are also occupied by informal/illegal settlers. Residential houses are built in the area and concrete buildings are also built within the foreshore areas and salvage zone which are both illegal and hazardous.

The foreshore of Malangas is mostly being utilized as tourist destination, i.e. bathing beaches and tourism areas. The foreshore area of Barangay Poblacion has also a beach for bathing and has nipa huts.

In Barangay Dansulao, there is an ecotourism spot that is under CBFMA which is being developed by the Local Government Unit of Malangas. It has a mangrove area with different species of mangrove trees. It has a sandbar that

is color pink when hit by the sun rays. There are floating cottages where visitors can rent to stay during the day.

There is an island called Muyong Island with fine white sand. The island can be reached through a boat. It is 20 minutes away from Barangay Poblacion.

In Barangay Kigay, there are only few residents live within the foreshore areas. There are fishponds within the area which are grown with crabs. There are also bathing beaches with sand bar and white sand. These beaches have long shoreline and have the potential to be a source of income for the residents.

Mangroves and swamp areas totaled to 910.664 hectares. As can be seen in Table 27, the area devoted to fishpond with Foreshore Lease Agreement (FLA) is fifty-two (52) hectares (24 has in Barangay Lipacan and 24 hectares in Barangay Palalian). Fishponds without FLA sum up to 59 hectares (Lipacan – 10 hectares, Mabini – 10 hectares, Palalian – 12 hectares, Tigabon – 12 hectares). The area that is devoted to seaweed production totaled to 242 hectares which are found in Barangays Bacao – 10 hectares, Dansulao – 10 hectares, Kigay – 50 hectares, Lipacan – 50 hectares, Logpond – 10 hectares, Poblacion – 4 hectares, Sinusayan – 40 hectares, Tackling – 40 hectares and Tigabon – 60 hectares.

Table 26 below shows the fish production and type of fishing in the Municipality of Malangas from years 2007 to 2010.

**Table 26 - Fish Production by Type of Fishing, Malangas 2007-2010**

Type of Fishing	2007	2008	2009	2010
Municipal (MT)	88.41	79.14	70.74	62.45
Commercial (MT)	989	833.36	476.01	206.20
Aquaculture (MT)	178.44	160.75	120.34	140.29
<b>T O T A L</b>	<b>1,255.85</b>	<b>1,073.25</b>	<b>667.09</b>	<b>408.94</b>

Source: MAO

Table 27 - Area Devoted to Fishpond, Mangrove and Seaweed

Barangay (Coastal)	Fishpond		Mangrove (Hectares)	Seaweed (Hectares)
	w/ FLA	w/out FLA		
Bacao			21.118	3.000
Dansulao			284.000	10.000
Kigay			34.140	50.000
Lipacan	28	10	40.000	50.000
Logpond			1.796	10.000
Mabini		10	100.000	-
Palalian	24	12	130.000	-
Poblacion			0.800	4.000
Sinusayan			10.050	40.000
Tackling			229.000	15.000
Tigabon		12	59.740	60.000
<b>TOTAL</b>	<b>52</b>	<b>59</b>	<b>910.644</b>	<b>242.000</b>

Pictures on the following page shows the Kigay Beach in Barangay Kigay which if fully developed will become one of the tourism destinations in the Province of Zamboanga Sibugay. There is also a beach in Barangay Dansulao that has red sandbar and the place is ideal for bathing. Another one suitable to bathing is the beach found in Barangay Poblacion.

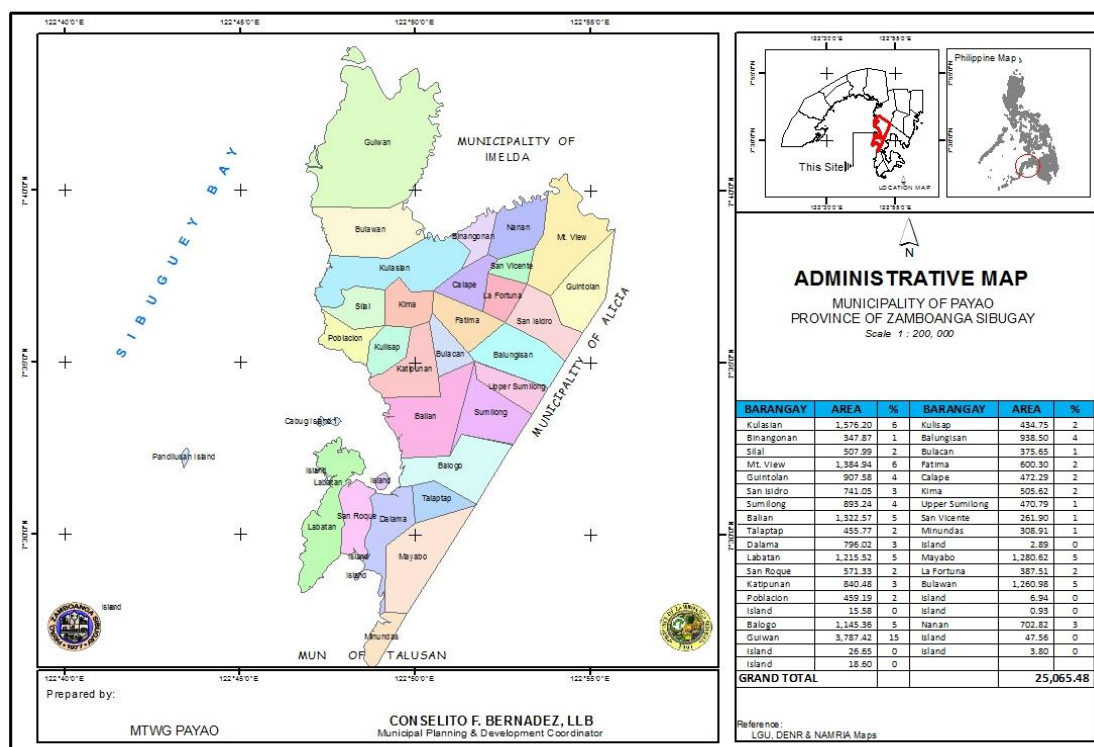


The mangrove species found in the area are Pagatpat, Bakauan Lalaki, Bakauan Babae, Bungalon, Bungalon Puti, Piapi, Tinduk-tindukan, Saging-Saging, Tabigi, Piagao and Nipa belonging to six (6) families namely, Sonneratiaceae, Rhizophoraceae, Avicenniaceae, Myrsinaceae, Meliaceae and Palmae.

The abandoned fishponds are potential sites for mangrove reforestation project and the area is recommended for reversion to mangrove forests.

### 3. Municipality of Payao

Figure 9.a – Administrative Map of the Municipality of Payao



Out of the twenty-nine (29) barangays in the Municipality of Payao, sixteen (16) are located in the coastal area, namely: Balian, Balogo, Binongonan, Bulawan, Dalama, Guiwan, Kulasian, Kima, Kulisap, Labatan, Mayabo, Minundas, Poblacion, San Roque, Silal and Talaptap.

Coastal resources in the municipality are mangroves which are mostly found in Barangay Silal. Per municipal record, there are eleven (11) true mangroves species belonging to six (6) families that were identified in the mangrove forest of the municipality. The most diverse family is the Avicenniaceae consisting of four (4) species followed by Rhizophoraceae, Sonneratiaceae and Meliaceae with two species,

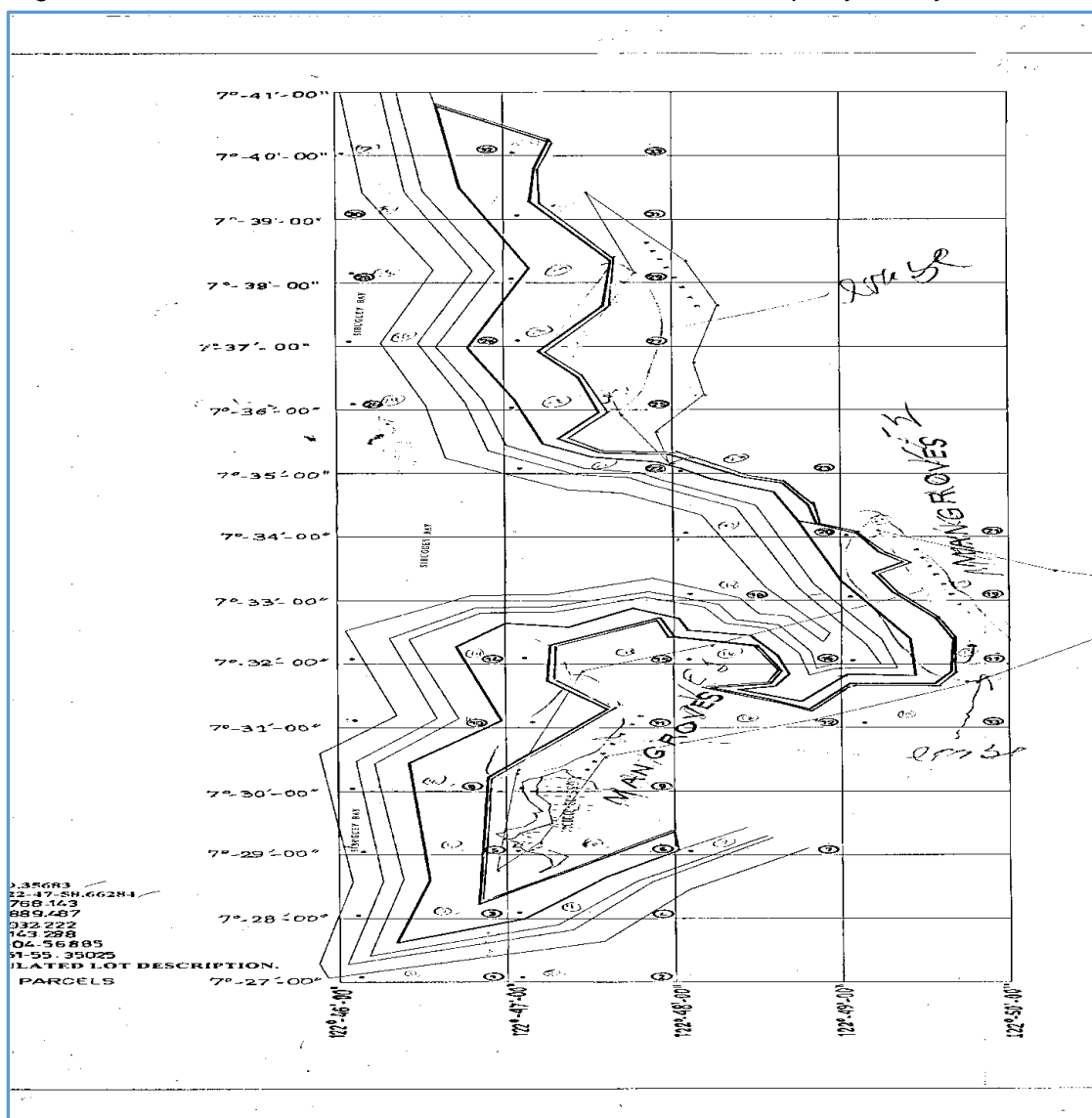
The mangrove species found in the area are Bakauan Lalaki, Bakauan Babae, Bungalon, Bungalon Puti, Api-Api, Piapi, Pagatpat, Saging-Saging, Tabigi, Piagau, and Nipa belonging to six (6) families namely Sonneratiaceae, Rhizophoraceae, Avicenniaceae, Meliaceae, Myrsinaceae, and Palmae.

Some of the mangrove areas are developed into fishponds, and one thousand (1,000) hectares, more or less, are being abandoned due to its depleted resource as a result of the illegal cutting of the mangroves. The cut mangroves were used for firewood, poles and charcoal which are done for



commercial purpose. There are residential houses constructed in the mangrove areas.

Figure 10 - Foreshore Delineation Land Delimitation of Municipality of Payao



Source: LMS, DENR

Currently, there are two (2) wharves in the Municipality of Payao which are located at Barangays Poblacion and Tandu Patao. But the one in Tandu Patao is no longer functional. The wharf in the Poblacion is utilized as docking area for passenger vessels and it is also serving as fish landing area.

## Mangrove Plantation



## Mangrove Species



Bakauan Lalaki



Bakauan Babae



Bungalon Puti



Bungalon



Api-api



Piapi





Pagatpat



Saging-Saging



Tabigi



Piagau



Nipa





#### d. Municipality of Alicia

Figure 11.a– Administrative Map of Municipality of Alicia

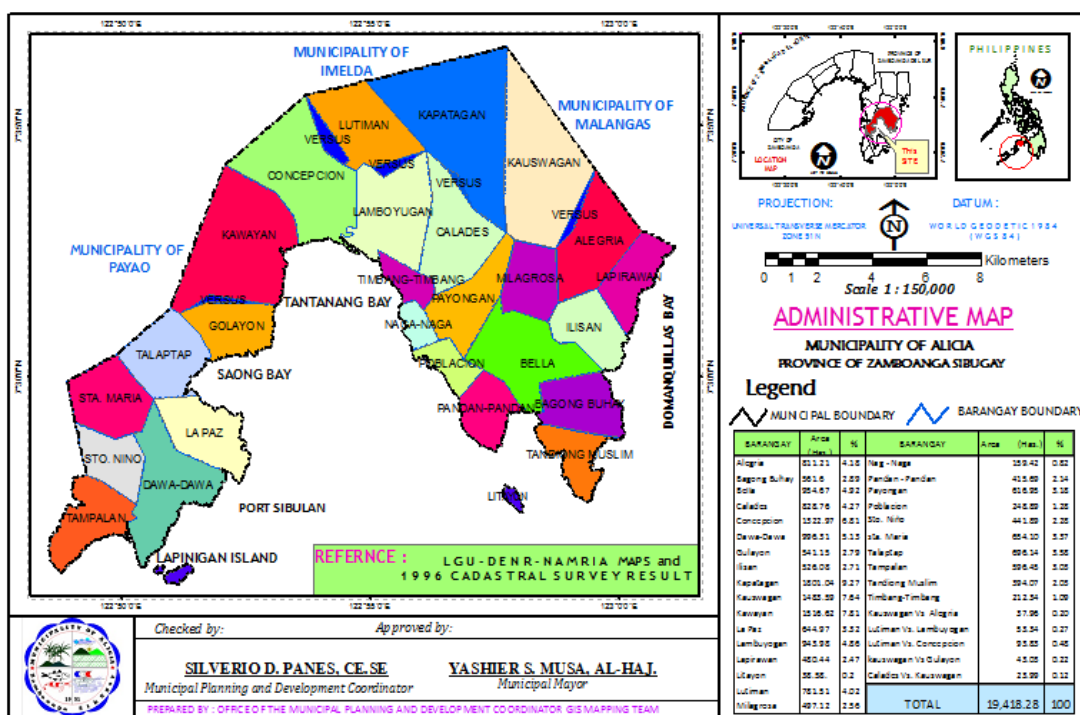
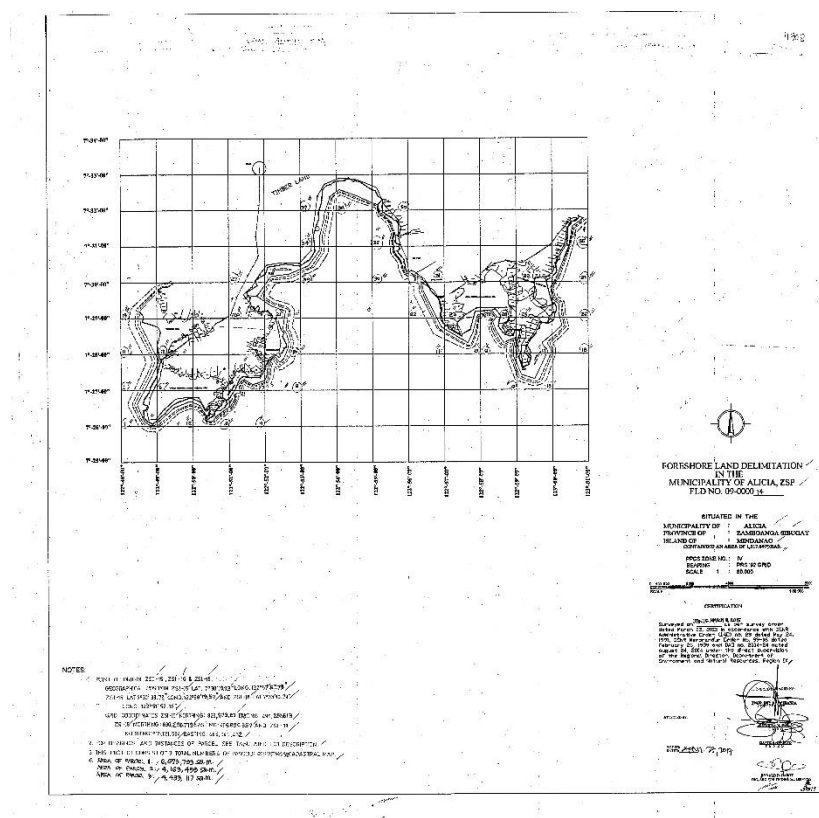


Figure 11.b- Foreshore Basemap of Alicia



There are twenty (20) coastal barangays in the Municipality of Alicia. These are Barangays Sta. Maria, Talaptap, Bella, Tampalan, Dawa-Dawa, Sto. Niño, La Paz, Concepcion, Gulayan, Kawayan, Timbang-Timbang, Naga-Naga, Poblacion, Lambuyogan, Bagong Buhay, Litayon, Pandan-Pandan, Tanjung Muslim, Ilisan, and Lapidawan.

The resources that are found in the coastal areas of the municipality are:

- a. **Coral reefs** which could be found in Brangays Sta. Maria, Tampalan, Dawa-Dawa, La Paz, Gulayan, Cawayan, Timbang-Timbang, Naga-Naga, Bagong Buhay, Pandan-Pandan, Tanjung Muslim, Ilisan, Litayon and Lapidawan. Sea grass, mangroves, reef fishes like Chaetodontidae (butterfly fishes or alibangbang);
- b. **Sea Grass Communities** – are found along the shorelines of the municipality.
- c. **Mangrove Forests-** Mangroves are one of the most diverse communities in the coastal area, harboring small mammals, birds, reptiles, amphibians and invertebrates. Some organisms in the mangroves are harvested as food; oyster and other bivalves, crabs,

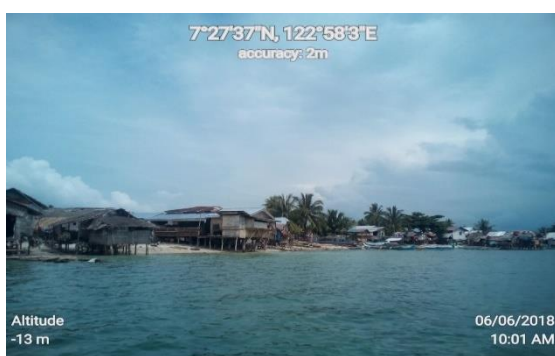
shrimps and fishes. Mangrove serves as nursery and feeding ground of many fishes, crustacean, and mollusk that are vital to the replenishment of stocks in the coastal area. They are also good sources of nipa shingles, firewood, charcoal, housing materials and other timber products.

