# COASTAL ENVIRONMENT PROFILE

**MUNICIPALITY OF NUEVA VALENCIA**
**PROVINCE OF GUIMARAS**

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# CHAPTER I

# INTRODUCTION

## Location

Nueva Vlaencia is one of the five (5) municipalities that comprise the island province of Guimaras. It is a fourth class municipality, has at present 22 barangays; 14 are coastal barangay, 6 are inland and 2 are island barangays.

It is located southeast of Panay with a distance of approximately six (6) nautical miles. This municipality is bounded on the north by the Municipality of Sibunag, on the south and east by Iloilo Strait and on the west by guimnaras Strait. It is within the geographical coordinates of 10 31' 40.63" North latitude and 122 32' 18.52" East longitudes.

## Historical Background

During the Spanish regime, Valencia was already an independent municipality with the late Don Manuel Segovia as Alkalde Mayor. Christianization of the people of Nueva Valencia started almost simultaneously with all other places in the Philippines. This place was originally called "Valencia". It was headed by the Alkalde Mayor. The casa real was situated in the pueblocito of Santa Ana which is now called the Poblacion which also the seat of the municipal government at present. When the casa real was burned with an unknown cause, the name Valencia was changed to Nueva Valencia which was once apart of the municipality of Jordan.

On January 1, 1942, the Municipality of Nueva Valencia was formally inaugurated with Hon. Florentino Gallopa as the first appointed municipal mayor and the seat of municipal government was located at Igbantog, Santa Ana but for the lack of facilities like municipal building and others, the office was temporarily housed at the police station in Barrio Igang until World War II.

It was in the year 1949 during the term of office of the late mayor Ricardo Ortiz when the issue for the final permanent site as the seat of municipal government was raised by political leaders. A plebiscite was held for such purpose and the majority's decision was to transfer the seat of municipal government permanently to sitio Igbantog, Santa Ana which became the permanent seat of municipal government up to the present.

## Objectives

Coastal Resources Management (CRM) is the process of planning, implementing and monitoring beneficial and sustainable uses of coastal resources through participation, collaboration and sound decision-making. This is reached by involving the entire affected community including resource users, local and national government, non government organizations (NGO's) and private sector. The aim is to promote integrated coastal resources from fishing, aquaculture and tourism.

The objectives of this profile are to:

1. Identify major resource management issues to be addressed by LGU's and communities;
2. Provide a source of information for communities, government, planners, researchers and other involved in the planning and education process;
3. Compile baseline information for monitoring and assessing trends in environmental changes and;
4. Provide a source of information for Environment Impact Assessment (EIA's) of development projects in the profile area.

**Scope**

This Coastal Environment Profile covers an area comprised of sixteen coastal barangays along the coastal area of Municipality of Nueva Valencia. It describes the overall economics, agricultural and environmental aspects of the profile area that will have bearing on an integrated management approach to the coastal resources of concern.

## CHAPTER II

## PHYSICAL FEATURES

### Land Area and Topography

The municipality of Nueva Valencia has the total land area of 13, 712.00 hectares with a coastal length of 102 kilometers. Barangay Calaya is the biggest while barangay Magamay is the smallest.

Table 1. Land Area per Barangay in the Municipality of Nueva Valencia

| Barangay | Area (Hectare) |
|---|---|
| 1. Cabalagnan | 458.91 |
| 2. Calaya | 1509.70 |
| 3. Canhawan | 323.59 |
| 4. Concordia Sur | 689.06 |
| 5. Dolores | 421.76 |
| 6. Guiwanon | 298.49 |
| 7. Igang | 608.48 |
| 8. Igdarapdap | 467.76 |
| 9. Lapaz | 704.59 |
| 10. Lanipe | 1002.80 |
| 11. Lucmayan | 737.22 |
| 12. Magamay | 218.67 |
| 13. Napandong | 407.28 |
| 14. Oracon Sur | 525.18 |
| 15. Pandaraonan | 283.55 |
| 16. Panobolon | 310.50 |
| 17. Poblacion | 579.76 |
| 18. Salvacion | 803.94 |
| 19. San Antonio | 1056.01 |
| 20. San Roque | 524.52 |
| 21. Sto. Dominggo | 727.42 |
| 22. Tando | 287.37 |
| **TOTAL** | **13,712.00** |

(Source: MPDO)

**Table 2. Slope ranges and area coverage**

| Slope Range (%) | Description | Area Coverage (ha) | Share to Total (%) |
|---|---|---|---|
| 0-3 | Level to gently sloping | 2, 515 | 18.34 |
| 3-5 | Gently sloping to | 2,435 | 17.76 |
| 5-8 | Undulating to rolling | 2,832 | 2.65 |
| 8-15 | Rolling to hilly | 3,444 | 25.12 |
| 15-18 | Hilly to steepy hilly | 1,163 | 8.48 |
| 18 and over | Steepy hilly to mountainous | 1,323 | 9.65 |
| **TOTAL** | | **13,712** | **100** |

Source: MPDO

**Table 3: Land area by evaluation ranges**

| Elevation Range (m) | Area Coverage (ha) | Share to Total (%) |
|---|---|---|
| Below- 100 | 4,950 | 36.10 |
| 101-150 | 2,832 | 20.65 |
| 151-200 | 3,444 | 25.12 |
| 201-250 | 1,163 | 8.48 |
| 251-300 | 1,323 | 9.65 |
| **TOTAL** | **13,712** | **100** |

(Source: MPDO)

The town topography varies from one barangay to the other. The hilly portion is located at its northeastern part facing Panay Island: the hilly is 150 meters above sea level while its coastal areas are flat and lowland. Land elevation Ranges from 0-300 meters above sea level with Mount Adan as the highest peak.

Hydrology

Nueva Valencia has rivers and creeks which serve as the natural drainage in the water shed area. These are also the sources of water for domestic use and are impounded to irrigate rice fields during short falls of rain. The known rivers of this place are Puyo, Igang and Cabalagnan. There is no sufficient source of water especially during summer on the other areas. Only Igang has sufficient source of water that can cater even dry season. Currently, there is an irrigation extension, expansion and maintenance project at barangay Igang.

Soil Type

The major soil types in the municipality ar Oysteric Nitrosol (62.82% of the total land area), Orthic Herosol (10.03% of the total land area), Orthic Luvisol(12.14%), Hydrosol (1.12%) and Beach Sand (13.89%).

**Table 4. Types of soil and area coverage of Nueva Valencia**

| Type of Soil | Area (ha) | % to Total |
|---|---|---|
| Oysteric Nitrosol | 8, 613.88 | 62.82 |
| Orthic Herosol | 1,375.31 | 10.03 |
| Orthic Luvisol | 1,664.63 | 12.14 |
| Hydrosol | 153.58 | 1.12 |
| Beach Sand | 1,904.60 | 13.89 |
| **TOTAL** | **13, 712.00** | **100.00** |

(Source: Bureau of Soils & Water Management, 2000)

A. Oysteric Nitrosol

This type represents a vast expanse of soil type in Nueva Valencia. In this type of soil, a wide variety of upland crops and fruit trees are generally suitable. This type is considered as stable and can withstand soil erosion because of relatively good infiltration capacity and drainage.

B. Orthic Herosol

About 1, 375.31 hectares (10.03% of the total land area) of this type is generally acid in reaction, thus fertility is inherently low. This can be found in the upland areas of Nueva Valencia.

C. Orthic Luvisol

These are developed from limestone and other volcanic rocks. About 1, 664. 63 hectares (12.19% of the total land area belongs under this soil category. Organic matter content is generally low and productivity is hard to sustain over long period. This type is conducive for growing coconuts, upland rice and other rain fed annual crops.

D. Hydrosol

These soils are about 1563.58 hectares (1.12% of the total land area)

E. Beach Sand

This type is usually located at the coastal soils about 19, 004.60 hectares (13.89% of the total land area) of the municipality are considered to belong to this soil type.

**Land Use**

The area used for agriculture in 2000 was estimated at 11, 339.65 hectares (82.6988% of the total land area). Utilities occupy about 230.92 hectares or 1.6841 %. Theses are 193.68 hectares covered by protected areas (NIPAS) or 1.4125 % of the total land area. The Timberland is about 201.10 hectares (1. 4666%). Mangroves occupy about 239.49 hectares or 1.7466 of the total land area, while agri-tourism is about 83.61 hectares (0.6098), 822.72 hectares 96.000%) is for Forest Conservation/ Protection Area & 315.91(2.3039% of the total land area) is unclassified.

Table 5. Existing General Land Use Accounting of Nueva Valencia in the Year 2000

| Land Use Category | Area (has) | %to Total |
|---|---|---|
| Built up area | 248.89 | 2.0777 |
| Agriculture | 11,339.65 | 89.6988 |
| Utilities(road) | 230.92 | 1.6841 |
| Protected Areas | 193.68 | 1.4125 |
| Timbeland | 201.10 | 1.4666 |
| Mangroves | 239.49 | 1.7466 |
| Agri-tourism | 83.61 | 0.6093 |
| Forest Conservation/Protected Areas | 822.72 | 6.0000 |
| Unclassified | 315.91 | 2.3039 |
| **TOTAL** | **13,712.00** | **100.0000** |

(Source: MPDO)

**Residential Area**

The distribution of residential units in the area is along the coastline and roads were topography is plain. Residential use covers around 27,1357 hectares. The economic activity which will be realized as a result of the development in trade and industry brought about by improvement in transportation and facilities sees in this area a potential commercial.

**Commercial Area**

Commercial establishments in Nueva Valencia include the registered sari-sari- stores where ten (10) are in Barangay Poblacion; 9 in Cabalagnan; 9 I Igang: 6 in Dolores; 4 in Napandong; 3 in Pandaraonan; 2 in Magamay; 2 in Concordia Sur; 2 in Sto Domingo; 2 in Lucmayan; 1 in Lapaz; 1 in Tando; 1 in Lanipe and 1 in Canhawan.

Other types of business are welding shops and steel works where two are located in Igang and two in Pandaronan. There are two registered poultry supplies; one in Poblacion and another in Dolores. There are two licensed bakeries; one in San Roque and one in Dolores.

Among the registered business establishments, 4 are categorized as general merchants; two in Igang; 1 in Cabalagnan and 1 in Poblacion. There is only one licensed rice retailer which is located in Pandaraonan. The only rural bank operating in the municipality is the Rural Bank of Buenavista and is located in Poblacion, while the only licensed hardware is in Igang where the only motorcycle parts dealer also operates. The only licensed purified water distribution is in Igdarapdap while the only licensed LPG distributor of agricultural ricemill is in Concordia Sur where the only dormitory operates. The only licensed distributor of agricultural products is in Poblacion and the only licensed computer gaming is in Cabalagnan. There are two billiard operators: one (1) in Sto. Domingo and one (1) in Poblacion. There are likewise two licensed carinderias, one in Poblacion and one in Magamay. There are only four beaches that had renewed their licenses: three in Poblacion and one in Dolores.

Aside from the above mentioned businesses, commercial undertakings are done in the municipal or Public market as well as in "bolantihan" on market days where bolanteros do business in some barangays. The market day in the Poblacion is every Sunday afternoon, in Lanipe every Monday morning and in the afternoon in Salvacion. In Igdarapdap and Lapaz in on Wednesday morning while in Calaya is every Thursday in the morning and in Oracon Sur in the afternoon. Market day in Cabalagnan is every Saturday in the morning while Saturday afternoon in Napandong. The rest of the 13 barangays don't have market day.

**Watershed Reserve**

Nueva Valencia lies on the western watershed, which roughly coincides without crops of certified limestone and mixture of sandstone, ebale and limestone. There are 10 individual rivers and creeks basins, Igang river with drainage area of 37.30 sq. km. and located in Mt. Pandan Volcanoes is considered perennial.

**Climate**

The climate is practically the same with that of the whole island f Guimaras. It is milder and colder than the other provinces in Western Visayas. Thus, like other provinces, Nueva Valencia has two (2) pronounced seasons, the wet and dry. The mountains of Negros Island, which intercept the rain clouds blown by northeast monsoon from the months of November to April, brought by dry season. The wet season on the other hand is caused by southeast monsoon, which brings rain during the rest of the year. The average rainfall as of the year 2003 is 6.73 millimeters while temperature averages to 27.6 ° C.

# CHAPTER III

# NATURAL RESOURCES

## Mineral Resources

Mineral deposits in Nueva Valencia consist of lump of iron as well as prospects of gold, copper and prospects of limestone and silics sand, phosphate and guano. Gold (Au) and copper (Cu) are deposited as epithermal vein type in barangays where these minerals were noted and explored – Calaya and Salvacion. In Calaya, gold has an average grade of 0.02 part per million (ppm) while copper is i%. Salvacion on the other hand has 0.04 ppm of gold and 240 parts per billion (ppb) of copper.

## Forest Resources

Nueva Valencia has a total land area of 13, 712 has. The alienable and disposable land has a total of 13, 174.76 has., 12465.36 has.for agricultural, 709.40 fro private plantation and 518.24 for fishpond. In forestland areas 313.24 has. is classified for public forest, 103.50 has. fro plantation and 19 has. for fishpond development. The municipality has 62 has. of natural growth forest. The Integrated Social Forestry (ISF) area devolved by DENR to LGU is about 252.8192 has.

The vegetative cover of this municipality includes open cultivated land with an area of 149.3192 has. and the tree plantation of 101 has. The mini forest area is about 3 has. which is protected by the municipality.

# Community Resource Map of the Municipality of Nueva Valencia

## Coastal Resouces

The following is the profile of the Municipality's coastal marine environment composed of the mangrove ecosystems in the intertidal zone, seagrass ecosystems in the near shore zone and coral reef ecosystems which defines the offshore boundary of the coastal zone.

### 1. Mangrove Resources

#### 1.1 Mangrove cover

The overall coverage in the municipality area is approximately 147.72 has. (GIS 2002). The largest area appears in Panobolon Island with a reported coverage of 58.78 has. followed by Lapaz with an area of 38.78 has. and 19.63 has. at San Roque, Nueva Valencia. The existing mangrove cover in some of the coastal barangays of Nueva Valencia were as follows: Cabalagnan (0.60 ha.); Guiwanon (0.99 ha.); Igang ).86 ha); Igdarapdap (3.47 ha); Lapaz 38.78 has); Mgamay (0.93 ha.); Panobolon (58.78 has.); Poblacion 8.03 has.); San Antonio (11.33 has.); San Roque (19.63 has.); Sto. Domingo (2.36 has.) and Tando (1.96 ha.).

Among the 5 municipalities, Nueva Valencia has the second largest mangroves in the province. Said municipslity has also rich fishing grounds.

#### 1.2 Mangrove Species Composition and Diversity.

The current species composition in the mangrove stands of Nueva Valencia can be described as relatively diverse, with true mangroves consisting of 25 species and 17 associates belonging to 8 families thrive in the site. The listof species found in Nueva Valencia is shown in the following tables.

Themangrove species that occurs in the beach front are the Pagatpat, Bungalon and bakauan species. There is no visible zonation pattern, however they naturally occur in their specific zones. Mangrove associates usually can be observed at the back portion of the mangrove stand.

The 3 species with registered high importance value (IV) are ranked as follows: Avecennia marina (Bungalon), Rhizophora mucronata (Bakauan babae) and Sonneratia alba (Pagatpat). The other species listed above are of lesser importance value because of the rareness of occurrence/distribution in the stand. Outside the established transect lines, it was observed that Avicennia marina dominates the mangrove stand in the municipality.

**Table 6. Mangrove species found in the 16 coastal barangays of Nueva Valencia, Guimaras.**

| Family Name | Local Name | Common Name | Scientific Name |
|---|---|---|---|
| Rhizophoraceae | Bakhaw - laki | Bacauan lalaki | *Rhizophora apiculata* |
| | Bakhaw – bayi | Bacauan babae | *Rhizophora mucronata* |
| | Bakhaw | Bacauan | *Rhizophora stylosa* |
| | Busaing | bangkaw/bato | *Bruguiera gymnorrhiza* |
| | - | Busain | *Bruguiera cylindrica* |
| | Lapis – lapis | Pototan lalaki | *Ceriops decandra* |
| | Baluk | Malatangal | *Ceriops tagal* |
| Avicenniaceae | Bungalon/Talang- | Tangal | *Avicennia marina* |
| | talang | Bungalon | *Avicennia alba* |
| | - | Piapi | *Avicennia officinalis* |
| Sonneratiaceae | - | Api-api | *Sonneratia alba* |
| | Pagatpat | Pagatpat | *Sonneratia caseolaris* |
| Combretaceae | - | Pedada | *Lumnitzera littorea* |
| | Tabau | Tabau | *Lumnitzera racemosa* |
| Meliaceae | - | Kulasi | *Xylocarpus granatum* |
| | Tabigi | Tabigi | *Xylocarpus mollucensis* |
| Palmae | Piagau | Piagau | *Nypa fruticans* |
| Euphorbiaceae | Nipa | Nipa | *Excoecaria agallocha* |
| Lythraceae | Alipata | Buta – Buta | *Pemphis acidula* |
| Myrtaceae | - | Bantigi | *Osbornia octodonta* |
| Bombacaceae | - | Taualis | *Camptostemon philippinensis* |
| Myrsinaceae | - | Gapas – gapas | *Aegiceras corniculatum* |
| | - | Saging – saging | *Aegiceras floridum* |
| Acanthaceae | - | Tinduk – tindukan | *Acanthus ilicifolius* |
| | - | Diluwariw / Tingloy | |

**Table 7. Some of the more common mangrove associates found in the coastal areas of Nueva Valencia, Guimaras.**

| Family Name | Local Name | Common Name | Scientific Name |
|---|---|---|---|
| Combretaceae | Talisay | Talisai | *Terminalia catappa* |
| Clusiaceae | Dangcalan | Bitaog | *Callophyllum inophyllum* |
| Fabaceae | Aroma | Aroma | *Acacia farnessina* |
| | Dapdap | Dapdap | *Erythrina orientalis* |
| | Botong | Bani | *Pongamia pinnata* |
| Lamiaceae | Lagundi | Lagundi | *Vitex negundo* |
| Lecythidaceae | Biribituon | Botong | *Barringtonia asiatica* |
| Malvaceae | - | Banilad | *Sterculia comosa* |

| | | | |
|---|---|---|---|
| Pandanaceae | - | Pandan – dagat | *Pandanus tectorius* |
| Sterculiaceae | - | Dungon – lati | *Heritiera littoralis* |
| | - | Dungon | *Heritiera sylavatica* |
| | - | Daripay | *Ipomea pes- caprae* |
| Convulvolaceae | Kalang-kalang | Pataning dagat | *Calystegia soldanella* |
| | - | Takay-takay | - |
| | Balabago | Malabago | *Spirofex lifloreus* |
| Bignoniaceae | Tui | Tui | *Dolichandrone spathacea* |
| Mimosaceae | Kasay | - | Albizia retusa |

- scientific name not available

### 1.3 Mangrove Stand Structure and Characteristics

Bungalon, Pagatpat and Bakauan group dominates the area. Bungalon had a high number of occurrence in all transects laid out during the survey. Bakauan species occurs in almost all of the transects with Bungalon.

The other species such as Busain, Tangal, Taualis, Buta-buta, Saging-saging, etc. surveyed were found to be occurring at the "back portion" of the mangrove stand going inlan (landward).

Among the 16 coastal barangays included in the study,Brgy. Lucmayan had the more abundant number of trees in the mangrove stand. Bungalon had as much as 1, 787/ha.; as compared to the lowly 20 trees of Bungalon per hectare in Panobolon.

Based on the vertical and scatter diagram, most of the mangrove area in Nueva Valencia needs enrichment planting. The area needs intervention because of the absence of regeneration data in most of the coastal barangays.

Based on the ocular inspection conducted, most of the mangrove areas were converted to large tract of fishponds and others are settlements. Mangrove associates that are occurring in the coastal zone of Nueva Valencia are in a form of grasses, shrubs and trees.

