# Socio-Economic and Physical Profile

## Santa Fe, Romblon

## EXECUTIVE SUMMARY

The Municipality of Santa Fe in the Province of Romblon, located in the southern part of Tablas Island, is a fifth-class municipality bounded by the municipalities of Looc and Alcantara, Tablas Strait and Guinbirayan Bay. According to their cadastral survey, Santa Fe has a total land area of 7,309.3417 hectares subdivided by 11 barangays wherein only one (1) is not coastal (Danao Sur). The latest census of Philippine Statistics Authority in 2015 recorded a total population of 16,098 with a growth rate of 0.50% and total households of 3,711.

Barangays Poblacion and Guinbirayan are considered urban while the other nine (9) barangays are considered rural. Among the barangays, Magsaysay has the largest area and Danao Sur has the smallest. Majority of the land is classified as alienable and disposable. Only few parts of land in *barangays* Guinbirayan, Guintigbasan, Pandan, Mat-i, Poblacion, and Agmanic is classified as a forest reserve.

The municipality has a total of 20 schools, 17 of which are public schools and three (3) are private schools. The three (3) private schools offer preschool education only while 14 public schools offer preschool and elementary education, another two (2) public schools offer secondary education, and one (1) state university offer tertiary education. The Rural Health Unit (RHU) located in Poblacion, is the only major health facility in the municipality with an ambulance for emergency situation. The RHU only provides basic health services and facilities. Although the case of overweight children increased by one (1) in year 2015, it still has decreased from 16 cases in year 2013 to only 14 cases by year 2015. According to CBMS, the total number of households is 3,387 with 481 coming from Barangay Poblacion followed by 401 from barangay Tabugon. Highest numbers of informal settlers are from Barangays Poblacion and Guinbirayan with 27 and 12, respectively. For protective services, the ratios of police force and fire protection personnel to population is 1:767 and 1:2,683, respectively. The municipal hall is near a covered basketball court and the Municipal Plaza. Most of the basketball courts are in good condition except for the ones in Barangays Danao Norte, Guintigbasan, and Pandan.

Agriculture is the most important sector in the Municipality of Santa Fe. Based on GIS, the total land area devoted to agriculture is 6,109.0327 hectares which is about 83.5 percent of the municipality's total land area. This is subdivided into crop production, fish pond, pasture land, timber land, swamp, forest land and idle land or mixed trees. Majority of the agricultural land is used for the production of the three major crops in the area which are the coconut, rice, and banana.

The municipality has a total road length of 72 km distributed in the entire locality. The main road is made up of the provincial road with a length of 26.75 km, municipal road with a length of 3.85 km and the barangay road with a total length of 41.4 km. Power is provided through the transmission line by Tablas Island Electric Cooperative (TIELCO) while the Barangay Power Association (BAPA) helps in the supervision of power system in particular barangays The most common source of water supply in Santa Fe is its groundwater, surface water and rainfall while the most common type of water supply facilities are the shallow/deep wells or water pumps found in all barangays. The water system in the municipality is run by the Barangay Water System Association (BAWASA) which operates and manages the level III system in the municipality. Internet, broadcast, and television network in Santa Fe are offered by Santa Fe Cable and Internet, Cignal, GSat and Dream TV Satellite. Globe and Smart telecommunications companies are also present in the municipality.

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# 1. HISTORICAL BACKGROUND

The negritos who are also called aetas and locally known as “ati” or “agta” are believed to be the first settlers of the municipality of Santa Fe. They came to this place from Panay (Nayon) and Carabao Island during the Paleolithic period via causeway of rock. The next wave of migrants were the Malays who came around 12th century who now from the majority of the people in this municipality with an admixture of other racial strains of later colonizers.

Very little is known of the pre-Spanish history of the Islands in the Romblon Group. They were, however, known to the Spaniards as early as the time of Don Miguel Lopez de Legaspi, the first governor of the Philippines, the “Maestro de Campo” and better known as “El Adelantado”, but because of their being very sparsely populated, no record of interest was made of them. People must have lived in the island centuries before the arrival of the Spaniards, but nothing has been written about them.

The first written history of Osigan (Tablas) island, where the municipality of Santa Fe is located, was in the year 1570 when Spaniard conquistadores and explorer Martin de Goiti, on orders of Miguel Lopez de Legaspi, explored and conquered the settlement and native villages in Osigan Island. He noted it to have a population of around 250 indios who lived by gathering wax, almacega, raising domesticated animals and in agriculture. Also discovered was the presence of native pintados (painted a tattooed) Visayan Indios.

In the year 1582, the island of Osigan was again visited by another Spanish explorer Don Miguel Lopez De Loarca, who was a census officer dispatched by Spanish authorities to evaluate the vastness and wealth of their new conquered territory. He was the second European explorer to set-foot on the island of Osigan. He had almost the same observation of the island with that of Martin de Goiti. He also noted that the inhabitants had already been converted to Christianity. Loarca renamed the island from Osigan to Tablas. It happened when some of his men asked from the natives whom they met; “como se llama estesitio?” (What is the name of this place?) The natives did not understand what they were asking, but they saw native with finger pointed to a pile of lumber, table or tablas in Spanish, so from then on, the island was called Tablas.

The third European to set-foot in the island was a Spanish Missionary and explorer; Father Pedro Cubero Sebastian. He described Santa Fe as a rolling hills terrain, the island’s lowest elevation.

Long before any settlement was founded in the island of Tablas, a large number of Panay Visayans have already lived long in the different parts of the interior of the island. It was known that, these people came as fugitives in most cases, so they preferred to live a nomadic life rather than settle in villages. Thus since the early days, the entire island, from the northern region of Andagao, (now Calatrava) to the southern seacoast of Sitio Cabalian in Santa Fe was peopled by wandering semi-civilized Panay Visayans, besides the Negritos and Mangyans.

As we know, the towns of Panay Island, like other towns of the Philippines, were victims of abuse on the part of the Spanish authorities, who made their absolute power unbearable to the people. In order to escape the tyranny of their officials, these people left their homes, went to the mountains and there lived the life of a “boyong” or outlaws. In many instances, these outlaws migrated to other islands where they expected to enjoy freedom. Many of this class of people found refuge in Tablas. They came on “baroto” or “paraw” by way of Boracay, Carabao Island or by crossing the Tablas strait.

Sometime in 1620, a boyong named Francisco Geguillan, native of presently known as Antique fled from the Spanish government because of the crime of killing his own son using baroto to traverse the treacherous Tablas Strait. Late in the evening, he drifted in the shore of what is now called Barangay Poblacion of the Municipality of Santa Fe. Feeling exhausted from the long and hazardous journey, he had fallen asleep the whole night. Upon waking, he exclaimed "Aycatologtakon" and from that time on, he called the place Catolog, which literally means the place where he slept. Later, Francisco met some ati who were his friends from Dalanas in Antique. They helped him build his house and made kaingin for rice, corn, camote and vegetables in the area where the present town is located. After the harvest, Francisco returned to Antique and took his family with him back to his new-found home in Catolog.

Sometime later, three unnamed fishermen from Panay (presently Aklan) were drifted ashore by huge waves caused by typhoon. They found out the fertile and vast plains of Catolog with few yet friendly inhabitants and considering the opportunity of rearing a family with ample livelihood, they fetched their respective families and opted to settle with the growing community of Catolog and other barrios of the municipality.

Among them also came KapitanAndong and his wife Kapitana Embay who then occupied most plane of what is now called Barangay Pandan. The couple, not able to cultivate the area by themselves, decided that Kapitana Embay return to Antique and took with her Osfia and Rita Visca with their familia and made them their tenants in Pandan.

In the height of Moro piracy, Hindorokot Cove and Catolog bay were frequented by them. They found the place as good anchorage and source of fresh water and ample food supply collected from the inhabitants. Fearing these pirates, the early settlers moved to the interior of Catolog (Barangay Magsaysay today) which was also a settlement of the ati tribe in sitioLayog. Uncomfortable to mingle with domolo-ong or other race, the Ati tribe transferred to the interior of Tablas and settled their community at Patoo, a Barangay in Odiongan.