- d. **Reef fishes** - The presence of reef fishes like Chaetodontidae (butterfly fishes or alibangbang) in the area indicates the healthiness of a certain reef (Reese, 1994). It is because that majority of these fish family depends on coral reefs to feed. These fishes are ecologically dependent and concentrated on coral reefs for their food, shelter and lifetime habitat. Reef fishes have symbiotic relationship with corals. They co-exist together with the existence of the coral reefs and other coastal ecosystems, such as sea grass beds and mangroves.

Presently, there are structures and residential houses in the foreshores of the Municipality of Alicia particularly in Barangays Dawa-Dawa, Gulayon, Lapaz, Litayon Island with School Building, Naga-Naga, Pandan-Pandan, Poblacion, Sto. Niño, Tampalan, Tandiong Muslim and Timbang-Timbang majority of which are owned by the fisher folks thereat. There are portions of the foreshore area that were developed into beach resorts by private individuals like the one in Barangay Cawayan specifically at Sitio Tangalan. There is also the Solmar Beach and the Sinking Island with white sand & sand bars in the foreshore area of Barangay Poblacion. The foreshore area of Barangay Litayon is built with public school buildings as shown in the picture below. There are wharfs/ports in Barangays Guicam, Dawa-Dawa and Poblacion.

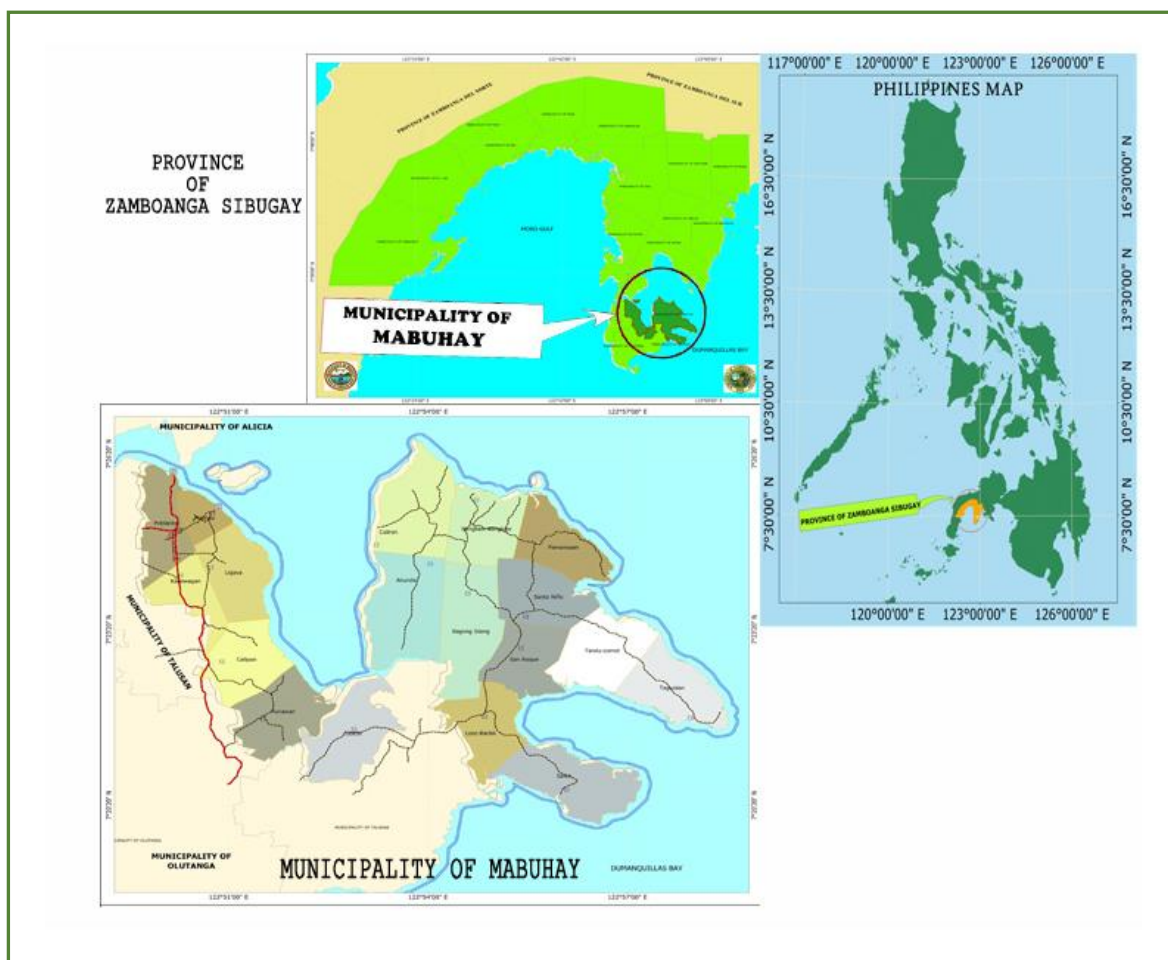
The are mangrove areas that were developed into fishponds but these are illegal inasmuch as the developers have not secured the required permits.

#### Foreshore Area of Alicia



## 5. Municipality of Mabuhay

Figure 12 – Map of Municipality of Mabuhay



Municipality of Mabuhay is composed of eighteen (18) barangays out of which only Barangay Kauswagan is upland, all the rest are coastal barangays, namely: Poblacion, Malinao, Abunda, Bagong Silang, Bangkaw-Bangkaw, Caliran, Catipan, Ligaya, Looc-Barlac, Pamansaan, Punawan, San Roque, Sawa, Sioton, Sto. Niño, Taguisan and Tandu Comot. The 17 coastal barangays have a total of 27,500 hectares marine water area, 65.2 kilometers coastal line, 151,358 oceanic, 140,000 fathoms self-deep and 137.146 hectares fish sanctuary.

The coastal resources found in the municipality are the following:

- a. Coral Reef – This can be found in Barangays Taguisian, Malinao, Sawa and Tandu Comot. Per records, Barangay Sawa has the highest coral cover registered at sixty-nine (69%) and falls under “good” coral cover category. Barangay Tandu Comot and Taguisan has a “fair” coral cover category with forty-seven percent (47%) and thirty (30%), respectively. Barangay Malinao falls under the “poor” coral cover category with fourteen percent (14%). Coral Reef has a total area of 91.4 has.



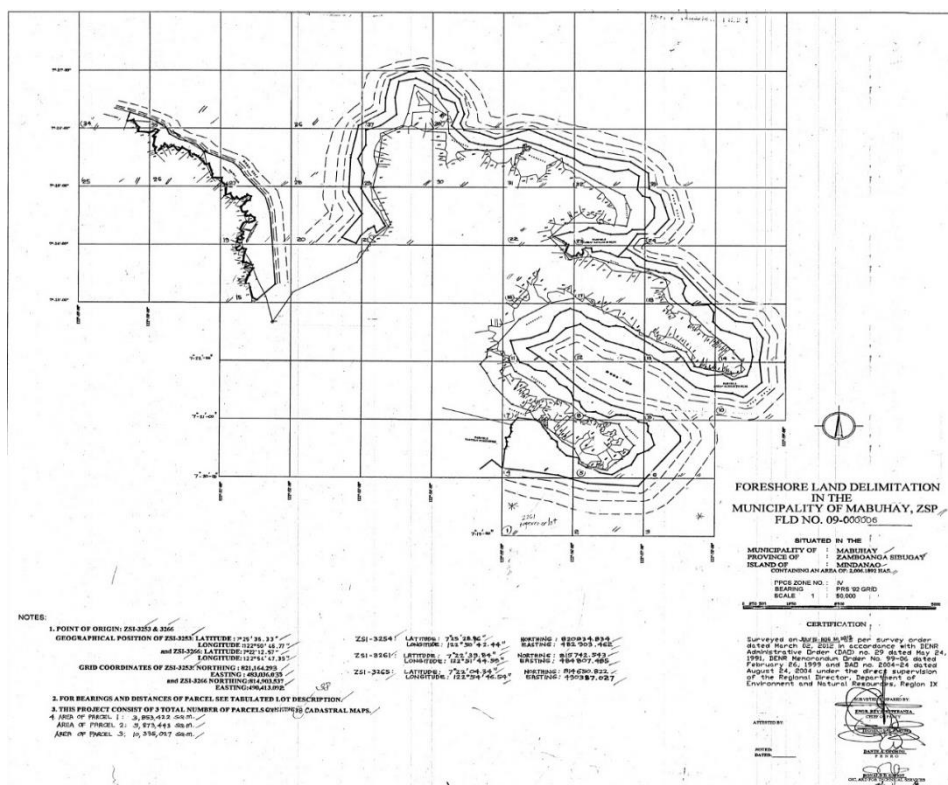
- b. Seagrass Communities – Seagrass beds have an area of 16.1 hectares while seagrass cover has 38.91% of the total area. There is only one (1) species of seagrass in Barangay Malinao and Poblacion – the **enhalus acoroides** - with 43.89% cover in Malinao and 30% cover in Poblacion. The seagrasses are all in fair condition.
- c. Mangroves – Mangrove forest in the municipality covers seventeen (17) coastal barangays. The area is being used for a)breeding ground for different species of marine resources; b)collection area of seashells and other marine products; and c)bangus and prawn fry gathering area. The nipa in Barangays Bangkaw-Bangkaw, Sto. Niño, San Roque, Bagong -Silang, Punawan and Katipan are utilized for domestic purpose.

A total of fifteen (15) mangroves species and associates belonging to nine (9) families were identified and recorded in the mangrove forest of the Municipality of Mabuhay. The most diverse family is the **Rhizophoraceae** consisting of 5 species followed by **Aviceniaceae** with 2 species.

As regard to the availability of seeds/seedlings and saplings, species of pagatpat, bakauan lalaki, bakauan babae, piapi and nipa are found in Barangay Catipan, Ligaya, Pamansaan, Sto Nino and Tandu Comot.

#### 4, Fish

Figure 13- Foreshore Land Delimitation Map of Mabuhay



Foreshore areas in the Municipality of Mabuhay, just like in other foreshore areas, has residential houses owned and built by the fisher folks

thereat. There is a fish landing and Seaweed Dryer in the foreshore area of Barangay Caliran. Mangroves with developed fish ponds are found in Barangays Poblacion, Malinao, Catipan, Abunda, Ligaya, Punawan, Sioton, Sto. Niño and San Roque.

At Barangay Caliran, there is a beach resort called the “Sibulan Island” and a hot spring which is approximately ten (10) meters from the foreshore area.

The facilities in the foreshore area of Mabuhay are the following:

- 1) fish landing in Barangays Sioton, Malinao and Sitio Hula-hula, Poblacion;
- 2) mini wharf in Barangays Looc Barlac, Bangkaw-Bngkaw and Sawa; and
- 3) municipal port at Barangay Malinao.

Based on 2016 Fishpond Assessment, the Technical Team from DENR-IX Regional Office conducted Mangrove Inventory and Assessment in the nine (9) coastal barangays of Mabuhay. The team inventoried, assessed and surveyed sixteen (16) abandoned fishponds which were operated by thirteen (13) individuals with a total area of 94.57 hectares. Fifteen (15) fishponds are active with thirteen (13) identified operators having total area of 67.52 hectares.

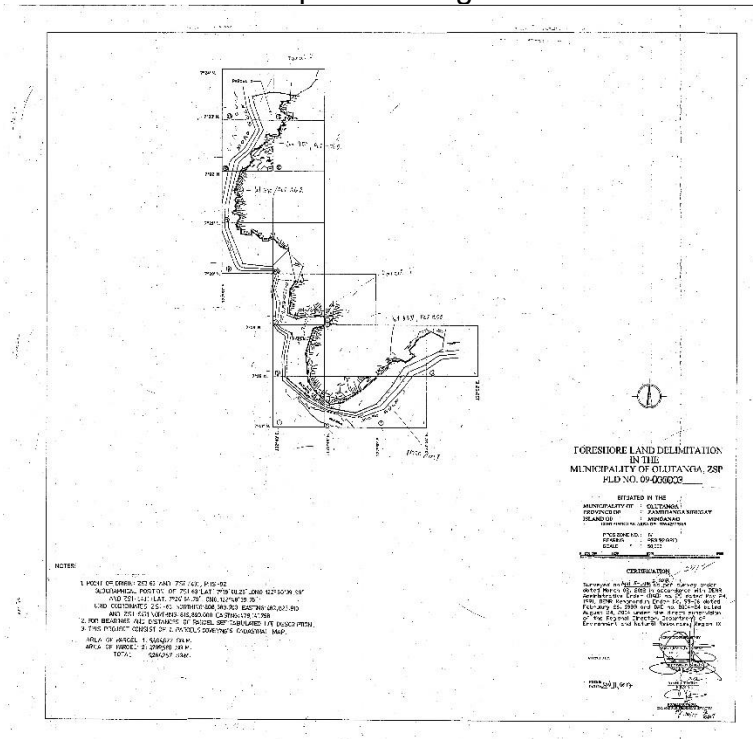
Mangroves



Beach



Figure 14 – Location Map of Municipality of Olutanga



The Municipality of Olutanga is basically a coastal municipality with a total of nineteen (19) barangays. The stretch of its shoreline is approximately 926.4251 hectares covering thirteen (13) barangays, namely: Calais, Esperanza, Galas, Gandaan, Looc Sapi, Matim, Pulo Laum, Pulo Mabao, San Isidro, San Jose, Santa Maria, Solar, and Tambanan. The inland barangays of the municipality are Bateria, Fama, Kahayagan, Noque, Villacorte and Villagonzalo. The shoreline is mostly vegetated by mangroves of which bacauan is the most dominant specie.

The bays and gulf entangling the municipal waters of Olutanga is renowned to have tons of both demersal and pelagic fishes that can be produced in marine areas. In addition, the coastal barangays are also rich in fisheries resources that has a vast mangrove area, tidal flats, water impoundments with an aggregate area of approximately 5,000 hectares feasible and viable for mariculture such as seaweeds farming, abalone culture, caulerpa (Lato) culture and aquaculture production such as bangus, crabs, shrimps (sugpo), lobster, samaral (kitong), siganid (danggit) and lapu-lapu culture. Other coastal resources of the municipality are sea grass, corals, mollusks and shells.

The facilities found in the coastal area of Olutanga are:

1. Port, fish landing, wharf/boat landing at Barangay Solar;
2. Wharf at Pulo Laum; and
3. Boat Landing at Barangay Gandaan.



Figure 15. Municipal Boundary Index Map of Olutunga



The foreshore area is built with houses



Mangroves

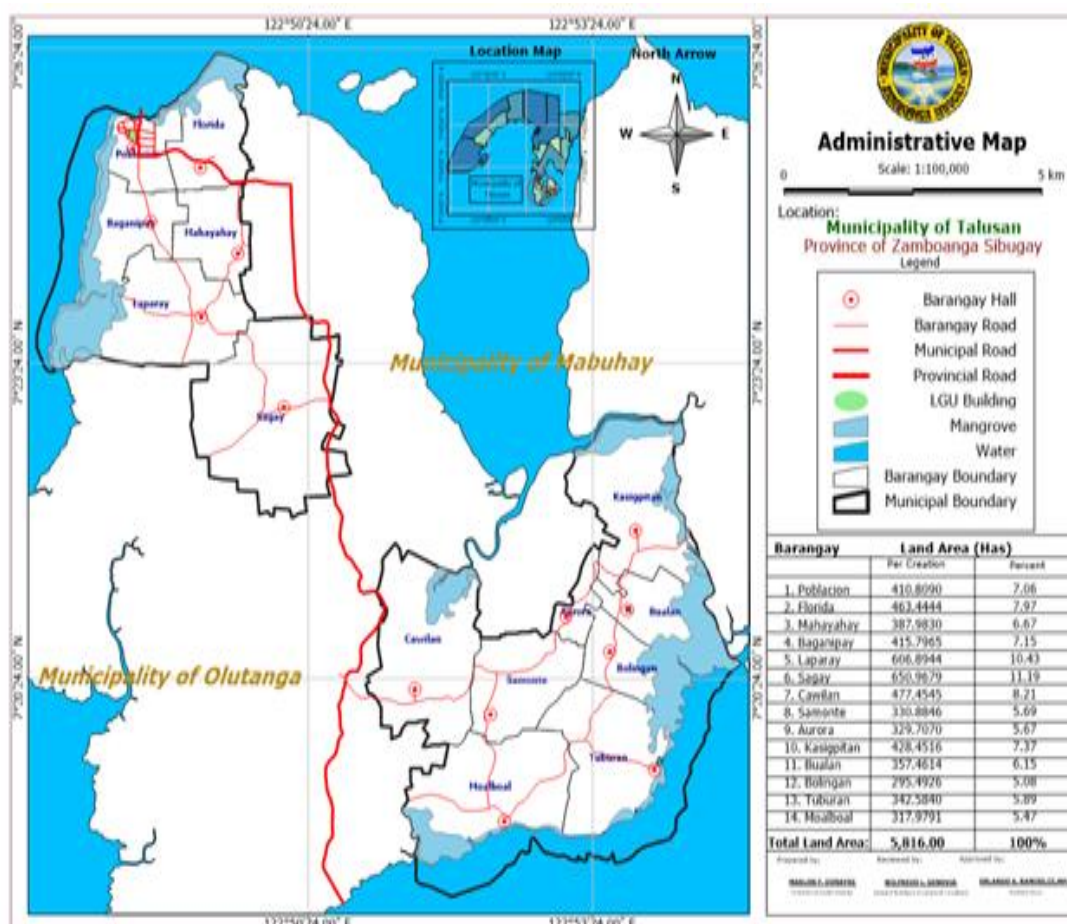


Most of its shorelines in the Municipality of Olutanga are vegetated with mangroves wherein Bacauan is the most dominant species. It is blessed with serene white beaches, namely: Tugsukan Beach in Barangay Pulo Laum and Lapusan Beach in Pulo Mabao where the local residents used to go to for bathing and swimming. These beaches are not developed, i.e. there are no facilities yet.

However, the municipality is faced with some issues and problems, like presence of illegal settlers in the foreshore areas and within the salvage zone specifically in Barangays Calais, Looc Sapi and Pulo Mabao. And, the worst thing is that the residents dispose their wastes and garbage directly into the sea thus the area became polluted. Fishing is the main source of livelihood of most of the people residing in the foreshore and salvage zone areas.