**Table 8. Importance Value (IV) of mangrove species found in the 16 coastal Barangays of Nueva Valencia, Guimaras**

| Species | # of segments occurence | Total # of trees | Total Basal Area (m2) | f | Rf | RDen | RDom | IV |
|---|---|---|---|---|---|---|---|---|
| **Cabalagnan** | | | | | | | | |
| Bungalon | 2 | 13 | 1.05 | 100 | 50 | 68.42 | 80.15 | 348.57 |
| Pagatpat | 2 | 6 | 0.26 | 100 | 50 | 31.58 | 19.85 | 251.43 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Canhawan** | | | | | | | | |
| B. Babae | 1 | 2 | 0.26 | 100 | 33 | 6.06 | 0.03 | 206.09 |
| Bungalon | 1 | 30 | 1.94 | 0 | 33 | 90.91 | .96 | 291.87 |
| Pagatpat | 1 | 1 | 0.0314 | 100 | 33 | 3.00 | .02 | 203.02 |
| | | | | 100 | | | | |
| **Dolores** | | | | | | | | |
| B. lalaki | 3 | 3 | 0.78 | 100 | 30 | 5.36 | 61.42 | 96.78 |
| Buta-buta | 2 | 2 | 0.08 | 0 | 20 | 3.57 | 6.30 | 29.87 |
| Bungalon | 3 | 49 | 0.32 | 67 | 30 | 88.00 | 25.20 | 143.20 |
| Pagatpat | 2 | 2 | 0.09 | 100 | 20 | 3.57 | 7.09 | 30.66 |
| | | | | 67 | | | | |
| **Guiwanon** | | | | | | | | |
| B. babae | 9 | 57 | 6.50 | 90 | 35 | 52.29 | 50.43 | 137.72 |
| B. bancau | 1 | 2 | 0.13 | 10 | 4 | 1.83 | 1.01 | 6.84 |
| B. lalaki | 8 | 34 | 4.30 | 80 | 31 | .3119 | 31.19 | 95.55 |
| Bungalon | 4 | 7 | 0.031 | 40 | 15 | 6.42 | 6.42 | 23.82 |
| Busain | 3 | 1 | 0.063 | 10 | 4 | .092 | 0.92 | 9.81 |
| Pagatpat | | 8 | 1.02 | 30 | 12 | 7.34 | 7.91 | 27.25 |
| **Igang** | | | | | | | | |
| B. babae | 2 | 28 | 0.997 | 100 | 50 | 47 | 39.63 | 136.63 |
| B. lalaki | 2 | 32 | 1.588 | 0 | 50 | 53 | 60.37 | 163.37 |
| | | | | 100 | | | | |
| **Igdarapdap** | | | | | | | | |
| B. babae | 3 | 14 | 0.208 | 100 | 37 | 29.79 | 6.56 | 73.35 |
| B. lalaki | 3 | 30 | 2.7478 | 0 | 37 | 63.83 | 0.87 | 101.70 |
| Bungalon | 2 | 3 | 0.212 | 100 | 25 | 6.38 | 0.67 | 32.05 |
| | | | | 67 | | | | |

**Table 8. Importance Value (IV) of mangrove species found in the 16 coastal Barangays of Nueva Valencia, Guimaras**

| Species | # of segments occurence | Total # of trees | Total Basal Area (m2) | f | Rf | RDen | RDom | IV |
|---|---|---|---|---|---|---|---|---|
| **Lapaz** | | | | | | | | |
| B. babae | 4 | 69 | 2.7373 | 80 | 19 | 58.47 | 52.90 | 129.56 |
| B. lalaki | 4 | 6 | 0.1947 | 80 | 19 | 5.08 | 3.70 | 27.78 |
| Bantigi | 2 | 6 | 0.4852 | 40 | 10 | 5.08 | 9.23 | 24.31 |
| Bungalon | 2 | 7 | 0.2984 | 40 | 10 | 5.93 | 5.68 | 21.61 |
| Pagatpat | 2 | 5 | 0.4437 | 40 | 10 | 4.24 | 8.44 | 22.68 |
| Tualis | 3 | 11 | 0.5615 | 60 | 14 | 9.32 | 10.68 | 34.00 |
| Tinduk-tindukan | 4 | 14 | 0.5338 | 80 | 19 | 11.86 | 10.16 | 41.02 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lucmayan** | | | | | | | | |
| B. Babae | 1 | 3 | 0.0785 | 12 | 4 | 1.38 | 1.27 | 6.65 |
| B. lalaki | 3 | 4 | 0.1139 | 38 | 12 | 1.84 | 1.85 | 15.69 |
| Bungalon | 7 | 143 | 3.7525 | 88 | 27 | 65.90 | 60.89 | 153.79 |
| Kulasi | 7 | 44 | 0.5887 | 88 | 27 | 20.28 | 9.55 | 56.83 |
| Pagatpat | 2 | 6 | 0.2395 | 25 | 8 | 2.76 | 3.89 | 14.65 |
| Pedada | 1 | 5 | 0.4674 | 12 | 4 | 2.30 | 7.59 | 13.89 |
| Piapi | 5 | 12 | 0.9226 | 62 | 19 | 5.53 | 14.97 | 39.5 |
| **Magamay** | | | | | | | | |
| B. lalaki | 2 | 2 | 0.1020 | 10 | 33 | 22 | 0.1035 | 55.10 |
| Bungalon | 2 | 5 | 0.6088 | 0 | 33 | 56 | 0.6176 | 89.62 |
| Pagatpat | 2 | 2 | 0.2749 | 10 | 33 | 22 | 0.2789 | 52.28 |
| | | | | 0 | | | | |
| | | | | 10 | | | | |
| | | | | 0 | | | | |
| **Pandaraonan** | | | | | | | | |
| B. Babae | 7 | 39 | 2.6726 | 70 | 27 | 33.05 | 44.47 | 104.52 |
| B. lalaki | 3 | 3 | 0.2239 | 30 | 12 | 2.54 | 3.73 | 18.27 |
| Bungalon | 9 | 56 | 2.3011 | 90 | 35 | 47.46 | 38.28 | 120.74 |
| Pagatpat | 4 | 17 | 0.7617 | 40 | 15 | 14.41 | 12.67 | 42.08 |
| Pedada | 3 | 3 | 0.0510 | 30 | 12 | 2.54 | 0.84 | 15.38 |
| **Panobolon** | | | | | | | | |
| B. bancau | 1 | 2 | 0.2121 | 20 | 5 | 2.90 | 4.98 | 12.88 |
| B. lalaki | 2 | 17 | 0.8167 | 40 | 10 | 24.64 | 19.17 | 53.81 |
| Bungalon | 1 | 1 | 0.0393 | 20 | 5 | 1.45 | 0.92 | 3.37 |
| Busain | 1 | 5 | 0.2082 | 20 | 5 | 7.25 | 4.89 | 17.14 |
| Buta-buta | 1 | 1 | 0.0864 | 20 | 5 | 1.45 | 2.03 | 8.48 |
| Dungon | 1 | 1 | 0.1335 | 20 | 5 | 1.45 | 3.13 | 9.58 |
| Dungon late | 1 | 2 | 0.3063 | 20 | 5 | 112.9 | 7.19 | 15.09 |
| Kulasi | 2 | 2 | 0.0550 | 40 | 10 | 2.90 | 1.29 | 14.19 |
| Pagatpat | 1 | 9 | 0.7539 | 20 | 5 | 13.04 | 17.93 | 35.97 |
| Piapi | 2 | 5 | 0.3691 | 40 | 10 | 7.25 | 8.66 | 25.91 |
| Tangal | 4 | 22 | 1.2054 | 80 | 21 | 31.88 | 28.29 | 81.17 |
| Tualis | 1 | 1 | 0.0275 | 20 | 5 | 1.45 | 0.64 | 7.09 |
| Tabigi | 1 | 1 | 0.0471 | 20 | 5 | 1.45 | 1.10 | 7.55 |
| **Poblacion** | | | | | | | | |
| B. babae | 6 | 71 | 8.9595 | 10 | 46.30 | 88.75 | 89.88 | 224.93 |
| B.lalaki | 2 | 3 | 0.3259 | 0 | 15.28 | 3.75 | 3.27 | 19.30 |
| Bungalon | 2 | 3 | 0.2670 | 33 | 15.28 | 3.75 | 3.27 | 22.30 |
| Pagatpat | 3 | 3 | 0.4163 | 33 | 23.15 | 3.75 | 4.18 | 31.08 |
| | | | | 50 | | | | |

**Cont. Table 8. Importance Value (IV) of mangrove species found in the 16 coastal Barangays of Nueva Valencia, Guimaras**

| Species | # of segments | Total # of | Total Basal | f | Rf | RDen | RDom | IV |
|---|---|---|---|---|---|---|---|---|

| | occurence | trees | Area (m2) | | | | | |
|---|---|---|---|---|---|---|---|---|
| **San Antonio** | | | | | | | | |
| B. lalaki | 2 | 46 | 3.1351 | 100 | 40 | 66.67 | 46.43 | 153.10 |
| Bungalon | 2 | 18 | 2.419 | 100 | 40 | 26.09 | 35.83 | 101.92 |
| Pagatpat | 1 | 5 | 1.1977 | 52 | 20 | 7.25 | 17.74 | 44.99 |
| **San Roque** | | | | | | | | |
| B. Babae | 6 | 46 | 2.4107 | 75 | 31 | 45.54 | 39.26 | 115.80 |
| B. lalaki | 4 | 12 | 0.7853 | 50 | 21 | 1.19 | 12.79 | 34.98 |
| Balabago | 1 | 3 | 0.1021 | 12 | 5 | 2.97 | 1.66 | 9.63 |
| Bantigi | 1 | 1 | 0.1589 | 12 | 5 | 1.00 | 0.96 | 6.96 |
| Bungalon | 8 | 18 | 1.5259 | 6 | 3 | 17.82 | 24.85 | 45.67 |
| Pagatpat | 5 | 19 | 1.1114 | 62 | 26 | 18.81 | 18.10 | 62.91 |
| Pedada | 1 | 1 | 0.0393 | 12 | 5 | 1.00 | 0.64 | 6.64 |
| Piapi | 1 | 1 | 0.1060 | 12 | 5 | 1.00 | 1.73 | 7.73 |
| **Sto. Domingo** | | | | | | | | |
| B. lalaki | 1 | 1 | 0.0157 | 25 | 17 | 2.27 | 0.44 | 19.71 |
| Bungalon | 4 | 42 | 3.5773 | 100 | 67 | 95.45 | 99.24 | 261.69 |
| Saging-saging | 1 | 1 | 0.0118 | 25 | 17 | 2.27 | 0.44 | 19.71 |
| **Tando** | | | | | | | | |
| B. babae | 2 | 31 | 0.5300 | 100 | 22 | 36.47 | 15.79 | 74.26 |
| B. lalaki | 2 | 14 | 0.2043 | 100 | 22 | 16.47 | 6.09 | 44.56 |
| Bungalon | 2 | 11 | 0.4517 | 100 | 22 | 12.94 | 13.45 | 48.39 |
| Pagatpat | 2 | 27 | 2.1086 | 100 | 22 | 31.76 | 62.80 | 116.56 |
| Pedada | 1 | 2 | 0.0628 | 50 | 11 | 2.35 | 1.87 | 15.22 |

**Table 9. Importance Value (IV) of Mangrove Species Found Occurring in the Creeks/ River of Cabalagnan, Igdarapdap and Igang, Nueva Valencia, Guimaras.**

| Species | # of segments occurence | Total # of trees | Total Basal Area (m2) | f | Rf | RDen | RDom | IV |
|---|---|---|---|---|---|---|---|---|
| Cabalagnan Creek | | | | | | | | |
| Pagatpat | 1 | 1 | 0.0825 | 17 | 5 | 1.06 | 1.35 | 7.41 |
| Api-api | 1 | 1 | 0.0353 | 17 | 5 | 1.06 | 0.58 | 36.64 |
| B. lalaki | 1 | 1 | 0.0942 | 17 | 5 | 1.06 | 1.55 | 7.61 |
| Balabago | 1 | 1 | 0.0432 | 17 | 5 | 1.06 | 0.71 | 6.77 |
| Bungalon | 1 | 11 | 0.4789 | 17 | 5 | 11.70 | 7.86 | 24.56 |
| Buta-buta | 3 | 8 | 0.3573 | 50 | 14 | 8.51 | 5.87 | 28.38 |
| Kulasi | 2 | 7 | 0.3416 | 33 | 9 | 7.45 | 5.61 | 22.06 |
| Malatangal | 5 | 21 | 0.7696 | 83 | 22 | 22.34 | 12.64 | 56.98 |
| Piapi | 6 | 38 | 3.6202 | 100 | 27 | 40.42 | 59.45 | 126.87 |
| Tanaliz | 1 | 5 | 0.267 | 17 | 5 | 5.32 | 4.38 | 14.7 |
| Igdarapdap Creek | | | | | | | | |
| B. lalaki | 1 | 2 | 0.19630 | 50 | 6 | 4.76 | 9.56 | 20.32 |
| Bungalon | 1 | 1 | 0.314 | 50 | 6 | 2.38 | 1.53 | 9.91 |
| Buta-buta | 2 | 3 | 0.2238 | 100 | 11 | 7.14 | 10.90 | 29.04 |
| Dungon late | 1 | 1 | - | 50 | 6 | 2.38 | - | 8.38 |
| Kulasi | 2 | 5 | 0.1687 | 100 | 11 | 11.90 | 8.22 | 31.12 |
| Malatangal | 2 | 4 | 0.2277 | 100 | 6 | 9.52 | 11.09 | 26.61 |
| Pagatpat | 1 | 1 | 0.0321 | 50 | 11 | 2.38 | 1.69 | 13.38 |
| Piapi | 2 | 4 | 0.4279 | 100 | 22 | 9.52 | 20.84 | 52.36 |
| Pototan lalaki | 2 | 15 | 0.1021 | 100 | 22 | 35.71 | 10.08 | 67.79 |
| Saging-saging | 1 | 4 | 0.2827 | 50 | 11 | 9.52 | 13.77 | 34.79 |
| Tabau | 1 | 1 | 0.0589 | 50 | 11 | 2.38 | 2.87 | 24.63 |
| Tabigi | 1 | 1 | - | 50 | 11 | 2.38 | - | 8.38 |
| Nilad | 1 | 1 | 0.1414 | 50 | 11 | 3.70 | 13.96 | - |
| Igang River | | | | | | | | |
| B. lalaki | 1 | 1 | 0.957 | 33 | 17 | 1.64 | 1.01 | 19.65 |
| Bungalon | 2 | 47 | 1.1979 | 67 | 34 | 77.05 | 76.83 | 187.88 |
| Kulasi | 1 | 5 | 0.1453 | 33 | 17 | 8.20 | 9.32 | 34.52 |
| Malatangal | 1 | 1 | - | 33 | 17 | 1.64 | - | 18.64 |
| Piapi | 1 | 1 | 0.1492 | 33 | 17 | 1.64 | 9.57 | 28.21 |
| Pototatn lalaki | 1 | 3 | 0.0393 | 33 | 17 | 4.92 | 2.52 | 24.44 |
| Saging-saging | 2 | 2 | 0.0118 | 67 | 34 | 3.28 | 0.72 | 38.04 |
| Tanaliz | 1 | 1 | - | 33 | 17 | 1.64 | - | 18.64 |

Legend:

F - Frequency
Rf - Relative frequency
RDom - Relative Dominance
IV - Importance Value
RDen - Relative Density

**Table 10. Abundance and Constancy Rate of Mangrove Species found occurring in 16 coastal Barangays of Nueva Valencia, Guimaras.**

| Species | Crown Cover | | Abundance (Trees /ha) | Basal Area (m/ha) | Constancy |
|---|---|---|---|---|---|
| | M | % | | | |
| **Cabalagnan** | | | | | |
| Bungalon | 449.25 | 225 | 650 | 52.5 | High |
| Pagatpat | 61.49 | 31 | 300 | 13 | High |
| **Canhawan** | | | | | |
| B. Babae | 8.19 | 4 | 100 | 3 | High |
| Bungalon | 984.53 | 492 | 1500 | 97 | High |
| Pagatpat | 3.88 | 2 | 50 | 1.57 | High |
| **Dolores** | | | | | |
| B. lalaki | 25 | 8 | 100 | 26 | High |
| Buta-buta | 26.44 | 9 | 66.67 | 2.67 | Moderately high |
| Bungalon | 243.54 | 81 | 1633 | 10.67 | High |
| Pagatpat | 26 | 9 | 66.67 | 3 | Moderately high |
| **Guiwanon** | | | | | |
| B. babae | 1155.5 | 116 | 570 | 65 | High |
| B. lalaki | 55.25 | 6 | 20 | 1.3 | Rare |
| B. bangkau | 10.24 | 102 | 340 | 43 | High |
| Bungalon | 102 | 10 | 70 | 3.1 | Low |
| Busain | 16 | 2 | 10 | 6.3 | Rare |
| Pagatpat | 241.25 | 24 | 80 | 0.2 | Low |
| **Igang** | | | | | |
| B. babae | 93.4 | 47 | 1400 | 49.85 | High |
| B. lalaki | 188.75 | 94 | 1600 | 75.94 | High |
| **Lapaz** | | | | | |
| B. babae | 289.75 | 58 | 1380 | 54.746 | Moderately High |
| B. lalaki | 19.82 | 4 | 120 | 3.894 | Moderately high |
| Bantigi | 115.5 | 23 | 120 | 9.704 | Low |
| Bungalon | 34.25 | 7 | 140 | 5.968 | Low |
| Pagatpat | 49.44 | 10 | 100 | 8.874 | Low |
| Taualis | 81.64 | 82 | 220 | 11.23 | Intermediate |
| Tinduk-tindukan | 118.54 | 24 | 280 | 10.676 | Moderately High |
| **Igdarapdap** | | | | | |
| B. babae | 36 | 12 | 466.67 | 6.93 | High |
| B. lalaki | 727.48 | 242 | 1000 | 91.61 | High |
| Bungalon | 25 | 8 | 100 | 7.07 | Moderately high |

| | | | | | |
|---|---|---|---|---|---|
| **Poblacion** | | | | | |
| B. babae | 2317 | 386 | 1183.33 | 149.325 | High |
| B. lalaki | 61 | 10 | 50 | 5.432 | Low |
| Bungalon | 27 | 5 | 50 | 4.45 | Low |
| Pagatpat | 18 | 3 | 50 | 6.983 | Intermediate |

**Table 10 (continuation). Abundance and Constancy Rate of Mangrove Species found occurring in 16 Coastal Barangays of Nueva Valencia, Guimaras.**

| Species | Crown Cover | | Abundance (Trees /ha) | Basal Area (m/ha) | Constancy |
|---|---|---|---|---|---|
| | M | % | | | |
| **Lucmayan** | | | | | |
| B. babae | 13.53 | 2 | 37.5 | 0.981 | Rare |
| B. lalaki | 16.06 | 2 | 50 | 1.424 | Low |
| Bungalon | 389.48 | 49 | 1787.5 | 46.906 | High |
| | 112.28 | 14 | 550 | 7.359 | High |
| Pagatpat | 45.65 | 6 | 75 | 2.994 | Low |
| Pedada | 85.14 | 11 | 62.5 | 5.843 | Rare |
| Piapi | 222.5 | 28 | 150 | 11.533 | Moderately high |
| **Magamay** | | | | | |
| B. lalaki | 25.16 | 13 | 100 | 5.1 | High |
| Bungalon | 89.25 | 45 | 250 | 30.44 | High |
| Pagatpat | 50 | 25 | 100 | 13.745 | High |
| **Pandaraonan** | | | | | |
| B. babae | 270.25 | 27 | 390 | 26.726 | Moderately high |
| B. lalaki | 21 | 2 | 30 | 2.239 | Low |
| Bungalon | 506.4 | 51 | 560 | 23.011 | High |
| Pagatpat | 67.5 | 7 | 170 | 7.617 | Low |
| Pedada | 17 | 2 | 30 | 0.51 | Low |
| **Panobolon** | | | | | |
| B. bangkau | 34 | 7 | 40 | 4.242 | Rare |
| B. lalaki | 162 | 42 | 340 | 16.334 | Low |
| Bungalon | 4 | 0.8 | 20 | 0.786 | Rare |
| Busain | 43.25 | 7 | 100 | 4.164 | Rare |
| Buta buta | 30.25 | 6 | 20 | 1.728 | Rare |
| Dungon | 16 | 3 | 20 | 2.67 | Rare |
| Dungon lati | 72 | 14 | 40 | 6.126 | Rare |
| Kulasi | 25 | 5 | 40 | 1.1 | Low |
| Pagatpat | 141.5 | 28 | 180 | 15.78 | Rare |
| Piapi | 59 | 12 | 100 | 7.382 | Low |
| Tangal | 128 | 25 | 440 | 24.108 | Moderately high |
| Taualis | 1 | 0.2 | 20 | 0.55 | Rare |

| | | | | | |
|---|---|---|---|---|---|
| Tabigi | 12.25 | 2 | 20 | 0.942 | Rare |
| **Cabalagnan** | | | | | |
| Api – api | 9 | 15 | 17 | 1.38 | Rare |
| B. lalaki | 64 | 10.67 | 17 | 1.57 | Rare |
| Balabago | 4 | 0.66 | 17 | 0.72 | Rare |
| Bungalon | 219.25 | 36.54 | 183 | 7.98 | Rare |
| Buta buta | 115 | 19.17 | 133 | 5.96 | Intermediate |
| Kulasi | 128 | 21.33 | 117 | 5.69 | Low |
| Malatangal | 248.1 | 41.35 | 350 | 12.83 | Rare |
| Pagatpat | 16 | 2.67 | 17 | 1.38 | Rare |
| Piapi | 1557.50 | 259.58 | 633 | 60.34 | Intermediate |
| Taualis | 163 | 27.17 | 83 | 4.45 | Rare |