On May 31, 1837, Capiz, in the island of Panay, was classified as a province under the civil rule of the Spanish government, making Romblon as its territory. The province was governed by a "politico military commandanti". People were obliged to concentrate in the barrios and to send their children to school where they were taught to read the cartilla. They forced to work for the government without just compensation and were made to pay their taxes.

In that same year, Ignacio Patino was the leader of the settlement of Catolog and 1842 Pedro Ganoria established Guinbirayan.

Legend relate that the present name of Catolog got its name from a beautiful, kind, "Maria Clara" type and lovely daughter of one of the early settlers, named Fe. The town people were charmed by this lady. Unfortunately, she was afflicted with an unknown disease and nobody could cure her, causing her dismal and untimely death. The people felt sad and they found it hard to forget her character worth remembering. To immortalize her memory, they renamed the place FE. Later, they added the word SANTA because of her venerable character.

By the year 1876, Santa Fe became a regular municipality by the Spanish government under a Governadorcillo. The first Governadorcillo of the municipality was Macario Antaran.

In 1886, the Spanish provincial governments were reorganized. Governors were appointed and were vested with executive powers. Don Jose Fernandez de Teran was appointed governor for the province of Capiz. During the "tiempo ni Teran", Catolog was made a Barrio and was headed by a Cabesa del Barrio. During this time Governor Teran formally called the coastal part of Catolog to Santa Fe while the interior portion of the barrio remained as Catolog which was later became Barangay Magsaysay. Governor Terran also assigned the people their family names. He compelled them to plant more crops for local consumption and for trade. People from neighboring islands come to barter with their finished products such as sinamay clothes, bolos, ax, sugar, wines, etc. with the local produce, rice, corn, domestic animals, cattle and even with parcels of land thus making some migrants owners of huge parcels of land.

In the year 1898 the Spanish rule in the Philippines ended. They were defeated in the war against the Filipino and American soldiers. The pueblos were abandoned so with the barrios. The people returned to their respective homes and farms.

Most of the Spanish nationals returned to Spain but some Spaniards decide to stay in the country and married Filipino women. Among them were, Lucas Carralero, Domingo Lopez, Joaquin Villar and Francisco Casas who settled in the town of Santa Fe and established their business. Lucas Carralero put up a cattle ranch in Barangay Agmanic, Domingo Lopez at Barangay Mat-I, Joaquin Villar in Campong, Canyayo and Francisco Casas at Guinda, Barangay Pandan and at Palate, Layug, Maambong at Barangay Catolog. Santa Fe then was once known as "The Little Spanish Town".

Immediately after the war, the Americans wanted the Filipinos to recognize the United States of America's sovereignty over the Philippines but the Filipinos refused. They (Filipinos) claimed that it was they who defeated the Spaniards. This ignited the war between the Filipino and American soldiers. Disunited, the Filipinos vowed to the superior American forces and finally surrendered in 1902. The Americans now in control, they established their government making Santa Fe a municipality with Guinbirayan, Agmanic, Busay, Agcogon and Lanas as its barrios.

The municipality was under a municipal president, like the Municipal Mayor of today and Juan Gutierrez, Sr. was appointed the municipal president of Santa Fe. Schools were constructed and classes were opened but enrolment was limited. Only very few children were able to go to school.

In 1906, the municipality of Santa Fe was reverted to a barrio status for the reason that its income did not warrant its continuance as a municipality and became apart of the municipality of Looc. Santa Fe being a barrio was ruled by a Teniente del Barrio.

In 1940, Santa Fe was made a Municipal District by virtue of Commonwealth Act No. 485 which was formulated by Representative Leonardo Festin. Barrios Agmanic, Guinbirayan, Agcogon, Busay, Lanas and Poblacion were its territorial barrios. On January 1, 1941, Rafael Gomez was elected member of the *ayuntamiento* or district Councilor pursuant to Act 581. He was in-charged, with the powers and function of a Mayor, of the Municipal District of Santa FE.

It was very early of a Monday morning of December 8, 1941, that the news of the bombing of Pearl Harbor reached the province of Romblon. Japan, without declaration of war, started a swift attack of the Pacific Islands. On the following day, Tuesday, the United States of America declared war against the Axis. The Philippines as an ally was involved in the war. The government was placed under military Control. School were closed and abandoned. In 1944, Rafael Gomez was appointed Police Inspector of the Province of Romblon and Juanito Sanchez was appointed Mayor to replace Rafael Gomez. Santa Fe regained its municipal status in the year 1946. In that same year, Gervacio Lopez

was elected as its first elected municipal mayor until 1951. He was succeeded by Gaudencio Molina, Sr. in 1952-1959; Amador B. Medina in 1960-1967; Perfecto M. Condes, Jr. in 1968-1979; and Conrado M. Medina in 1980-1986. During the transitional government of President Corazon Aquino, Fred R. Dorado was appointed as OIC in July 1, 1986 to December 1, 1987; the 1988 election placed Leo M. Machon into the mayoralty until 1995; Asher C. Visca for 1995-2004; Elsie D. Visca, 2004-2007; again Asher C. Visca, 2007-2016; and again Elsie D. Visca, 2016 up to present. On June 23, 1969, under R.A. 3423, sponsored by Congressman Jose D. Moreno, Carabao Island with its five (5) barangays namely; Agcogon, Busay, Lanas, Lendero and Pinamihagan, was separated from Santa Fe and became the Island municipality of San Jose, Romblon.

Santa Fe has a population of 16,098 and 3,711 households with a land area of 7,309.3217 hectares. It is composed of 11 Barangays: Agmanic, Canyayo, Danao Norte, Danao Sur, Guinbirayan, Guintigbasan, Magsaysay, Mat-I, Pandan, Poblacion and Tabugon. It is bordered by the municipality of Looc in North West; Alcantara in North East; Tablas Strait in the West; Sibuyan Sea in the East; and Tablas Strait in the South. Unhan/ taga-unhan or inunhan, is the native tongue of the municipality's inhabitants. Indeed, Santa Fe has a colorful history which we can call our own. Knowing the past can make our future generations understand, be proud and love the place and its people more.

The following are the years of tenure of the mayors and members of the municipal council who serve in Santa Fe from the time of its creation up to the present.

***Table HB- 1 List of Preceding Mayors and Their Inclusive Term of Office***

| NAME OF OFFICIAL | | INCLUSIVE YEAR | NAME OF OFFICIAL | | INCLUSIVE YEAR |
|---|---|---|---|---|---|
| **1** | Rafael D. Gomez | 1940-1947 | **7** | Fred R. Dorado | 1986-1987 |
| **2** | Gervacio Lopez | 1948-1951 | **8** | Leo M. Machon | 1988-1995 |
| **3** | Gaudencio Molina | 1952-1959 | **9** | Asher M. Visca | 1995-2004 |
| **4** | Amador B. Medina | 1960-1967 | **10** | Elsie D. Visca | 2004-2007 |
| **5** | Perfecto M. Condes Jr. | 1968-1979 | **11** | Asher M. Visca | 2008-2016 |
| **6** | Conrado B. Medina | 1980-1986 | **12** | Elsie D. Visca | 2016- present |

# 2. Physical and Natural Characteristics

## 2.1 Location, Land Area, Land Classification and Political Subdivision

### 2.1.1 Location

SANTA FE is a peninsular town on the southernmost part of Tablas Island, Province of Romblon. It is bounded on the northwestern side by the municipality of Looc, on the northeastern side by Alcantara, on the west by Tablas Strait and Santa Fe Bay, on the eastern and southern side by Sibuyan Sea and Guinbirayan Bay.

The municipality is geographically located at coordinates 12'9' latitude and 121`59` longitude. It is approximately 51 kilometers away from Odiongan, Romblon which is a growth center in the Island of Tablas. It is also accessible from Caticlan and Boracay Island via pump boat within 50 minutes to one (1) hour.