## 7. Municipality of Talusan

Figure 16 – Location Map of Municipality of Talusan



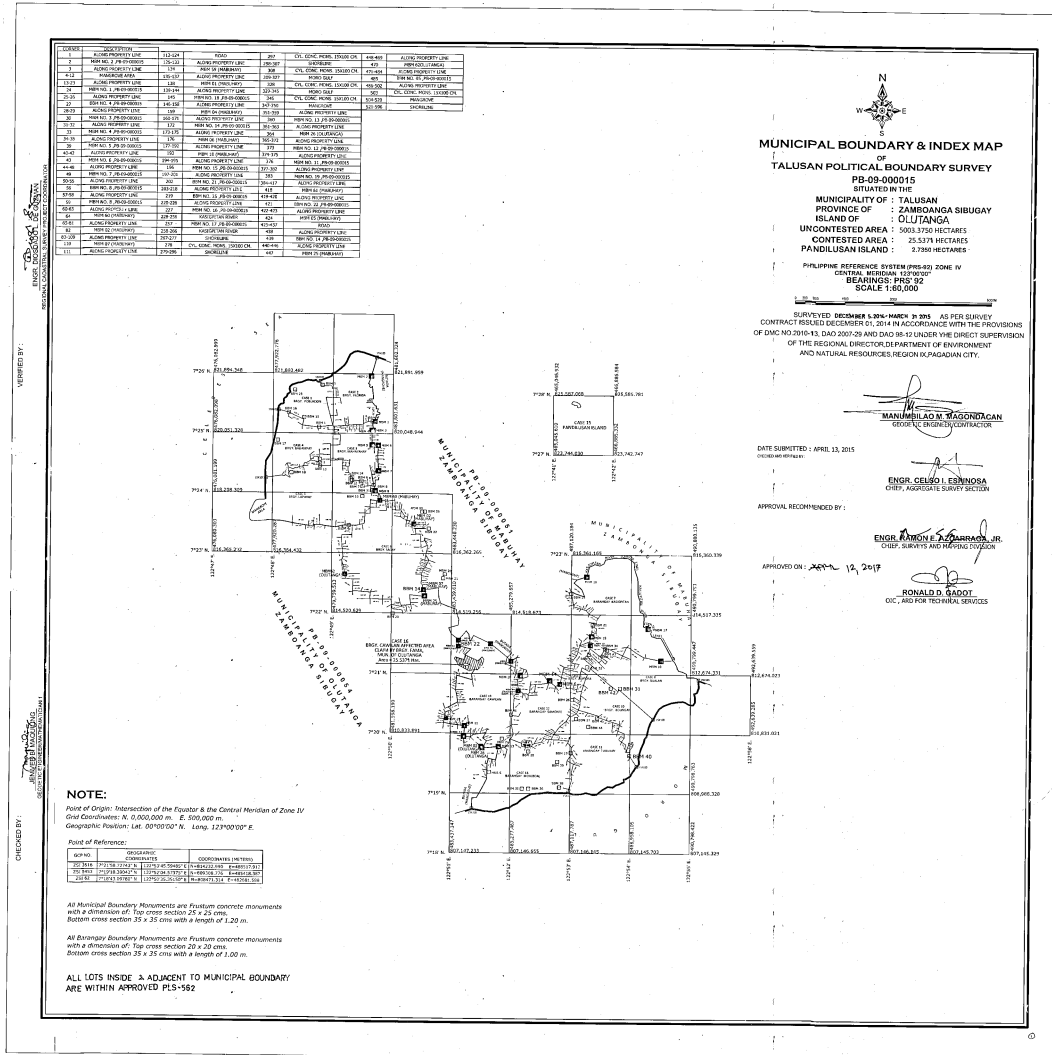
The Municipality of Talusan has fourteen (14) barangays of which ten (10) are coastal barangays, namely: Poblacion, Florida, Baganipay, Laparay, Moalboal, Tuburan, Bualan, Bolingan, Kasigpitan and Cawilan. The remaining four (4) barangays: Aurora, Sagay, Samonte and





There are facilities established in the foreshore areas of Talusan, such as: 1) seaweed/fish dryer at Barangays Poblacion, Baganipay, Laparay, Florida and Tuburan, and 2) ice plant/cold storage at Barangay Poblacion.

Figure 17. Municipal Boundary and Index Map



Seaweeds culture are found along the watered area of Poblacion, Florida, Baganipay, Laparay, Moalboal, Tuburan, Bualan, Bolingan and Kasigpitan.

In addition to the bountiful coastal and marine resources, there are also beautiful beaches in the municipality like those that are found in Barangays Baganipay, Moalboal, Poblacion and Tuburan. These areas have very high potential for tourism which could eventually boost the economic activities in the said barangays.

Some foreshore areas in the municipality are occupied by residents in the area particularly those whose main source of income is fishing.

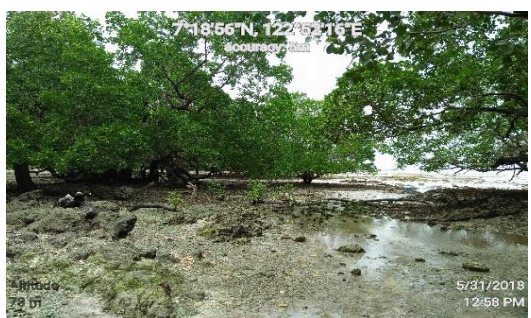
### Barangay Baganipay



### Barangay Laparay



### Barangay Moalboal







### 3.1.2 District II

There are six (6) coastal municipalities in District II of Zamboanga Sibugay. These are the municipalities of Siay, Kabasalan, Naga, Ipil, R.T. Lim and Tungawan.

#### 1. Municipality of Siay

Figure 18.a – Municipal Boundary and Index Map of the Municipality of Siay

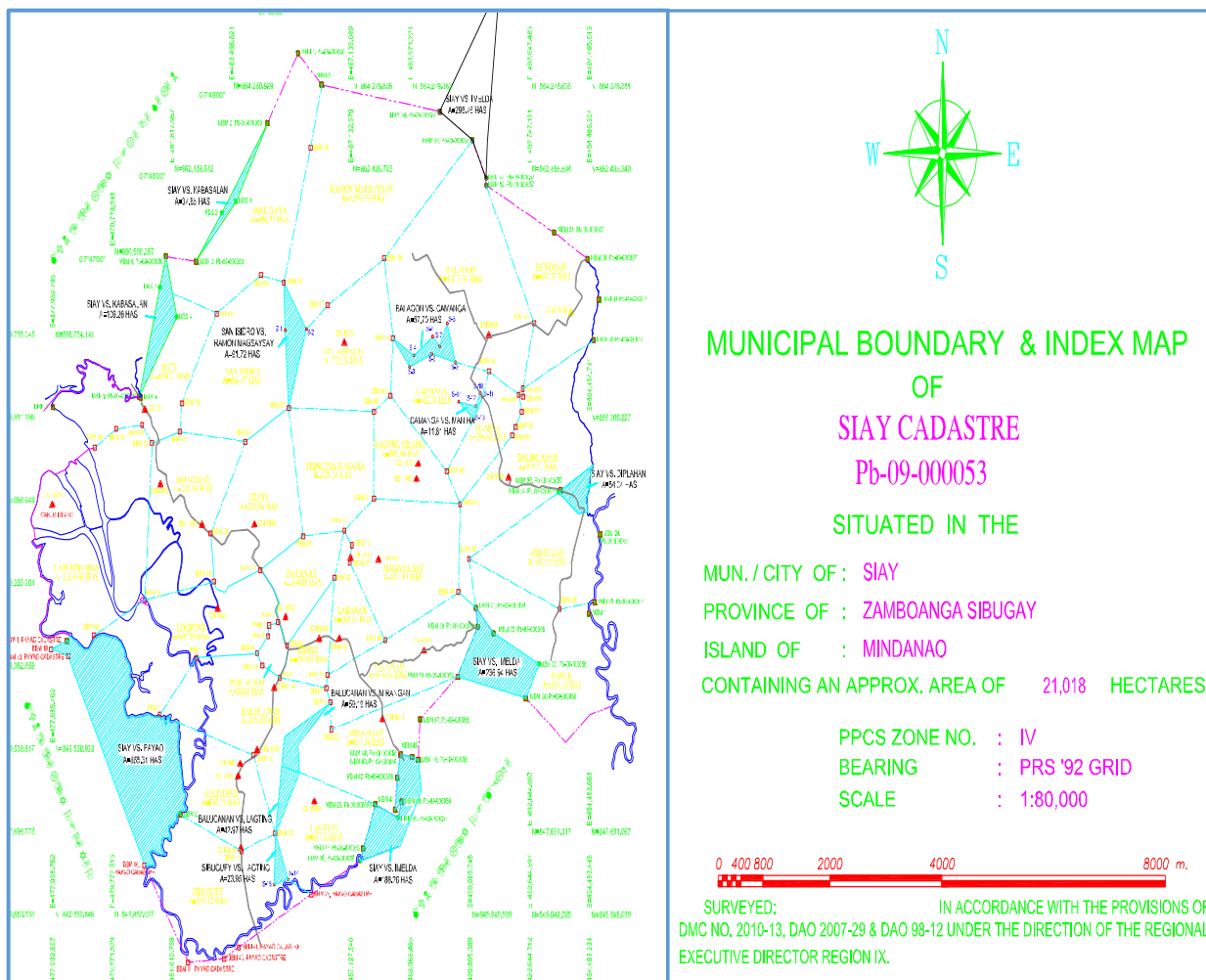


Figure 18.b- Foreshore Basemap of Siay (Google Map)



Municipality of Siay is basically an agriculture area in which the main agricultural activity and source of income and livelihood of the residents is farming. Approximately 18,139.05 hectares are devoted to agriculture and planted with rice, corn, rubber, coconut, calamansi, banana and other crops. The second economic activity is fishing and the third is nipa farming. As regard to fishing, the fisher folks in the mangrove areas developed fishponds where they culture bangus, crabs, lobsters, shrimps/prawns, etc.

It has twenty-nine (29) barangays of which seven (7) are situated with the coastal area, namely; Barangays Logpond, Batu, Monching, Laih, Siloh, Balucanan and Salinding.

The resources that can be found in the coastal barangays of Siay are:

- a. Mangroves - are abundant in Siay with an approximate area of 6,242 hectares or about 19.90% of the total land area of the municipality;
- b. Fishes; and
- c. Seagrasses;

The average fish catch (various fishes) in the municipal fishing ground is 558 MT per annum. In aquaculture, Bangus is almost 840 MT and 245 MT of exportable prawns. Fishpond has a total area of 2,342 hectares considered as fully developed and 500 hectares are undeveloped.

There is an island in the Municipality of Siay – the Kabug Island. The island, if developed, could become an ecotourism site because there are a lot of migratory birds found in the area that comes from other countries as far as China, Indonesia and Malaysia. And, above all, the place is the home of bats thus it is ideal for “bat watching”.

Table 28 – Average Yield Production/Annum

	Coastal Area (in Hectare)	Average Yield Production/Annum (in Metric Ton)
Municipal Fisheries:		
Fishing Grounds	3,572	558
Mangroves	6,397	-
Agriculture:		
Bangus	4,800	840
Prawns	-	245

Source: Municipal Fisheries Division

#### Barangay Laih



## 2. Municipality of Kabasalan

Figure 19.a – Administrative Map of Municipality of Kabasalan

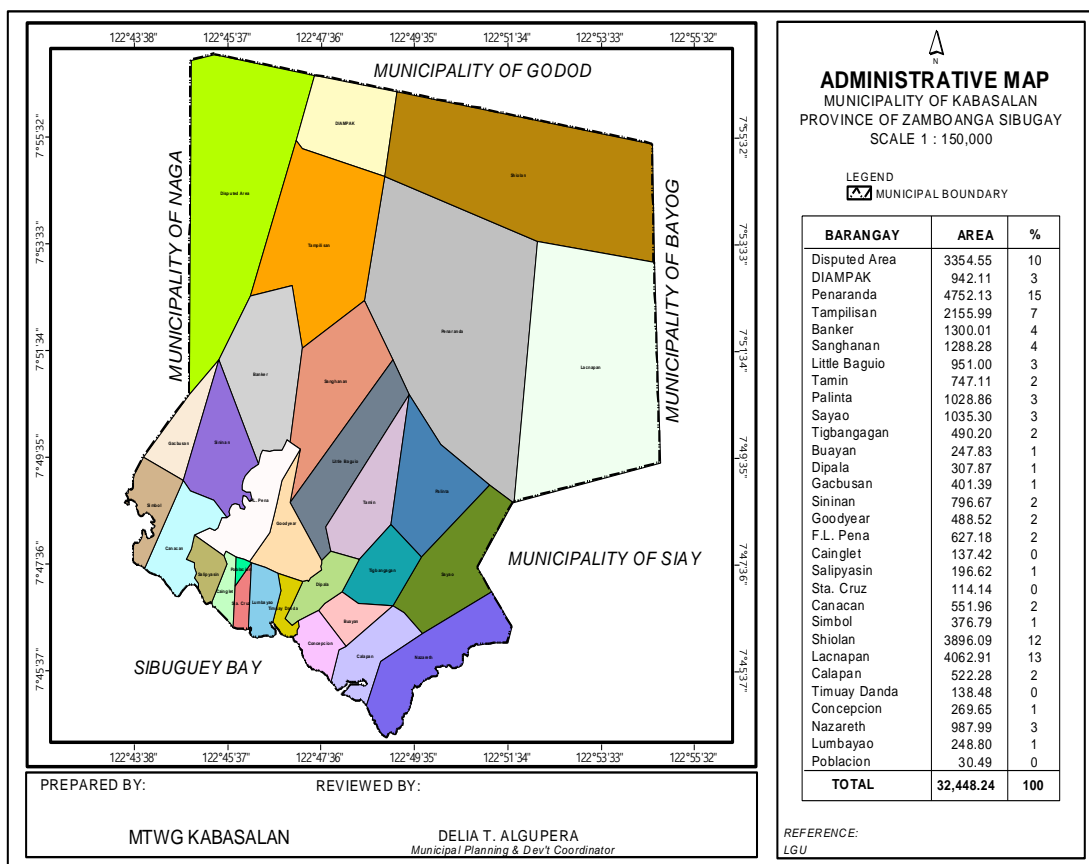


Figure 19.b- Foreshore Basemap of Kabasalan (Google Map)



Out of the twenty-nine (29) barangays of Kabasalan, eleven (11) are within the coastal area. These are Barangays Nazareth, Dipala, Concepcion, Timuay Danda, Lumbayao, Sta. Cruz, Salipyasin, Simbol, Calapan and Cainglet. The total coastal area is 3,861.94 or 11.9% of the total land area of Kabasalan.

The coastal resources of the municipality are mangrove forests which are found in the eleven (11) coastal barangays. These mangroves are used by the local residents in fishing and sea shells gathering. Other resources are fish, crabs, prawns and shrimps.

The wetlands in the area should be preserved as it is utilized for fishponds. The mangroves in the coastal and wetland areas must be rehabilitated because some are being cut by the residents in the area primarily for firewood and other kinds of household uses.

The foreshore of Barangay Concepcion has a beach. It also has an ecotourism park at Tihim-Tihim Island.

Facilities in the foreshore areas are the following:

1. Fish Landing at Barangay Sta. Cruz;
2. Fish Dryer at Barangay Concepcion;
3. Fish wharf at Barangays Nazareth, Concepcion and Lumbayao;
4. Crab Meat Processing Plant at Barangay Concepcion;
5. Fish Cage at Barangay Concepcion; and
6. Mariculture Park at Barangay Concepcion,







### 3. Municipality of Naga

Figure 21.a – Municipal Boundary & Index Map of Municipality of Naga

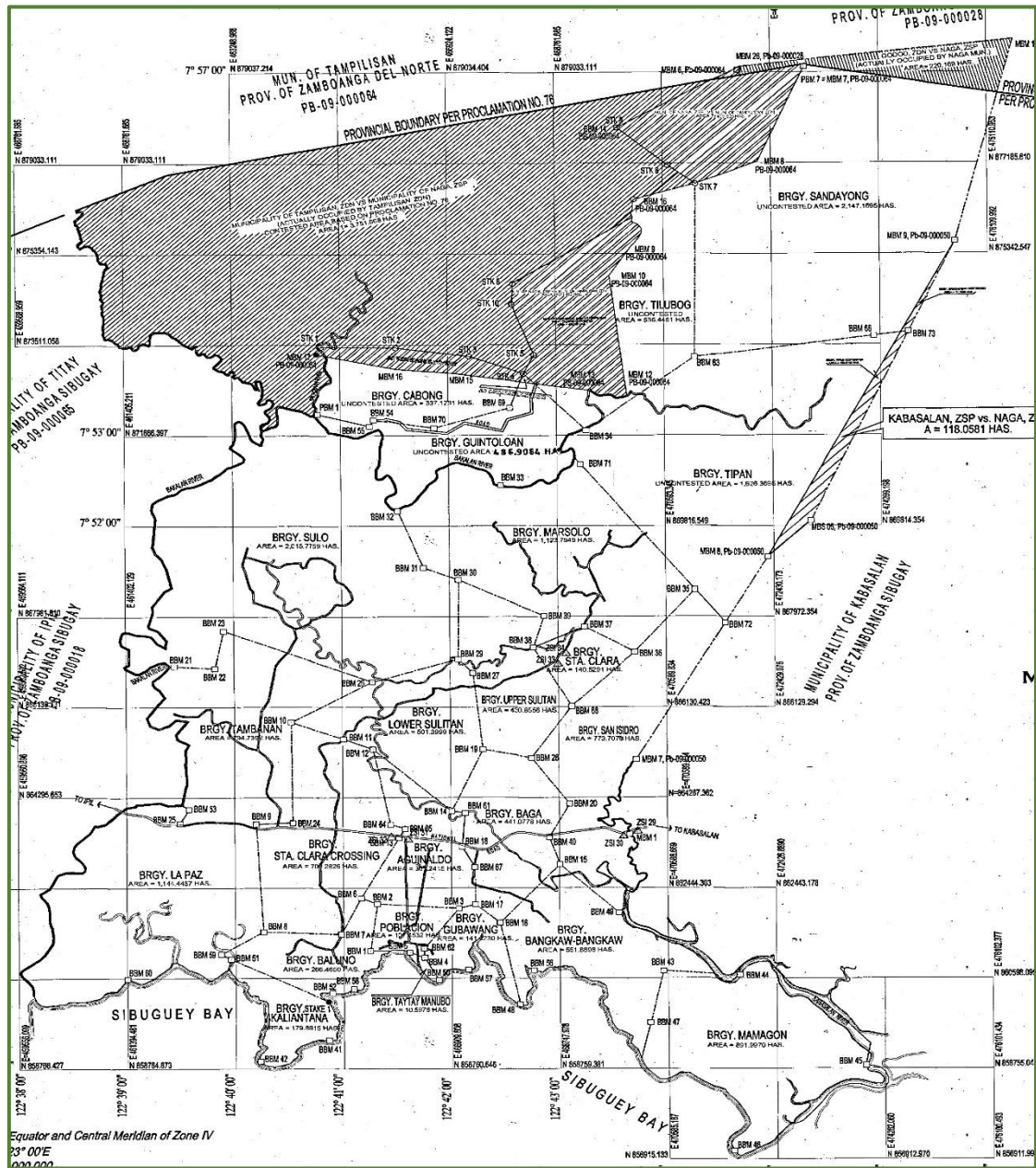


Figure 21.b -Foreshore Basemap of Naga



The Municipality of Naga has twenty-three (23) barangays. Out of these 23 barangays, eight (8) are located in the coastal, namely: La Paz, Baluno, Kaliantana, Poblacion, Taytay Manubo, Gubawang, Bangkaw-Bangkaw and Mamagon. The shoreline of Naga along Sibuguey Bay is 20 kilometers in length. Aside from this, Naga has two (2) major rivers namely, the Bacalan river and Baga river. It has also a subterranean river which is found in barangay Tipan.