**Table 10 (continuation). Abundance and Constancy Rate of Mangrove Species found occurring in 16 Coastal Barangays of Nueva Valencia, Guimaras.**

| Species | Crown Cover | | Abundance (Trees /ha) | Basal Area (m/ha) | Constancy |
|---|---|---|---|---|---|
| | M | % | | | |
| **San Antonio** | | | | | |
| B. lalaki | 636 | 159 | 1150 | 78.378 | High |
| Bungalon | 326 | 82 | 450 | 60.475 | High |
| Pagatpat | 172 | 46 | 125 | 29.943 | Intermediate |
| **San Roque** | | | | | |
| B. babae | 424.18 | 93 | 575 | 30.134 | Moderately high |
| B. lalaki | 163.25 | 20 | 150 | 9.816 | High |
| Balabago | 8.25 | 1 | 37.5 | 1.276 | Intermediate |
| Bantigi | 9 | 1 | 12.5 | 0.736 | Rare |
| Bungalon | 332.4 | 42 | 225 | 19.074 | Rare |
| Pagatpat | 221.11 | 28 | 237.5 | 13.893 | Rare |
| Pedada | 16 | 2 | 12.5 | 0.491 | Moderately high |
| Piapi | 16 | 2 | 12.5 | 1.325 | Rare |
| **Sto. Domingo** | | | | | |
| B. lalaki | 1 | 0.25 | 25 | 0.3925 | Low |
| Bungalon | 468.75 | 117 | 1050 | 89.43 | High |
| Saging-saging | 0.04 | 0.01 | 0.25 | 0.295 | Low |
| **Tando** | | | | | |
| B. babae | 66.47 | 33.24 | 1550 | 26.5 | High |
| B. lalaki | 56.18 | 28.09 | 700 | 10.215 | High |
| Bungalon | 147.19 | 73.59 | 550 | 22.585 | High |
| Pagatpat | 446.79 | 223.29 | 1350 | 105.43 | High |
| Pedada | 3.88 | 1.94 | 100 | 3.14 | Intermediate |

| | | | | | |
|---|---|---|---|---|---|
| **Igang River** | | | | | |
| Bungalon | 354.81 | 59.14 | 783 | 19.96 | Moderately High |
| B. lalaki | 1.44 | 0.24 | 17 | 0.26 | High |
| Kulasi | 26.94 | 161.64 | 83 | 2.42 | Low |
| Malatangal | 0.25 | 0.04 | 17 | - | Low |
| Piapi | 100 | 16.67 | 17 | 2.49 | Low |
| Pototan lalaki | 3.76 | 0.63 | 50 | 0.66 | Low |
| Saging saging | 1.16 | 6.96 | 33 | 0.20 | Moderately High |
| Taualis | 0.64 | 0.11 | 17 | - | Low |
| **Igrarapdap Creek** | | | | | |
| B. lalaki | 157 | 79 | 100 | 9.815 | Intermediate |
| Bungalon | 6.25 | 3 | 50 | 1.57 | Intermediate |
| Buta buta | 47.5 | 24 | 150 | 11.19 | High |
| Dungon lati | 0.36 | 0.18 | 50 | - | Intermediate |
| Kulasi | 39.69 | 20 | 250 | 8.435 | High |
| Malatangal | 9.21 | 5 | 200 | 11.385 | High |
| Pagatpat | 100 | 50 | 50 | 1.605 | Intermediate |
| Piapi | 273 | 137 | 200 | 21.395 | High |
| Pototan lalaki | 142.6 | 71 | 750 | 5.105 | High |
| Saging - saging | 132.64 | 66 | 200 | 14.135 | Intermediate |
| Tabaw | 36 | 18 | 50 | 2.945 | Intermediate |
| Tabigi | 0.04 | 0.02 | 50 | - | Intermediate |

**C. Edaphic Characteristics**

Distribution of mangrove species depends on substrate presence in every mangrove areas.The sandy substrate of over washed mangroves in Lapaz and San Roque Islets shows a healthy stand of Bantigi group. Riverine mangroves had a sandy to muddy substrate which was categorized as the ideal soil for mangrove plantation. The fringe mangrove of Nueva Valencia has different substrate. The Lucmayan, San Roque, Igdarapdap, Dolores, Panobolon and Guiwanon have muddy substrate and the rest were coralline to sandy substrate.

**Table 11. Mangrove Species Occurrence Per Barangay in the Municipality of Nueva Valencia.**

| SPECIES | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Api – api | √ | | | | | | | |
| Bakauan babae | | √ | | √ | √ | √ | √ | √ |
| Bakauan lalaki | √ | | √ | √ | √ | √ | √ | √ |
| Bantigi | | | | | | | √ | |
| Bungalon | √ | √ | √ | √ | √ | √ | √ | √ |
| Buta buta | √ | | √ | | | √ | | |
| Kulasi | √ | | | | √ | √ | | √ |
| Malatangal | √ | | | | √ | √ | | |
| Pagatpat | √ | | | | √ | √ | √ | √ |
| Pedada | | √ | √ | √ | | | | √ |
| Piapi | √ | | | | √ | √ | | √ |
| Pototan lalaki | √ | | | | √ | √ | | |
| Saging-saging | √ | | | | | √ | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Balabago | √ | | | | | | | |
| Dungon lati | | | | | | √ | | |
| Tabau | | | | | | √ | | |

**Table 11.Continuation Mangrove Species Occurrence Per Barangay in the Municipality of Nueva Valencia.**

| SPECIES | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|
| Bakauan babae | | √ | | √ | √ | √ | | √ |
| Bakauan lalaki | √ | √ | √ | √ | √ | √ | √ | √ |
| Bantigi | | | | | √ | √ | | |
| Bungalon | √ | √ | √ | √ | √ | √ | √ | √ |
| Buta buta | | | √ | | | | | |
| Kulasi | | | √ | | | | | |
| Pagatpat | √ | √ | √ | √ | √ | √ | | √ |
| Pedada | | √ | | | √ | √ | | √ |
| Piapi | | | √ | | √ | √ | | |
| Saging-saging | | | | | | | √ | |
| Balabago | | | | | | √ | | |
| Dungon | | | √ | | √ | | | |
| Dungon lati | | | √ | | | | | |
| Talisay | | | | | | | | |

**Legend:**

1. Cabalagnan
2. Canhawan
3. Dolores
4. Guiwanon
5. Igang
6. Igdarapdap
7. La paz
8. Lucmayan
9. Magamay
10. Pandaraonan
11. Panobolon
12. Poblacion
13. San Antonio
14 San Roque
15. Sto Domingo
16. Tando

**2. Seagrasses**

Surveys were conducted in the sixteen coastal barngays of Nueva Valencia namely Poblacion, Igang. Sto. Domingo, Magamay, Pandaraonan, Dolores, Tando, Lucmayan, San Roque, Lapaz, Cabalagnag, Canhawan, Igdarapdap, San Antonio, Panobolon and Guiwanon.

Areas of seagrassses were observed in all coastal barangays of Nueva Valencia. Through the assistance of some fisherfolks and barangay officials, areas of seagrasses were identified. These areas were found closer to the shoreline of each barangay.

**Table 12. Summary Data of Seagrass Beds in all Coastal barangays of Nueva Valencia.**

| Barangay | Geographical Coordinates/ Location | Approx. Area | Estimated Percentage Cover | Estimated Area Covered | Species Present | Rank |
|---|---|---|---|---|---|---|
| Poblacion | Near Puyo Wharf | 3 has. | 30 % | 0.9 | *Tropical eelgrass (Enhalus acoroides)* | 13 |
| Igang | Away from Nalundan | 1 ha. | 10 % | 0.1 | *Tropical eelgrass (Enhalus* | 15.5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | river | | | | *acoroides) Fiber-stand seagrass (Halodule pinifolia)* | |
| Sto. Domingo | After mangrove area | 1 ha. | 10 % | 0.1 | *Fiber-stand seagrass (Halodule pinifolia)* | 15.5 |
| Magamay | Near Bato Daku | 1 ha. | 15 % | 0.15 | *Tropical eelgrass (Enhalus acoroides) Fiber-stand seagrass (Halodule pinifolia)* | 14 |
| Pandaraonan | 10º 30'27" 122º 29'51.8"<br><br>10 º 30'27" 122º 29'37.8" | 3 has. | 50 % | 1.5 | *Tropical eelgrass (Enhalus acoroides), Small-spoon-grass (Halophila minor), Round-tipped seagrass (Cymodocea rotundata)* | 12 |
| Dolores | 10 º 28'45" 122 28'51.8"<br><br>10º 30'30.4" 122 º 29'15.5" | 8 has. | 53.75 % | 4.3 | *Tropical eelgrass (Enhalus acoroides), Small-spoon-grass (Halophila minor), Round-tipped seagrass (Cymodocea rotundata)* | 6 |
| Tando | 10º 28'18" 122º 29'16.1"<br><br>10º 27'47.6" 122º 29'15.8" | 20 has. | 70 % | 14 | *Tropical eelgrass (Enhalus acoroides), Round-tipped seagrass (Cymodocea rotundata)* | 4 |

**Table 12 (continuation). Summary Data of Seagrass Beds in all Coastal Barangays of Nueva Valencia.**

| Barangay | Geographical Coordinates/ Location | Approx. Area | Estimated Percentage Cover | Estimated Area Covered | Species Present | Rank |
|---|---|---|---|---|---|---|
| Lucmayan | 10º 27'13.3" 122º 29'23" | 3 has. | 77.5% | 2.33 | *Tropical eelgrass (Enhalus* | 11 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 10̊ 27’47.9” 122̊ 29’36.5” | | | | *acoroides), Round-tipped seagrass (Cymodocea rotundata)* | |
| San Roque | 10̊ 25’43” 122̊ 30’9.1”<br><br>10̊ 25’50” 122̊ 30’50.4” | 20 has. | 83.33 % | 16.67 | *Tropical eelgrass (Enhalus acoroides), Fiber-stand seagrass (Halodule pinifolia), Round-tipped seagrass (Cymodocea rotundata)* | 3 |
| Lapaz | 10̊ 324”57.9” 122̊ 30’12.6”<br><br>10̊ 24’19.7” 122̊ 30’23.1” | 30 has. | 85 % | 25.5 | *Fiber-stand seagrass (Halodule pinifolia)* | 1 |
| Cabalagnan | 10̊ 30’27” 122̊ 29’37.8”<br><br>10̊ 30’27” 122̊ 29’37.8” | 4 has. | 70% | 2.8 | *Tropical eelgrass (Enhalus acoroides), Fiber-stand seagrass (Halodule pinifolia), Round-tipped seagrass (Cymodocea rotundata), Dugong grass (Thalassia hemprichii), Small-spoon grass (Halodule minor), Spoon-grass (Halodule ovalis, Syringe grass (Syringodium isoetifolium)* | 10 |
| Canhawan | 10̊ 325’21,2” 122̊ 33’13.9” | 5 has. | 60% | 3 | *Tropical eelgrass (Enhalus acoroides), Fiber-stand seagrass (Halodule pinifolia), Syringe* | 9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | *grass (Syringodium isoetifolium)* | |

**Table 12 (continuation). Summary Data of Seagrass Beds in all Coastal Barangays of Nueva Valencia.**

| Barangay | Geographical Coordinates/ Location | Approx. Area | Estimated Percentage Cover | Estimated Area Covered | Species Present | Rank |
|---|---|---|---|---|---|---|
| Igdarapdap | 10º 25'225.5" 122º 29'37.8"<br><br>10º 30'27" 122º 33'33.44" | 6 has. | 60 % | 3.6 | *Tropical eelgrass (Enhalus acoroides), Fiber-stand seagrass (Halodule pinifolia), Small-spoon grass (Halodule minor), Dugong grass (Thalassia hemprichii), Round-tipped seagrass (Cymodocea rotundata)* | 11 |
| San Antonio | 10 º 26'13" 122º 34'42.3"<br><br>10º 26'7.4" 122º 34'4.6" | 8 has. | 67.5 % | 5.4 | *Tropical eelgrass (Enhalus acoroides), Dugong grass (Thalassia hemprichii), Round-tipped seagrass (Cymodocea rotundata)* | 3 |
| Panobolon | 10º 24"42.6" 122º 35'22.6"<br><br>10º 24'48.7" 122º 35'8.5" | 30 has. | 56 % | 16.8 | *Tropical eelgrass (Enhalus acoroides), Dugong grass (Thalassia hemprichii), Round-tipped seagrass (Cymodocea rotundata)* | 1 |
| Guiwanon | 10º 21'51.1" 122º 36'37.5"<br><br>10º 20'19" | 5 has. | 66.67 % | 3.33 | *Tropical eelgrass (Enhalus acoroides), Fiber-stand seagrass (Halodule pinifolia), Round-tipped seagrass* | 10 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | 122° 35'12.1" | | | | *(Cymodocea rotundata), Syringe grass (Syringodium isoetifolium)* | |
| **Nva. Valencia** | | **148 has.** | **54.05** | **79.99** | | |

Seagrass beds of Nueva Valencia are comprised primarily of *Enhalus acoroides* and *Cymodocea rotundata* which are inhabited by sea urchin, sea cucumber and seaweeds. The table above shows that the densest and the most diverse seagras beds were found in Barangay Lapaz, where a marine reserve located. The least seagrass cover observed at Igang, Magamay and Sto Doingo. This is due to the presence of perennial Igang River and some minor rivers like Katilaran River and Nalundan River, which increases the sediment load of coastal waters during rainy season, which favors the growth of only a few species, notably fiber-strand seagrasses.

### 3. Corals

All coastal barangays of the municipality of Nueva Valencia were found to have coral reef areas except in Sto. Domingo. Through the assistance of some fisherfolks and barangay officials areas of coral reef were determined. These areas were approximately 300 meters to 1 kilometer away from the coastline.

**Table 13. Summary of Characteristics of Coral Reef Habitat in All Coastal Barangays of Nueva, Valencia.**

| **Barangay** | **Percentage Cover** | | | | | **Geographical Coordinates/ Location** | **Coral Families Present** | **Rank** |
|---|---|---|---|---|---|---|---|---|
| | Hard corals | Soft Corals | Dead Corals | Dead Corals w/ Algae | Sand and Silt | | | |
| Poblacion | 23.5 | 14.5 | 11.5 | 20.5 | 30 | Zone 5, So. Puyo | *Pocilloporidae, Acroporidae, Milleporidae, Agariciidae, Oculinidae, Poritidae, Nepthedae* | 13 |
| Igang | 20 | 5 | 20 | 0 | 55 | Boudary of Igang and Laktawan | *Pocilloporidae, Acroporidae, Milleporidae, Dendro-* | 14 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | *phyllidae, Agariciidae* | |
| Magamay | 30 | 33.33 | 10 | 0 | 26.67 | Before Bato Daku | *Pocilloporidae, Acroporidae, Faviidae, Poritidae, Nepthedae, Dendro-phyllidae, Agariciidae* | 10 |
| Pandaraonan | 61.22 | 7.22 | 10.46 | 5.55 | 15.55 | N10 ̊30’50” E122̊29’20.8 “<br><br>10 ̊ 30’48” 122 ̊ 29’18.7” | *Pocilloporidae, Acroporidae, Faviidae, Poritidae, Agariciidae,Thamanastreidae, Nepthedae, Oculinidae* | 7 |
| Dolores | 63.75 | 2.5 | 5 | 2.5 | 26.25 | N10 ̊ 30’43.4” E122 ̊ 29’6.4”<br><br>10 ̊ 30’41.7” 122 ̊ 29’6.4” | *Acroporidae, Pocilloporidae, Poritidae, Thamanastreidae, Agariciidae, Faviidae, Mussidae, Merulinidae, Alcyonidae* | 8 |

**Table 13 (continuation). Summary of Characteristics of Coral Reef Habitat in All Coastal Barangays of Nueva, Valencia.**

| **Barangay** | **Percentage Cover** | | | | | **Geographical Coordinates/ Location** | **Coral Families Present** | **Rank** |
|---|---|---|---|---|---|---|---|---|
| | Hard corals | Soft Corals | Dead Corals | Dead Corals w/ Algae | Sand and Silt | | | |
| Tando | 61.66 | 11.66 | 3.33 | 6.67 | 16.67 | N10 ̊ 28’24” E122 29’11.3”<br><br>10 ̊ 28’21” 122 ̊ 29’33.2” | *Pocilloporidae, Acroporidae, Milleporidae, Poritidae Thamanastreidae, Dendro-phyllidae, Mussidae, Faviidae* | 4 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | *Alcyonidae, Nepthedae* | |
| Lucmayan | 60 | 9 | 2 | 9 | 20 | N10 ̊ 28’24” E122 29’33.2”<br><br>10 28’50” 122 29’39.4” | *Pocilloporidae, Acroporidae, Milleporidae, Dendro-phyllidae, Poritiidae, Faviidae, Mussidae,Alcyo nidae, Nepthidae, Merulinidae* | 6 |
| San Roque | 66.6 6 | 9.17 | 5 | 5 | 14.1 7 | N10 ̊ 25’38.2” E122 29’45.3”<br><br>10 ̊ 25’35.2” 122 ̊ 30’46” | *Pocilloporidae, Acroporidae, Faviidae, Poritidae, Nepthedae, Dendro-phyllidae, Mussidae, Agariciidae, Oculinidae, Thamanastreida e* | 3 |
| Lapaz | 72.2 2 | 13.89 | 4.67 | 1.33 | 7.89 | N10 ̊ 24’35.2” E 122 ̊ 30’25.1”<br><br>10 ̊ 24’36.7” 122 ̊ 30’20.1” | *Pocilloporidae, Acroporidae, Faviidae, Poritidae, Milleporidae, HelioporidaePe ctiniidae, Mussidae, Alcyonidae, Nepthidae, Oculiniidae, Agathyphyllidae , Siderastreidae* | 1 |
| Cabalagnan | 62.5 | 2.5 | 12.5 | 15 | 7.5 | N10 ̊ 24’46.2” E122 ̊ 33’13.8”<br><br>10 ̊ 24’47” 122 ̊ 33’14.4” | *Acroporidae, Pocilloporidae, Poritidae,Melli poridae, Pectiniidae, Faviidae Nepthidae Agathyphyllidae , Sidestreidae* | 9.5 |

**Table 13 (continuation). Summary of Characteristics of Coral Reef Habitat in All Coastal Barangays of Nueva, Valencia.**

| Barangay | Percentage Cover | | | | | Geographical Coordinates/ Location | Coral Families Present | Rank |
|---|---|---|---|---|---|---|---|---|
| | Hard corals | Soft Corals | Dead Corals | Dead Corals w/ Algae | Sand and Silt | | | |
| Canhawan | 40 | 10 | 10 | 20 | 20 | N10 ̊ 25'24.8" E122̊ 33'16.5" 10 ̊ 25'18.2" 122 ̊ 29'33.2" | *Pocilloporidae, Acroporidae, Milleporidae, Poritidae Thamanastreidae, Dendro-phyllidae, Mussidae, Faviidae Alcyonidae, Nepthedae* | 4 |
| Igdarapdap | 47.5 | 5 | 5 | 15 | 27.5 | N10 ̊ 28'24" E122 29'33.2" 10 28'50" 122 29'39.4" | *Pocilloporidae, Acroporidae, Milleporidae, Dendro-phyllidae, Poritiidae, Faviidae, Mussidae,Alcyonidae, Nepthidae, Merulinidae* | 6 |
| San Antonio | 60 | 5 | 15 | 5 | 15 | N10 ̊ 25'38.2" E122 29'45.3" 10 ̊ 25'35.2" 122 ̊ 30'46" | *Pocilloporidae, Acroporidae, Faviidae, Poritidae, Nepthedae, Dendro-phyllidae, Mussidae, Agariciidae,* | 3 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | *Oculinidae, Thamanastreidae* | |
| Panobolon | 64 | 12 | 8.5 | 7.5 | 8 | N10 ̊ 24’35.2” E 122 ̊ 30’25.1”<br><br>10 ̊ 24’36.7” 122 ̊ 30’20.1” | *Pocilloporidae, Acroporidae, Faviidae, Poritidae, Milleporidae, HelioporidaePectiniidae, Mussidae, Alcyonidae, Nepthidae, Oculiniidae, Agathyphyllidae, Siderastreidae* | 1 |
| Guiwanon | 62.14 | 11.07 | 4.29 | 1.43 | 21.10 | N10 ̊ 24’46.2” E122 ̊ 33’13.8”<br><br>10 ̊ 24’47” 122 ̊ 33’14.4” | *Acroporidae, Pocilloporidae, Poritidae,Meliporidae, Pectiniidae, Faviidae Nepthidae Agathyphyllidae, Sidestreidae* | 9.5 |
| Nueva Valencia | 49.70 | 9.49 | 7.95 | 7.20 | 26.66 | | | |

Table 13 shows that Barangay Lapaz has the highest percentage of living coral cover. The relatively low coral cover in Igang and Magamay and void in Sto. Domingo is due to proximity of these areas to Igang River and its nearby rivers. Good coral cover in each site is on the areas with lower slopes or high water level even during low tide.