*Table PN- 2 Approximate Distance of Santa Fe from Other Municipalities of Romblon*

| Municipality | Distance from Santa Fe in Kilometers | Means of Transportation |
|---|---|---|
| **Alcantara** | 12.1 | PUJ, Habal-Habal or Single Motorcycle |
| **Banton** | 90.7 | PUJ, Motorboat |
| **Cajidiocan** | 125.5 | PUJ, Motorboat |
| **Calatrava** | 53.6 | PUJ, Mini Bus |
| **Concepcion** | 112 | PUJ, Mini Bus |
| **Corcuera** | 71.9 | PUJ, Mini Bus |
| **Ferrol** | 21 | PUJ, Habal-Habal or Single Motorcycle |
| **Looc** | 12.1 | PUJ, Habal-Habal or Single Motorcycle |
| **Magdiwang** | | PUJ, Motorboat |
| **Odiongan** | 27.3 | PUJ, Mini Bus |
| **Romblon** | 63.3 | PUJ, Motorboat |
| **San Agustin** | 48.4 | PUJ, Mini Bus |
| **San Andres** | 40.01 | PUJ, Mini Bus |
| **San Fernando** | 112.1 | PUJ, Motorboat |
| **San Jose** | 11.7 | PUJ, Mini Bus |

Source: *Google Earth (2017)*

### 2.1.2 Land Area

The municipality of Santa Fe has a total land area of 7,309.3417 hectares. 95.27 percent or a total of 6,122.3818 hectares of their land area is an agricultural land. Coconut comprises the largest share of the agricultural sector of the municipality (2,181 hectares) and it is dominantly grown in all barangays. In order to optimize production, intercropping under coconut plantation is a common practice among farmers. The fully irrigated rice fields cover 50.63 hectares, rain-fed rice fields cover 514.80 hectares and pastureland covers 350 hectares. Timberland accounts for 1.98%. The uncultivated agricultural lands cover an area of 43.2%. Fruit trees, vegetables, banana, root crops and livestock are usually planted and raised throughout the municipality.

Santa Fe is one of the 17 coastal municipalities of Romblon province. It is composed of 11 barangays, only one of which is not coastal. The barangays of Poblacion and Guinbirayan are considered urban. The other nine barangays are considered rural. Among the barangays, Magsaysay has the largest area and Danao Sur has the smallest. There is also one small island (Cabangahan).

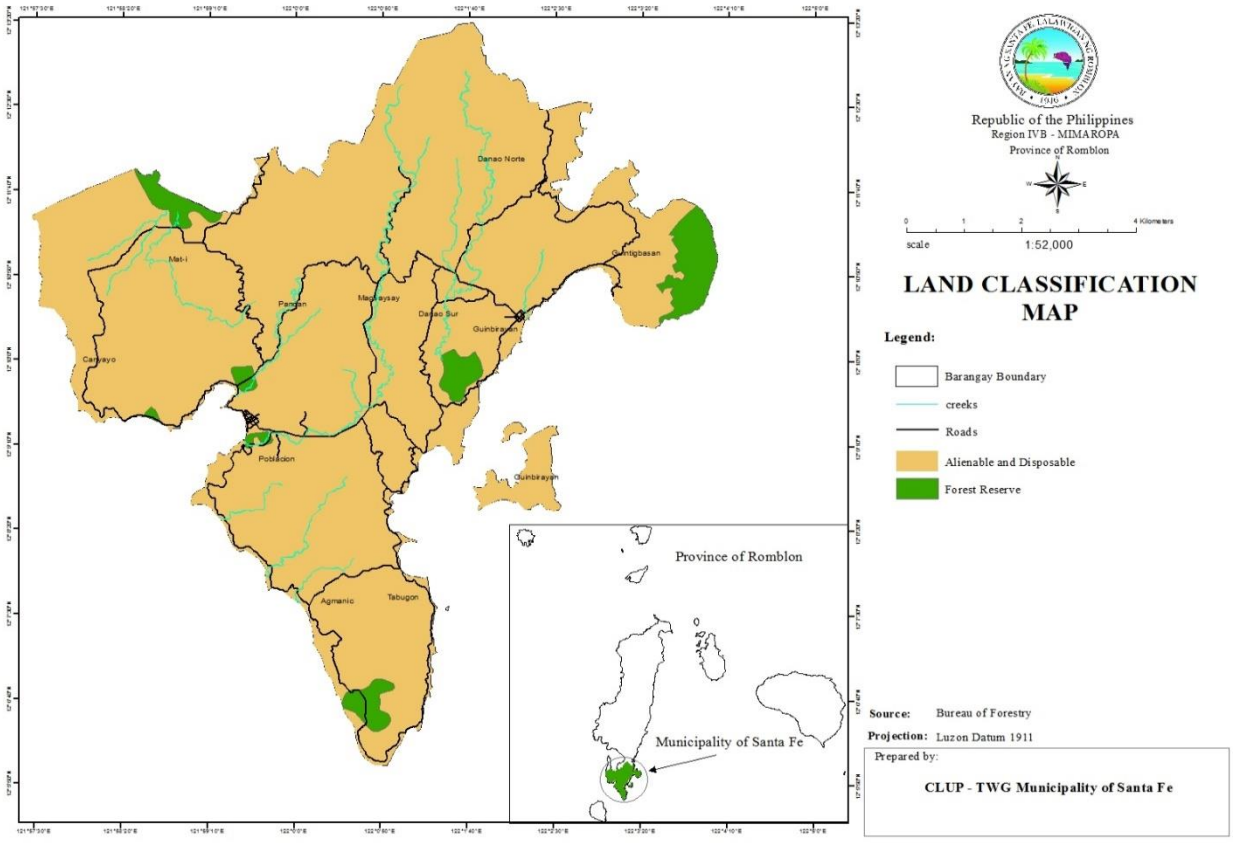
*Table PN- 3 Land Area of Santa Fe*

| Barangay | Land Area | Percent to Total |
|---|---|---|
| Agmanic | 618.1209 | 8.46 |
| Canyayo | 429.1914 | 5.87 |
| Danao Norte | 902.981 | 12.35 |
| Danao Sur | 184.5766 | 2.56 |
| Guinbirayan | 450.4863 | 6.16 |
| Guintigbasan | 450.7415 | 6.17 |
| Magsaysay | 1,987.6725 | 27.19 |
| Mat-i | 834.444 | 11.45 |
| Pandan | 702.7065 | 9.61 |
| Poblacion | 363.534 | 4.97 |
| Tabugon | 384.8869 | 5.27 |
| **Total** | **7,309.3416** | 100.00 |

Source: *Cadastral Survey*

## Land Classification

***Figure PN-1 Land Classification Map***



**Source:** *Geographic Information System (thru Arc GIS) (2017); Mines and Geosciences Bureau (2017)*

Majority of the land is classified as alienable and disposable. Only few parts of land in *barangays* Guinbirayan, Guintigbasan, Pandan, Mat-i, Poblacion, and Agmanic are classified as a forest reserve.

### 2.1.3 Political Subdivision

Santa Fe is divided into 11 barangays and each barangay has a number of *Sitios.* The table below gives the name of *Sitios* in each barangay.