The coastal area of the municipality has the following resources:

a. Coral Reef

The shallow portion of the reef registered 14 genera while the deeper portion registered 10 genera with 9 species common to both areas, dominated by *Fungia* (Mushroom coral), *Montipora* (Pore coral) *Acropora* (Flower coral) and *Porites* (Hump coral).

Although siltation is evident in the area, its effect to the shallow portion of the reef is negated due to good water exchange brought about by the rise and fall of water during high and low tide. The sediments in the shallow portion of the reef are easily washed away by this water movement.

b. Seagrass Communities

The area registered four species of seagrass growing on the different substrata ranging from purely sandy substrate, to mixed substrates of sandy-muddy and sandy-dead corals. The species

recorded in Bangkaw-Bangkaw and Gubawang were *cymodoceaserrulata* (Toothed seagrass), *Halophila ovalis* (Big spoon grass), *Halodule uninervis* and *Halodule pinifolia* (Fiber strand seagrass). *Halodule uninervis* registered the highest density with 545 shoots per sq m, followed by *Cymodocea rotundata* with 325 shoots per sq m. Several species of fish and macro invertebrates were observed thriving in the seagrass beds of Bangkaw-Bangkaw and Gubawang. Among the most common fishes found in the seagrass beds belong to family *Siganidae* (Rabbit fishes), *Pomacentridae* (Wrasses and Damsel Fish), *Nemipteridae* (Bream Fishes) and *Apogonidae* (Cardinal Fish). Different species of starfish are also found in the area, such as: *Acantha sterplanci* (Dap-ag), *Protoreaster sp.* and *Pentaceraster sp.* There were also Brittle stars (*Amphiuridae sp.*) observed in the area. Colonies of sea urchins such as *Diademasitum*, *Bohadschiamarmorata*, *Echinometramathae* and *Echinotrix calamaris* are also found in the area.

### c. Mangrove Forests

Fourteen mangrove species belonging to 4 families were recorded in the mangrove forest of Barangays Gubawang and Bangkaw-bangkaw with *Sonneratia caseolaris* (Pagatpat) as the most dominant species, registration a relative dominance value of 26.33%. *Sonneratia Alba* ranked second with 19.88%, followed closely by *Rhizophora apiculata* found within and outside the (Bakhawan Lalaki) with 19.82%.

Mangroves Species in Gubawang and Bangkaw-Bangkaw		
Family	Common Name	Scientific Name
Rhizophoraceae	BakhawanLalaki	RhizophoraApiculata
	BakhawanBabae	RhizophoraMucronata
	BakhawanTigrihon	RhizophoraStylosa
	Tangal/Tungog	CeriopsTagal
	Malatangal/Tungog	CeriopsDecandra
	Langurai	BruguieraParviflora
	Pototan	BruguieraSexangula
Avicenniaceae	Piapi	AvicenniaOfficinalis
	BungalonPuti	AvicenniaLanata
	Bungalon	Avicennia Marina
Sonneratiaceae	Pagatpat	Sonneratia Alba
		SonneratiaCaseolaris

Meliaceae	Tabigi	XylocarpusGranatum
Myrsinaceae	Saging-saging	AegicerasCorniculatum
Lythraceae	Bantigi	PemphisAcidula

#### d. Coral Lifeforms and Associated Species

The shallow portion of the reef registered 14 genera while the deeper portion registered 10 genera with 9 species common to both areas, dominated by *Fungia* (Mushroom coral), *Montipora* (Pore coral) *Acropora* (Flower coral) and *Porites* (Hump coral).

#### e. Reef Fish Communities

The fish species in the municipality are Lapu-lapu, Mol-Mol, Sulid and Maya-Maya. There is also the *Chaetodon* species (Alibangbang) which is an indication that the corals in the area are still in good condition.

#### 4.1.3 Fisheries

##### Fishpond:

LOCATION	YIELD	AREA (HECTARES)
1. Baga	62.2166	31,1083.00
2. Baluno	65.0000	(Abandoned)
3. Bangkaw-Bangkaw	103.8184	51, 9092.00
4. Crossing Sta. Clara	44.8300	(Abandoned)
5. Gubawang	58.5403	(Abandoned)
6. Kaliantana	39.9918	(Abandoned)
7. La Paz	98.0933	49,0466.50
8. Mamagon	241.7220	120,8610.00
9. San Isidro	46.9800	23, 4900.00
TOTAL:	761.1924	276, 4151.05

#### 2.8.2 Groundwater Resources

The shoreline of Naga along Sibuguey Bay is 20 kilometers in length. Aside from this, Naga has two (2) major rivers namely, the Bacalan river and Baga river. It has also a subterranean river which is found in barangay Tipan.

The municipality has its own Fishing Port which is located at Barangay Taytay Manubo, which is used by fishing boats and there is also an underdeveloped seaport intended for vessels located at Baluno which was used by Sta. Clara Lumber Co. before. There is a fish dryer in Barangay Taytay Manubo and seaweed/stilt dryers in Barangays Baluno, Poblacion, Taytay Manubo, Bangkaw-Bangkaw, Mamagon, La Paz and Gubawang. The ice/cold storage of the LGU situated at Barangay Poblacion needs repair to make it



functional again. As of now, there is an on-going construction of fish landing at Barangay Baluno (Tandu Timmang).

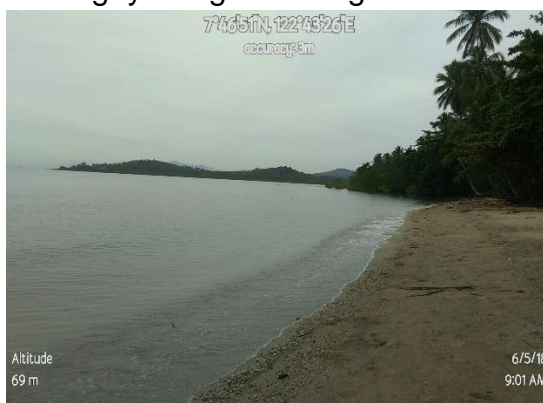
There are two (2) beach resorts in the foreshore area – the Aitana Beach and the Singah Beach Resort in Barangay Gubawang where the residents of the municipality and those from the neighboring towns use to go for picnic, swimming and other recreational activity.

The foreshore area in Barangays Kaliantana, Gubawang and Bangkaw-Bangkaw is sandy while that in Barangay Lapaz is muddy with mangroves. Barangays Mamagon and Baluno have muddy and rocky foreshore area. The muddy area has mangroves. Barangay Taytay Manubo has a sandy and rocky. Foreshore. Just like other foreshore areas, some portions are being occupied by some residents from the municipality majority of whom are fisher folks.

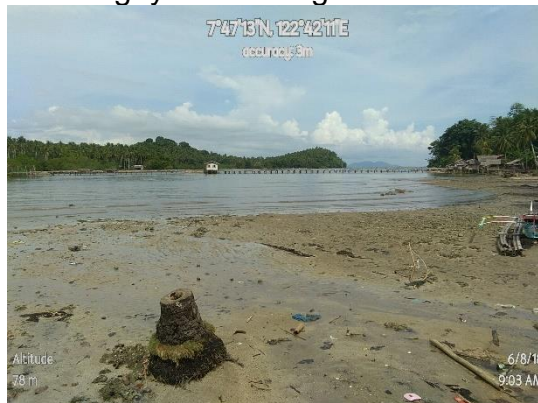
Barangay Kaliantana



Barangay Bangkaw-bangkaw



Barangay Gubawang



The Municipality of Ipil has twenty-eight (28) barangays in which nine (9) are classified as urban, namely: Bangkerohan, Don Andres, Ipil Heights, Lower Ipil Heights, Lower Taway, Poblacion, Sanito, Taway and Veterans village. The remaining nineteen (19) barangays are rural, namely: Bacalan, Buluan, Caparan, Domandam, Doña Josefa, Guitu-an, Labe, Logan, Lumbia, Maasin, Magdaup, Makilas, Pangì, Suclema, Tenan, Tiayon, Timalang, Tomitom and Upper Pangì.



Figure 22. b - Foreshore Basemap of Ipil



Ipil has ten (10) coastal barangays with an estimate coastline of 15 kilometers. The coastal barangays are: Buluan, Caparan, Tiayon, Bangkerohan, Magdaup, Sanito, Upper Pangi, Pangi, Tenan and Makilas. Its municipal water totals to 17,000 hectares inclusive of the 63 hectares of Marine Protected Area (MPA).

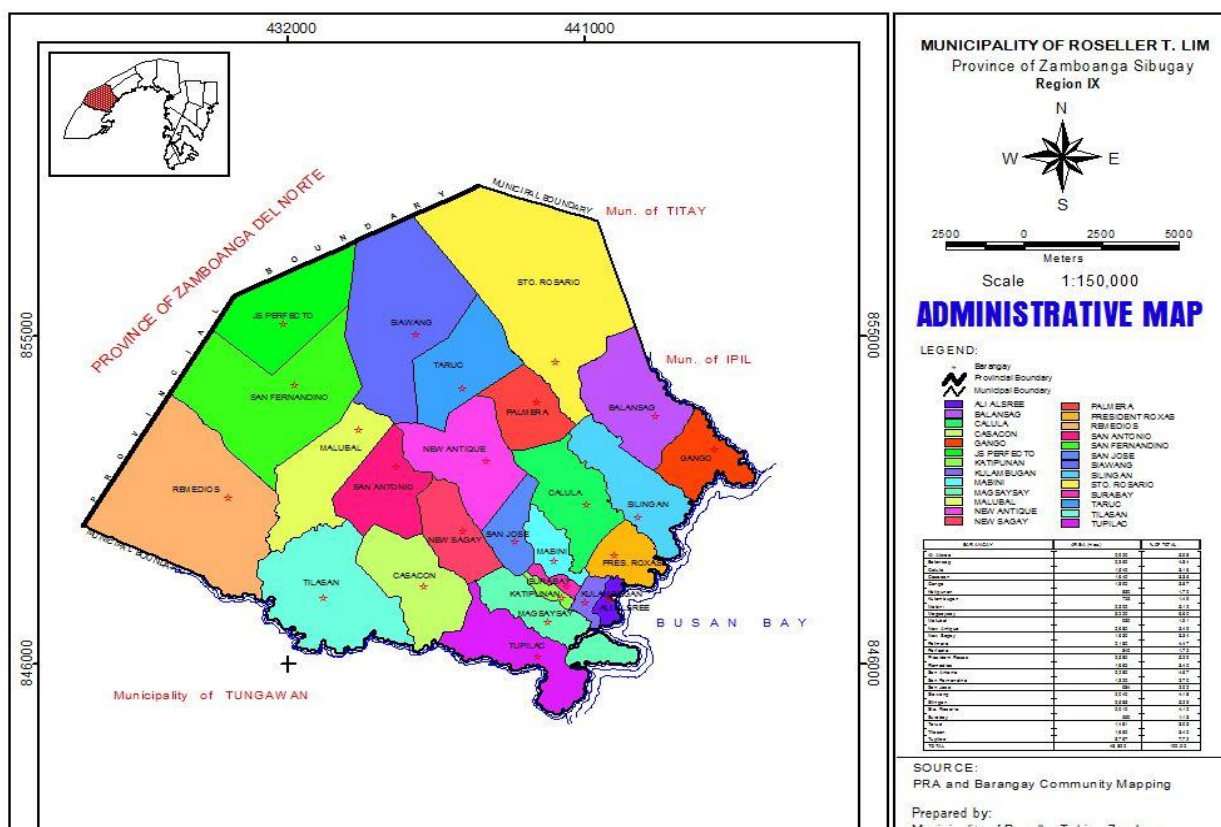
Ipil has been implementing conservation program in three (3) important areas namely: Watershed, Mangrove area and the Marine Protected Area. Reforestation activities in the Watershed area had been undertaken by the LGU, conservation projects were implemented with funding from NGO and NEDA.

Municipal water is 17,000 hectares, part of it is the Marine Protected Area situated alongside Buluan Island, with a total area of 63 hectares. Program for conservation is continuously implemented by the LGU for the lasting development of the MPA.

Attractions that could be found in the area are:

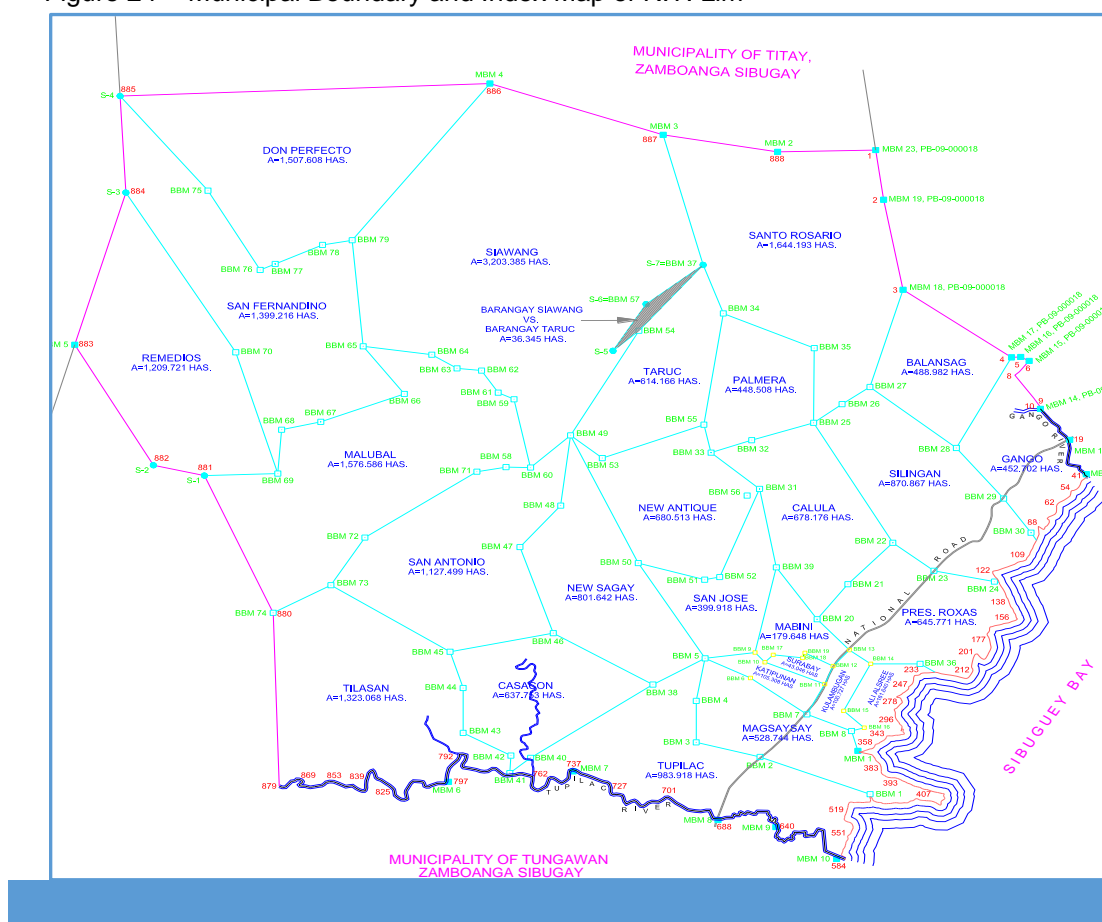
1. Beaches in Barangays Caparan, Tiayon, Buluan and Magdaup;
2. Boardwalk along the mangrove area in Barangay Buluan;
3. Sea Horse in Barangay Caparan which is proposed for Sea Horse Sanctuary;
4. Sibaluya Berthing Site (Sea Turtle) in Buluan Island, Buluan;

The facilities established in the foreshore areas of Ipil are the following:



There are two (2) foreshore areas in R.T. Lim which are located in Barangays Ali Alsree and Gango. The foreshore in Barangay Ali Alsree has a port, Community Fish Landing Center (CFLC), beach resort, mangrove plantation and marine sanctuary. There is also an islet in the municipality which is currently developed by the MLGU of R.T. Lim and it is situated within the Marine Protected Area. The islet has a white sand, cottages and a boat landing area. It has also a “lookout tower” where one can view the municipality from the area. The place could be accessed through the bridge (350 ln. m.) constructed by the MLGU. As of the moment, use of the facilities in the islet are just for free. The MLGU has yet to formulate and pass an ordinance prescribing the users’ fee.