Rating the coral habitat of Nueva Valencia, it would give an overall rating of 59.19% of living corals which is still in good condition.

Among the most frequently occurring coral families are Pocilloporidae, Poritidae, Acroporidae and Faviidae. Sponges, sea anemone, sea star, sea cucumber, sea urchin, seaweeds. Crinoids, algae and some crustaceans are thriving in the coral reef area of this municipality.

**4. Fisheries**

Fishing is a subsistence livelihood in the profile area and many people started this kind of work in their younger years. Fishing season is throughout the year which peaks from November to May. The average annual production is 143, 914 metric tons.

Being Catholics, fishermen celebrated a feast day annually in honor of their patron saints. By social custom, they prepare foods and drinks for their family, relatives and acquaintances to enjoy and a holy mass is held in the church or chapel.

Aside from fishing, households of coastal communities glean for shellfish, crustaceans and seaweeds at daytime (panginhas) and at night (panulo – aided by kerosene-fueled lamp and spear gun). Like fishing, gleaning not only supplies food on the table but also provides extra income.

In the profile area, coastal communities, fisheries and related industries appear to supplant traditional agriculture as the main source of livelihood. Municipal profile of the year 2005 reports that 7, 565 residents are directly dependent to fishing. There are 510 motorized fishing crafts and 578 non-motorized fishing crafts. Fishing with the use of motorized fihing boat has an average catch of 5 kilograms per day while 1.5 kilograms a day is catched using non-motorized boats.

Municipal territorial waters cover 15 kilometers from shoreline of Sibunag River and Punta Ganga at Poblacion. Annual production totaled 1, 984.668 metric tons amounting to 93, 233.400.

**Table14. Summary of Fisheries Data in the Coastal Barangays of Nueva Valencia, Guimaras.**

| Name of Barangay | No. of Registered Fiherfolks | No. of Registered Fiherfolks | | Average Monthly Income (P) |
|---|---|---|---|---|
| | | Longline | Gillnet | |
| Guiwanon | 81 | 26 | 50 | 2, 150 |
| Igang | 24 | 12 | 5 | 2, 500 |
| Magamay | 21 | 15 | 15 | 2, 400 |
| Cabalagnan | 34 | 4 | 12 | 2, 100 |
| Panobolon | 14 | 1 | 8 | 2, 250 |
| San Antonio | 106 | 42 | 54 | 2, 350 |
| San Roque | 54 | 0 | 28 | 2, 800 |
| Tando | 86 | 1 | 54 | 2, 800 |
| Pandaraonan | 35 | 28 | 11 | 2, 450 |
| Poblacion | 42 | 8 | 19 | 3, 000 |
| Canhawan | 98 | 10 | 79 | 2, 700 |
| Dolores | 36 | 0 | 27 | 2, 550 |
| Lucmayan | 29 | 0 | 8 | 2, 850 |

| | | | | |
|---|---|---|---|---|
| Igdarapdap | 26 | 1 | 24 | 2, 225 |
| Sto Domingo | 23 | 1 | 18 | 2, 500 |
| | 37 | 13 | 6 | 2, 850 |
| Total | 746 | 166 | 418 | 40, 475 |

Source: BFAR & MPDO

**Table 15. Summary of Fish Catch and Shell/Mollusks Gathering Season in the Municipality of Nueva Valencia**

| Dominant Fish | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Samaral | xo | xo | xo | x | xo | xo | xo | o | * | * | # | # |
| 2. Ngisi-ngisi | x | x | x | x | x | o | o | o | o | x | x | x |
| 3. Indangan | # | # | # | # | # | # | # | # | # | # | # | # |
| 4. Kanturayan | # | # | # | | | | | | | | | |
| 5. Gurayan | x | x | x | x | x | * | * | * | * | * | * | * |
| 6. Salmonete | | | | | # | # | # | # | # | # | # | # |
| 7. Gusaw | | * | * | * | * | * | * | | | | x | x |
| 8. Sulig | | | | # | # | # | # | # | # | # | # | # |
| 9. Lagaw | o | o | x | x | x | x | * | * | # | # | # | |
| 10. Tambilawan | | # | # | # | # | x | x | x | o | o | # | # |
| 11. Putian | | | | | | # | # | # | # | # | # | # |
| 12. Pak-an | x | x | x | x | x | o | o | o | o | # | x | x |
| 13. Bukaw-bukaw | x | x | x | x | x | x | o | o | # | # | # | # |
| 14. Salungasig | x | x | x | * | * | * | * | * | * | * | o | o |
| 15. Aloy | x | x | x | * | * | * | * | * | * | * | | |
| 16. Bulaw | o | # | # | x | x | * | * | * | * | * | | |
| 17. Tangigue | x | x | x | x | x | * | * | * | * | * | | |
| 18. Inid | * | * | # | # | * | * | * | * | * | * | * | * |
| 19 Ubod | o | o | o | | | | | | | x | x | x |
| 20. Nipa-nipa | o | o | o | | | | | | | | | |
| 21. Gingaw | x | x | x | x | o | o | o | | | | | |
| 22. Tabagak | x | x | x | x | o | o | o | o | o | | | |
| 23. Alimusan | x | x | xo | xo | o | | | | | | | |
| 24. Tulingan | | | | | | # | # | # | # | # | # | # |

**Table 15 (continuation). Summary of Fish Catch and Shell/Mollusks Gathereing Season in the Municipality of Nueva Valencia.**

| Dominant Fish | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 25. Bansa | | | o | o | o | o | x | x | x | x | x | |
| 26. Rari | | | o | o | | | | | | | | |
| 27. Malasugi | | | o | o | o | | | | | | | |
| 28. Mangagat | * | * | # | # | # | # | * | * | * | * | * | * |
| 29. Abo | xo | xo | xo | xo | | | | | | | | |
| 30. Pagi | | | # | # | o | o | o | | | | | |
| 31. Moymoy | # | # | # | # | # | # | # | # | # | # | # | # |
| 32. Ibis | | | | | | # | # | # | | | | |
| 33.Barongoy | # | # | # | # | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 34. Kilawan | | | | | # | # | # | # | # | | | |
| 35. Ampahan | # | # | # | # | # | # | # | # | # | # | # | # |
| 36. Bulao | x | x | x | x | # | # | # | o | o | x | x | x |
| 37. Gumaa | | # | # | x | x | * | * | * | | | | |
| 38. Bais | * | * | * | * | o | o | * | * | * | * | * | * |
| 39. Sapsap | x | x | x | x | o | o | o | o | # | # | # | # |
| 40. Batikuling | x | x | x | x | x | x | | o | o | x | x | x |
| 41. Lison | x | x | x | x | o | o | o | o | o | | | |
| 42. Barira | x | x | x | x | x | o | o | o | o | | | |
| 43. Dangit | x | x | x | x | o | x | # | # | o | # | # | # |
| 44. Balanak | * | * | * | * | o | o | * | * | * | * | * | * |
| 45. Liwit | # | # | x | x | x | o | o | o | o | o | o | o |
| 46. Balantyong | # | # | x | x | x | o | o | o | o | o | o | o |
| 47. Marot | # | # | | | x | x | x | o | o | o | | |
| 48. Bolinaw | # | # | x | x | x | x | o | o | o | | | |
| **Shell/ Mollusk** | | | | | | | | | | | | |
| 1. Kasag | o | o | o | o | o | x | x | x | o | o | o | o |
| 2. Alimango | o | o | o | o | o | x | x | x | * | * | * | * |
| 3. Pasayan | * | * | * | * | * | * | xo | xo | xo | x | | * |
| 4. Lukon | * | * | * | # | # | * | * | * | * | * | * | * |
| 5. Lukos | | | | # | # | o | o | o | # | # | o | o |
| 6. Pugita | x | x | # | # | * | * | * | * | * | * | # | # |
| 7. Imbao | # | # | # | # | # | # | # | # | # | # | # | # |
| 8. Banagan | | | # | # | # | # | | | | | | |
| 9. Litob | # | # | # | # | # | # | # | # | # | # | # | # |
| 10. Bakalan | x | x | x | # | # | # | x | x | x | x | x | x |
| 11. Damisol | x | x | x | x | x | | x | x | x | x | x | x |
| 12. Sikad[2] | # | # | # | # | # | # | # | # | # | # | # | # |
| 13. Sisi | # | # | # | # | # | # | # | # | # | # | # | # |
| 14. Manlot | # | # | # | # | # | # | # | # | # | # | # | # |
| 15. Baka[2] | # | # | # | # | # | # | # | # | # | # | # | # |
| 16. Dawat | # | # | # | # | # | # | # | # | # | # | # | # |
| 17. Bug-tan | # | # | # | # | # | # | # | # | # | # | # | # |
| 18. Sobra[2] | * | * | * | * | * | * | * | * | * | * | * | * |

Legend:

x – peak * - low

# - moderate o- spawning

With regards to fish catch there are forthy-nine (49) species of fish that are commonly found within the municipality. These species however vary in seasonality (peak, moderate, low and spawning season). The most abundant species are ngisi-ngisi, samaral.gusaw, and moymoy.

Shell gathering has been year-round practice mostly by residents in sixteen (16) barangays. PCRA results of various coastal barangays reveal that there are five (5) crustaceans, one (1) mollusk and twelve (12) shells. At the above table shows the list of various species captured in the profile area. Some species caught almost whole year-round which are found to

peak in some barangays while low in others. This simply shows that seasonality for these species vary.

### 4.1 Aquaculture

**Table 16. Brackishwater Fishponds Data in the Municipality of Nueva Valencia.**

| Species Cultured | Culture Method | No. of Operators | No. of Farms | OWNERSHIP | | Annual Production (MT) |
|---|---|---|---|---|---|---|
| | | | | Family | Corporation | |
| Bangus | Modular | 5 | 5 | 5 (titled) | 0 | 67 |
| - | -do- | 19 | 19 | 19 (titled) | 0 | 237 |
| - | -do- | 64 | 64 | FLA | 0 | 1,523 |

Brackish water fishponds are focused in Bangus aquaculture using modular system of cultural method. A total of 88 farms are operating in Nueva Valencia, all of which are owned by private individuals.

Freshwater fishponds, culture of freshwater tilapia and hito in Nueva Valencia, depends on the availability of fry/ fingerling dispersal and productions are only for consumption.

**Table 17. Mariculture Data in the Municipality of Nueva Valencia.**

| Species Cultured | Area in Operation | No. of Operators | Annual Production (MT) |
|---|---|---|---|
| Bangus, Siganid, Grouper, Snapper | 1 Ha. | N.A | Unspecified for training & extension purposes only. |

**Table 18. Fry Production in the Municipality of Nueva Valencia**

| Species/Produced | Source of Fry | Location | Production (pcs) | |
|---|---|---|---|---|
| | | | 2004 | 2005 |
| Bangus | Wild | Municipal waters | 1.0 million | 1.2 million |
| Praw/ shrimps | wild | Municipal waters | 15,000 | 20,000 |

Bangus and prawn/ shrimp aquaculture are practiced primarily for commercial purposes. Fry of these species are caught within the municipal waters.

**5. Beaches, Foreshore Lease Agreements and Bathing Establishments**

The municipality of Nueva Valencia possesses nature's innumerable blessings such as white sand beach, corals, fish and other marine life. It also possesses an attractive topography and natural environment. At present, there are fifteen (15) resorts found in the coastal areas of the municipality. Aside from resorts, there are also eco-tourism destinations such as: Taklong-Tandog Island Perfected Seascapes or Taklong Island National Marine Reserve: SEAFDEC Marine Station; Toyo Reef Sanctuary in Guiwanon Island; Bato Mata at San Antonio; and Biac na Bato at Barangay Lapaz.

The following are different tourist destination in Nueva Valencia( special interest resorts):

| | | |
|---|---|---|
| 1. Freelance | 6. Villa Igang | 11. Pulo Tiphag |
| 2. Raymen | 7. Punta Tando | 12. Villa Clara |
| 3. Rico | 8. Sto. Nino | 13. Rumagangrang |
| 4. Shan | 9. Isla Miguel | 14. Heritage Cottage |
| 5. BellaCove | 10. Clear Water | 15. Pulang Pasayan |

**Table 19. Foreshore Lease Agreement Holders DENR-PENRO Guimaras**
**As of 07 July 2005**

| Barangay | Use | No. of Applicant/ Occupant/Leasee/ Permitee | Total Area (Sq. m.) |
|---|---|---|---|
| Igang | Residential | 56 | 13, 512+ |
| | Commercial | 1 | 369 |
| | Not stated | Not stated | 35,144 |
| | | **57+** | **49,025** |
| Sto. Domingo | Residential | 1 | 10,663 |
| Poblacion | Residential House/ | 1 | 104,229 |
| | cottages | 1 | 1,320+ |
| | Beach resort crab | 3 | 14,613 |
| | fattening | 1 | Not stated |
| | Not stated | **6** | **120, 162** |
| Dolores | | 2 | 50, 998 |
| San Roque | | 1 | 6, 901 |
| | Beach resort | 1 | 10, 739 |
| | Commercial | 1 | 10, 001 |
| | Beach Resort | **3** | **27, 641** |
| | Not stated | | |
| Cabalagnan | | 1 | 1,000 |
| Canhawan | | 1 | 75 |
| | Shed for drying fish | 1 | 400 |
| | Beach resort | 2 | 600+ |

| | | | |
|---|---|---|---|
| San Antonio | Residential<br>Not stated<br><br>Agricultural | **4**<br><br>1 | **1,075**<br><br>26, 511 |
| **Total** | | **76** | **288,150** |

Based on DENR-PENRO data, there are two (2) Foreshore Lease Agreement (FLA) holders with an area of 7, 270 sq. intended for commercial purposes, fifty-nine (59) area 0f 63, 132 sq. for residential use, seven (7) holders with an meters for crab fattening, one (1) holder with an area of 1,000 for shed for drying fish, one (1) have an area of 135, 745. The beach resorts are located in the Barangays of Poblacion, Dolores, San Roque and Canhawan. Furthermore there are fourteen (14) bathing Magamay and Malingin Island, Guiwanon with total area of 48.25 hectares.

**Participatory Coastal Resource Assessment (PCRA) Results**

The Participatory Coastal Resource Assessment (PCRA) in the Municipality of Nueva Valencia was conducted last September 6-8, 2004. The first batch of sixteen coastal barangay and the second batch was September 13-15, 2005. The first two days was lecture and workshop proper while the third day was actual field survey and assessment in selected barangay. In this municipality, the actual field resource assessment was conducted at So. Puyo, Barangay Poblacion and Barangay Panobolon. It was actively participated by Barangay Captains of each barangay, Municipal Agriculture Office staffs, DENR-Region VI personnel, DENR-PENRO Guimaras, PENRO-LGU, BFAR staffs and fisherfolks of every coastal barangay.

The result of municipal level PCRA are presented in different tools used to come up data and issues within the municipality. Important habitats are mapped as well as resources, uses and issues. It is noted also that coral reefs, sea grass beds and mangrove are the dominant features of the municipal coastline. The resources and issues are almost similar throughout the municipality. Management issues persist with major concerns being; illegal fishing or use of destructive method, illegal cutting of mangroves, conversion of mangroves into fishponds, improper waste disposal and others are noted in different figures.

Tools used:

1. **Venn Diagram** – a tool used which determines the relationship of different institutions or organizations as well as individuals and with outside groups. Circles of different sizes used to represent different institutions extending assistance in the barangay. This can be interpreted as " the bigger the circle, the bigger the assistance extended, and the smaller the circle, the smaller the assistance extended. (Refer to Figures 1.1 to Figures 1.16)

2. **Transect Diagram** – It was done through a transect walk by the participants which was one (1) km. away from the coastal area of each coastal barangay with each respective azimuth

reading at the starting point. This is were all the resources are recorded while having a transect walk and determine its uses and issues that exist. (Refer to Table 2.1 to Table 2.16)

3. **Seasonal calendar** – is a calendar that identifies cycle/ pattern of activities that occur within the life of a community on a regular basis. It demonstrates ways to explore changes on trends during the year such as illness, cropping pattern. Major crops, etc. (Refer to Table3.1 to Table 3.16)

4. **Trend Diagram** – a tool used to determine the status of all resources and other data affecting the environment from the previous years up to the present with the corresponding causes. It is represented by a graph. (Refer to Table 4.1 to Table 4.16)

5. **Resource mapping-** it is represented by a map with their corresponding resources, issues and habitats exist. (Refer to figure 5.1 to figure 5.16)

6. **Resource Assessment** – Involved assessment of mangroves, seagrasses and corals in each coastal barangays.

- **Mangrove Assessment** – There were two kinds of measures drived from the results of the mangrove resource inventory/ assessment conducted, that is measure of mangrove species diversity; and characterization of the existing mangrove stand structure in each of the seventeen (17) coastal barangays. Characterization of which included measures of density, abundance and importance value of the species occurring in the site. Both measures were thefocus of the assessment conducted, the result of which were based on a resource inventory method currently, adapted for mangrove forest in the Philippines - the transect line method.

  The transect line method was used in the assessment and inventory of the mangrove stand in the Municipality of Buenavista Guimaras. This method utilizes 10-meter wide transect lines running perpendicular to an established baseline from seaward zone going up to the edge of the mangrove vegetation in the landward zone. The transect line method was used in order to capture the trend of change in vegetation and mangrove zone pattern.

- **Seagrasses Assessment** – Seagrass beds were assessed through snorkeling and by holding the outriggers of the boat while running at minimal speed. Species identification and seagrass cover were then determined by the observer. A handheld Global Positioning System (GPS) was used to determine the specific geographical coordinates of each observation.

- **Coral Assessment** – A broad Manta Tow technique was used as method of survey where a timed observation of an observer hanging on the outrigger of the boat was recorded. In every two minutes of towing, the observer determined the percentage of live hard corals, live soft corals, dead corals, dead corals with algae and the percentage area covered with sand and silt. Depth was also noted during the

observation. A handheld Global Positioning System (GPS) was used to determine the specific geographical coordinates.

## CHAPTER IV

## SOCIO- POLITICAL SETTING

### Political Boundaries

The profile area is bounded by the Municipality of Sibunag on the North and on the South and East by Iloilo Strait and on the West by Guimaras Strait.