*Table PN- 4 Barangays and Their Respective Sitios*

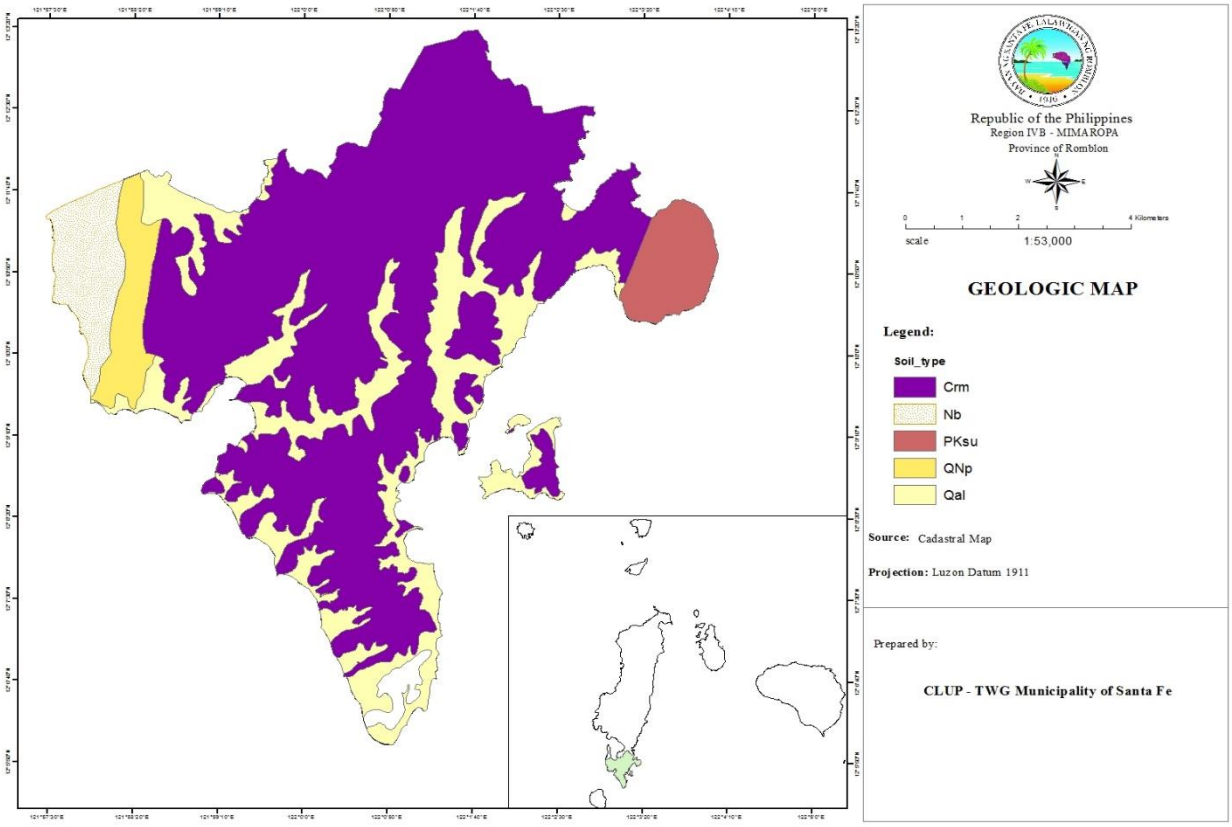
| Barangays and Their *Sitios* | | | |
|---|---|---|---|
| **Agmanic** | **Canyayo** | **Danao Norte** | **Danao Sur** |
| **Binaluca** | Campong | Bayanihan | Bigaa |
| **Bulucawe** | Capid | Mandaragat | Hatay-Hatay |
| **Cabalian** | Lunoc | Progreso | Kaliwayan |
| **Canyugan** | Nahi | Tabing Daan | Proper |
| **Capdang** | Proper | | Suli |
| **Torrel** | Punta | | Ilaya |
| **Guinbirayan** | **Guintigbasan** | **Magsaysay** | **Mat-i** |
| **Bagong Silang** | Calatong | Banderahan East | Aglagtang |
| **Pag-Asa** | Kulasi | Banderahan West | Bulagsong |
| **Puro** | Proper | Hinaklupan | Canduyong |
| **Tabing Dagat** | Punta | Layog | Centro |
| **Tabing Ilog** | Tabun-Ac | Maambong | Tabuk |
| | | Palati | |
| **Pandan** | **Poblacion** | **Tabugon** | |
| **Baybay** | Barusbos | Liwayway | |
| **Camunsil** | Proper | Mangingisda | |
| **Canduyong** | Tipolo | Masikap | |
| **Catupas** | Longa-Og | Tabing-Dagat | |
| **Centro** | | | |
| **Guinda** | | | |
| **Kapinayan** | | | |
| **Libudon** | | | |
| **Luho** | | | |
| **Sayaw** | | | |

## 2.2 Geology

### 2.2.1 Rock Formation

The surface area of Santa Fe is underlain by five (5) types of rock formation.

a. Romblon Metamorphics (Crm) – schistose and banded rocks consisting predominantly of chlorite-quartz-serisite schist, quartz-albite mica schist and amphibolite; with thin, vari-colored banded marble interbeds; thick and massive marble overlie the schistose rocks as in Romblon Island.
b. Quarternary Alluvium (Qal) – unconsolidated and unsorted floodplain deposits and beach sand.
c. Binoog Formation (Nb) – buff to light pink, massive limestone and alternate layers of calcarenite and argillite or calcisiltite with local intercalation of igneous rocks.
d. Peli Formation (QNp) – conglomeratic limestone, sandy shale, lithic fragments of volcanic rocks, schist, shale and limestone.




e. Sibuyan Ultramafics (PKsu) – undifferentiated ultramafic suite consisting of peridotite, pyroxenite, dunite and gabbro.

***Figure PN-02 Geologic Map***

**Source:** *Geographic Information System (thru ArcGIS) (2017); Mines and Geosciences Bureau (2017)*

## 2.3 Topography and Slope

The topography of the municipality is generally rolling. The 11 barangays are separated from each other by hills or mountain ridges. The most prominent of these are Mount Malbog and Calatong Hill. Water bodies that drain different areas in the municipality are Magsaysay River, Pandan River, Manhac Creek, Magsaysay River, Guinbirayan River, Guintigbasan Creek, Binaluca Creek and Tinago River. These water bodies empty at Tablas Strait and Sibuyan Sea.

**Slope:**

Slope ranges from 0-3% to 18-30%. Fifty percent of the land area is rolling with slopes of 8-18%. These areas are mostly planted with coconuts and at times intercropped with root crops and upland crops.

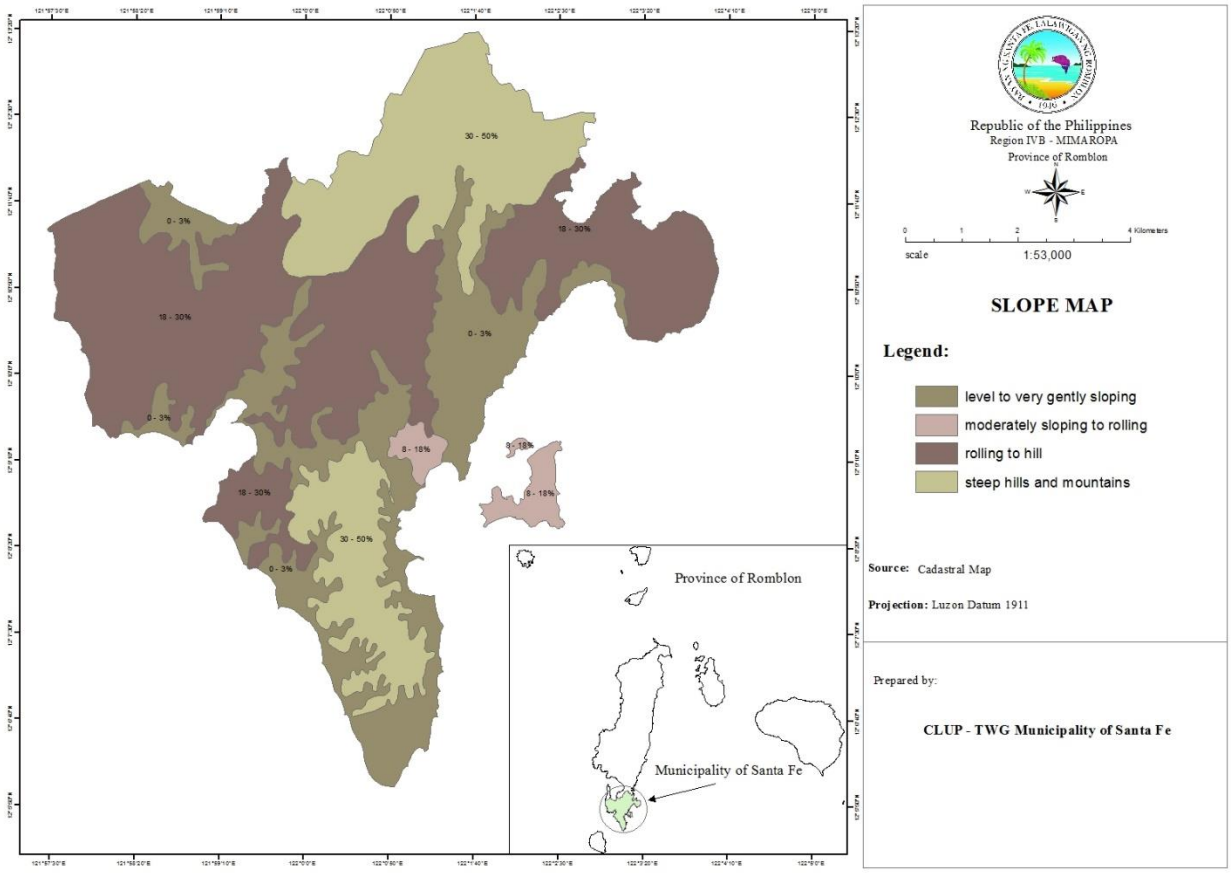
The lowland areas extending from the coast are devoted to rice production. Some marshes and swamps situated on the level areas, usually covered by mangroves are partially converted into rice lands by building dikes to prevent sea water from flooding the area.