Figure 24 - Municipal Boundary and Index Map of R.T. Lim



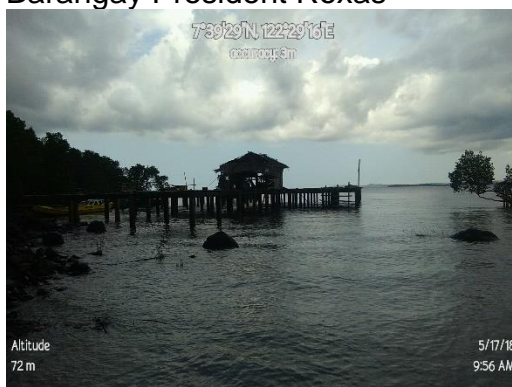
## Barangay Ali Alsree



## Barangay Gango



## Barangay President Roxas

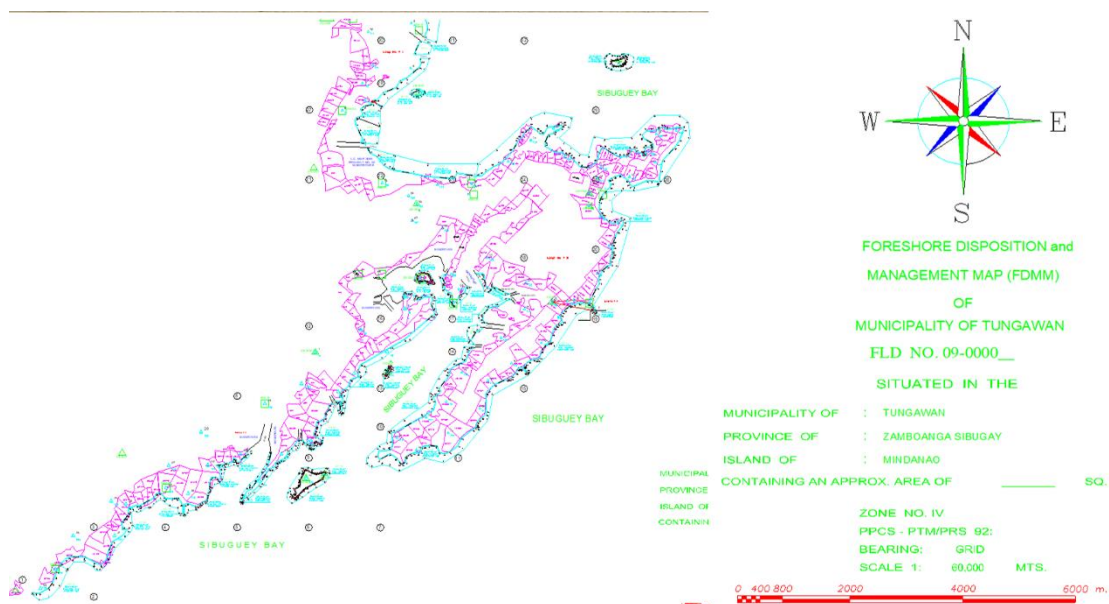




Municipality of Tungawan has twenty-five (25) barangays, namely: Baluran, Batungan, Cayamcam, Datu Tumanggong, Gaycon, Langon, Libertad (Poblacion), Linguisan, Little Margos, Loboc, Looc Labuan, Lower Tungawan, Masao, Malangon, San Isidro, San Pedro, San Vicente, Santo Niño, Sisay, Taglibac, Tigbanuang, Tigbucay, Tigpalay, Timbabauan and Upper Tungawan.

Barangays that are situated in the coastal area are Tigbucay, Libertad, Linguisan, Looc Labuan, Taglibas, San Vicente, Sto. Niño, Baluran and Masao. The foreshore areas in the Municipality of Tungawan are found in Barangays Sto. Niño, San Vicente, Tigbucay, Bangaan Island, Linguisan, Looc Labuan and Libertad.

Figure 26- Foreshore Basemap of Tungawan



Coastal resources in the area are coral reef, seagrasses, fishes and mangroves (nipa). The facilities that are established in the foreshore areas are:

1. Seaweed Dryer in Barangays Baluran, Masao, Libertad, Taglibas, Tigbucay, San Vicente and Sto. Niño;
2. Community Fish Landing Center at Barangay Libertad; and
3. Fish Wharf in Barangays Libertad, Sto. Niño and San Vicente.

Foreshore attractions in the municipality are the Looc Labuan Beach, Tubo-Tubo Beach, Bangaan Beach and Brisa Marina Beach. There are also marine sanctuaries in the municipality, such as: Bangaan Marine Sanctuary, Pulo Piña Marine Sanctuary in Pulo Piña Island and the Tungawan Marine Culture.



Bangaan Island



Bangaan Beach



Tigbucay



Pulo Piña



Linguisan



Looc Labuan



### 3.2 Foreshore Area and Classification

The foreshore areas in the Province of Zamboanga Sibugay are reflected in the following table:

Table 29 – Foreshore Areas in the Province of Zamboanga Sibugay

District	Municipality	Foreshore Area/Barangay	Actual Land Use	Recommended Use
I	1. Buug	Sitio Silupa, Bawang Pamintayan	Beach/Bathing	Leisure, Recreation and Tourism Zone
			Fish Dryer Settlement	Management and Development Zone, Relocation,
			Mangrove Beach/Bathing Ice Plant	Protection, Conservation, Restoration and Preservation Zone
	2. Malangas	Sitio Margal, Pamintayan	Residential Beach/Bathing Mangrove	Leisure, Recreation and Tourism Zone
				Relocation
				Protection, Conservation, Restoration and Preservation Zone
		Pulog	Mangrove Beach/Bathing	Leisure, Recreation and Tourism Zone
				Protection, Conservation, Restoration and Preservation Zone
		Sinusayan	Mangrove Beach/Bathing	Leisure, Recreation and Tourism Zone Protection, Conservation, Restoration and Preservation Zone
		Bacao	Mangrove	Leisure, Recreation and Tourism Zone Protection, Conservation, Restoration and Preservation Zone
		Logpond	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Tigabon	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Tackling	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Lipacan	Mangrove Wharf Carbon Port Settlement	Management and Development Zone, Relocation, Protection, Conservation, Restoration and Preservation Zone , Relocation

3. Payao	Poblacion	Mangrove Beach/Bathing	Protection, Conservation, Restoration and Preservation Zone
	Kigay	Mangrove Beach/Bathing	Leisure, Recreation and Tourism Zone Protection, Conservation, Restoration and Preservation Zone
	Dansulao	Mangrove Settlement	Leisure, Recreation and Tourism Zone Protection, Conservation, Restoration and Preservation Zone
	Mabini	Mangrove Settlement	Relocation Protection, Conservation, Restoration and Preservation Zone
	Palalian	Mangrove	Relocation Protection, Conservation, Restoration and Preservation Zone
	Balian	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Balogo	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Binongonan	Mangrove Fishpond Settlement	Protection, Conservation, Restoration and Preservation Zone
	Bulawan Dalama	Beach/Bathing Mangrove Fishpond Settlement	Relocation Leisure, Recreation and Tourism Zone Protection, Conservation, Restoration and Preservation Zone
	Guiwan	Mangrove Fishpond Settlement	Relocation Protection, Conservation, Restoration and Preservation Zone
	Kulasian	Mangrove	Relocation Protection, Conservation, Restoration and Preservation Zone
	Kima	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone
	Kulisap	Mangrove	Relocation Protection, Conservation, Restoration and Preservation Zone
	Labatan	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone
	Mayabo	Mangrove Settlement	Relocation Protection, Conservation, Restoration and Preservation Zone
			Relocation

4. Alicia	Minundas	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone
	Poblacion San Roque	Settlement Mangrove Fishpond	Relocation Relocation Protection, Conservation, Restoration and Preservation Zone
	Silal	Mangrove Fishpond	Protection, Conservation, Restoration and Preservation Zone
	Talaptap	Mangrove Fishpond	Protection, Conservation, Restoration and Preservation Zone
	Sta. Maria	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Talaptap	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Bella	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Tampalan	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	Dawa-Dawa	Mangrove Wharf Settlement/Commercial	Protection, Conservation, Restoration and Preservation Zone, Relocation Management and Development Zone
	Sto. Niño	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	La Paz	Settlement	Relocation
	Concepcion	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Gulayan	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	Kawayan	Mangrove Beach/Bathing	Protection, Conservation, Restoration and Preservation Zone, Relocation, Leisure, Recreation and Tourism Zone
	Timbang-Timbang Naga-Naga	Settlement Fish Landing/Dryer Settlement	Relocation Management and Development Zone Relocation
	Poblacion	Wharf Mangrove Beach/Bathing	Management and Development Zone, Relocation, Protection, Conservation, Restoration and Preservation Zone

5. Mabusay	Lambuyogan	Settlement Mangrove	Leisure, Recreation and Tourism Zone, Relocation Protection, Conservation, Restoration and Preservation Zone
	Bagong Buhay	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Litayon	Beach/Bathing School Bldg. Settlement	Leisure, Recreation and Tourism Zone, Management and Development Zone, Relocation
	Pandan-Pandan	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	Tanjung Muslim	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	Ilisan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Lapirawan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Poblacion	Wharf Mangrove Settlement/Com mercial	Management and Development Zone, Protection, Conservation, Restoration and Preservation Zone, Relocation
	Malinao	Mangrove Fish Landing/Dryer Settlement/Comm ercial	Protection, Conservation, Restoration and Preservation Zone, Management and Development Zone, Relocation
	Abunda	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	Bagong Silang	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Bangkaw-Bangkaw	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Caliran	Mangrove Beach/Bathing Settlement	Protection, Conservation, Restoration and Preservation Zone Leisure, Recreation and Tourism Zone, Relocation
	Catipan	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone Relocation
	Ligaya	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Looc Barlac	Mangrove	Protection, Conservation, Restoration and Preservation Zone



6. Olutanga	Pamansaan	Mangrove Marine Sanctuary	Protection, Conservation, Restoration and Preservation Zone
	San Roque	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Sawa	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Sioton	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Sto. Niño	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Taguisan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Tandu Comot	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Calais	Mangrove Fish Landing/Dryer Settlement	Protection, Conservation, Restoration and Preservation Zone, Management and Development Zone, Relocation
	Esperanza	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Galas	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Gandaan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Looc Sapi	Mangrove Settlement	Protection, Conservation, Restoration and Preservation Zone, Relocation
	Matim	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	Pulo Laum	Mangrove Residential Beach/Bathing	Protection, Conservation, Restoration and Preservation Zone, Relocation Leisure, Recreation and Tourism Zone,
	Pulo Mabao	Mangrove Beach/Bathing Settlement	Protection, Conservation, Restoration and Preservation Zone Leisure, Recreation and Tourism Zone, Relocation
	San Isidro	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	San Jose	Mangrove	Protection, Conservation, Restoration and Preservation Zone

II	7. Talusan	Santa Maria	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Solar	Wharf Mangrove Sea snake Sanctuary Settlement	Management and Development Zone Protection, Conservation, Restoration and Preservation Zone, Relocation
		Tambanan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Villagonzalo	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Poblacion	Mangrove Fish Landing/Dryer Settlement	Protection, Conservation, Restoration and Preservation Zone, Management and Development Zone Protection, Relocation
		Florida	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Baganipay	Mangrove Beach/Bathing	Protection, Conservation, Restoration and Preservation Zone, Protection, Conservation, Restoration and Preservation Zone, Relocation
		Laparay	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Moalboal	Mangrove Beach/Bathing	Protection, Conservation, Restoration and Preservation Zone, Protection, Conservation, Restoration and Preservation Zone
		Bualan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Tuburan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Bacalan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	8. Siay	Bolangan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Kasigpitan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Cawilan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Logpond	Mangrove	Protection, Conservation, Restoration and Preservation Zone

	9. Kabasalan	Batu	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Monching	Commercial/Industrial	Management and Development Zone Protection
		Laih	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Siloh	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Balucanan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Salinding	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Nazareth	Commercial/Industrial	Management and Development Zone Protection
		Dipala	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Concepcion	Tourism/Commercial/Industrial	Management and Development Zone Protection
		Timuay Danda	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Lumbayao	Commercial/Industrial	Management and Development Zone Protection
		Sta. Cruz	Commercial/Industrial	Management and Development Zone Protection
		Salipyasin	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Canacan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Simbol	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Calapan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Cainglet	Mangrove	Protection, Conservation, Restoration and Preservation Zone
	10. Naga	Kaliantana	Commercial/Industrial	Management and Development Zone Protection
		Baluno	Commercial/Industrial	Management and Development Zone Protection
		Poblacion	Commercial/Industrial	Management and Development Zone Protection
		La Paz	Mangrove	Protection, Conservation, Restoration and Preservation Zone

	11. Ipil	Taytay Manubo	Commercial/Industrial Mangrove	Management and Development Zone Protection
		Gubawang	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Bngkaw-Bangkaw	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Mamagon	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Magdaup	Industrial/Commercial	Management and Development Zone Protection
		Makilas	Industrial/Commercial	Management and Development Zone Protection
		Caparan	Industrial/Commercial	Management and Development Zone Protection
		Tiayon	Tourism/Industrial/Commercial	Management and Development Zone Protection
		Buluan	Tourism/Commercial	Management and Development Zone Protection
		Bangkerohan	Industrial/Commercial	Management and Development Zone Protection
	12. R.T. Lim	Sanito	Industrial/Commercial	Management and Development Zone Protection
		Pangi	Industrial/Commercial	Management and Development Zone Protection
		Upper Pangi	Industrial/Commercial	Management and Development Zone Protection
		Ali Alsree	Tourism/Industrial/Commercial	Management and Development Zone Protection
		Magsaysay	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Tupilac	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Kulambugan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		President Roxas	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Silingan	Mangrove	Protection, Conservation, Restoration and Preservation Zone
		Gango	Tourism/Commercial	Management and Development Zone Protection
	13. Tungawan	Tigbucay	Tourism/Commercial	Management and Development Zone Protection

	Libertad	Industrial/Commercial	Management and Development Zone Protection
	Linguisan	Industrial/Commercial	Management and Development Zone Protection
	Looc Labuan	Tourism/Commercial	Management and Development Zone Protection
	Taglibas	Industrial/Commercial	Management and Development Zone Protection
	San Vicente	Industrial/Commercial	Management and Development Zone Protection
	Sto. Niño	Industrial/Commercial	Management and Development Zone Protection
	Baluran	Industrial/Commercial	Management and Development Zone Protection
	Masao	Industrial/Commercial	Management and Development Zone Protection

### 3.3 Types of Foreshore Uses

Below is a tabular presentation of the criteria indicators for foreshore best use set by DENR.

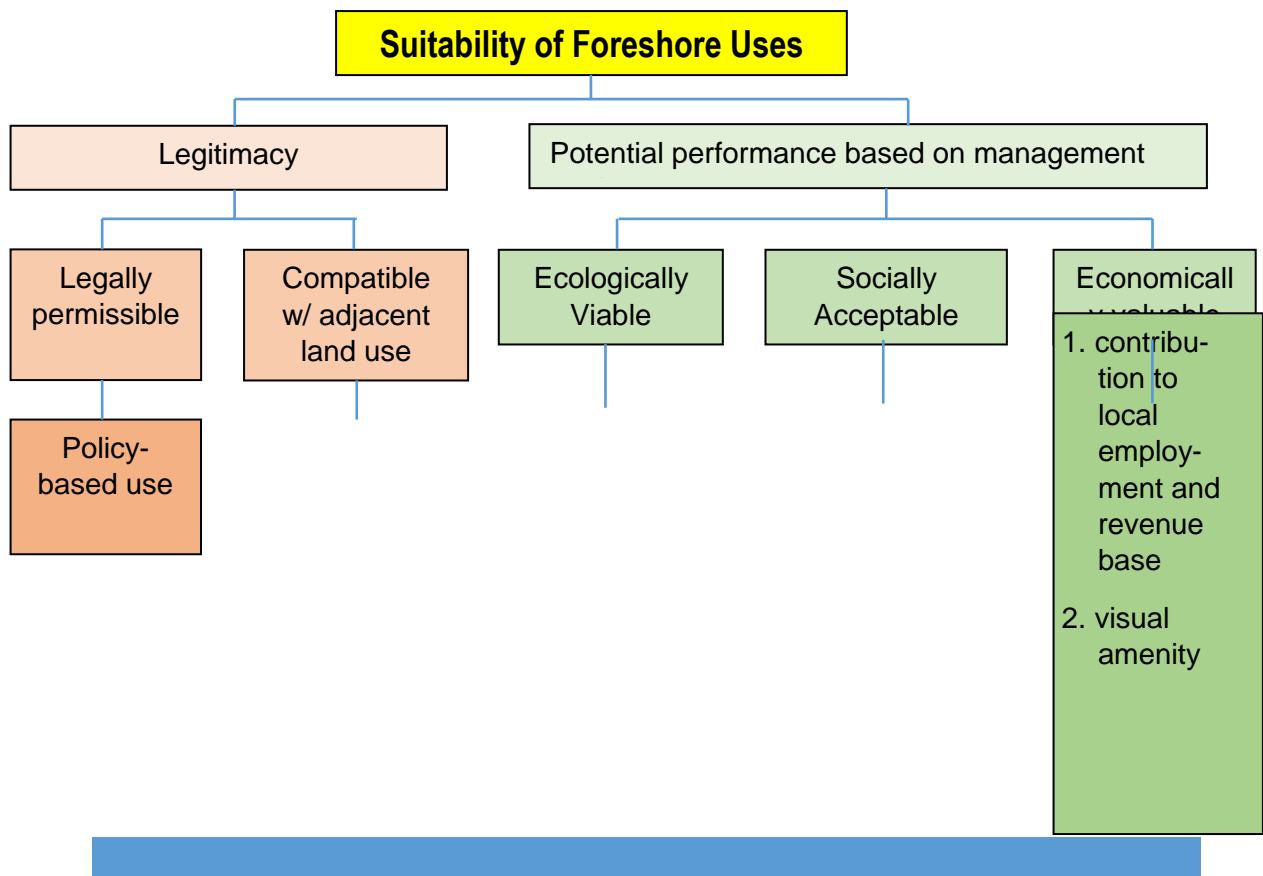
Table 30 – Criteria Indicators of Foreshore Best Use

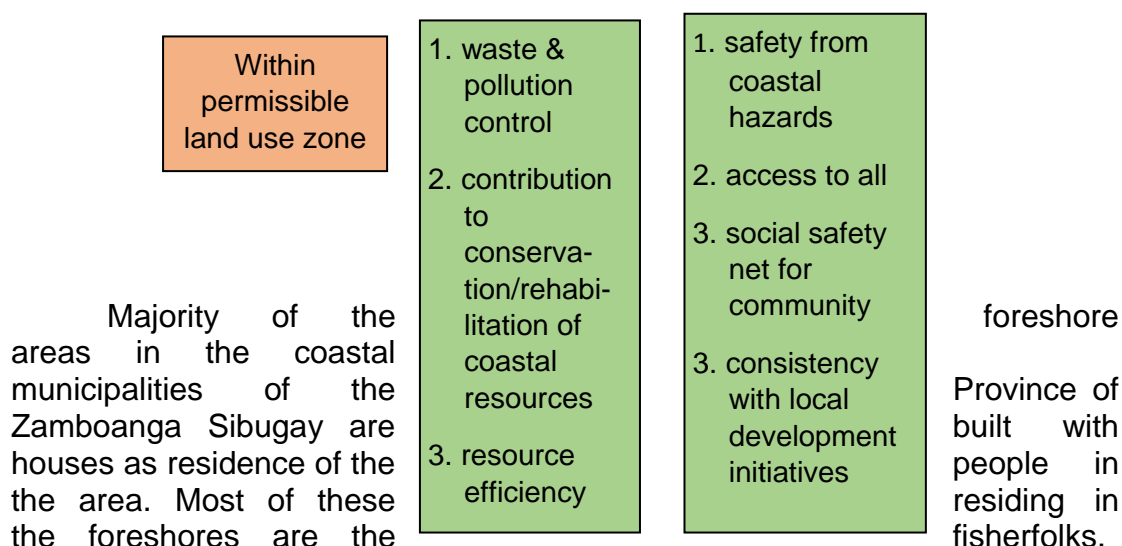
Best Use	Indicators	Scoring Method
Management and Development Zone	<ul style="list-style-type: none"> <li>• Must be identified as a regional growth center</li> <li>• The required infrastructures such as roads, ports, etc., suitability and capacity of the proposed site to absorb improvements</li> <li>• Availability of water and electric power</li> <li>• The project is not detrimental to the environment</li> <li>• The availability of skilled, semi-skilled and non-skilled labor force in and around the zone</li> </ul>	To be rated from 1-10
Leisure, Recreation and Tourism Zone	<ul style="list-style-type: none"> <li>• Influx of Visitors</li> <li>• Affordability of facilities and utilities</li> <li>• Security of the zone</li> <li>• Aesthetic quality</li> <li>• Utilities available</li> <li>• Accessibility of the place</li> <li>• The availability of skilled, semi-skilled and non-skilled labor force in and around the zone</li> </ul>	To be rated from 1-10



Protection, Conservation, Restoration and Preservation Zone	<ul style="list-style-type: none"> <li>• The required infrastructures such as roads, ports, etc., suitability, and capacity of the proposed site to absorb improvements</li> <li>• To consider the nature of the vegetation and land use</li> <li>• Accessibility of the place</li> <li>• Availability of water and electric power</li> <li>• Security of the zone</li> </ul>	To be rated from 1-10
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The chart below shows how to appraise the suitability of foreshore uses.