### Demographics

Twenty- two barangays comprise the profile area. The population in 2000 was 31, 996 distributed to 6,298 households where 4, 428 households are found along the coastal area. The average household's size is 5.08 persons.

**Table 20. Total Population, Household Population, Number of Household and Average Household Size by Barangay: Nueva Valencia 2000.**

| Barangay | Total Population | Household Population | Number of Household | Average HH Size |
|---|---|---|---|---|
| 1. Cabalagnan | 2027 | 2027 | 370 | 5.84 |
| 2. Calaya | 2746 | 2746 | 514 | 5.34 |
| 3. Canhawan | 863 | 863 | 153 | 5.64 |
| 4. Concordia Sur | 642 | 642 | 124 | 5.03 |
| 5. Dolores | 1993 | 1993 | 381 | 5.23 |

| | | | | |
|---|---|---|---|---|
| 6. Guiwanon | 1720 | 1720 | 312 | 5.51 |
| 7. Igang | 1753 | 1753 | 307 | 5.71 |
| 8. Igdarapdap | 1001 | 1001 | 165 | 6.07 |
| 9. La paz | 1061 | 1061 | 399 | 2.66 |
| 10. Lanipe | 2164 | 2164 | 360 | 6.01 |
| 11. Lucmayan | 2062 | 2062 | 380 | 5.43 |
| 12. Magamay | 1068 | 1068 | 214 | 4.99 |
| 13. Napandong | 1368 | 1368 | 260 | 5.29 |
| 14. Oracon Sur | 657 | 657 | 131 | 5.02 |
| 15. Pandaraonan | 1275 | 1275 | 242 | 5.27 |
| 16. Panobolon | 859 | 859 | 159 | 5.40 |
| 17. Poblacion | 2712 | 2712 | 497 | 5.46 |
| 18. Salvacion | 2575 | 2575 | 461 | 5.59 |
| 19. San Antonio | 1514 | 1514 | 289 | 5.24 |
| 20. San Roque | 1549 | 1549 | 267 | 5.79 |
| 21. Sto. Domingo | 760 | 760 | 149 | 5.10 |
| 22. Tando | 898 | 898 | 164 | 5.48 |
| **TOTAL** | **34,255** | **34,255** | **6,298** | **5.31** |

The average annual population growth rate is 2.67% over the period of 1995-2000. Nueva Valencia has sixteen coastal barangays where two of these are island barangays with the combined population of 22,996 inhabitants. The two island barangays populated by 2,398 inhabitants while the remaining coastal barangays are inhabited by 20, 054 individuals.

**Table 21. Net Population Density of Nueva Valencia in the Year 2000**

| Barangay | Population | Area (has) | Person/ Has. |
|---|---|---|---|
| 1. Cabalagnan* | 1,892 | 458.91 | 4.123 |
| 2. Calaya | 2,562 | 1,509.70 | 1.697 |
| 3. Canhawan* | 787 | 33.59 | 2.432 |
| 4. Concordia Sur | 580 | 689.06 | 0.987 |
| 5. Dolores* | 1,843 | 421.76 | 4.369 |
| 6. Guiwanon** | 1,602 | 298.49 | 5.367 |
| 7. Igang* | 1,641 | 608.84 | 2.695 |
| 8. Igdarapdap* | 921 | 467.76 | 1.968 |
| 9. Lapaz* | 1,911 | 704.59 | 2.712 |
| 10. Lanipe | 2,013 | 1,002.80 | 2.007 |
| 11. Lucmayan* | 1,911 | 737.22 | 2.592 |
| 12. Magamay* | 1,002 | 218.67 | 4.582 |
| 13. Napandong | 1,288 | 407.28 | 3.162 |
| 14. Oracon Sur | 600 | 25.18 | 1.142 |

| | | | |
|---|---|---|---|
| 15. Pandaraonan* | 1,197 | 283.55 | 4.221 |
| 16. Panobolon** | 796 | 310.50 | 2.564 |
| 17. Poblacion*º | 2,531 | 579.76 | 4.366 |
| 18. Salvacion | 2,411 | 803.94 | 2.999 |
| 19. San Antonio* | 1,398 | 1,056.01 | 1.323 |
| 20. San Roque* | 1,455 | 524.52 | 2.774 |
| 21. Sto. Domingo* | 729 | 727.42 | 1.002 |
| 22. Tando* | 836 | 287.37 | 2.909 |
| **TOTAL** | **31,996** | **13712** | **2.470** |

(Source: MPDO)

**Legend** *** coastal barangay**
**** island barangay**
***º coastal barangay and urban**

In comparison with the Municipality of Nueva Valencia as a whole, the entire profile area is more rural in population distribution and has a higher population density per hectare of land.

**Religion and Language**

Most of the populace in the municipality are Roman Catholic. Other domination existing in the municipality includes Aglipayan, Iglesia ni Kristo, Jehovah's witnesses, Seventh Day Adventist, Protestants, etc. Hiligaynon and Kiniray a are the predominant language in the Municipality.

**Livelihood and Income Source**

The primary sources of livelihood in Nueva Valencia are farming and fishing. Majority of the barangays are dependent on farming and fishing related activities as source of income while there are some families have members who are OFWs who also contribute to the family income. Fishing has become one of the major industries considering that sixteen barangays are geographically located in coastal areas.

Worth mentioning also in the thriving mango industry which uplift the economic status of some families, and copra production, that is why there is the presence of coco processing plant located at Concordia Sur, Nueva Valencia.

**Health, Sanitation and Medical Care**

There is only one district hospital in the municipality located at barangay Lanipe. This 25-bed district hospital has medical/dental facilities, morgue, laboratory facilities, pharmacy, ECG, X-ray and ambulance. This is staffed with 3 doctors, 1 dentist, 5 midwives and 1 medical technologist and aimed at delivering primary health care. Also there are private health services offered in the municipality.

Barangay health programs cover immunization, maternal and child care, nutrition and health education. Barangay Health workers act as local volunteers in the absence of certified practitioners. Fortunately, each barangays has health centers.

Toilet facilities are two types: water sealed sewer/ septic tank and water sealed, other depository. The first one is classified as exclusively used and shared. The second one is classified as exclusively used, shared, close pit, open pit and others (open space etc.).

While Nueva Valencia has more rivers and creeks, there are also many level 111 water systems (Table 4.3)

**Table 22: Potable Water Supply (Levels I, II, and III) in Nueva Valencia**

| Barangay | Water Source (level) |
|---|---|
| Poblacion | III,II,I |
| Igang | III,II,I |
| Sto. Domingo | III,II,I |
| Magamay | III,II,I |
| Pandaraonan | III,II,I |
| Dolores | III,II,I |
| Tando | 1 rain collector, 2 w/ pump, 9 open wells |
| Lucmayan | II,I |
| San Roque | III,II,I |
| Lapaz | II,I |
| Cabalagnan | II,I |
| Canhawan | II,I |
| Igdarapdap | II,I |
| San Antonio | III,I |
| Panobolon | III,I |
| Guiwanon | III,I |
| Oracon Sur | III,II,I |
| Lanipe | III,I |
| Salvacion | III,II,I |
| Napandong | III,II,I |
| Calaya | III,I |

(Source: MPDO, Brgy. Survey 2005)

The water system levels in the profile area are as follows: Level I- dug wells, artesian wells, shallow and deep wells, other natural sources such s springs and creeks; Level II – all sources mentioned in level I but provided with limited or small scale distribution lines: level III- large scale water system, usually with water pumping stations, reservoirs and even water treatment facilioties.

**Education**

Population Distribution by Educational Attainment of the total population five years old and over, almost half (53%) had attended or completed elementary education. Twelve percent

had attended or graduated high school and only 4. 32% had finished college. There are 0.04% had a Post Baccalaureate.

There are many elementary schools in the profile area which is common throughout the Philippines. There are four high schools and none vocational schools and colleges in the municipality. There are two research centers- South East Asian Fisheries and Development Center (SEAFDEC) and Taklong Island National Marine Reserve (TINMAR). As of the year 1995, literacy rate reached up to 81.40 %.

**Table 23: Educational Attainment and Literacy rate, 5 Years old and Over of the Municipality of Nueva Valencia in the Year 1995**

| Level | Number | Percentage |
|---|---|---|
| No grade completed | 683 | 3.09 |
| Pre-School | 566 | 2.56 |
| Elementary | 11,810 | 53.42 |
| High school/ undergraduate | 3,163 | 14.31 |
| High school graduate | 2,821 | 12.76 |
| Post Secondary | 1,111 | 5.02 |
| College Undergraduate | 668 | 3.02 |
| College Graduate | 954 | 4.32 |
| Post Baccalaureate | 8 | 0.04 |
| Not Stated | 223 | 1.01 |
| **TOTAL** | **22,007** | **99.55** |
| **LITERACY RATE** | | **81.40** |

(Source: MPDO)

**Table 24: School Population and Participation rate of the Municipality in the Year 2004-2005**

| Level | School Age Population | No. Enrolled | Participation Rate |
|---|---|---|---|
| Pre- school | 2, 422 | 810 | 33.46% |
| Elementary | 5, 533 | 5, 526 | 99.87% |
| Secondary | 3, 466 | 3, 623 | 104.53% |

(Source: NSO, 1995)

As of 2004, there are 20 day care center and there are 10 Pre-schools under the DepEd. The Municipality of Nueva Vlencia is composed of two (2) districts the North and South. There are 27 elementary schools and one private school. It has a total of six (6) secondary schools and one private high school. Speaking of schools by districts there are 13 public elementary school in North and 13 public elementary in South.

The prevalence of elementary and high schools which added to high rate of attendance indicates that elementary and high school classes are the best way to provide grassroots environmental education to a large percentage of the populace.

**Kinds of Lighting Facilities and Fuel**

Lighting facilities of Nueva Valencia include electricity, kerosene, LPG, charcoal and wood. Electricity is provided by Guimaras Electric Cooperative (GUIMELCO) which sources its power supply from a substation in Iloilo City through a 2.5 – kilometer sub marine cable. Municipal Solar Infrastructure Project for Lighting in the year 2000 covers barangays Guiwanon, Lapaz, Lanipe, Panobolon, San Roque and Tando with Barangay hall, school, health centers and plaza as prioritized institutional buildings.The two (2) island barangays Guiwanon and Panobolon are energized by a generator and solar system where households contribute for fuel consumption. The remaining households in the mainland were not energized due to unavailable electrical wire and post and financial incapacity of some families for electrical connection.

**Transportation and Telecommunication Facilities**

Transportation plays a major component in the development of the municipality, particularly in the economic and social aspects. Water and land transportation are available thus making all barangays accessible. Public utility vehicles are available to the public which charges a very reasonable fare. The 22 barangays are provided by the municipal government with multicabs for easy transportation. One could also wait for services of FX and L300 vans that could transport one to his destination.

The post office is available at the Municipal Hall that can cater the needs of the postal patron. There are also cellular sites (Globe and Smart) at the same place that makes it easy for individuals to send and receive domestic and international calls.

# CHAPTER V

# INSTITUTIONAL AND LEGAL FRAMEWORK

## A. INTRODUCTION

The previous natural resources management efforts in the Philippines reflected a top down approach to governance. Currently, the legal and institutional issues of coastal management have been changed by devolution of many responsibilities under the Local Government Code.

Management of coastal resources is governed by various national and local institutions. At the national level, coastal resources are under the jurisdiction of the Department of Environment and Natural Resources (DENR) and the Department of Agriculture (DA), Bureau of Fisheries and Aquatic Resources (BFAR). The DENR is responsible for coastline development, mangrove management and management of all areas which are government owned. The BFAR covers all fishery related products harvested in coral reefs, open seas and brackish water ponds. Since, managing human behaviors is the underlying theme of Coastal Resource Management (CRM), other agencies such as the DSWD, DECS, DILG, PCG, and DOJ are now playing important roles in CRM.

The management of coastal resources involves many Local Government Units (LGU's) and national agencies. Traditionally, the line agencies most involved with coastal management issues are the DA-BFAR and the DENR-CEP (Coastal Environment Program). Under the policy of devolution, the 1991 Local Government Codes give more authority and responsibility to governance to the LGU's this means that the Provincial Government, Municipalities and even Barangays may now influence natural resource management issues. The DILG is the overseeing agency which ensures that LGU's exercise their obligations in responsible manner.

Under devolution, the DENR offices at the provincial level, GENRO and CENRO oversee the management of coastal habitats as well as upland forests and protected areas. In addition, the Provincial Office for Agricultural Services (POAS) has a fisheries section which manages various brackish water around the municipality. Traditionally, the fisheries section works with local fisherfolks and fishing associations on production and capture issue.

In 1996, President Fidel V. Ramos signed an Executive Order 240 regarding the establishment of Fisheries and Aquatic Resource Management Council (FARMC) at the

municipal level. These councils are supposed to consist of fisherfolks representatives, Non-Government Organizations (NGO's) and municipal officials, and let them participate in the management of coastal resources within the *15 km*. municipal water. The FARMC also strengthen and support the Local Government Code Statement that allows different LGU's to coordinate and collaborate with each other on relevant issues.

**A. Current State of the Philippines Coastal Zone Law**

In accordance with the provisions of PD 705, as amended, otherwise known as the Revised Forestry Code of the Philippines, the following rules and regulations governing the utilization, development and management of mangrove resources are hereby promulgated for the information and guidance of all concerned.

- **Policy and Objectives** – Mangroves have multi-uses. As such, the utilization, development and management of mangrove resources shall involved as many uses as possible for the productivity, it shall be the policy of the government to conserve, protect, rehabilitate and development of the mangrove resources, stop the wanton exploitation of mangrove resources and enhance the replenishment of the denuded areas through natural or artificial means.

- **Prohibition in the Issuance of License and Permit** – the granting the renewal of mangrove timber license and or permit of any kind that authorizes the cutting and debarking of trees for commercial purposes in areas outside the coverage of FLA and mangrove plantation shall no longer be allowed.

- **Conversion of Mangrove Areas Into Fishfonds** – conversion of thickly vegetated mangrove areas into fishfonds shall no longer be allowed. All mangroves swamps released by BFAR which are not utilized, or which have been abandoned for five years from the date of such release shall revert to the category of forest land in accordance with existing laws and regulations.

- **Fishponds in Mangrove Forest resources and Wilderness Areas** – in accordance with the national policy, fishponds will not be allowed, be limited to sustainable activities as indicated on the approved Management Plan for such areas. Conservation of not limited to fishponds development, saltworks and paddy cultivation shall not be allowed under the Certificate of Stewardship Contract. FLA areas through a permit shall be turned over to the DENR for disposition through public bidding. FLA holders are given the right to equal the highest bidder in which case the bid is automatically awarded to him.

- **Establishment, Development and Manaqgement of Communal Managrove Forest** – the development and management of the communal mangrove forest shall be the responsibility of the community people concerned under the concept of CBFM and in accordance with the approved Management Plan to be monitored closely by the Regional Officer of the DENR. The DENR however, disestablished a mangrove area as communal mangrove forest if the allowable activity thereat is found to be in accordance to the resource.

- **Responsibility and Authority on the Protection, Development and Management of Mangrove Areas –** it is the responsibility of the concerned regional offices of the DENR in coordination with DA.

- **Continuing Assessment of Mangrove Resources –** periodic assessment throughout the country, National Mapping and Resources Information Authority (NAMRIA) Land Satellite (LANDSAT) and involvement of NGO.

**Fisheries Laws and Penalties**

**R.A. 8550 Section 1 –** Otherwise known as "**The Philippine Fisheries Code of 1998"** an act providing for the development, management and conservation of the fisheries and aquatic resources, integrating all laws pertinent thereto, and for other purposes.

**Article 1, Section 16 – Jurisdiction of Municipal/City Government –** the municipal/city government shall have the jurisdiction over the municipal waters as defined in this code. The municipal/city government, in consultation with the FARMC shall be responsible for the management, conservation, development, protection, utilization, and disposition of a fish and fishery/aquatic resources within their respective municipal waters.

**Article III, Section 49 – Reversion of All Abandoned, Undeveloped or Under-utilized Fishponds –** the DENR, in accordance with the Department, LGUs and other concerned agencies and FARMs shall determine which abandoned, undeveloped, or under-utilized fishponds covered by FLAs can be reverted to their original mangrove safe and after having made such determination shall take all steps necessary to restore such areas in their original mangrove state.

**Section 88 – Fishing through Explosives, Noxious or Poisonous Substance and or Electricity.**
**Penalties:**

**a**. mere possession of explosives, noxious or poisonous substance or electro fishing devices for illegal shall be punishable by imprisonment raging from six (6) months to two (2) years.

**b**. Actual use of explosives, noxious or poisonous substance or electro fishing devices for illegal fishing shall be punishable by imprisonment ranging from five (5) to ten (10) years without prejudice to the filling of separate criminal cases in the use of the same result to physical injuries or loss of human life.

**Section 94 – Conversion of Mangroves** – it shall be unlawful for any person to convert mangroves into fishponds or for any other purposes.

Violation of the provision of this section shall be punished by imprisonment for six (6) years and one (1) day to twelve 12 years and or a fine of Eighty Thousand Pesos (P80, 000. 00). Provided, that if the area requires rehabilitation or restoration as determined by the court, the offended shall also be require to restore or compensate for the restoration of the damage.

**Philippine Laws on Mangrove Protection**

| | | |
|---|---|---|
| **P.D. 704 (1975)** | - | **Fisheries Code:** policy of accelerated, integrated fishpond development set conditions for mangrove conversion to ponds, public lands for fishponds can only be leased, not owned. |
| **DENR A.O. 17 (1998)** | - | Defined fishpond conversion as major cause of mangrove deforestation, prohibited further zonification and release for pond development of already zonified forests. |
| **P.D. 705 (1975)** | - | **Revised Forestry Code**: retention (and exclusion from pond development of 20m-wide mangrove strip along shorelines facing oceans, lakes, etc. |
| **P.D. 953 (1976)** | - | Fishpond/mangrove lease holders required to retain or replant 20m mangrove strip along river, creeks. |
| **P.D. 1067** | - | 3 to 20 m of riverbanks, seashore for public use: recreation, navigation, floatage, fishing or salvage; building of structures not allowed. |
| **P.D. 1586 (1978)** | - | Environmental Impact Statement (EIS) system covering resource extraction industries (such as fishponds). |
| **BFD A.O. 2 (1979)** | - | Minimum of 25% of total mangrove forest in any given area declared completely protected as Mangrove Wilderness Areas. |
| **P.P. 2146 (1982)** | - | Prohibition of mangrove cutting throughout the country |
| **P.P. 2151 & 2152 (1981)** | - | Declaration of 4,326 has. of mangroves as wilderness areas and 74.76 has. (Including entire Palawan Province) as forest resources. |
| **BFD Cir. 13 (1986)** | - | Processing of applications prohibited for mangrove lands which area part of forest lands. |
| **MNR A.O. 42 (1986)** | - | Expansion of mangrove belt in storm surge, typhoon areas: 50- |

100 m long shorelines, 20-50m along riverbanks.

**DENR A.O. 76 (1987)** - Establishment of buffer zone: 50 m fronting seas, oceans and 20 m along riverbanks; lease of ponds under FLA required to plant 50-m mangrove strip.

**L.O. I 917** - Mangrove forests declared essential to foreshore protection, maintenance of estuarine and marine life.

**DENR Mem. Cir.5 (1990)** - Guidelines on Mangrove existing inside approved FLA areas

**DENR Mem. Cir.7 (1991)** - Mangrove cutting in FLA area prohibited if ≤10% canopy cover and /or capable of natural regeneration.

**R. A. 7161 (1991)** - Ban on cutting of all mangrove species

**DENR A.O. 34 (1991)** - Guidelines for Environmental Clearance Certificate (applicable to fishponds)

**DENR A.O. 21 (1992)** - Implementing guidelines for EIS

**DENR A.O. 13 (1992)** - Some as MNR A.O. 42 (see above)

**DENR A.O. 16 (1993)** - Guidelines for Establishment of buffer zones in protected areas

**DENR A.O. 96 -29** - Community-Based Forest Management Program (CBFMP)) – a national strategy to ensure sustainable development of our forest by empowering forest dependent communities to rehabilitate,protect & develop the country's forest & mangrove areas.