*Table PN- 5 Slope*

| SLOPE | LOCATION | SLOPE CHARACTERISTICS | SUITABLE USES |
|---|---|---|---|
| **0 – 3%** | Some parts of all barangays | Broad area of level to nearby level land | Intensive development high density urban development |
| **8 – 18%** | Parts of Magsaysay and Guinbirayan | Gently sloping areas with land sloping and rolling in more than one general direction. | Intensive development high-density urban development |
| **18 – 30%** | Practically parts of all barangays except Tabugon | Alternating moderate to steeply undulating and rolling lands sloping in many directions. | Agriculture and low-density urban development, limited cultivation, pasture and forest. |
| **30-50 %** | Parts of Tabugon, Agmanic, Poblacion, Magsaysay, Pandan, and Guinbirayan | Very steeply sloping land in many directions to many mountainous and hilly areas. | Forest and Pasture |

**Source:** *Mines and Geosciences Bureau; Mapped thru ArcGIS* (2017)

***Figure PN-3 Slope Map***




Source: *Geographic Information System (thru ArcGIS) (2017); Mines and Geosciences Bureau (2017)*

## 2.4 Soils

There are three types of soil found in the municipality. These are Santa Fe Loan Sandy Loam and Hydrosol.

Around 74% of the soil cover of Santa Fe is of Sandy Loam Type while 21% is of Santa Fe Loam type which is generally suitable for coconuts, rice, corn, root crops and fruit trees. There is however, 5% hydrosol area, which is suitable for fishpond development.

**Soil Depth:**

Majority of the soils are deep from 60-150 cm thick over coarse loamy, fine loam or clay materials.

**Soil Fertility:**

The general fertility is medium to low with a soil reaction of very strongly acid to neutral at PH-4-5 to 7-0. Organic matter content is medium to low; nitrogen ore moderately low and phosphorous is moderate. Exchangeable potassium is low (less than 15 ppm/100) and exchangeable calcium and magnesium is high.

**Soil Drainage:**

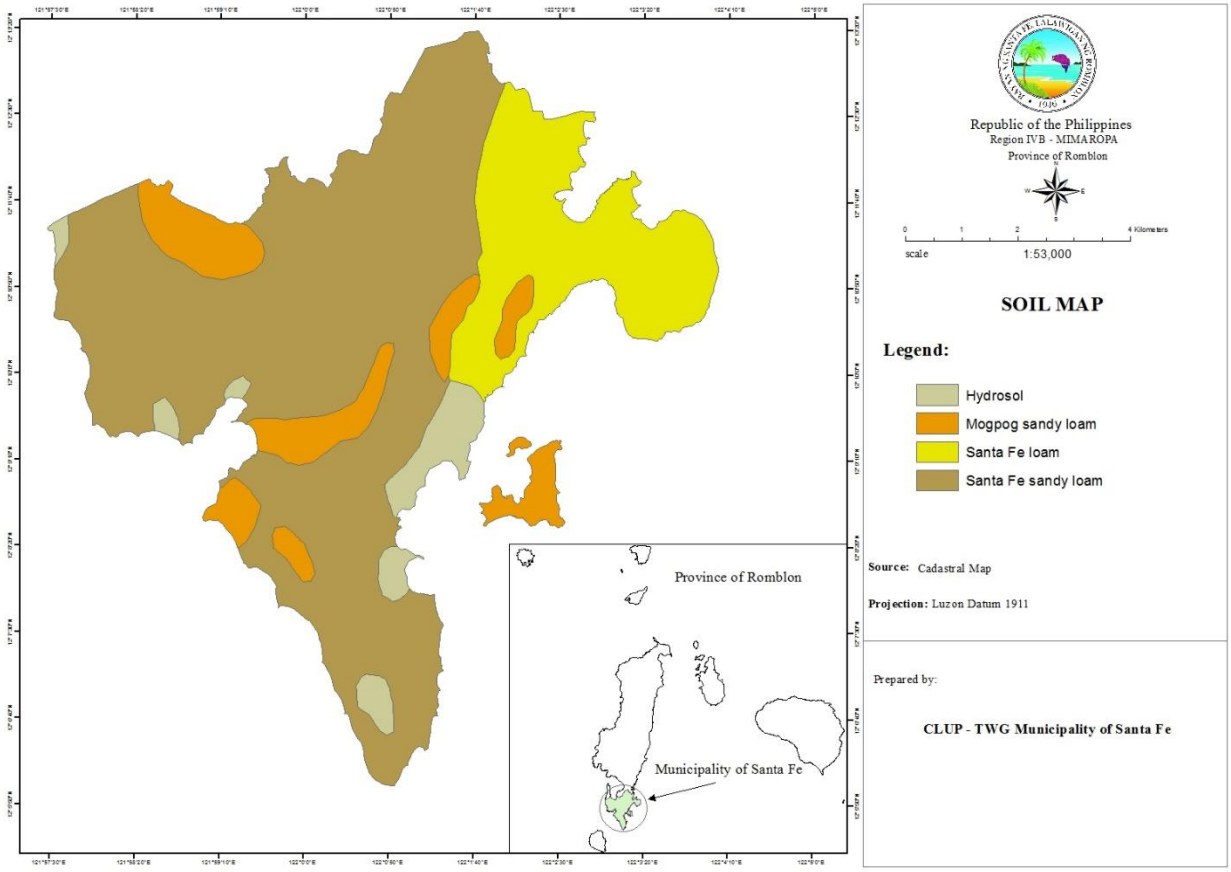
Drainage is slow in external while the internal drainage is moderately well to poorly drain. Areas with higher slopes are classified as well drained to moderately drain.

*Table PN- 6 Type of Soil*

| SOIL TYPES | AREA/LOCATION (Hectares) | CROP SUITABILITY |
|---|---|---|
| **Santa Fe Loam** | 1,300 (Guinbirayan, Guintigbasan) | Coconuts, rice, corn, root crops and fruit trees |
| **Santa Fe Sandy Loam** | 4,485 (Mat-I, Pandan, Canyayo, Poblacion, Danao Sur & Norte, Magsaysay, Tabugon and Agmanic) | Limited Agriculture, pasture, coconuts |
| **Hydrosol** | 275 (Parts of Mat-I, Canyayo, Pandan, Guinbirayan, Agmanic & Tabugon) | Fishpond development |

Table PN-6 shows the soil types, location and area by hectares as well as it crop suitability. The most dominant of which is sandy loam comprising 4,485 hectares utilized for pastures, limited agriculture and coconuts. On the other hand, a total of 1,300 hectares of loam soil located at barangays Guintigbasan and Guinbirayan are suitable for planting rice, corn, root crops, fruit trees and coconuts while 275 hectares of hydrosol are ideal for fishpond development.

***Figure PN-4 Soil Map***




**Source:** ***Geographic Information System (thru ArcGIS) (2017)***

## 2.5 Climate Information

Climate is the most important physical aspect of project implementation and it is dependent in the land characteristics of the municipality.

Under the Corona's classification of climate in the Philippines, the province of Romblon falls under Type III which is considered by no pronounced wet and dry seasons from June to November and sometimes December and from January to May respectively. Areas are partly sheltered from the northeast monsoon and trade winds open to the southeast monsoon or at least to frequent storms.

**Temperature:**
Minimum and Maximum temperature ranges from 20$^0$C during the monthly of February when the Siberian wind is blowing to 35$^0$C at day time for the month of May when summer seasons is at its peak.

**Relatively Humidity:**
Monthly average relative humidity ranges from 75% during the month of April or May to 84% during December.