There are beautiful beaches that are found in the foreshores of the Municipalities of Buug, Malangas, Alicia, IMabuhay, Olutanga, Talusan, Naga, Ipil, R.T. Lim and Tungawan but they are not yet fully developed. Using the criteria for the best uses of foreshore areas, the following are the recommendations for the best use of the following foreshores:

Table 31– Recommendation for Best Use of Foreshores

Municipality	Specific Location/ Name of Barangay	Recommended Use(s)
<b>District I</b>		
1. Buug	Pamintayan	<ul style="list-style-type: none"> <li>○ Tourism Zone/ Commercial Zone (Beach Resort)</li> <li>○ Industrial Zone (Seaweed/Fish Dryer)</li> </ul>
	Sitio. Silupa, Bawang	<ul style="list-style-type: none"> <li>○ Tourism/Commercial Zone (Beach Resort)</li> </ul>
	Pulog	<ul style="list-style-type: none"> <li>○ Tourism/Commercial Zone (Beach Resort)</li> </ul>
2. Malangas	Kigay	<ul style="list-style-type: none"> <li>○ Tourism/Commercial Zone (Beach Resort)</li> </ul>
	Poblacion	<ul style="list-style-type: none"> <li>○ Tourism/Commercial/ Industrial Zone</li> </ul>
	Dansulao	<ul style="list-style-type: none"> <li>○ Tourism/Commercial Zone</li> </ul>
3. Payao	Poblacion	<ul style="list-style-type: none"> <li>○ Tourism/Commercial/Industrial Zone</li> </ul>
4. Alicia	Cawayan	<ul style="list-style-type: none"> <li>○ Tourism/Commercial Zone (Beach Resort)</li> </ul>
	Poblacion	<ul style="list-style-type: none"> <li>○ Tourism/Commercial/</li> </ul>

5. Mabuhay	Dawa-Dawa Litayon Pandan-Pandan Caliran	Industrial Zone ○ Commercial/Industrial Zone ○ Tourism/Commercial Zone ○ Tourism/Commercial Zone ○ Tourism/Commercial Zone (Beach Resort) ○ Commercial/Industrial Zone
6. Olutanga	Poblacion, Malinao, Abunda, Bangkaw- Bangkaw, Looc Barlac Pulo Laum	○ Tourism/Commercial/Industrial Zone (Beach Resort) ○ Tourism/Commercial Zone (Beach Resort)
7. Talusan	Pulo Mabao  Solar Baganipay, Moalboal, Tuburan, Cawilan Poblacion, Florida, Laparay	○ Commercial/Industrial Zone ○ Tourism/Commercial Zone (Beach Resort) ○ Commercial/Industrial Zone

District II		
8. Siay	All coastal barangays	○ Mangrove Plantation/Rehabilitation
9. Kabasalan	Moncing All mangrove areas	○ Commercial/Industrial Zone ○ Mangrove Plantation/Rehabilitation
10. Naga	Nazareth Concepcion  Kaliyanta Taytay Manubo, Baluno, Poblacion	○ Commercial/Industrial Zone ○ Tourism/Commercial/ Industrial Zone ○ Commercial/Industrial Zone
11. Ipil	Areas with mangroves Buluan, Caparan, Tiayon Palid, Magdaup, Bangkerohan	○ Mangrove Plantation ○ Tourism/Commercial Zone (Beach Resort) ○ Commercial/Industrial
12. R.T. Lim	Gango Ali Alsree	○ Tourism/Commercial Zone ○ Tourism/Commercial/Industrial
13. Tungawan	Looc Labuan, Linguisan, Bangaan Island Baluran, Masao, Libertad, Taglibas, Tigbucay, San Vicente, Sto. Niño	○ Tourism/Commercial  ○ Commercial/Industrial Zone

### 3.4 Status of Foreshore Leases and Contracts Issued

Per records of CENRO – Imelda, there are FLAs issued in the Municipality of Malangas. These FLAs were issued to fishpond operators in Barangay Lipacan with a total area of twenty-eight (28) hectares and in Barangay Palalian – twenty-four (24) hectares.

Shown in the following page is the list of foreshore applications/contracts under CENRO-Kabasalan. As can be gleaned in the table, there are eleven (11) FLAs in Ipil (5 – industrial, 1 – maritime school, 1 – multi-purpose building, 1 – Docking area, 3 – beaches). Four (4) FLAs were issued in Naga for industrial purposes and one (!) FLA is issued in Tungawan for docking purpose.

Table 32 - List of Foreshore Applications/Contracts  
under CENRO Kabasalan

CENRO KABASALAN, ZAMBOANGA SIBUGAY							
	Estimated Foreshore Area	Use/ Type of Permit	Occupants/ Lessee/ Permittee	Basis of Occupancy	Date of Application Files	LOCATION	Date Contr Perfec
IPIL, ZAMBOANGA SIBUGAY							
1	3.2341	FLAG T	Dulce Ann K. Hofer	Beaches	2006	Caparan, Ipil, ZSP	NOM
2	15.5386	FLAG T	Dulce Ann K. Hofer	Beaches	April 22, 2010	Tiayon, Ipil, ZSP	NOM
3	14.1844	SPLU	Rhode rick R. Santos	Beaches	April 22, 2010	Tiayon, Ipil, ZSP	NOM
4	4.5000	FLA	Alfredo F. Eustaquio	Docking Purpose	2004	Magdaup, Ipil, ZSP	NOM
5.	7.325	FLA	Arturo F. Eustaquio III	Multi- purpose Building	August1, 2000	Magdaup, Ipil, ZSP	NOM
6.	4.5015	FLA	Arturo F. Eustaquio	Maritime School	April 20, 2001	Magdaup, Ipil, ZSP	NOM
7.	2.8236	FLA	Hrs. of GALORA HASIM, Rep. by: Shariff Ahman Hasim	Industrial	July 10, 2008	Magdaup, Ipil, ZSP	NOM
8.	28000		Hrs. of Salip Galora Hasim rep. Mr. Shariff Ahmad Hasim	Industrial	April 27, 2017	Magdaup, Ipil, ZSP	NONE
9.	32341		Dulce Ann K. Hofer	Industrial	June 22, 2018	Caparan, Ipil, ZSP	NOM
10.	141844		Rhoderick R. Santos	Industrial	June 22, 2018	Tiayon, Ipil, ZSP	NOM



11.	15586		Dulce Ann K. Hofer	Industrial	June 22, 2018	Tiayon, Ipil, ZSP	NOM
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**NAGA, ZAMBOANGA SIBUGAY**

1.	25000	FLA	LGU of Naga ZSP Rep by: Municipal Mayor Rino Delos Reyes	Industrial	May 5, 2016	Taytay Manubo Naga, ZSP	NOM
2.	1.6940	FLA	Cotabato Timberland Co. Inc.	Industrial	1996	Baluno, Naga, ZSP	NOM
3.	0.943	FLA	Cotabato Timberland Co. Inc.	Industrial	1996	Baluno, Naga, ZSP	NOM
4.	35671	FLC	Cotabato Timberland Corp. Inco. Rep by: Melchor D. Borbon	Industrial	May 30, 1996	Baluno, Naga, ZSP	NOM

**TUNGAWAN, ZAMBOANGA SIBUGAY**

1.	2.1622	FLA	Atro Mining Vitali Incorp. Rep. by Godofredo S. Dinapo	Docking Purposes	March 24, 2014	San Vicente, Tungawan, ZSP	NOM
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# Chapter 4

## Problems, Issues & Concerns

The foreshore areas in the thirteen (13) coastal municipalities of the Province of Zamboanga Sibugay are faced with different problems, issues, concerns and development needs as well in regard to their foreshore areas. After the conduct of field assessment by the Technical Working Groups (TWG) of the two (2) districts, the following came out to be the major issues and concerns with respective recommendations:

<b>Issues and Problems Identified</b>	<b>Recommendations</b>
1. Informal settlers in the Foreshore areas/salvage zones;	1.LGU provide re-location
2. Illegal construction of structures (government-owned/privately-owned);	2. LGU to create Arbitration Committee
3. Non-delineation of the Foreshore areas (leasable and non-leasable) due to outdated cadastral maps, unresolved municipal boundary disputes and incomplete database on foreshore leases/users (all agencies);	3. Existing Infrastructure: Apply to Foreshore Lease Agreement at DENR
4. Titled properties in the Foreshore areas and salvage zones;	4. Apply for Foreshore Lease Agreement prior to development
5. Illegal reclamation;	5. Strict implementation of Solid Waste Management R.A. 9003 and local ordinances
6. Mangrove degradation in some Foreshore areas due to illegal cutting;	6. Apply for Foreshore Lease Agreement before Issuance of Business Permit
7. Illegal fishpond operation;	7.LGU should be exempted on reclamation permit; required only for private companies
8. Pollution due to improper waste disposal;	8. Strict implementation of Solid Waste Management R.A. 9003 and local ordinances
9. Flooding along river banks;	9. Strict implementation of Solid Waste Management R.A. 9003 and local ordinances
10. Sea level rise due to Climate change;	
11. Quarrying long Foreshore areas; and	
12. Unstable Peace and Order	

## Chapter 5

# PFDM Plan

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### 5.1 Vision

A Foreshore with ecological balance and harmonious relation among stakeholders and indigenous people sustaining in a relatively modern socio-economic community resilient to disaster, providing a unique experience to local and international tourist, preserving its cultural history and govern by God-centered and pro-people officials.

### 5.2 Mission

1. To provide a foreshore that is clean with balance environment, utilizing the natural resources that mitigate natural calamities; and
2. To be self-reliant, healthy, secured, united and champion of sustainable development that benefits all stakeholders throughout generations.

### 5.3 Objectives

1. To develop the beaches in the coastal municipalities into world-class beaches from year 2019-2028;
2. To construct facilities/utilities (wharves, fish landing/banca/pump boat docking area, fish/seaweed dryers, solar power plants) in the coastal municipalities from year 2019-2028;
3. To improve the wharves in the Municipalities of Payao and Alicia in 2019-2028;
4. To conduct training on tourism and business planning to all coastal municipalities with tourism sites in 2019-2020;
5. To conduct training on basic business management to the organized fisherfolks in year 2019-2020;
6. To rehabilitate all the mangroves in the coastal municipalities from 2019-2028;
7. To construct seawall protection in tsunami inundation areas in the coastal municipalities from 2019-2028; and
8. To acquire and develop resettlement areas for the informal/illegal settlers from 2019-2028.

## Implementation Process



### 5.4 Strategies, Programs, Projects, Services and Activities

After assessment of the current situation in the foreshore areas of Zamboanga Sibugay Province using the SWOT Matrix done by the participants from the coastal municipalities during the Provincial Foreshore Management and Development Planning workshop, the following strengths, weaknesses, opportunities and threats were identified.

### SWOT Matrix for Situational Analysis

<div style="text-align: center;"> <b>Internal Factors</b>  <b>External Factors</b> </div>	<b>Internal Strengths (S)</b>	<b>Internal Weaknesses (W)</b>
	<ol style="list-style-type: none"> <li>1. Some fisher folk had already built stilt cottages for Beaches.</li> <li>2. Barangay roads are emplaced in some Barangays.</li> <li>3. We have a very supportive Provincial LGU.</li> </ol>	<ol style="list-style-type: none"> <li>1. Barangay roads not properly maintained.</li> <li>2. People's Organization and Fisher folks lack the necessary capital.</li> <li>3. Lack of Cooperation among stakeholders.</li> </ol>
<b>External Opportunities (O):</b>	<b>SO Strategy:</b>	<b>WO Strategy:</b>
<ol style="list-style-type: none"> <li>1. Some fishermen were already organized into fisher folk association, and they can be tapped for the development &amp; protection of Foreshore areas.</li> <li>2. There are several white sand Beaches in the Foreshore areas within Zamboanga Sibugay.</li> </ol>	<ol style="list-style-type: none"> <li>1. Invite more investors in the development of beach resort like Boracay.</li> <li>2. LGUs must built more infrastructure for recreational purposes along Foreshore areas.</li> </ol>	<ol style="list-style-type: none"> <li>1. To train further the Fisher folk in their project at Foreshore areas.</li> <li>2. Develop further the white sand beaches to become world class beach resort.</li> </ol>
<b>External Threats (T)</b>	<b>ST Strategy:</b>	<b>WT Strategy:</b>
<ol style="list-style-type: none"> <li>1. Quarrying along Foreshore areas.</li> <li>2. Pollution from solid waste, waste waters and chemical from upland farmers.</li> </ol>	<ol style="list-style-type: none"> <li>1. Strengthening the monitoring of violators in quarrying in the Foreshore area for immediate apprehension.</li> <li>2. To strictly implement R.A. 9003, the Solid Waste Management Act and PD- 1076 Water Code, R.A. 9275 Clean Water Act and R.A. 9729 Philippine Climate Change Act by the MLGU and PLGU.</li> </ol>	<ol style="list-style-type: none"> <li>1. Barangays should pass a Barangay ordinance in the protection from pollution and preservation of Foreshore areas.</li> <li>2. Municipal Mayors must develop a relocation site for informal settlers of Foreshore areas.</li> </ol>

#### EXTERNAL OPPORTUNITIES (O)

1. Some fishermen were already organized into fisher folk association, and they can be tapped for the development and protection of Foreshore areas.
2. There are several white sand Beaches in the Foreshore areas within Zamboanga Sibugay District-2.
3. Access to several entrepreneur coming from Zamboanga del Norte, Zamboanga del Sur, Zamboanga City and from nearby other provinces of Mindanao and Visayas.
4. In Zamboanga Sibugay the revenue collection is just fair.
5. We have a low price in all commodities in our district.
6. Sibugaynons are naturally beach-lovers.

#### EXTERNAL THREATS (T)

1. Quarrying along Foreshore areas.



2. Pollution from solid waste, waste waters and chemical from upland farmers.
3. Proliferation of Informal settlers.
4. Conflict of claims in Foreshore areas.
5. Peace and Order Situation.
6. Siltation
7. Unauthorized utilization and reclamation of Foreshore areas

#### **INTERNAL STRENGTHS (S)**

1. Some fisher folk had already built stilt cottages for Beaches.
2. Barangay roads are emplaced in some Barangays.
3. We have a very supportive Provincial LGU.
4. Fisher folk and other People's organization are well-organized.
5. LGUs are capable to manage any project on Foreshore areas.
6. There are several white sand Beaches in the Foreshore areas.

#### **INTERNAL WEAKNESSES (W)**

1. Barangay roads not properly maintained.
2. People's Organization and Fisher folks lack the necessary capital.
3. Lack of Cooperation among stakeholders.
4. Barangay Ordinance regarding Foreshore.
5. Lack of Political will.
6. Underdevelopment of Beaches.
7. Weak implementation of laws and regulations.
8. Change of Administration.
9. No barangay initiated protection and preservation activities.

- I. The WT Strategy or interventions (see the lower right-hand quadrant) is to minimize both Weaknesses and Threats.
  1. Barangay must prioritize annual allocation for repair and maintenance of Barangay roads leading to Foreshore areas.
  2. The Provincial LGU should coordinate with the concerned Municipality and Barangay in the prevention of illegal quarrying on the Foreshore areas, and in implementation of laws.
  3. Barangays should pass a Barangay ordinance in the protection from pollution and preservation of Foreshore areas.
  4. Municipal Mayors must develop a relocation site for informal settlers of Foreshore areas.
  5. There must be an Arbitration Committee from Barangay to Municipal up to Provincial level to handle all conflict claims on Foreshore areas.
  6. Enforcement agencies like AFP and PNP must prioritize programs/activities in their mission to keep the Foreshore especially Beaches peaceful and in order.
- II. The WO Strategy attempts to minimize the weaknesses and maximize opportunities.
  1. To train further the Fisher folk in their project at Foreshore areas.

2. Develop further the white sand beaches to become world class beach resort.
  3. To promote and offer the white sand beach resort to several visitors and entrepreneurs coming to our District.
  4. Encourage the Sibugaynons to patronize and introduce thru social media the white sand beaches resort which is comparable to Boracay.
- III. The ST Strategy is based on the organizations strengths to deal with threats in the environment.
1. Strengthening the monitoring of violators in quarrying in the Foreshore area for immediate apprehension.
  2. To strictly implement R.A. 9003, the Solid Waste Management Act and PD- 1076 Water Code, R.A. 9275 Clean Water Act and R.A. 9729 Philippine Climate Change Act by the MLGU and PLGU.
  3. Municipal Government must pass a local ordinance to prohibit informal settlers and residential houses in the Foreshore areas.
  4. Provincial Government should request the AFP and PNP to establish more detachments/ headquarters and help put up such infrastructure for their use in the maintenance of peace and order and apprehension of violators on Foreshore areas.
- IV. The SO Strategy is the most describe position in which an organization can its strengths to take advantage of opportunities.
1. Invite more investors in the development of beach resort like Boracay.
  2. LGUs must built more infrastructure for recreational purposes along Foreshore areas.
  3. PLGU allocate more road projects leading to beach resorts, for easy access in and out by both local and international tourists.
  4. Prioritize the development of Airport into international Airport to attract more visitors from abroad to have a vacation tour in different white sand beach resorts particularly in the Province of Zamboanga Sibugay.