**E.O. 263** - Adopting CBFM as the National Strategy to Ensure the Sustainable Development of the Country's Forestlands.

**DENR A.O. 96 – 29** - Rules and regulations for the Implementation of E.O. 263 or the "Community-Based Forest Management Strategy".

**DENR A. O. 96 – 30** - Integration of all Community-Based Forest Mnagement Strategy & People – Oriented Programs & Projects into the DENR Regular Structure

**Memo. Circular 97-12** - Guidelines for the formulation of CRMF & AWP for CBFMA's.

**DENR A. O. 98 – 10** - Guidelines on the Establishment of CBFM Projects within mangrove areas.

**DENR A. O. 98 – 91** - Guidelines on the Establishment & Management of CBFM Projects within Watersheds Reservations

**Joint MC 98 – 01** - Manual of Procedures for DENR-DILG-LGU Partnership on Devolved and Other Forest Management Functions.

**DENR A.O. 98-08 Dated June 24 1998 –** Guidelines on Contracting Inside CBFM Areas.

**DENR A.O. 98-42 Dated June 24 1998** - Production Sharing Agreement with PO's in the harvest of forest plantation owned by the government inside CBFM areas.

**DENR A.O. 98-43 Dated June 24 1998 –** Exemption of CBFM Projects from the payment of administrative charges.

**DENR A.O. 98-08 Series of 1998** - Rules of Fishpond Reversion

**R. A. 9147 & DAO 2004-01** - "Wildlife Resources Conservation and Protection Act" and its Implementing Rules and Regulations. Section 7 provides for the collection of wildlife species may be allowed for scientific researches, breeding/propagation, bioprospecting, commercial purposes, or for other activities as may be authorized by the Secretary provided that such collection is supported by appropriate permit from the DENR.

**DAO 2007-24 Amending DAO 2007-01 – "**Establishing the National List of Threatened Philippine Plants ans Their Categories and List of Other Wildlife Species". Section 7 "Illegal Acts" provides that it shall be unlawful for any person, group or entity to collect and/or trade the threatened plant species, unless such acts are covered be a permit issued by the DENR under a valid tenurial instruments as may be applicable & in accordance with existing wildlife & forestry laws, rules and regulations.

**RA 7586 – National Integrated Protected Areas System Act –** Places management of national protected areas under a multi-sectoral body called the Protected Area Management Board (PAMB), chaired by DENR for Protected Seascape covering mangrove areas.

**Public Land Act of 1936** - Governs the use of foreshore lands. E.O. 192 gives jurisdiction over foreshore areas to DENR; and P.D. 1198 requires rehabilitation of damaged foreshore areas to their original condiction

**R.A. 7942** - Provides restrictions on areas closed to mining such as old growth or virgin forest, proclaimed watershed forest reserves, wilderness areas, mangrove forests, mossy forests, national parks**,** provincial/municipal forests, parks, greenbelts, game

refuge & bird sanctuaries as defined by law & in areas prohibited by NIPAS & penalties.

**Philippine Laws on Mangrove Use, Tenure and Rehabilitation**

| | | |
|---|---|---|
| **DENR A.O. 77 (1988)** | - | Implementing guidelines of Integrated Social Program (incentives for management of forest resources through provision of legal tenure) |
| **DENR Mem. Cir. 15 (1989)** | - | Implementation of reforestation of reforestation for mangrove rehabilitation and diversity prioritized |
| **DENR A.O. 123 (1990)** | - | Award of 25-yr Community Forestry Management Agreement for small scale utilization of mangroves, establishment of nypa and Rhizophora and aquasilviculture activities. |
| **DENR A.O 3/9 (1991)** | - | Policies and Guidelines for Mangrove Stewardship Agreement |
| **DA DENR M.O.3 (1991)** | - | Guidelines for FLA Cancellation: Mangrove areas released to BFAR but not utilized or abandoned for 5 years from release to be reverted to forest land under DENR administration |
| **DENR A.O. 6 (1992)** | - | Reversion to forest land category of portions of Bohol mangroves declared Alienable and Disposable for ponds |
| **E.O. 263** | - | Community Based Forest Management (CBFM) adopted as national strategy for sustainable development of forests. |
| **DENR A.O. 23 (1993)** | - | Combined 3-yr Mangrove reforestation Contract and 25 yr Forest Land Management Agreement into new 25 years FLMA for families (1-10 ha) and communities (10-1,000 ha) |
| **DENR A.O. 30 (1994)** | - | Community Based Mangrove Forest Management NGO assistance |
| **RA 8550 (1998)** | - | Reforestation on Riverbanks; seashore, etc. fronting fishponds; reversion of abandoned, underdeveloped or under- utilized ponds to mangroves. |

**C. Local Government**

The relationship of the province with other LGU and NGO is founded on the concept of "strong collaboration of all sectors towards people empowerment and development". The Local Government Code (1991) has provided mechanism for inter-governmental and non-governmental linkages. The Province through the governor has to ensure that every component municipality within its territorial jurisdiction acts within the scope of its prescribed powers and

functions. The governor reviews all executive orders promulgated by which form vertical linkages among LGU's.

The LGC (1991) has provided provisions for the promotion of relationship between LGU's and NGO's. LGU's have to promote the establishment and operation of Peoples Organization (PO) as well as NGO's to become active partners in the pursuit of local autonomy. LGU can enter into joint ventures and such other cooperative arrangements with PO's and NGO,s to engage in delivery of certain basic services, capability building and livelihood projects and to develop local enterprises designed to improved productivity and income, diversify agriculture, spur rural industrialization, promote ecological balance and enhance the economic and social well being of the people.

**D. Non- Government Organizations**

Non- Government organization are working in the municipality with the objective of "broadening community participation in rural development. The following are the list of accredited NGO operating in the Municipality of Nueva Valencia, Save the Children Federation Incorporated (SCFI), Municipal Agriculturist and Fishery Council (MAFC), Nueva Valencia Multi-Purpose and Transport Services Cooperative, (NVMPTSC), Taytay sa Kauswagan Incorporated (TSKI), Federation of Fisherfolk Association, Provincial Agrarian Reform Beneficiaries Ass.(PARBA), Peoples Economic Council Incorporated (GPEFI), Participatory Research Organization of Communities and Education towards Struggle for Self –Reliance (PROCESS) and SEAFDEC.

- **Participatory Researched Organizing of Communities and Education Towards Struggle for Self-Reliance (PROCESS)**. It is actively involved in organizing fisherfolk communities and initiating fishery development projects and cooperation with other development agencies and organization. Each organizational purpose and concentrated on empowering the grassroots and deprived sectors of society through gender sensitivity and community organizing project.

- **South-East Asean Fisheries Development Center (SEAFDEC) –** it is designed as a training module on grouper culture and cages and ponds for the fisherfolk cooperative and fisherfolks association.

- **Taos Puso Foundation Inc. (TPFI) –** is a national NGO established **in** 1988 with the aim of addressing the social, economic and health needs of the youth and women and the countryside who hardly feel the economic recovery program of the government. It has implemented projects such as livelihood, health, infrastructure and socio-cultural activities. Its program has covered barangay and the municipality with program focus on community organization, health and education.

- **Taytay Sa Kauswagan (TSKI) –** is a national non-government organization registered with Securities and Exchange Commission (SEC) of the Republic of the Philippines in 1980. It is now operating in the five (5) municipalities of the province. It is implementing rural credit program to the disadvantaged and poor group. This program is the replication of Grameen Bank of Bangladesh.

- **Save the Children –** It is established in Nueva Valencia in 1981. It initiated programs on community self-management, health, sponsorship, water, and infrastructure, income generation, sustainable agriculture and the information of the Nueva Valencia Multi-Purpose Cooperative, Inc. (NVMPC). Under community team building and project development management training. It also initiated barangay planning workshops as well as annual/semi-annual evaluation and replanning workshop in Nueva Valencia.

- **Guimaras Peoples Economic Foundation (GPEFI)** – the Nueva Valencia peoples economic council organized in 1986, is a community based multi-sectoral, group organized to mobilize the various resource of the locality towards defining and solving the community economic problems especially those affecting the poor, the potential entrepreneur in need of capital, t6he neglected minority, the unemployed abd victims of social injustices; such as the lack of opportunities for economic advancemenet. It is composed of representatives from trade, industry, academe youth the professionals. Its program focuses on health, community organizing, livelihood and education.

## F. Community Organizations

The community is medium through which the people acting as a cohesive group can interact with government agency to obtain the required services for the solution of community based problems, and at the same time, acting on their own initiative, promote the communities welfare and upgrade their standard of living.

Community participation in planning has been initiated in the province by the European Union (EU), funded project named as Small Islands Agricultural Support Services Programmed (SMISLE).

Municipal Participatory Coastal Resource Assessment (PCRA) workshops were also conducted in the province in year 2004 under the community based strategic planning funded by the Province to evaluate the influence and impact of community program administered by internal organization such as;

4.1 Cooperatives
4.2 School and Church Organizations
4.3 Farmers Association
4.4 Fisherfolks Associations

At the Municipality of Nueva Valencia various associations / organizations were operating with primary project concentration on mangrove reforestation.

1. Katilingban sang mga Magagmay nga Mangingisda sa Dolores. (KAMAMADO)
2. Laktawan Tabunan Small Fishermen Association (LATASFA)
3. Lucmayan Mangrove Growers Association
4. Guiwanon Mangrove Growers Association
5. Samahan ng mga Maliliit na Mangingisda ng San Antonio.
6. Igdarapdap Barangay Council
7. Panobolon Mangrove Growers Association Inc. (PMGAI)
8. Lapaz Small Fishermen Association

9. Cabalagnan Small Fishermen Association
10. Canhawan Fishermens/ Farmers Associations
11. San Roque Small Fishermen Association
12. Tando Small Fishermen Association
13. Pandaraonan Small Fishermen Association
14. Sto. Domingo Small Fishermen Association
15. Igang Small Fishermen Association
16. Magamay Small Fishermen Association
17. Poblacion Small Fishermen Association.

## CHAPTER VI

## MANAGEMENT ISSUES AND OPPORTUNITIES

The environmental thrust of the municipal government is underscored by its vision and mission to wit as " We envision Nueva Valencia as God loving, peaceful, self-reliant and progressive community anchored an democratic ideals, political stability, sustainable development and ecologically balanced environment. " Nueva Valencia is well known for its sweet mango, marine lobster "banagan", high valued commercial fishes, one of which is tanigue and unique bivalve delicacy "imbao" which thrive in mangrove areas.

### Issues and Concerns

Issues noted during the conduct of Participatory Coastal Resource Assessment with the participation of barangay officials, women, youth and fishers of each coastal barangay are the following: 1) Ileegal cutting/ harvesting of mangroves for fuel and charcoal making, 2) over gleaning- the activity destruct newly planted mangroves in the area., 3) illegal fishing practices (fine mesh nets, dynamite fishing, hudhod, tubong,trawling, forse siener, compressor, sahid, poisoning, hulbot-hulbot), 4) boundary conflict- need relocation of coastal boundary between Lawi-Poblacion, Poblacion-Igang and Igang-Sto. Domingo, 5) Extraction of corals, 6) Illegal quarrying of sand and gravel; 7) Improper waste disposal- residents near rivers and foreshore areas dumped their garbage in the bodies of water stated and some of the residents have no sanitary toilets that causes water pollution; 8) flooding in some barangays, and 9) weak enforcement of environmental laws- all government agencies involved shall coordinate with each other to performed their duties for the protection of the coastal areas.

Although the provincial, municipal and barangay government of Guimaras had instituted some measures to minimized illegal activities and implemented various programs/ projects to address such issues, still those activities can be observed in some coastal barangays in the municipality.

**Opportunities**

After the completion of this profile, a Coastal Resource Management plan shall be formulated to properly manage the coastal areas. This would a direction to the implementor on wahat program/projects to be prioritized that would address needs of the coastal communities. Advocating all stakeholders with enhance proper management of the coastal areas. For the sustainability of these initiatives, strict political will is needed to impose the CRM plans in the municipality.

**Recommendations**

Based on results of the PCRA workshops and field assessment, the following components are to be incorporated in the formulation of CRM plan in your municipality.

**1. Habitat Enhancement/Rehabilitation**

Abandoned fishponds, heavily cut mangrove forest areas and gaps in naturally reforested areas needs to be enhanced by conducting the following activities: (1) Mangrove reforestation, (2) Assisted natural regeneration, (3) enrichment planting and restocking of diminishing species. Mangrove reforestation shall be undertaken to areas which was mangrove forest before but was cleared in to be abandoned fishponds sites. The assisted natural regeneration (ANR) is done by modifying the forest floor or the forest stand to allow fallen seeds to optimally germinate and grow as wildlings to trees. The activities may include of rehabilitation. Enrichment planting is the process of supplementing inadequately residual forest to enhance forest land productivity.

The reversion of abandoned fishpond into mangroves should be acted by BFAR and DENR to utilize the area for mangrove reforestation.

**2. Law Enforcement**

Republic Act 8550 and 7160 should be strictly implemented in terms of the conversation, protection and rehabilitation of the natural resources in the coastal areas. This can be done in collaboration with all government agencies task to implement those laws since, illegal fishing is prevalent in every coastal barangay, the Bantay-Dagat in coordination with barangay officials, FARMC's, PO shall conduct daily monitoring at the coastal area to minimize illegal activities.

**3. Solid Waste Management**

The increasing human population and the growing economy have put the environment into compromise and one of these is the proliferation of waste along coastal areas. Most of the

residents dump their waste in rivers and at foreshore area and some residents use mangrove areas as their comfort rooms which ultimately pollutes the coastal waters.

To address this problem, coastal villagers should have proper waste disposal system for organic as well as inorganic waste. Domestic garbage should be buried or composted while special containers and other inorganic refuse can be sold or recycled. Each coastal barangays must provide collection of used oils from boat engines. IEC's should be conducted to enhance people's knowledge of the importance of coastal water. Likewise, effective enforcement of ordinances regarding this issue is important in sparing the coastal water from deteriorating.

**4. Livelihood Identification and Development**

Based on the status of the resources in each coastal barangays, project implemented can already assist PO's in identifying livelihood in their areas. Livelihood programs should be environmentally friendly that will let each resources to co-exist in the area.

**5. Sustainable Financing Mechanism**

**6. Capability Building**

To enhance knowledge and skills of fishers, bacauan planters, cooperative members and member of community organization training shall be conducted to address issues raised by the coastal communities.

**BRGY. CABALAGNAN**

**TRANSECT DIAGRAM**

| HABITAT | SETTLEMENT | FOREST ZONE | CREEK | AGRICULTURAL | STATIC BODIES OF WATER | MANGROVE & FISHPOND | SETTLEMENT | BEACH | COASTAL AREA | OPEN SEA |
|---|---|---|---|---|---|---|---|---|---|---|
| **RESOURCES** | High school building, houses | Bamboos, mangoes, ipil- ipil, duhat, mahogany, Tar apple, assorted trees | Puyo (fish) reptiles, amphibians, birds & different animals | Rice fields, vegetables, poultry raising, swine fattening | Fishes, shells, crabs, shrimps, mangroves, bridge | -same- | Public market, houses, cemetery, bakery, fishpond | Wharf, sand, pump boats, sailboats, houses | Fishes, shells, sea grass, corals, mollusks | Fishes, sea weeds, fish, corals, fish pen |
| **RESOURCE USE** | Education & shelter | Firewood, charcoal, boat construction, furnitures, fishing purposes | Foods | Foods, income generating projects, money | Food, consumption, income, firewoods, transportation | -same- | Convenience, shelter, burial services | Convenience, recreation fishing purposes, income generating project | Foods, consumption, skin diving | -same- |
| **ISSUES & CONCERN** | Lack of area, hilly | None | Water pollution | Air pollutants | Pollutants | Garbage disposal | Reconstruction of break water | Un-sanitary | Illegal fishing | Illegal fishing |
| **RECCOMENDATIONS** | Expansion | Tree planting | Plant trees, cleanlines | Plant trees, clealiness, correct | Proper garbage disposal | None | Proper waste disposal | For budget (lack of fund) | Proper sanitation | Stop illegal fishing |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | s | used of chemicals | | | | | | |
| **AGENCY/ IES CONCERN** | DECS, DPWH | PENRO, Brgy. officials | Brgy. officials | DA | Brgy. officials | PENRO | Brgy. officials | Province | DOH | LGU, Brgy. officials |

**BRGY. CANHAWAN**

**TRANSECT DIAGRAM**

| **HABITAT** | **FOREST ZONE** | **AGRICULTURAL** | **MANGROVE & FISHPOND** | **COASTAL AREA** |
|---|---|---|---|---|
| **RESOURCES** | Trees, stones, bamboo, coconut, creek, root crops | Rice, corn, banana, human, farm animals | Bakhaw, nipa, sand, gravel, isda | Shells, pasayan, isda, kasag, corals, sea grass |
| **RESOURCE USE** | Fuel, building, materials, source of water, food, livelihood | Food, source of labor | Building materials, roofing, fish shelter and breeding areas | Food, livelihood, decorations |
| **ISSUES & CONCERN** | Kaingin, too much cutting of trees | Low production in farming | Less mangrove population | Catching of small fishes and crabs using fine mesh nets |
| **RECCOMENDATIONS** | Regulate cutting of trees, discourage ": kaingin" practice, replacement cut | Farmers should be trained with modern farm technology | Replanting and expansion of mangrove areas | Intensify campaign on the regulation in catching small fishes, etc. |

| | | | | |
|---|---|---|---|---|
| | trees | | | |
| **AGENCY/ IES CONCERN** | BDC< DENR- PENRO | OMA, POAS, BDC | DENR-PENRO, BDC, FARMC | BDC, FARMC, Bantay-Dagat |

**BRGY. DOLORES 130º**

**TRANSECT DIAGRAM**

| HABITAT | UPLAND | MANGROVE | BEACH | SEAGRASS | CORALS |
|---|---|---|---|---|---|
| **RESOURCES** | Sibukao, mahogany, nem tree, kasoy, sambag, kawayan, acacia, magaspang, teak, atis, chico, pamalay, kasapatan, tulabomg, maya, pating, punay | Bungalon, bakhaw, lip[ata, imbao, sisi, kasag, alimango, alimusan, pasayan | White sand, pangisdaan, panginhasan | Seaweeds, guso, gulaman | Pagang, samong, manonggo |
| **RESOURCE USE** | Lumber, charcoal, ginahimo baroto, residential, ginagatong | Para istaran sang mga issda kag iban pa, cultiban sang talaba | Beach resort, fishing ground | Madamu makuha nga mapuslanon, puloy-an kag kalan-on sang mga isda | Pwedi istaran sang mga isda |
| **ISSUES & CONCERN** | Iregulate ang pagpanguling, indi pag | Dagsa sang rorok, illegal fishing, guba | Illegal nga pangisda sang pangayao | Indi mag usar sang dinamita | Indi pag gub-on ang mga corals |

| | | | | | |
|---|---|---|---|---|---|
| | buy-an ang mga sapat, indi pamatyon ang mga pispis, indi pagtapson ang mga dalagko nga kahoy. | sand sisihan, illegal nga pagkuha sang balas, corals, pagpasar sang ordinansa, prohibit sa pagkuha sang balal kag bakhaw | | | para may maistaran ang mga isda |
| **RECCOMENDATIONS** | Tree planting, magpakig anot sa nagakinalain lain nga ahensya sang gobyerno, may mga brgy. ordinance nga ega implementar | Igapasar sang ordinance, pagprohibit sa pagkuha sang balas kag bakhaw, imbao, bungalon | Pagprohibit sa pagkuha sang balas | Magtanum sang mga guso kag gulaman | Preserbahan ukon amligan ang mga corals |
| **AGENCY/ IES CONCERN** | DENR, PENRO | DENR, PENRO | DENR, PENRO | DENR, BFAR | |