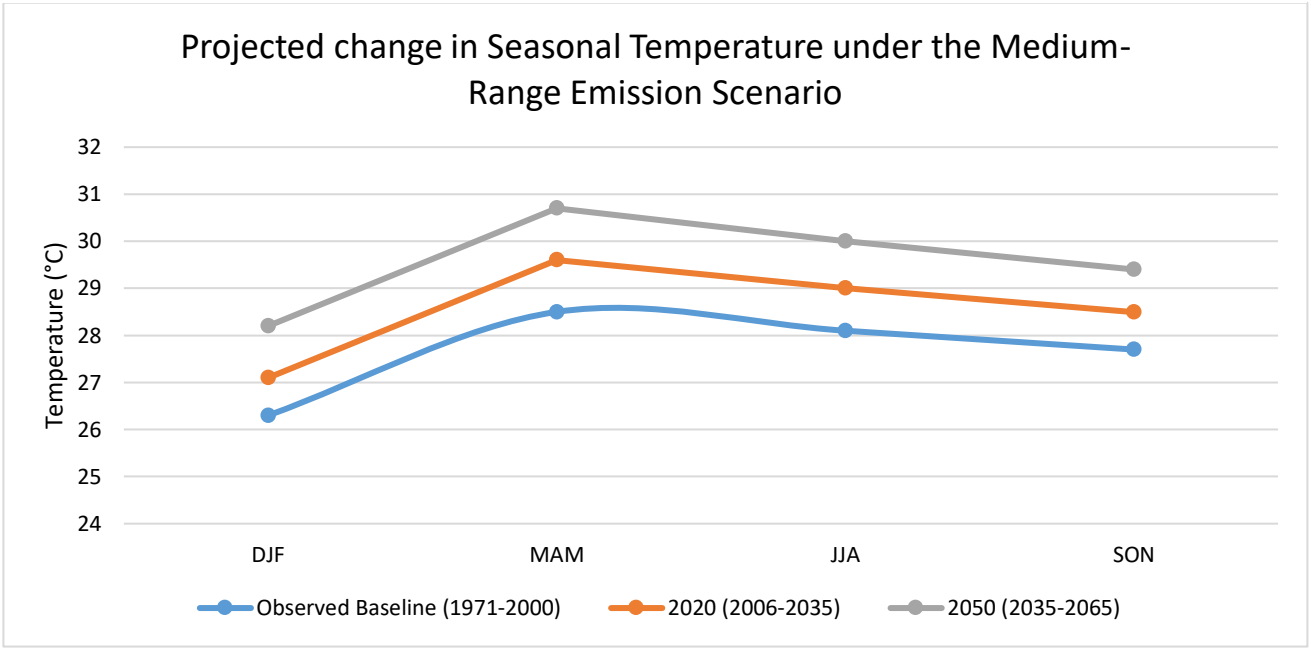
**Rainfall:**
As per rainfall analysis that was presented using the means and the 75% probability analysis it is more reliable and safer from the risk of not implementing projects and crop less due to drought. This shows that the Island is generally wet from the middle of June to November when the southwest monsoon is preponderant and dry during the rest of the year. Annual rainfall varies, from 1-2000 to 1-750mm. Refer to table PN-06 for information on Climate Projection under medium-range scenarios.

*Table PN- 7 Climate Projections Under Medium-Range Emission Scenario*

| Climate Variable | Observed Baseline (1971-2000) | | | | 2020 (2006-2035) | | | | 2050 (2036-2065) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Season** | **DJF** | **MAM** | **JJA** | **SON** | **DJF** | **MAM** | **JJA** | **SON** | **DJF** | **MAM** | **JJA** | **SON** |
| Seasonal Temperature Increases(◦C) | 26.3 | 28.5 | 28.1 | 27.7 | 27.1 | 29.6 | 29.0 | 28.5 | 28.1 | 30.7 | 30.0 | 29.4 |
| Seasonal Rainfall Change (mm) | 357 | 224.0 | 652.9 | 778.0 | 389.1 | 224.4 | 833.1 | 953.8 | 473.4 | 282.9 | 1,085.1 | 1,072.9 |
| No. of Days w/ Tmax >35◦C | 59 | | | | 235 | | | | 756 | | | |
| No. of Dry Days | 7,628 | | | | 6,125 | | | | 5,663 | | | |
| No. of Days w/ Rainfall 200 mm | 4 | | | | 11 | | | | 20 | | | |

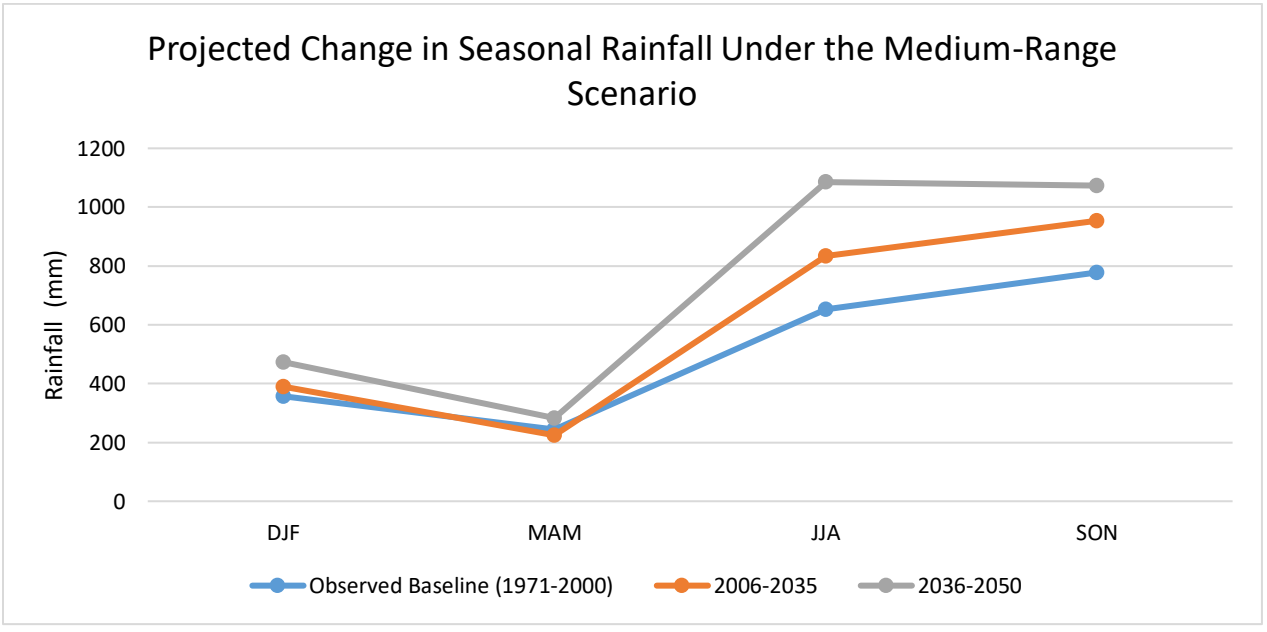
Source: *Philippine Atmospheric Geophysical and Astronomical Services (2011)*

*Figure PN- 5 Projected Change in Seasonal Temperature Under Medium-Range Scenario*




Source: *Philippine Atmospheric Geophysical and Astronomical Services (2011)*

***Figure PN- 6 Projected Change in Seasonal Rainfall Under Medium-Range Scenario***




Source: *Philippine Atmospheric Geophysical and Astronomical Services (2011)*

## 2.6 Hazard Information

Hazards are potential occurrence of a natural or human-induced physical event that may cause loss of life, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision and environmental resources. It is also considered a threatening event, or the probability of occurrence of a potentially damaging phenomenon, within a given time period and area that may cause loss of life or injury, property damage, social and economic disruption of environmental degradation or a combination of these (Guidelines on Mainstreaming Climate Risks in the CLUP, 2014).

Santa Fe is exposed to various hydro-meteorological and geologic hazards due to its geographical location and geographic characteristics. The most frequently occurring hazard in the municipality is flood brought about by *Habagat* season which intensifies when a typhoon comes. Refer to Table PN-07 for inventory of hazards that the municipality is exposed to.