Table 33 - Strengths, Weaknesses, Opportunities, Threats (SWOT) Matrix

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
1. Presence of beaches/white sand beaches	1. Barangay roads are not maintained regularly	1. Organized fisherfolks can be tapped in foreshore development and protection	1. Quarrying along foreshore areas
3. Presence of sandbars	2. Peoples' Organizations (POs) and fisherfolks lack capital	2. Supportive Provincial Local Government Unit (PLGU)	2. Pollution due to improper solid wastes, wastewater and chemicals from the upland ecosystem
4. Presence of access roads			
5. Fish abundance	3. Lack of cooperation		

7. Presence of various species of mangroves	among stakeholders	3. Availability of funding assistance from NGAs (DOT, TIEZA, DPWH, DA) for development projects	3. Illegal cutting of mangroves 4. Illegal fishing 5. Informal settlers in foreshore areas 6. Occurrence of tsunami in tsunami inundation areas
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As shown in the SWOT matrix above, strengths of the foreshore areas are: 1)there are beautiful beaches which are found in the Municipalities of Buug, Malangas, Alicia, Mabuhay, Olutanga, Talusan, Naga, Ipil, R.T. Lim and Ipil. Some of these beaches are developed by private developers. The beaches, if fully developed, could become a very attractive ecotourism destination for local tourists as well as national and international tourists; and, 2)majority of the foreshore areas in the barangays already have an access roads so that improving the areas would no longer be a problem to developers.

While the Province of Zamboanga Sibugay foreshore areas have its strengths, they also have their own weaknesses. Among the weaknesses identified are: 1)some of the barangay roads/access roads in the foreshore areas are not being regularly maintained so that there are some roads which are in poor condition; 2)there are already organized peoples' organizations and fisherfolks but they cannot engage in business and other economic activities due to lack of capital; and, 3)stakeholders in some LGUs do not cooperate with foreshore management activities.

The Province of Zamboanga Sibugay is blessed with the opportunity that there are organized fisherfolks and other groups can be tapped to support projects and activities that are for the development and protection of the foreshore areas. However, there are possible threats to the foreshore areas just like quarrying. The danger of quarry is that it might deform the physical formation of the foreshore thus it will affect its aesthetics. Another threat is the pollution from the upland ecosystem that is brought about by improper solid waste management, wastewater and chemicals.

Another threat is the possible occurrence of tsunami in areas that are tsunami prone like Alicia, Malangas, Mabuhay, Olutanga and Talusan. So, in order to give solutions or interventions to the weaknesses and threats, strategies are developed by the coastal municipalities and are reflected in the matrix below.

Table 34 – SWOT Strategy

SO Strategy	WO Strategy	ST Strategy	WT Strategy
1. Invite investors/ establish partnership with the private sector for the development of the beaches  2. LGUs shall establish and/or construct facilities and utilities for recreational purposes.  3. Develop the white sand beaches to make them world class beach resorts.	1. Conduct training to fisherfolks on basic business management and project development.	1. Strict monitoring of quarry & related activities in the foreshore areas  2. Apprehend immediately all violators  3. Strict implementation of the ff in the MLGUs:  a. RA 9003 (Solid Waste Management Act)  b)PD 1076- Water Code  c)RA 9275 – Clean Water Act  d)RA 9729 – Phil. Climate Act	1. Strengthening of Barangay Solid Waste Management Committees (BSWMCs)  2. Passage of Barangay Ordinance for the protection and preservation of the foreshore areas.  2. Provision of relocation/ resettlement sites for the informal settlers in foreshore areas.  3. Coordinate with NHA for the housing of the informal settlers.

The following are the identified programs, projects and activities in each coastal municipality:

Table 35 – Programs, Projects and Activities

Municipality	Program/ Project/ Activities	Description	Year of Implementation	Responsible Agency/ Office/ Person	Cost Estimates (in Million Pesos)
<b>DISTRICT I</b>					
1. Buug	1. Development of beaches	a. Construction of cottages for tourist			

		accomodation in: -Silupa Beach	2019-2020	Private Developer	5,000
		-Pamintayan Beach	2019-2020	Private Developer	5,000
	2. Road concreting	a.Poblacion-Silupa, Bawang Road	2019-2020	DPWH DOT MLGU	80,000
		b. (Poblacion-Pamintayan Section)	2019-2020	DPWH DOT MLGU	100,000
	3. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	4. Housing Development	Pamintayan	2019-2028	NHA MLGU	10,000
2. Malangas	1.Development of beaches	- Kigay Beach - Poblacion Beach - Dansulao Beach	2019-2028	DOT MLGU	5,000
					5,000
	2.Mangrove plantation/ rehabilitation	- All coastal barangays with mangroves	2019-2028	MLGU DA	10,000
	3.Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	4. Housing development		2019-2028	MLGU NHA	10,000
3. Payao	1. Improvement of municipal wharf	Barangay Poblacion	2019-2028	DOT MLGU	10,000
	3.Acquisition of resettlement site for foreshore		2019-2028	MLGU	2,000



	informal settlers		2019-2028	MLGU NHA	10,000
	4. Housing development				
4.Alicia	1.Development of beaches	a. Litayon Island, Brgy. Litayon	2019-2028	MLGU DOT	1,500
		b. Black Sand Beach, Brgy, Pandan-Pandan	2019-2028	MLGU DOT	1,000
		c. White Sand Atoll, Brgy. Poblacion	2019-2028	MLGU DOT	2,500
		b.Solmar Beach, Brgy. Kawayan	2019-2028	Private Developer	500
	2.Road Access Development	Along foreshore areas	2019-2028	DOT DPWH	320,000
	3. Acquisition of 2 units, UV Plastic Drying Facility	○ Brgy. Poblacion ○ Dawa-Dawa	2019-2028	MLGU BFAR/DA OPAD	160,000
	4. Mangrove reforestation (300 has.)		2019-2028	MLGU DA	30,000
	5. Construction of Boat Landing Facility	14 units (14 barangays)	2019-2028	MLGU DOT TIEZA DPWH	72,000
	6. Acquisition of Housing Lot for Foreshore Informal Settlers	20 barangays @ 2 has. each	2019-2028	MLGU DOT	200,000
	7. Housing Development	20 resettlement sites	2019-2028	MLGU NHA	400,000
	8. Breakwater Development Project	Brgy. Poblacion	2019-2028	MLGU DPWH Foreign Assistance	400,000

5. Mabuhay	1. Development of Beaches	- Sibulan Island Beach @ Caliran	2019-2028	Private Developer DOT	2,000
		- Caliran Beach. @ Caliran	2019-2028	MLGU DOT	2,000
	2. Development of Hot Spring	Brgy. Caliran	2019-2028	MLGU DOT	2,000
	3. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	4. Housing Development		2019-2028	MLGU NHA	10,000
6. Olutanga	1. Development of Beaches	- Tugsukan Beach, Pulo Laum	2019-2023	Private Developer DOT	7,000
		- Lapusan Beach, Pulo Mabao	2019-2023	Private Developer DOT	7,000
	2. Improvement of Rock Causeway	Pulo Mabao	2019-2023	DPWH TIEZA MLGU	10,000
	3. Improvement of the Sea Snake Sanctuary	Sea Snake Sanctuary	2019-2028	DOT MLGU	7,000
	4. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	5. Housing development		2019-2028	MLGU NHA	10,000
7. Talusan	1. Development of Beaches	- Baganipay Beach at Baganipay	2019-2028	MLGU DOT	2,000

		- Moalboal Beach at Moalboal	2019-2028	MLGU DOT	2,000
		- Tuburan Beach @atTuburan	2019-2028	MLGU DOT	2,000
		- Dao Beach at Poblacion	2019-2028	MLGU DOT	2,000
	2. Spring Development	Barangay Cawilan	2020-2028	MLGU TIEZA DILG	10,000
	3. Expansion of municipal port.		2019-2028	MLGU DPWH	10,000
	4. Construction of seawalls	Tsunami inundation area	2018-2028	MLGU DPWH	30,000
	5. Construction of Steel Bridge (connecting Talusan-Olutanga)		2019-2028	MLGU DPWH	100,000
	6. Construction of Fish Landing		2019-2028	BFAR MLGU	10,000
	7. Mangrove rehabilitation	All coastal barangays with depleted mangroves	2019-2028	MLGU DA	10,000
	8. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	9. Housing Development		2019-2028	MLGU NHA	10,000
<b>DISTRICT II</b>					
8. Siay	1. Mangrove rehabilitation	a. All coastal barangays with depleted mangroves	2019-2028	MLGU DA/BFAR	20,000
				MLGU	15,000

	2. Construction of wharf	Barangay Monching	2019-2028	BFAR DPWH	5,000
	4. Development of Ecotourism Site	- Bat watching site at Kabug Island	2019-2028	MLGU DOT	
	5. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	6. Housing development		2019-2028	MLGU	10,000
9. Kabasalan	1. Mangrove rehabilitation	All coastal barangays with depleted mangroves	2019-2028	MLGU DA	20,000
	2. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	3. Housing Development		2019-2028	MLGU NHA	10,000
	4. Beach Development		2019-2028	MLGU DOT	2,000
3. Naga	1. Construction of Fish Dryer	a. Kaliasana	2019-2028	BFAR MLGU	5,000
		b. Taytay Manubo	2019-2028	BFAR MLGU	5,000
	2. Construction of Wharf/Pier	Brgy. Baluno	2020-2028	BFAR MLGU	15,000
	3. Construction of Boat Building/ Dry Docking Area	Brgy. Baluno	2020-2028	BFAR MLGU	10,000

	4. Installation of Solar Power Plant	Barangay Poblacion	2010-2028	MLGU NGA	10,000
	5. Mangrove rehabilitation	All coastal barangays with depleted mangroves	2019-2028	DA MLGU	10,000
	6. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	2,000
	7. Housing Development		2019-2028	MLGU NHA	10,000
11. Ipil	1. Construction of Wharf/Pier	a. Palid	2019-2028	MLGU DA/BFAR	20,000
		b. Magdaup	2019-2028	MLGU DA/BFAR	20,000
		a. Magdaup	2019-2028	MLGU DA/BFAR	20,000
	2. Construction of Fish Dryer	b. Bangkerohan	2019-2028	MLGU DA/BFAR	2,000
		c. Buluan	2019-2028	MLGU DA/BFAR	2,000
		a. Magdaup	2019-2028	DA/BFAR MLGU	2,000
	3. Construction of Banca/ Pump Boat Docking Area	b. Bangkerohan	2019-2028	DA/BFAR MLGU	2,000
		c. Buluan	2019-2028	DA/BFAR MLGU	2,000
	4. Mangrove rehabilitation	All areas with depleted mangroves	2019-2028	MLGU DA	10,000
	5. Acquisition of resettlement site for foreshore		2019-2028	MLGU	10,000

	informal settlers				
	6. Housing Development		2019-2028	MLGU NHA	100,000
12. R.T. Lim	1, Development of Beach	- Gango Beach at Brgy. Gango	2019-2028	DOT MLGU	2,000
	2. Construction of Wharf/Pier	Brgy. Ali Alsree	2019-2028	BFAR MLGU	20,000
	3. Construction of Fish Dryer/ Seaweed Dryer	Ali Alsree	2019-2028	BFAR MLGU	2,000
	5. Development of Banca/Pump Boat Docking Area	Ali Alsree	2019-2028	DA/BFAR MLGU	2,000
	6. Installation of Solar Power Plant	- Solar Power Plant	2020-2028	MLGU	5,000
	7. Mangrove Rehabilitation	All coastal barangays with depleted mangroves	2019-2028	DA MLGU	5,000
	8. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	5,000
	9. Housing Development		2019-2028	MLGU NHA	50,000
13, Tungawan	1. Development of Beaches	- Looc Labuan Beach Resort	2019-2028	Private Developer MLGU DOT	2,000
		- Tubo-tubo Beach Resort	2019-2028	Private Developer MLGU DOT	2,000



		- Bangaan Island Beach Resort	2019-2028	Private Developer MLGU DOT	2,000
		- Brisa Marina Beach Resort	2019-2028	Private Developer MLGU DOT	2,000
		- Tigbucay, Linguisan Beach	2019-2028	Private Developer MLGU DOT	2,000
		- Pulo Piña Beach Resort	2019-2028	Private Developer MLGU DOT	2,000
	2. Construction Fish/Seaweed Dryer		2020-2028	DA/BFAR MLGU	2,000
	3. Development of Banca/Pump Boat Docking Area		2020-2028	DA/BFAR MLGU	2,000
	4. Acquisition of resettlement site for foreshore informal settlers		2019-2028	MLGU	10,000
	5. Housing Development		2019-2028	MLGU NHA	50,000

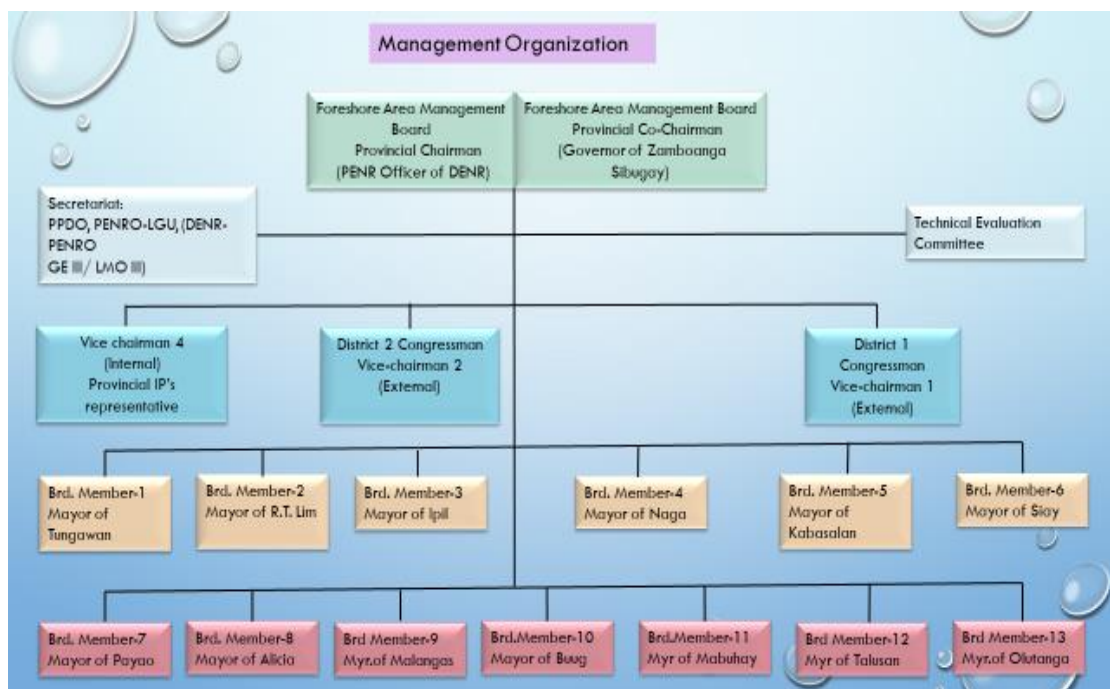
## 5.5 Institutional Arrangements

The foreshores shall be co-managed by various stakeholders and groups/sectors in order to:

1. Enable multi-level interaction recognizing and integrating different values, interests and roles of different actors and users;

2. Incorporate traditional and scientific approaches in resolving conflicts and advancing development objectives;
3. Promote transparency, equity and inclusiveness;
4. Promote continuous consultation and participation and a “learning by doing” approach;
5. Assists establishment of information loops between local and national levels and other sectors; and
6. Optimize the contributions of different stakeholders.

A Provincial Foreshore Area Management Board (PFAMB) shall be created to be composed of the following:



- |                  |   |
|------------------|---|
| 1. Chairman      | - DENR PENRO                              |
| 2. Co-Chairman   | - Provincial Governor                     |
| 3. Vice-Chairmen | - Congressman, District I (External)      |
|                  | - Congressman, District II (External)     |
|                  | - Provincial IP Representative (Internal) |
| 4. Members       | - Provincial Governor                     |
|                  | - Municipal Mayor, Buug                   |
|                  | - Municipal Mayor, Malangas               |
|                  | - Municipal Mayor, Payao                  |
|                  | - Municipal Mayor, Alicia                 |
|                  | - Municipal Mayor, Mabuhay                |
|                  | - Municipal Mayor, Olotanga               |
|                  | - Municipal Mayor, Talusan                |

- Municipal Mayor, Siay
- Municipal Mayor, Kabasalan
- Municipal Mayor, Naga
- Municipal Mayor, Ipil
- Municipal Mayor, R.T. Lim
- Municipal Mayor, Tungawan
- Chairman on Environment and Natural Resources (SP)
- Chairman on Tourism (SP)
- Provincial Director, DOT
- Provincial Director, PNP
- Philippine Coast Guard
- 102<sup>nd</sup> Brigade, Zamboanga Sibugay
- Philippine Ports Authority
- Department of Public Works and Highways

PFAMB Secretariat shall likewise be constituted with the following members:

- |                      |   |
|----------------------|---|
| 1. Head, Secretariat | - Provincial Planning & Devt. Coordinator   |
| 2. Members           | - MENROs from the 13 coastal municipalities |
|                      | - DENR-PENRO Staff (GE III & LMO III)       |

The Provincial Foreshore Area Management Board shall mainly be responsible for the strategic planning, overall coordination and policy making. It shall have the following specific functions:

- a. Formulation of operational policies/procedures for the municipal foreshore development and management and provision of technical assistance, research and ICT support;
- b. Guide the formulation of Municipal Foreshore Development and Management Plans;
- c. Approved/recommend approval of foreshore lease application as appraised by the technical appraisal team;
- d. Mediate inter-LGU concerns such as foreshore lease application that straddle two LGUs;
- e. Maintain province-wide database on foreshore uses, spatial data, and other information and pursue relevant research in aid of area management;
- f. Mobilize composite monitoring and evaluation team from shore zone management councils for regular evaluation of foreshore status;
- g. Apply national regulatory standards;

- h. Capacitate the municipal shore zone management council through training, education and advocacy programs; and
- i. Closely coordinate with other provincial and local inter-agency bodies with relevant functions or plans on the foreshore such as the CRM Committee and PAMB.