**BRGY. IGANG**

**TRANSECT DIAGRAM**

| HABITAT | AGRICULTURAL | FISHPOND | SETTLEMENT | MANGROVE | BEACH | SEAGRASS | OPEN SEA |
|---|---|---|---|---|---|---|---|
| **RESOURCES** | Ricefield, mango, coconut, banana, buri, bamboo, fruit trees, cows, goat, chichen, ducks, carabao, river, cutflowers | Migratory birds (tulabong) fighting cocks, bangus, tilapia | People, OCW, fisherfolks, fish vendor | Bakhaw, bungalon, litub, sihi, alimango, kasag, migratory birds, bangus fry, | Shells, pasayan, migratory, bird, mud crab | Shells, pasayan, pitik-piyik, mantaha, bangus fry | Fishes, crabs, pasayan, banagan, buwa-buwa |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | sahid, hudhod | | | |
| **RESOURCE USE** | Farming, charcoal making, mat making, buri, (padak), Vinegar making, irrigation canal, sand and gravel | Fishpond culture, fighting cock breeding, church, health center, school | Fishing, vending, bakery, iron works, vulcanizing shop | Shell gathering | Docking area, motorized banca, hudhudan, fish coral, shell gathering, pamukot | Fry gathering, shell gathering | Fishing, fish coral |
| **ISSUES & CONCERN** | Flood (occasional), tenancy problem, disposal of biodegradable waste | Flooding sea water reach the agricultural area during high tide, loe lying | No, proper waste disposal, no toilet, direct disposdal of livestock waste to sea. | Waste( no proper waste disposal) | Illegal fishing method (hudhod and tulbong) | Fishnet, gillnet w/ tumbok causes, premature delivery of fry. | Same |
| **RECCOMENDATIONS** | Improve mat making production, river clean-up, pass brgy resolution prohibiting waste disposal along river, recycling | Increase height of fishpond dike | Proper waste disposal (ecological waste mgnt project), provision of toilet bowls, stop illegal squatting | Replanting/ expansion, impose proper waste disposal, Provision of supplemental Livelihood project | IEC Impose policies on illegal fishing | IEC Impose policies on illegal fishing | IEC Impose policies on illegal fishing |
| **AGENCY/ IES CONCERN** | Brgy.,DA | BFAR | Mun. & Brgy. Officials | DENR, PENRO | | | |

**BRGY. IGDARAPDAP**

**TRANSECT DIAGRAM**

| HABITAT | UPLAND | AGRICULTURAL | SETTLEMENT | MANGROVE/ WHARF | MUDFLATS | SEAGRASS | CORALS |
|---|---|---|---|---|---|---|---|
| **RESOURCES** | Paho, pispis, lubi, kawayan, mahogany, ipil-ipil, bangkal saging | Humay, carabao, tawo | Balay, simbahan, tangke sang tubig (spring) | Bakhaw, fishpond, lubi | Litub, kulukudkuran, dawat, kasag | Litub, kulukudkuran, dawat, kasag | Tarab, corals, indong different fishes |
| **RESOURCE USE** | Gina-uling, gunakopras, ginagatong. Lumber, ginahimo balay, ginahimo punot | Ginakunsumo, ginabaligya, ginapanguma | Gina-istaran, ginasimbahan, use as drinking water and washing clothes | Gina-istaran sang isda | Ginasudan, ginabaligya | Ginasudan, ginabaligya | Ginasud-an,ginabaligya |
| **ISSUES & CONCERN** | Pagninit sang tuburan | Baha | Wala palangitan-an | Nagdiutay ang bakhaw kay ginahimo nga punong | Maiwat ang kuha kay madamo ang nagapanguha | Maiwat ang kuha kay madamo ang nagapanguha | Maiwat ang kuha kay madamo ang nagapanguha |
| **RECOMENDATIONS** | Iregulate ang pag-uling ka gang pagpanapas sang kahoy | -do- | Hatagan palangitan-an | Dugangan pananumsang bakhaw | Himuan resolusyon sa pagmanehar sang pagpanginhas kag pagpangisda | Himuan resolusyon sa pagmanehar sang pagpanginhas kag pagpangisda | Himuan resolusyon sa pagmanehar sang pagpanginhas kag pagpangisda |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **AGENCY/ IES CONCERN** | Barangay DENR PENRO | -do- | Government Agencies | DENR PENRO-LGU | Barangay Council kag Municipal Government | Barangay Council kag Municipal Government | Barangay Council kag Municipal Governme nt |

**BRGY. LAPAZ**

**TRANSECT DIAGRAM**

| **HABITAT** | **FOREST** | **AGRICULTURAL** | **SETTLEMENT** | **COASTAL/TIDAL AREA** | **SEAGRASS/ CORALS** | **OPEN SEA** |
|---|---|---|---|---|---|---|
| **RESOURCES** | Mango, coconut, narra, payhod, mambog, pasi, buri, sibucao, kawayan, pispis, lumboy, pipi, magtalisay, gmelina, saging, talisay, santol, mahogany, | Rice, creek, bubon, camonsil, saging, carabao, garangan, mambog, margoso, okra, alogbate, siniguelas, kadyos, dagmay | Balay, simbahan, brgy. hall, coconut, suha, tarsh can, shoreline, proteksyon bakhaw | Shells | Shells, fish, balat | Fish, banagan, pawikan, crabs |

| | | | | | | |
|---|---|---|---|---|---|---|
| | ipil-ipil | | | | | |
| **RESOURCE USE** | Firewood, ginakopras, ginapabunga, lumber, food | Bug, atan, sud-an | Gina-istaran, simbahan, gina-inom | Ginapanginhasan, ginapaliguan, ginapamunitan | Food, income | Food, income |
| **ISSUES/ CONCERNS** | Strict compliance of laws in cutting of trees | Improper use of insecticides | Proper solid waste management | Sanctuary | Close and open season for gleaning | Illegal fishing (trawling, purse seiners and dynamite fishing |
| **RECOMMEND-ATIONS** | Avoid illegal cutting of trees | Assistance from agricultural technician how to use insecticides | Agud ilugon sang iban | Pass ordinance regarding fish sanctuary | Proper ordinance advocacy | Proper monitoring of bantay dagat |
| **AGENCY/S CONCERN** | DA, DENR, UPV | DA, POAS | DENR, Health | DA, DENR, POAS | DA, DENR | DA, DENR, LGU |

**BRGY. LUCMAYAN**

**TRANSECT DIAGRAM**

| HABITAT | UPLAND | AGRICULTURAL | MANGROVE | BEACH | SEAGRASS | CORALS |
|---|---|---|---|---|---|---|
| **RESOURCES** | Mango, sibucao, kawayan, niyog, lunok, dapdap, magaspang, mahogany, tipolo, hitang, hitang, ipil-ipil, birds, snakes, lizard, kayos | Rice, corn, legumes | Fishes, fishponds, shell, imbao, pasayan, kasag, mangroves, bungalon, bakalan, alimango, sisi | White sand, isda, kasag | Seaweeds, lusay | Pagang, mangga |
| | Lumber, construction, | Food for human, consumption and | Ilistaran isda, pagaitlogan sang | Ginapangisdaan, ginapaliguan | Ginakaon sang isda | Ginaistiran sang isda |

| | | | | | | |
|---|---|---|---|---|---|---|
| **RESOURCE USE** | mat, charcoal, food, medicine, pesticide | for animals | isda, pagkaon, uling | sang mga bisita | | |
| **ISSUES/ CONCERN** | Ginaliyas, uling, kaingin, destroyed by stray animals | Presence of pest and diseases ky surrounded by forest, wala outlet and tubig halin sa talamnan | Napatay ang bakhaw kay ginatapas sang manugpangisda | Presenceof illegal fishers (compressor, sahid, panghilo, hulbot-hulbot) | Presenceof illegal fishers (compressor, sahid, panghilo, hulbot-hulbot | Presenceof illegal fishers (compressor, sahid, panghilo, hulbot-hulbot |
| **RECOMMENDATIONS** | Tree planting, implementation of the ordinance to prohibit kaingin, dalagk lang nga kahoy ang ulingon kag linyason | Crop diversification | i-report and nagapangguba mangrove para madilian, dugangan tanum mangrove | i-report sa bantay dagat para matapna and illegal fishers | i-report sa bantay dagat para matapna and illegal fisher | i-report sa bantay dagat para matapna and illegal fisher |
| **AGENCY/IES CONCERN** | DENR | PENRO-LGU, DENR | | PENRO-LGU, DENR | DENR | DENR |

**BRGY. MAGAMAY**

**TRANSECT DIAGRAM**

| **HABITAT** | **FOREST** | **AGRICULTURAL** | **MANGROVE** | **FISHPOND** | **COASTAL AREA** | **OPEN SEA** |
|---|---|---|---|---|---|---|
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **RESOURCES** | Rice , poultry and livestock | Mahogany, gmelina papaya, coconut, siniguelas, birds | Mangrove, nipa, clams, crabs | Bangus, shrimps, lumber crabs and clams | White sand | Fish, crabs and corals |
| **RESOURCE USE** | food | Foods, fuel ,lumber and recreation | Food, lumber, roofing materials | Food and lumber | Recreation, docking area | Food and recreation |
| **ISSUES/ CONCERN** | Overflooding during rainy season due to the absence of drainage canal | Overcutting of trees, development of spring for water supply | | | For budget | |
| **RECOMMENDATIONS** | Right of way for drainage canal | Reforestation for budget | Conservation | | Eco-tourism development | Intensify bantay dagat operation in barangay level |

**BRGY. PANDARAONAN**

**TRANSECT DIAGRAM**

| **HABITAT** | **SETTLEMENT & SCHOOL ZONE** | **AGRICULTURAL** | **PASTURE** | **FOREST** | **MANGROVES** | **SEAGRASS** | **CORALS** | **OPEN SEA** |
|---|---|---|---|---|---|---|---|---|

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **RESOURCES** | School, people, fisherfolks, farmers, carpenters | Ricefilelds, corn, coconut, bamboo, mango, mahogany, fruit trees | Cows, carabao, goat, chicken, pigs | Hagonoy, lunok, stone, trees | Bakhaw, bungalon, pakinhason | Shells, pasaya,, fish | Fish, lobster, squid, shells | Fish, lobster, squid, crabs |
| **RESOURCE USE** | Farming, charcoal, making, tuba, vinegar | Food, coconut oil, barter trade, furniture | Food, barter trade, used for farming | Firewood, charcoal, lumber, trade | Sea foods, spawning | Beaches | Sprawning | Food, consumption, trade |
| **ISSUES/CONCERN** | Lack of classroom, concrete road in front of school | Improved irrigated farm, stop illegal cuttingbof trees | Dessiminate information to the farmers | Prevent illegal cutting of trees | - | - | - | - |
| **AGENCY/IES CONCERN** | LGU, DPWH. Dep. Ed. | DA, PCA | DA | DA, DENR | DA, DENR | DA, Fisheries | DA, Fisheries | Fisheries |

**BRGY. PANOBOLON**

**TRANSECT DIAGRAM**

| HABITAT | SETTLEMENT | AGRICULTURAL | MANGROVE | MUDFLATS | INSHORE | SEAGRASS | CORAL REEF |
|---|---|---|---|---|---|---|---|
| | Brgy. hall, health | | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **RESOURCES** | center, footwalk, stage, houses, school, church, toilets, solar light, rice mill, mini-wharf, power house | Ricefields, farming, Riceland, corn, butterfly, fruits, vegetables | Bacauan, imbao, pasayan, kasag, litob, isda, birds | Mollusks, shells any of shelle | Sea cucumber, star fish, gulaman, guso, shells, jelly, fish, kasag, corals | Lusay, gulaman, guso | Punot, pukot |
| **RESOURCE USE** | Meeting, consultation, immunization, health,sanitation, community use, educational, docking point for pumpboats, give conmvenience to people | Foods, source of livelihood, fertilizer | Source of food, source of fertilizer | Source of food, source of fertilizer | Source of food, source of income | ource of food, source of income | Source of food, source of income |
| **ISSUES/CONCERN** | Improper waste disposal lack of financial support | Low production, lack of water, lamgud nga duta, lack of palay seed, fertilizer | Illegal destruction f newly planted mangrove, illegal fishing activities, sahid | Pagpanguha imbao nagaresulta sang pagkaguba, pagkapatay sang bag-o tanum nga bakhaw | Extraction of corals | Extraction of corals | Extraction of corals |
| **RECOMMENDATIONS** | Proper waste disposal, proper monitoring, additional supply | Financial assistance, lack of water source, absence of water | Technical and financial support of concern | Technical and financial support of concern | Technical and financial support of concern | Technical and financial support of concern | Technical and financial support of concern |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | and materials | detector | agencies for the restoration of mangrove areas, stop illegal fishing | agencies for the restoration of mangrove areas, stop illegal fishing | agencies for the restoration of mangrove areas, stop illegal fishing | agencies for the restoration of mangrove areas, stop illegal fishing | agencies for the restoration of mangrove areas, stop illegal fishing |
| **AGENCY/IES CONCERN** | LGU, PO'S, NGO's Brgy. Officials,community | POAS. OMA, DA, DENR | LGU, DENR, PENRO, FARMC | NGO | | | |

**BRGY. POBLACION**

**TRANSECT DIAGRAM**

| HABITAT | FOREST | SETTLEMENT | WHARF | SEA |
|---|---|---|---|---|
| **RESOURCES** | Trees, coconut, sibucao, bangkal, talisay, mango, mahogany, banana, bamboo, animals, carabao, birds | Houses, restaurant, public CR | JBLCF floating stage, resorts, yacts, fishing boats | Fish trap, seagrass, corals, shells, fish |
| **RESOURCE USE** | Firewood, charcoal, lumber, source of food and livelihood, farming | Fish vending, sari-sari store, for the cleanliness of surroundings | Promote tourism, provide livelihood to residents, promote economic development | Source of livelihood, source of food |
| | Denuding of mountain | Source of income or | Development of wharf on | Boundary between Lawi |

| | | | | |
|---|---|---|---|---|
| **ISSUES/CONCERN** | caused by rampant charcoal making and kaingin farming | livelihood, lack of capital to start business | Puyo area for yachts. Proposed warehouse stockyard for trade. Easement for proposed brgy. roads | and Poblacion. Poblacion Igang boundary, Area zoning |
| **RECOMMENDATIONS** | Strict implementation of reforestation | Provide livelihood for the people | Redesigning of wharf to facilitate foreign and local boats and yachts. | Deleniation of boundary between lawi and Poblacion and Igang, established zones |
| **GOVERNMENT INTERVENTIONS** | DENR and barangay | National Government agencies | DOTC | Local Government Units |

**BRGY. SAN ANTONIO**

**TRANSECT DIAGRAM**

| **HABITAT** | **SETTLEMENT** | **FOREST** | **TERRESTRIAL AREA** | **SETTLEMENT** | **MANGROVE** | **MUDFLATS** | **SEAGRASS** | **CORALS** |
|---|---|---|---|---|---|---|---|---|
| **RESOURCES** | Houses, with bamboo fence, people, vegetables | Duhat, ipil-ipil, bamboos, kasoy, shrubs, birds, banana | Pasture of goats, cattle forage grass, chicken | Houses. Resthouse with cages, fish pen of Director Agustino | Mangrove trees | Sisi, burubutigis, tuway, other sea shells | Seaweeds, guso | fishes |
| **RESOURCE USE** | Fishing, farming, panginhas, charcoal making for food and market | Charcoal, bamboo poles, kasoy nuts, firewood, | Livestock, chicken for food & income, forage-livestock food | For shelter, conference, visitors, for food and income | Ish breeding, ginatapikan sang sisi kag iban nga mga shells, istaran sang mga | Ginapangin hasan para maka income kag makasud-an | For income and food | Balay sang mga isda |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | linyas | | | isda | | | |
| **ISSUES & CONCERN** | Charcoal making, kalbo ang bukid, soil erosion, pagninit sang tuburan | Charcoal making, soil erosion, wala tuburan, linyas, ubos na ang mga kahoy | | Water pollution in this area, indi na makapanginhas ang mga tawo, indi kakuha saweeds kag kapangisda | Diutay na ang bilin | Damo dagsa nga basura | Illegal fishing, hudhud, panahid | Naglala guba tungod ginapan guha mga bato |
| **RECOMMENDATIONS** | Magtanum sang mga kahoy, maghimo sang Brgy. nursery | Dugangan ang pagtanum sang kahoy, magpisan | More raising of poultry & livestock | Petition | Reforestation | Pulot basura | Report to bantay dagat "dakpon" | Report to BFAR (provincial) |
| **AGENCY/IES CONCERN** | PENRO, DENR, Mun. LGU, Provincial Office | PENRO, DENR | OPA, OMA | BFAR, OMA Province & Regional Office | Brgy. level, BFRMC fisherfolks | Brg. Level (San Antonio) | Mun. Bantay Dagat | BFARMC BFAR PENRO |

**BRGY. SAN ROQUE**

**TRANSECT DIAGRAM**

| **HABITAT** | **FOREST** | **CREEK** | **SETTLEMENT** | **RICEFIELD** | **FISHPOND** | **MANGROVE** | **SEASHORE** | **SEA GRASS** | **CORALS** |
|---|---|---|---|---|---|---|---|---|---|
| **RESOURC** | Kahoy, fruits, | Tubig, bato, | Balay, tawo, flowers, | Humay Vegetables | Bangus, tilapia, | Bakhaw, nipa, isda | Shells, isda, tubig | Gulaman, guso | pagang |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **ES** | animals | balas | vegetables | | pasayan, lukon | | | | |
| **RESOURCE USE** | Lumber, construction materials, food for human and animals | Panglabhan, construction materials | Laborers, medicines, foods | Food for human, animals | Food source of income | Fuel (raha, uling) ilistaran sang isda | Paliguan, food, additional income | Pagkaon sang isda, tawo, kag ilitlugan (breeding grounds) | Ilistaran sang isda |
| **ISSUES/ CONCERN** | Kaingin for corn and kadyos | Quarrying, alagyan sang tubig pakadto sa punong | Waste disposal | Rainfed areas | Delikado kon magtabo ang high tide kag baha | Nagakapatay ang isda kon magspray sang kemikal sa punong | Polluted kon indi matipon ang higku | Delikado kon mabahaan | Palupok, panahid |
| **RECOMMEND-ATIONS** | Reforesta-tion | Regulate quarrying | Proper waste disposal | Irrigation, crop diversification | Mangrove reforestation, proper use of chemicals | Proper waste disposal | Identify suitable palce for gulaman | Regulate illegl fishing | |
| **AGENCY/IES CONCERN** | DENR | DENR, PENRO, LGU | PENRO Brgy. Council | DA. NIA | Owner, DA, fishinh | DA, ENRO | DENR, PENRO | DA, fishing | PNP, DA, fishery |

**BRGY. CABALAGNAN**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEP T** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Aloy | ▬ | ▬ | ▬ | ▬ | | | | | | ▬ | ▬ | ▬ |
| 2. Ngisi-ngisi | | | | | ▬ | ▬ | ▬ | | | | | |
| 3. Simaral | | | | | ▬ | ▬ | ▬ | | | | | |
| 4. Gusaw | | | | ▬ | | | | ▬ | ▬ | | | |
| 5. Moymoy | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 6 Indangan | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 7. Baolo | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 8. Tambilawan | | | | ▬ | ▬ | ▬ | | | | | | |
| 9. Barira | ▬ | ▬ | ▬ | ▬ | | | | | ▬ | ▬ | ▬ | ▬ |
| 10. Ibis | | | | | | ▬ | ▬ | ▬ | | | | |
| 11. Barongoy | ▬ | ▬ | ▬ | ▬ | | ▬ | ▬ | ▬ | | | | |
| 12. Kilawan | | | | ▬ | ▬ | ▬ | ▬ | | | | | |
| 13. Salungasig | ▬ | ▬ | ▬ | ▬ | | | | | | ▬ | ▬ | ▬ |
| 14. Tabagak | ▬ | ▬ | ▬ | ▬ | | | | | | ▬ | ▬ | ▬ |
| 15. Tulingan | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 16. Ampahan | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| **Mollusks/Shells** | | | | | | | | | | | | |
| 1. Lokus | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 2. Pugita | ▬ | ▬ | | | | | ▬ | ▬ | | | | |
| 3. Pasayan | ▬ | ▬ | ▬ | | | | | | | ▬ | ▬ | |
| 4. Kasag | | | | | | | ▬ | ▬ | ▬ | | | |
| 5. Alimango | ▬ | ▬ | ▬ | ▬ | | | | | | | | |
| 6. Imbao | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 7. Banagan | | | | ▬ | ▬ | ▬ | ▬ | | | | | |
| 8. Shells (sisi. Samong, manlot, baka-baka) | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |

LEGEND:

PEAK/STRONG ▬ Dark line using RED color
MODERATE ▬ Dark line using BLUE color

LOW —— Dark line using YELLOW color
SPAWNING SEASON oooooo Small Circles using ORANGE color

**BRGY. CANHAWAN**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Moymoy | | | | | | | | | | | | |
| 2. Tabagak | —— | —— | —— | —— | —— | | | | | | | |
| 3. Tambilawan | | ooooo | ooooo | | | | | ooooo | ooooo | ooooo | ooooo | ooooo |
| 4. Timbongan | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | | | | |
| 5. Kilawan | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | | | | |
| 6. Bangrus | | | | | | | | | | | | |
| 7. Ngisi-ngisi | | | —— | —— | —— | —— | —— | | | | | |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Imbao | —— | —— | —— | —— | | | | | | | | |
| 2. Bacalan | ooooo | ooooo | ooooo | ooooo | | | | | | | | |
| 3. Lokus | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— |
| 4. Pugita | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— |

LEGEND:

PEAK/STRONG —— Dark line using RED color

MODERATE —— Dark line using BLUE color
LOW —— Dark line using YELLOW color
SPAWNING SEASON oooooo Small Circles using ORANGE color

**BRGY. DOLORES**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Bangus | | | ooooo | | | ooooo | oooo | oooo | oooo | oooo | oooo | oooo |
| 2. Gusaw | | | | | | | | | | | | |
| 3. Lupoy | —— | —— | —— | | | | | —— | —— | —— | | |
| 4. Tabagak | | | | | | | | | | | | |
| 5. Dilis/Gurayan | —— | —— | —— | —— | | | | | | | | |
| 6 Simaral | | | | | | | —— | —— | —— | | | |
| 7. Ngisi-ngisi | | | | | | | —— | —— | —— | | | |
| 8. Alimusan | | | | | | | | | | | | |
| 9. Mangagat | | | | | | | | | | | | |
| 10. Sapsap | | | | | | | | | | | | |
| 11. Inid | | | | | | | | | | | | |
| Mollusks/Shells | | | | | | | | | | | | |
| 1. Kasag | ooooo | ooooo | ooooo | ooooo | | | | ooooo | ooooo | ooooo | ooooo | ooooo |
| 2. Lokus | | | | | | ooooo | ooooo | ooooo | | | | |
| 3. Pasayan | | | | | | ooooo | ooooo | ooooo | | | | |
| 4. Alimango | ooooo | ooooo | ooooo | ooooo | | | | ooooo | ooooo | ooooo | ooooo | |
| 5. Pakinhason | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— | —— |
| 6. Gulaman | ooooo | ooooo | ooooo | ooooo | ooooo | | | | | | | |
| 7. Tuway | | | | | | | | | | | | |
| 8. Imbao | | | | | | | | | | | | |
| 9. Bug atan | | | | | | | | | | | | |
| 10. Talaba/sisi | | | | | | | | | | | | |

LEGEND:

| | |
|---|---|
| PEAK/STRONG | ——— Dark line using RED color |
| MODERATE | ——— Dark line using BLUE color |
| LOW | ——— Dark line using YELLOW color |
| SPAWNING SEASON | oooooo Small Circles using ORANGE color |

**BRGY. IGANG**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Gingaw | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | | | | | |
| 2. Lagaw | | ooooo | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— | | | |
| 3. Ubod | ooooo | ooooo | ooooo | | | | | | | ——— | ——— | ——— |
| 4. Nipa-nipa | ooooo | ooooo | ooooo | | | | | | | | | |
| 5. Tabagak | | | | ——— | ——— | ——— | | | ooooo | ooooo | ooooo | ooooo |
| 6 Gurayan | | ——— | ——— | ——— | | | | | | ooooo | ooooo | ooooo |
| 7. Samaral | | | | ooooo | ooooo | | | | | | | |
| 8. Ngisi-ngisi | | | | ooooo | ooooo | | ——— | ——— | ——— | | | |
| 9. Gusaw | | ooooo | ooooo | | | | | | | | ——— | ——— |
| 10. Alimusan | ——— | ——— | ooooo | ooooo | ooooo | | | | | | | |
| 11. Tilapia | | | | | | | ——— | ——— | | | | |
| 12. Bansa | | | ooooo | ooooo | | | | | | | | |
| 13. Tangigue | ——— | ——— | ——— | ——— | ——— | | | | | | | |
| 14. Rari | | | ooooo | ooooo | | | | | | | | |
| 15. Malasugi | | | ooooo | ooooo | ooooo | | | | | | | |
| 16. Abo | ooooo | ooooo | ooooo | ooooo | ooooo | | | | | | | |
| 17. Bangrus | | | | | | | ——— | ——— | ——— | ——— | | |
| 18. Pagi | | | | | ooooo | ooooo | ooooo | | | | | |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Kasag | ——— | ——— | ——— | ——— | | | | | | | | |
| 2. Alimango | | | | ooooo | ooooo | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3. Lokus | | | | | | | | | | | ooooo | ooooo |
| 4. Pakinhason | | | | ooooo | ooooo | | | | | | | |

LEGEND:

PEAK/STRONG — Dark line using RED color
MODERATE — Dark line using BLUE color
LOW — Dark line using YELLOW color
SPAWNING SEASON oooooo Small Circles using ORANGE color

**BRGY. IGDARAPDAP**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Danggit | — | — | — | — | — | — | — | — | — | — | — | — |
| 2. Simaral | — | — | — | — | — | — | — | — | — | — | — | — |
| 3. Gusaw | — | — | — | — | — | — | — | — | — | — | — | — |
| 4. Lagaw | — | — | — | — | — | — | — | — | — | — | — | — |
| 5. Kilawan | — | — | — | — | — | — | — | — | — | — | — | — |
| 6. Lupoy | — | — | — | — | — | — | — | — | — | — | — | — |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Litob | — | — | — | — | — | — | — | — | — | — | — | — |
| 2. Imbao | — | — | — | — | — | — | — | — | — | — | — | — |
| 3. Kasag | — | — | — | — | — | — | — | — | — | — | — | — |

LEGEND:

PEAK/STRONG — Dark line using RED color

MODERATE —— Dark line using BLUE color
LOW —— Dark line using YELLOW color
SPAWNING SEASON oooooo Small Circles using ORANGE color

**BRGY. LAPAZ**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Danggit | | | | | | —— | —— | | | | | |
| 2. Lagaw | —— | —— | —— | —— | —— | | | | | | | |
| 3. Aloy | ooooo | ooooo | ooooo | | | | | | | | | |
| 4. Olibalay | ooooo | ooooo | ooooo | | | | | | | | | |
| 5. Bangrus | | | | | | —— | —— | | | | | |
| 6. Gurayan | —— | —— | —— | —— | —— | | | | | | | |
| 7. Tuloy | —— | —— | —— | —— | —— | | | | | | | |
| 8. Bulaw | —— | —— | —— | —— | —— | | | | —— | —— | —— | —— |
| 9. Pak-an | —— | —— | —— | —— | —— | | | | —— | —— | —— | —— |
| 10. Putian | —— | —— | —— | —— | —— | | | | —— | —— | —— | —— |
| 11. Gingaw | | | | —— | —— | —— | | | | | | |
| 12. Inid | —— | —— | —— | —— | —— | —— | | | | | | |
| 13. Ubod | —— | —— | —— | —— | —— | —— | | | | | | |
| 14. Barira | —— | —— | —— | —— | —— | | | | | | | |
| 15. Alatan | | | | | —— | —— | —— | —— | —— | | | |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Kasag | | | | | | —— | —— | —— | —— | | | |
| 2. Sikad-sikad | | | | | | —— | —— | —— | —— | | | |
| 3. Banagan | | | | | —— | —— | —— | —— | —— | | | |
| 4. Imbao | | | | | | | | | | | | |
| 5. Pugita | | | | | | | | | | | | |

LEGEND:

| | | |
|---|---|---|
| PEAK/STRONG | ▬▬ | Dark line using RED color |
| MODERATE | ▬▬ | Dark line using BLUE color |
| LOW | ▬▬ | Dark line using YELLOW color |
| SPAWNING SEASON | oooooo | Small Circles using ORANGE color |

**BRGY. LUCMAYAN**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Bulaw | ooooo | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | | |
| 2. Gumaa | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ooooo | ooooo | ooooo | ▬▬ | ▬▬ | ▬▬ | |
| 3. Lagaw | ooooo | ooooo | ▬▬ | ▬▬ | ▬▬ | ooooo | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | |
| 4. Tambilawan | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ooooo | ooooo | ▬▬ | ▬▬ |
| 5. Salungasib | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 6. Ngisi-ngisi | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 7. Simaral | ooooo | ooooo | ooooo | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 8. Timbungan | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 9. Bangrus | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 10. Kilawan | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 11. Gusaw | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 12. Inid | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 13. Mangagat | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 14. Bais | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ooooo | ooooo | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 15. Bansa | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ooooo | ooooo | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| **Mollusks/Shells** | | | | | | | | | | | | |
| 1. Lokun | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 2. Pasayan | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 3. Kasag | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 4. Alimango | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 5. Imbao | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 6. Shells | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |

LEGEND:

| | | |
|---|---|---|
| PEAK/STRONG | ▬▬ | Dark line using RED color |
| MODERATE | ▬▬ | Dark line using BLUE color |
| LOW | ▬▬ | Dark line using YELLOW colo |
| SPAWNING SEASON | oooooo | Small Circles using ORANGE color |

**BRGY. MAGAMAY**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ngisi-ngisi | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | |
| 2. Indangan | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | |
| 3. Samaral | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ooooo | ooooo | ooooo | ooooo | | | |
| 4. Sulig | | | | | | ▬▬ | ▬▬ | ▬▬ | | | | |
| 5. Tambilawan | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | |
| 6. Aloy | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | | | | | | |
| 7. Gurayan | ▬▬ | ▬▬ | ▬▬ | | | | | | | | | |
| 8. Pisogo | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 9. Tabagak | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Litob | **During** | **Low** | **tide** | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. Sikad-sikad | **Durin g** | **Low** | **tide** | | | | | | | | | |
| 3. Kapunaw | **Durin g** | **Low** | **tide** | | | | | | | | | |
| 4. Lokus | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | **During** | **Full** | **moon** | | | | |

LEGEND:

| | | |
|---|---|---|
| PEAK / STRONG | ▬▬ | Dark line using RED color |
| MODERATE | ▬▬ | Dark line using BLUE color |
| LOW | ▬▬ | Dark line using YELLOW colo |
| SPAWNING SEASON | oooooo | Small Circles using ORANGE color |

**BRGY. PANDARAONAN**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Simaral | ▬▬ | ▬▬ | | | | ▬▬ | ooooo | ooooo | ooooo | ▬▬ | ▬▬ | ▬▬ |
| 2. Ngisi-ngisi | | | | | | | | | | | | |
| 3. Indangan | ▬▬ | ▬▬ | ▬▬ | | | | | | | | | |
| 4. Canturayan | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | | | | | | |
| 5. Tulingan | | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 6. Gurayan | | | | | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ |
| 7. Baolo | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | |
| 8. Salmonoete | | | | | | | | | | | | |
| 9. Gusaw | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | |
| 10. Sulig | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | |
| 11. Lagaw | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | | | | |
| 12. Tambilawan | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | | |
| 13. Putian | | | | | | ▬▬ | ▬▬ | ▬▬ | ▬▬ | ▬▬ | | |
| 14. Pak an | | | | | ▬▬ | ▬▬ | ▬▬ | | | | | |
| 15. Bangrus | | | | | ▬▬ | ▬▬ | ▬▬ | | | | | |
| 16. Bukaw-bukaw | | | | | | | | | | | | |
| **Mollusks/Shells** | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Lobster | | | | ▬ | ▬ | ▬ | ▬ | | | | | |
| 2. Shell (Sikad-sikad, Litob, Tirik) | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 3. Pasayan | | | | | | | | | | | ▬ | ▬ |
| 4. Lokus | | | | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |

LEGEND:

| | | |
|---|---|---|
| PEAK / STRONG | ▬ | Dark line using RED color |
| MODERATE | ▬ | Dark line using BLUE color |
| LOW | ▬ | Dark line using YELLOW color |
| SPAWNING SEASON | ooooo | Small Circles using ORANGE color |

**BRGY. PANOBOLON**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Bangrus | ▬ | ▬ | ▬ | ▬ | | | ▬ | ▬ | ▬ | | ▬ | ▬ |
| 2. Ngisi-ngisi | | | | | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | | |
| 3. Gurayan | | | | ▬ | ▬ | ▬ | ooooo | ooooo | | | | |
| 4. Rari | | ooooo | ooooo | | | | | | | | | |
| 5. Moymoy | | | | | | | | | | | | |
| 6. Barira | ▬ | ▬ | | | ▬ | ▬ | | | | | | |
| 7. Lagaw | | | ▬ | ▬ | ▬ | ▬ | | | | | | |
| 8. Kilawan | ▬ | ▬ | | ooooo | ooooo | ▬ | ▬ | ▬ | | ▬ | ▬ | ▬ |
| 9. Pak-an | | | | | | | | | | | | |
| 10. Duhaw | | | | | | | | | | | | |
| 11. Putian | | | | | | | | | | | | |
| 12. Ilak | | | | | | | | | | | | |
| 13. Simaral | | | | | | | | | | | | |
| 14. Latab | | | | | | | | | | | | |
| 15. Ulibalay | | | | | | | | | | | | |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Imbao | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 2. Kasag | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3. alimango | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 4. Pasayan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 5. Banagan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 6. Gulaman | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 7. Shells | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |

LEGEND:

| | |
|---|---|
| PEAK / STRONG | ——— Dark line using RED color |
| MODERATE | ——— Dark line using BLUE color |
| LOW | ——— Dark line using YELLOW colo |
| SPAWNING SEASON | oooooo Small Circles using ORANGE color |

**BRGY. POBLACION**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Sapsap | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— | ——— |
| 2. Abo | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— | ——— |
| 3. Bansa | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 4. Butokuling | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— |
| 5. Bulaw | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— |
| 6. Pugaw | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— |
| 7. Tabagak | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— |
| 8. Bukaw-bukaw | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— |
| 9. Simaral | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— |
| 10. Lison | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11. Pak-an | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | oooo o | ooooo | ——— | ——— | ——— |
| 12. Ngisi-ngisi | ——— | ——— | ——— | ——— | | ooooo | ooooo | oooo o | ooooo | ——— | ——— | ——— |
| 13. Ampahan | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | oooo o | ooooo | ——— | ——— | ——— |
| 14. Barira | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | oooo o | ooooo | ——— | ——— | ——— |
| 15. Lokus | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | oooo o | ooooo | ——— | ——— | ——— |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Crabs | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 2. Lobster | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 3. Imbao | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | oooo o | ooooo | | | |
| 4. Bakalan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 5. Shrimps | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 6. Prawns | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |

LEGEND:

| | |
|---|---|
| PEAK / STRONG | ——— Dark line using RED color |
| MODERATE | ——— Dark line using BLUE color |
| LOW | ——— Dark line using YELLOW colo |
| SPAWNING SEASON | oooooo Small Circles using ORANGE color |

**BRGY. SAN ANTONIO**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Gingaw | ——— | ——— | ——— | | | | | | | | ——— | ——— |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. Maya-maya | | | | ooooo | ooooo | ooooo | | | | | | |
| 3. Inid | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | | | | | ▬ | ▬ |
| 4. Tambilawan | | | | ▬ | ▬ | ▬ | | | ▬ | ▬ | ▬ | ▬ |
| 5. Bansa | ▬ | ▬ | | | | | | | | | | |
| 6. Barira | | | | ooooo | | ooooo | ooooo | ▬ | ▬ | ▬ | ▬ | ▬ |
| 7. Bulaw | | | | | ▬ | ▬ | ▬ | | ▬ | ▬ | ▬ | |
| 8. Lagaw | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 9. Dalangdang | ▬ | ▬ | ▬ | ▬ | ▬ | | | ▬ | ▬ | ▬ | ▬ | ▬ |
| 10. Moymoy | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | | |
| 11. Gurayan | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | | | | | |
| 12. Simaral | ▬ | ▬ | ▬ | ooooo | ooooo | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 13. Sapsap | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 14. Salmonete | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 15. Ngisi-ngisi | ▬ | ▬ | ▬ | ooooo | ooooo | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| **Mollusks/Shells** | | | | | | | | | | | | |
| 1. Lokus | ▬ | ▬ | | | | | | | | ▬ | ▬ | ▬ |
| 2. Pugita | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |
| 3. Banagan | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ | ▬ |

LEGEND:

PEAK/STRONG ▬ Dark line using RED color
MODERATE ▬ Dark line using BLUE color
LOW ▬ Dark line using YELLOW colo
SPAWNING SEASON oooooo Small Circles using ORANGE color

**BRGY. SAN ROQUE**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Danggit | ▬ | ▬ | ▬ | ▬ | ooooo | ▬ | ▬ | ▬ | ooooo | ▬ | ▬ | ▬ |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. Samaral | ——— | ——— | ——— | ——— | ooooo | | | | ooooo | ——— | ——— | ——— |
| 3. Lison | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | | ——— | ——— |
| 4. Balanak | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | ——— |
| 5. Aloy | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | ——— |
| 6. Kilawan | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | ——— |
| 7. Moymoy | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Litob | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 2. Imbao | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 3. Tuway | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 4. Sisi | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 5. Sikad-sikad | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 6. Bug-atan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 7. Baka-baka | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 8. Punaw | oooo o | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | oooo o |
| 9. Kasag | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 10. Alimango | oooo o | ooooo | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | | | |
| 11. Pasayan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |

LEGEND:

| | |
|---|---|
| PEAK/STRONG | ——— Dark line using RED color |
| MODERATE | ——— Dark line using BLUE color |
| LOW | ——— Dark line using YELLOW colo |
| SPAWNING SEASON | ooooo Small Circles using ORANGE color |

**BRGY. STO. DOMINGO**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Ngisi-ngisi | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2. Ubod | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— |
| 3. Gingaw | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| 4. Lapu-lapu | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| 5. Liwit | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| 6. Lagaw | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| 7. Bolinaw | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| 8. Balantyong | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| 9. Marot | ——— | ——— | | | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo |
| 10. Mangagat | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo | ooooo |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Lokus | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo | ——— | ——— | ——— |
| 2. Kasag | ——— | ——— | ——— | ——— | ——— | | ——— | ——— | ooooo | ooooo | ooooo | ooooo |
| 3. Pakinhason | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ooooo | ooooo | ooooo | ooooo |
| 4. Pasayan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |

LEGEND:

| | |
|---|---|
| PEAK/STRONG | ——— Dark line using RED color |
| MODERATE | ——— Dark line using BLUE color |
| LOW | ——— Dark line using YELLOW color |
| SPAWNING SEASON | oooooo Small Circles using ORANGE color |

**BRGY. TANDO**

**SEASONAL CALENDAR**

| **FISH** (Indicates species, peak of production & spawning season) | **JAN** | **FEB** | **MAR** | **APR** | **MAY** | **JUN** | **JUL** | **AUG** | **SEPT** | **OCT** | **NOV** | **DEC** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Salungasib | ooooo | ——— | ——— | ——— | ooooo | | | | | ——— | ooooo | oooo o |
| 2. Aloy | ——— | ——— | ——— | ——— | ——— | ——— | | | | | ——— | ——— |
| 3. Simaral | ooooo | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 4. Ngisi-ngisi | ooooo | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 5. Lagaw | ooooo | ——— | ——— | ooooo | ooooo | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 6. Bulaw | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 7. Tambilawan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 8. Tangigue | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 9. Balingon | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 10. Nipa-nipa | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 11. Ubod-Indong | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 12. Inid | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| **Mollusk/Shells** | | | | | | | | | | | | |
| 1. Imbao | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 2. Bakalan | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 3. Damisol | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 4. Sikad-sikad | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |
| 5. Kasag/Dawat | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— | ——— |

LEGEND:

PEAK/STRONG ——— Dark line using RED color
MODERATE ——— Dark line using BLUE color
LOW ——— Dark line using YELLOW color
SPAWNING SEASON oooooo Small Circles using ORANGE color