*Table PN- 8 Hazard Inventory Matrix*

| Barangay | Flood | Rain-Induced Landslide | Storm Surge | Tsunami | Sea Level Rise |
|---|---|---|---|---|---|
| **AGMANIC** | x | x | x | x | x |
| **CANYAYO** | x | x | x | x | x |
| **DANAO NORTE** | x | x | x | x | x |
| **DANAO SUR** | x | | x | | x |
| **GUINBIRAYAN** | x | x | x | x | x |
| **GUINTIGBASAN** | x | x | x | x | x |
| **MAGSAYSAY** | x | x | x | x | x |
| **MAT-I** | x | x | x | x | x |
| **PANDAN** | x | x | x | x | x |
| **POBLACION** | x | x | x | x | x |
| **TABUGON** | x | x | x | x | x |

Source: *Municipal Disaster Risk Reduction and Management Office (2017)*

*Table PN- 9 Records of Previous Disasters in Municipality of Santa Fe (1984-2016)*

| Hazard Events and Description | Affected Barangays | No. of casualties (Number of Individuals) | | | No. of affected | | No. of houses damaged | |
|---|---|---|---|---|---|---|---|---|
| | | Dead | Injured | Missing | Persons | Families | Total | Partially |
| Nitang (Sept. 3-6, 1984) @ 275kph peak intensity | All barangays | 0 | 0 | 0 | 6,000 | 1,200 | 20 | 70 |
| Frank (June 23, 2008) @ 170kph peak intensity | All barangays | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ruping (Nov. 14, 1990) @150kph peak intensity | All barangays | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Senyang (Dec. 10, 2006) @ 155km/h peak intensity | All barangays | 0 | 12 | 0 | 10,000 | 815 | 212 | 530 |
| Super Typhoon Yolanda (Nov. 7-8, 2013) @ 315km/h peak intensity | All barangays | 0 | 0 | 0 | 14,000 | 550 | 0 | 15 |

Source: *Municipal Disaster Risk Reduction and Management Office (2017)*

### 2.6.1 Hydro-Meteorological Hazards

Hydro-meteorological hazards are natural processes or phenomena of atmospheric, hydrologic or oceanographic nature like flood, seal level rise, storm surge, and typhoon.

#### 2.6.1.1 Rain-Induced Landslide

All areas in the municipality are susceptible to landslide. Population and critical point facilities are at moderate risk to landslide. Rain-induced landslides are frequently observed in barangays Magsaysay, Mat-i, Pandan, and Poblacion. The following is landslide susceptibility rating parameters provided for by the MGB:

1. High landslide susceptibility occurs in area with steep to very steep slopes and underlain by weak materials.
2. Moderate landslide susceptibility occurs in areas with moderately steep slopes. Soil creep and other indications for possible landslide occurrence are present.
3. Low landslide susceptibility occurs in areas which are gently sloping with no identified landslides.

#### 2.6.1.2 Floods

Although flooding is commonly experienced in the municipality, overflowing of rivers is controlled by concrete sea walls and river controls along the river banks. However, even if most residential houses and other establishments are not affected, there are some areas wherein flooding causes

damages to rice fields and fishponds but not to a great extent. This is primarily due to the presence of swamps and mangroves in the area. The LGU of Santa Fe has constructed a drainage system that flows directly to the bay. Cemented canals had been properly maintained while some parts of the drainage system which were badly constructed were not maintained, thus, storing stagnant water in some areas of the municipality. The municipal government is planning to re-construct said portions for a more effective drainage system in the Poblacion area. This poorly-constructed drainage system has become one (1) of the problems of the municipality when it comes to cleanliness.

The following flood category descriptions are provided for by the Mines and Geosciences Bureau of the DENR.

1. *High flood susceptibility* occurs in areas likely to experience flood heights of greater than 1.00 meter and/or flood duration of more than three (3) days. These areas are immediately flooded during heavy rains of several hours. Landforms of topographic lows such as active river channels, abandoned river channels and areas along riverbanks are also prone to flashfloods.

2. *Moderate flood susceptibility* occurs in areas likely to experience flood heights of 0.50 to 1.00 meter and/or flood duration of one (1) to three (3) days. These areas are subject to widespread inundation during prolonged and extensive heavy rainfall or extreme weather condition. Fluvial terraces, alluvial fans, and infilled valleys are areas moderately subjected to flooding.

3. *Low flood susceptibility* occurs in areas likely to experience flood heights of less than 0.50 meter and/or flood duration of less than one (1) day. These also have sparse to moderate drainage density.

#### 2.6.1.3 Sea Level Rise

Sea level rise (SLR) results when the ice sheets and glaciers in the poles melt due to increase in temperature. Although there is no concrete study or quantitative research specified in the area, observations of sea level rise is plausible in the municipality being a coastal town.

#### 2.6.1.4 Storm Surge

PAGASA defines storm surge as an 8-10 kilometer wide dome of water that sweeps over the coastline during landfall of a tropical cyclone. Being a coastal town, the municipality is prone to storm surge; in fact, Typhoon Frank in 2008 is the most intense and damaging storm surge that have happened in the area.

### 2.6.2 Geologic Hazards

Geologic hazards are natural occurring or manmade geologic condition or phenomenon such as earthquakes, landslide, tsunami and other manmade or naturally occurring processes that may post risk or potential danger to life and property.

#### 2.6.2.1 Earthquake

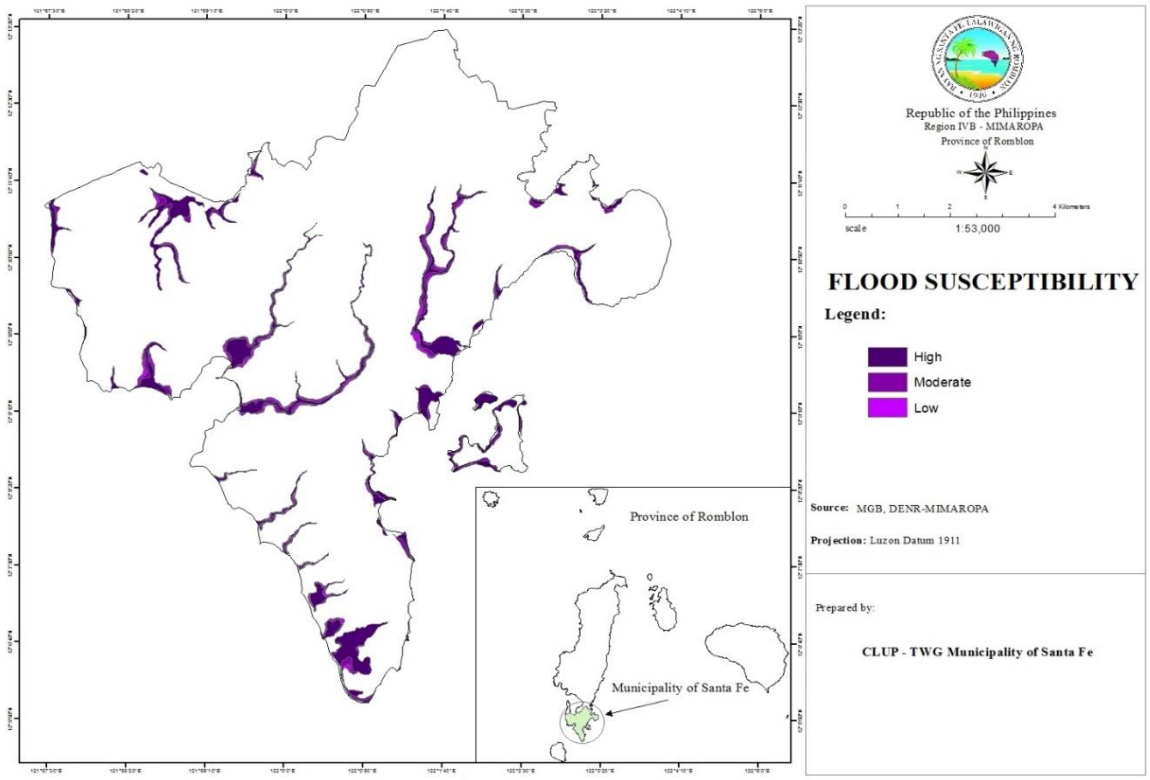
An *earthquake* is what happens when two blocks of the earth suddenly slip past one another. The surface where they slip is called the *fault* or *fault plane*. The location below the earth's surface where the earthquake starts is called the *hypocenter*, and the location directly above it on the surface of the earth is called the *epicenter* (USGS, n.d.). Fortunately, there are no fault near Sibuyan Island, and based from key informant interviews, there is still no earthquake incidence in the area.