## 5.6 Action Plan

### PROVINCIAL FORESHORE MANAGEMENT AND DEVELOPMENT PLAN IMPLEMENTATION ACTIVITIES

#### LOCAL GOVERNMENT UNITS (LGU)

##### 1<sup>st</sup> to 3<sup>rd</sup> year

Based on the proposed Organizational Chart of PFMDP both PLGU and MLGU have an active participation in managing the foreshore areas. It is their best interest to ensure that the foreshore with their territorial jurisdiction is placed under effective management because it is where the constituents get their livelihood and generated income for LGU's. According to section 16 of the Local Government Code, it is within the LGU's respective territorial jurisdictions, to ensure and support, among other things, the preservation and enrichment of culture, promote health and safety, enhance the right of the people to a balanced ecology, encourage and support the development of appropriate and self-reliant scientific and technological capabilities, improve public morals, enhance economic prosperity and social justice, promote full employment among their residents, maintain peace and order, and preserve the comfort and convenience of their inhabitants. Ordinances are law made by the local government without the consent of the legislature. It is not a public law of the state, but a local law of the particular corporation, made for its internal practice and good government (*Guzman v. Subido, et al.* GR No. L-31683). Therefore, it is the LGU's concern to make ordinances regarding the foreshore areas not contrary to national laws, and there is a need for ordinances in establishing different kind of zones within the Foreshore areas such as: Industrial, Commercial, Recreational, Sports, Beach resort, eco-tourism, open space, mangrove rehabilitation, protected area, mix uses, special uses, storm surge protection, infrastructure and utility and Government use zone.

It is recommended that the coastal LGU's with mangrove areas should formulate their own ordinance to stop all cuttings of trees for economic and residential use. This is in accordance to PD 705, Sec. 43 which states that mangrove areas that protect the shoreline, shoreline roads and coastal communities from the force of the sea shall be maintained and shall not be eliminated and shall not be subjected to clear-cutting operations.

Ordinances regarding solid waste should also be formulated. The coastal LGU's will make an action plan in addressing the solid waste problem in their own foreshore areas. As what the CENRO-Team observed, most of the foreshore areas of Zamboanga Sibugay 2<sup>nd</sup> District have an issue in disposing their waste. Most wastes are generated from the informal settler occupying the areas, as what also observed by the team of PENRO-Zamboanga del Norte in their PFMDP. The ordinances should be in line with R.A 9003 also known as the Ecological Solid Waste Management Act of 2000. Both PLGU and MLGU can coordinate with the DENT to be guided on the appropriate ordinances to be imposed in the foreshore areas.

Some quarrying on foreshore areas are still practice as observed also an erosion in other areas and flood water may reach residential areas. Pursuant to R.A. 7942 or also known as the Philippine Mining Act of 1995 and EO 79, beaches within 200 meters from the mean low tide, foreshore areas within 500 meters from the mean low tide and river banks including the mandated buffer zone pursuant to PD 1067, also known as the Water Code of the Philippines are NO-GO Zones. It means that within the designated limits above mentioned are not allowed to be mined or to be quarried.

In relation to the erosion caused by quarrying or by natural calamities due to climate change, the coastal LGU's will formulate plans in mitigating the problem of erosion in the foreshore areas. In coordination with the DPWH, the LGU's can propose plans in constructing seawalls or breakwaters to prevent coastal erosion and protection from storm surge.

Foreshore with different zoned should be identified and corresponding ordinance will be formulated in coordination with the HLURB as to different zoned mentioned earlier.

There should be plans for roads construction from the national road to the foreshore areas. As to present situation some foreshore areas are inaccessible to four-wheel vehicle, it can be accessed through walking or motorcycle with long distance from the national road.

Another prevailing concern that threatened Foreshore areas is the peace and order situation in some municipalities within Zamboanga Sibugay 2<sup>nd</sup> District. The LGU in coordination with the PNP should formulate an action plan for the safety of the people in the foreshore areas.

#### **4<sup>th</sup> to 10<sup>th</sup> year**

Target for the fourth year up to tenth year is the implementation of the ordinances that was passed. According to section 511 of the Local Government Code, ordinances with penal sanctions shall be posted at prominent places in the provincial capitol, city, municipal or Barangay hall, as the case may be, for a minimum period of three (3) consecutive weeks. Such ordinances shall also be published in a newspaper of

general circulation, where available, within the territorial jurisdiction of the local government unit concerned, except in the case of Barangay ordinances. Unless otherwise provided therein, said ordinances shall take effect on the day following its publication, or at the end of the period of posting, whichever occurs later.

The LGU's will monitor the foreshore areas especially in the barangay level. Barangay Captains should be responsible in implementing the ordinances and will make the Barangay Kagawads as the monitoring team, and within these period Foreshore areas within their jurisdiction should be free of informal settlers.

## **DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (DENR)**

### **1<sup>st</sup> to 3<sup>rd</sup> year**

The Legal utilization of Foreshore areas is when a lease contract was already issued to that particular lessee. Foreshore and marshy lands shall be inventoried and surveyed by the CENRO to determine their existing/ appropriate uses, availability of open areas, extent of the area and number of settlers with assistance of Barangay officials, to become an input in the preparation of different zones in foreshore areas.

A Foreshore Lease Application will be filed by a private individual or corporation in the DENR-CENRO within whose jurisdiction of the land applied for is located. A Foreshore Lease Application is a type of application covering foreshore lands, marshy lands and other lands bordering bodies of water for commercial, industrial or other productive purposes other than agriculture. Under the 1973 and 1987

Constitutions, an individual may lease not more than 500 hectares and a corporation may lease not more than 1000 hectares.

The CENRO- Survey Team if available will conduct the survey if not, any private Geodetic Engineer/ Surveyor may conduct the land survey after the issuance of a Survey Authority by the CENRO. After the approval of the survey then the LMI will continue to process the application. The appraisal committee headed by the CENRO officer will conduct the appraisal on the value of the land plus the improvement for the basis of annual rental by the lessee. The appraisal and/or reappraisal shall be in accordance with the manner prescribed in DAO 98-20 and DAO 2010-26.

The annual rental of the land leased shall not be less than three per centum of the value of the land in accordance with section 37 of CA 141. the FAMU is given the responsibility for the monitoring and implementation of all policies, plans and programs on foreshore lands, including the review of foreshore lease agreements and maintenance of foreshore information and databases.

The Secretary of DENR is responsible in approving the Foreshore Lease Contract. A Foreshore Lease Contract is the agreement between the DENR and the applicant that contains specific terms and



conditions. According to section 38 of CA 141, the contract shall run for a period of not more than twenty-five years but may be renewed once for another period not to exceed twenty-five years in case the lessee shall have made important improvements, which, at the discretion of the Secretary – justifies a renewal. When the contract is approved, the leased land will then be awarded to the lessee. CA 141 or Public Land Law is already aging and outdated and needs to be updated and improved.

The DENR may conduct Communication, Education and Public Awareness to each coastal barangay about the proper management and protection of the foreshore areas as well as the risks that may happen. It promotes and encourages understanding and develop education and public awareness programs. It deals with the processes that attract, motivate and mobilize individual and collective action for biodiversity and brings out common interests amongst stakeholders to conserve and use biodiversity sustainably. It will help in managing the foreshore areas specially in preserving the biodiversity in the rich foreshore areas. The department shall extend technical assistance to the LGUs to assess and review marine protected areas to be managed by the LGUs.

The foreshore areas are not alienable and disposable, therefore, should be surveyed and identified to segregate it from the mass of public domain for a specific government purpose for future use. It is recommended to have a Presidential Proclamation from the President. The Presidential Proclamation will be formulated for the segregation of an identified areas from the mass of public domain for a specific purpose of the government. It will be used for the governments' disposal. It shall be used for commercial, industrial or tourism that is managed by the government. A proclamation is needed because according to Administrative Code of 1987, Book III, Chapter 2, Section 4, proclamations, are acts of the President fixing a date or declaring a status or condition of public moment or interest, upon the existence of which the operation of a specific law or regulation is made to depend, shall be promulgated in proclamations which shall have the force of an executive order.

#### **4<sup>th</sup> to 10<sup>th</sup> year**

The DENR should strictly implement the rules and regulations concerning the foreshore areas together with the LGUs in accordance to CA 141, PD 1064, DAO No. 98-20, DAO No. 99-34, DAO 2004-24 and DAO 2010-26, or the new updated CA 141- Public Land Law. The department with the LGUs will monitor the foreshore application and no individual should occupy and develop structures in the area applied unless they are granted the FLC. Fees and rentals of the foreshore leases should be collected strictly by the DENR-FAMU.

When a Presidential Proclamation is issued by the President, areas that are identified to be for governmental use will be subjected to special patents. According to section 4 of RA 10023, a special patent is notwithstanding any provision of law to the contrary and subject to private rights, if any, public land actually occupied and used for public schools, municipal halls, public plazas or parks and other government institutions for public use or purpose may be issued special patents under the name of the national agency or LGU concerned.

## **DEPARTMENT OF INTERIOR AND LOCAL GOVERNMENT**

### **1<sup>st</sup> to 3<sup>rd</sup> year**

The DILG is responsible in assisting the legislation regarding local governments, law enforcement and public safety. Establish and prescribe plans, policies, programs and projects to promote peace and order, ensure public safety and further strengthen the administrative, technical and fiscal capabilities of local government offices and personnel. Formulate plans, policies and programs which will meet local emergencies arising from natural and man-made disasters. Establish a system of coordination and cooperation among the citizenry, local executives and the Department, to ensure effective and efficient delivery of basic services to the public.

The role of the agency in the foreshore areas is to assist the LGUs in formulating ordinances. They will also assist in making the development plans in each municipality/city in the province. The DILG should impart to the Provincial Foreshore Board the different lessons learned from the Boracay problems.

### **4<sup>th</sup> to 10<sup>th</sup> year**

The DILG will help enforce the ordinances and national laws because it is their duty to assist and help local government units in promoting good governance on the local people. And make sure that plans and programs of the Provincial Foreshore Board were implemented according to its target as scheduled especially on the Municipal level.

## **BUREAU OF FISHERIES AND AQUATIC RESOURCES**

### **1<sup>st</sup> to 3<sup>rd</sup> year**

The BFAR is responsible for the development, improvement, management and conservation of the fisheries and aquatic resources of the Philippines. The agency provides advisory services and technical assistance on the quality of fish from the time it is caught (i.e., on board fishing vessels, at landing areas, fish markets, to the processing plants and to the distribution and marketing chain). They will advise and coordinate with LGUs on the maintenance of proper sanitation and hygienic practices in fish markets and fish landing areas. Together with

LGUs and other concerned agencies they establish productivity-enhancing and market development programs in fishing communities to enable women to engage in other fisheries / economic activities and contribute significantly to development efforts. Perform such other related functions which shall promote the development, conservation, management protection and utilization of fisheries and aquatic resources (BFAR, 2014)

The agency should allocate boat docking sites as to not crowd the foreshore areas and will form organizations or cooperatives in each coastal municipality/city. Fisher folk cooperative and women's organizations are recommended in order to help the community. The agency can help these organizations in skills enhancement for generating income in coordination with TESDA. It shall identify and recommend to the Provincial Foreshore Board a Fisher folk resettlement area outside the Foreshore area and salvage zone but just near the shore for at least 20 meters from the highest tide.

#### **4<sup>th</sup> to 10<sup>th</sup> year**

The agency together with the LGUs should strictly implement and monitor the prohibitions and impose the penalties according to RA 8550 Chapter VI. The fisherfolk cooperative and women's organizations will help in the monitoring and implementation of the said law together with the ordinances of the LGUs regarding the foreshore areas. The agency will assess, review and evaluate the performance of these organizations as to following the ordinances or laws. Coordinate with the National Housing Authority for the establishment of subdivision housing site for fisherfolk resettlement area.

### **DEPARTMENT OF TOURISM**

#### **1<sup>st</sup> to 3<sup>rd</sup> year**

The DOT has the responsibility in promoting the tourism of the Philippines. Through the Provincial Tourism, the agency will help in promoting and identifying areas that are for ecotourism sites in the foreshore areas together with the DENR.

Ecotourism is a form of sustainable tourism within a natural and /or cultural heritage area where community participation, protection and management of natural resources, culture and indigenous knowledge and practices, environmental education and ethics, as well as economic benefits are fostered and pursued for the enrichment of host community and satisfaction of visitors.

The DOT will plan in establishing an ecotour facility that is designed to protect the environment and enhance the quality of visitor experience. With the identified foreshore areas with ecotourism potentials in the province of Zamboanga Sibugay, 2<sup>nd</sup> District, it will give way for

promoting the tourism capabilities of the province. Help the foreshore provincial board in classifying zones that are suitable for beach resorts in every municipality of the province, applying also the lesson learned on Boracay issues.

**4<sup>th</sup> to 10<sup>th</sup> year**

The DOT will implement its plans for the ecotourism of the foreshore areas of Zamboanga Sibugay, District 2. The facilities will be constructed and will be monitored by the agency together with the LGUs especially to the stakeholders. They will form a team that consist of the People's Organization for the maintenance of the facilities that can address the problem of both solid and water waste on the foreshore area.

**HOUSING AND LAND USE REGULATORY BOARD****1<sup>st</sup> to 3<sup>rd</sup> year**

The housing and land use regulatory board issues zoning and land use standards and guidelines. The HLURB includes the maximum safe distances from bodies of water and should follow the setback zones according to the Water Code. The agency may assist the LGUs in amending and revising plans and ordinances that are ambiguous especially in making the CLUP.

The HLURB may issue appropriate guidelines for the establishment of setback zones building standards and procedure for compliance according to EO 648 and 72 and RA 7279. This will be the basis of the LGUs in making the zoning ordinance and surveys. Advise the Provincial Foreshore in the preparation of different zoning on Foreshore areas and housing for resettlement of fisherfolks should be outside the foreshore area and salvage zone.

**4<sup>th</sup> to 10<sup>th</sup> year**

The boards will approve the zoning ordinances and they will then implement it to avoid confusion from other LGUs with regards to their foreshore zones.

**DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS****1<sup>st</sup> to 3<sup>rd</sup> year**

The DPWH is the engineering and construction arm of the Government tasked to continuously develop its technology for the purpose of ensuring the safety of all infrastructure facilities and securing all public works and highways the highest efficiency and quality in construction.

The agency is responsible for the planning, design, construction and maintenance of infrastructure, especially the national highways, flood

control and water resources development system, and other public works in accordance with national development objectives.

The plans of the LGUs for the construction of roads leading to the foreshore areas as well as the construction of seawalls and breakwaters will be presented to the agency. They will then assess and review the plans for its approval. The agency will advise the Provincial Foreshore Board the latest standard on the establishments of Waste Water Treatment Plant, the prevention of solid waste reaching the foreshore areas that was washed away during heavy rains, also the establishments of Solar Power plant at the foreshore areas.

## **PHILIPPINE PORTS AUTHORITY**

### **1<sup>st</sup> to 3<sup>rd</sup> year**

According to PD 857, the PPA supervises, control, regulate, construct, maintain, operate and provide such facilities or services that are necessary in the ports vested in, or belonging to the Authority. They also prescribe rules and regulations, procedures and guidelines governing the establishment, construction, maintenance and operation of all other ports, including private ports in the country. They will also exercise control of or administer any foreshore rights or leases which may be vested in the Authority from time to time. They will also coordinate with the Bureau of Lands or any other government agency or corporation in the development of any foreshore areas.

As the seaports are built in foreshore areas, it is in the PPA's interest to manage the foreshore areas and to identify the areas where ports can only be constructed. They will make plans for the constructing of the ports whether it is for a government port or a private port proposed by a private corporation. They will also consider the area and assess if the area is fit to have a seaport constructed.

### **4<sup>th</sup> to 10<sup>th</sup> year**

The agency will begin the implementing the plans and construction of the ports that are to be developed. They will assist any activities relating to the management and development of the foreshore areas including the demolition of all illegally constructed wharfs/ ports in the Province. Also in the closure of all wharfs/ ports that violates environmental laws especially the Clean Air Act, R.A. 8749; the Clean Water Act, R.A. 9275 and the Ecological Solid Waste Management Act, R.A. 9003, assisted by PNP and AFP.

## 5.6 Action Plan (Matrix Form)

[illegible]



	areas in accordance with Sec. 28 of RA 7279 – “Urban Development and Housing Act of 1992”													
	d. Lobby with LGUs to include coastal zoning in their CLUP	All coastal municipalities	x	x	x									PFAMB DENR
2. Plan Formulation	a. Formulation of Infrastructure Development Plan for inclusion in the LDIP including among others the construction of: - seawall & breakwaters - recreational facilities - access roads - sewage treatment plant - ports/wharfs - docking area	All coastal municipalities	x	x	x									MLGUs DPWH DOT DENR PPA DA/BFAR

	- fish dryer - seaweed dryer													
3. Tourism Development	a. Formulate a ten-year Ecotourism Development and Management Plan (EDMP)	All coastal municipalities with ecotourism site	x	x	x									DENR DOT MLGUs
	a. Formulate an Ecotourism Business Plan	All coastal municipalities	x	x	x									DENR DOT MLGUs
4. Monitoring and Evaluation	a. Creation of monitoring and evaluation team	All coastal municipalities	x											MLGUs
	b. Monitoring of PFMDP implementation in the foreshore areas	All coastal municipalities		x	x	x	x	x	x	x	x	x		MLGUs DENR
5. Human Resource Development	a. Training on: - Ecotourism Development & Mngt. Planning - Business Planning	All coastal municipalities	x	x	x									MLGUs DENR DILG DOT

[illegible]

## 5.7 Monitoring and Evaluation

*Monitoring* means the supervising of activities in progress to ensure they are on-course and on-schedule in meeting the objectives and performance targets.

*Evaluation* (Merriam Webster Dictionary) means the judgment of the value or condition of (someone or something) in a careful and thoughtful way; the determination of the significance, worth or condition of usually by careful appraisal and study. In this Plan, it means the process of comparing the baseline data with the information gathered through a monitoring program to determine the result or impacts of the activities to the environment and community.

The monitoring and evaluation processes indicates if the communities and eco-cultural sites are effective. It will also identify what has to be improved or changed. The monitoring process shall be participatory involving the communities and stakeholders in evaluating successes and challenges and the areas that need improvement.

Monitoring and evaluation of the programs, projects and activities embodied in the PFDMP shall be spearheaded by the Municipal Environmental & Natural Resource Officer (MENRO) in each coastal municipality with the assistance of the LGU Project Monitoring & Evaluation Team composed of the following:

1. Municipal Environment & Natural Resource Officer
2. Municipal Planning and Development Coordinator
3. SBM, Committee on Environment
4. Municipal Tourism Officer
5. Municipal Agriculturist
6. Municipal Engineer
7. NGO Representatives

The functions of the Monitoring and Evaluation Team shall be as follows:

- Monitor the status of implementation of the programs, projects and activities embodied in this Plan;
- Provide updates and advisory services to the Provincial Foreshore Area Management Board (PFAMB) in relation to PPA implementation;
- The Team should coordinate very closely with the PFAMB; and
- Submit regular monitoring reports to PFAMB.

The MENRO shall report back to PFAMB during its meeting. The MENRO should highlight the following in the report:

- Goals achieved so far
- Projects/programs accomplished
- Budget spent

- Resources generated
- Capacities of stakeholders in the Foreshore Areas and the community that had been developed;
- Established linkages and networks within and outside of the community; and
- Benefits to residents (or constituents/community members).