#### 2.6.2.2 Tsunami

Tsunami is a series of huge waves that can cause great devastation and loss of lives when they strike coastal areas. Most tsunamis are caused by underwater earthquakes. So far, occurrence of tsunami is non-existent in the municipality.

## HAZARD SUSCEPTIBILITY

***Figure PN- 7 Flood Susceptibility Map***



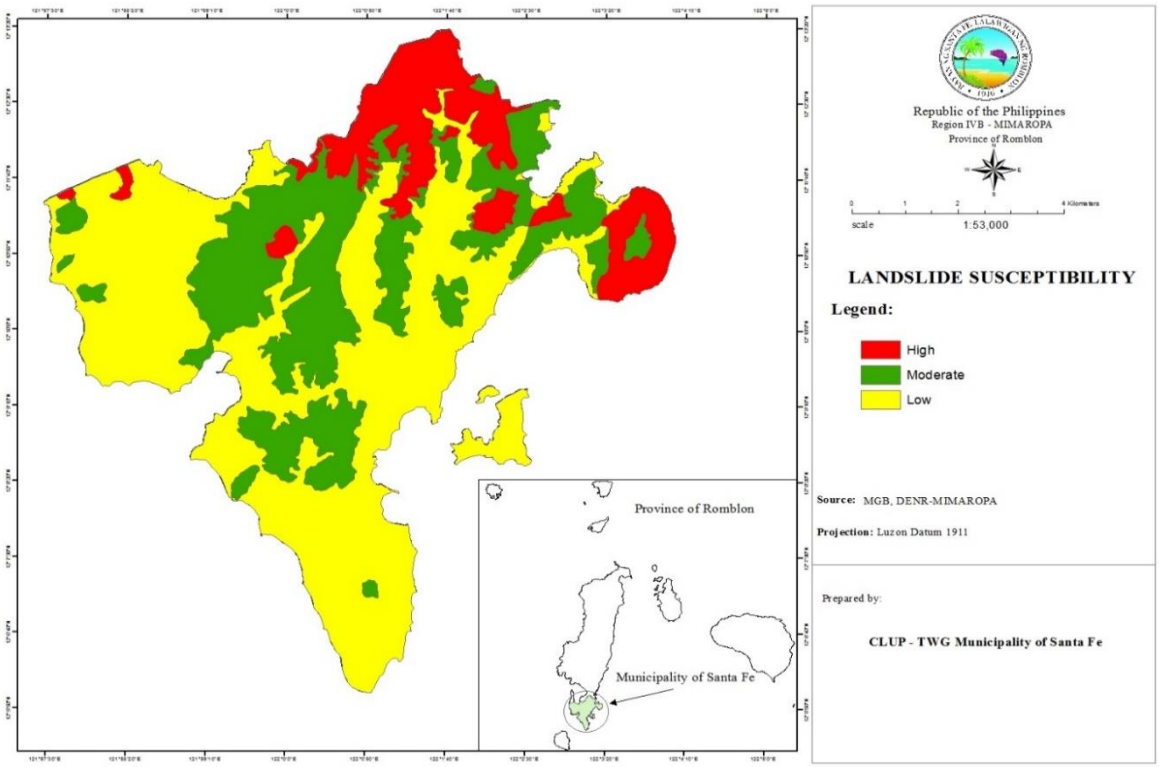

Source: *Geographic Information System (thru ArcGIS) (2017)*

*Table PN- 10 Flood Susceptibility*

| Barangay | Flood Susceptibility | | |
|---|---|---|---|
| | Low | Moderate | High |
| **Agmanic** | 9.66285 | 14.69735 | 68.75777 |
| **Canyayo** | 4.234 | 8.8154 | 27.65572 |
| **Danao Norte** | 3.84578 | 7.30924 | 17.32826 |
| **Danao Sur** | 3.99806 | 10.42771 | 11.3611 |
| **Guinbirayan** | 4.24328 | 10.32049 | 49.22064 |
| **Guintigbasan** | 0.53038 | 4.23941 | 15.58616 |
| **Magsaysay** | 5.72925 | 9.78935 | 26.01675 |
| **Mat-i** | 1.5516 | 11.54255 | 47.61498 |
| **Pandan** | 7.04937 | 8.65688 | 28.95903 |
| **Poblacion** | 5.53829 | 7.8565 | 17.84961 |
| **Tabugon** | 1.58018 | 4.60155 | 18.29034 |
| **TOTAL** | 47.96304 | 98.25643 | 328.64036 |

**Source:** *Geographic Information System (thru ArcGIS) (2017)*

***Figure PN- 8 Landslide Susceptibility Map***



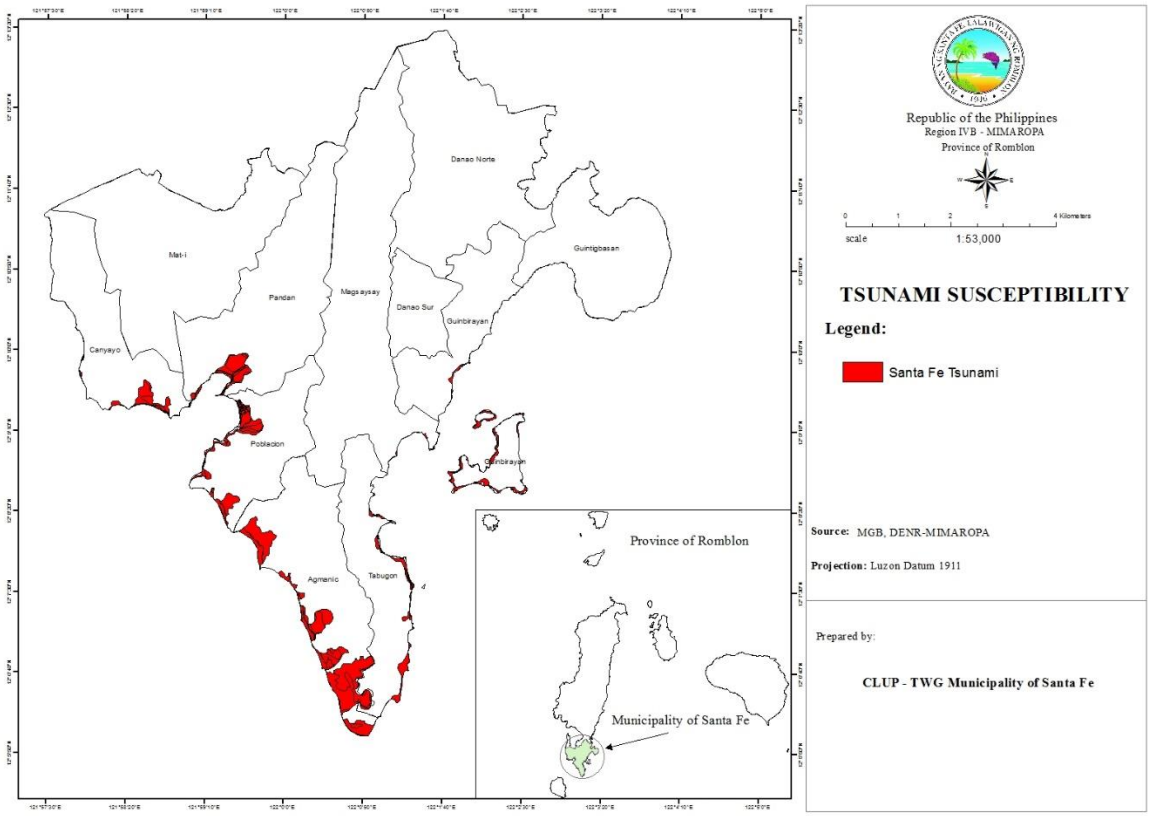

Source: *Geographic Information System (thru ArcGIS) (2017)*

### *Table PN-11 Landslide Susceptibility*

| Barangay | Landslide Susceptibility | | |
|---|---|---|---|
| | Low | Moderate | High |
| **Agmanic** | 525.52478 | 86.49227 | 0 |
| **Canyayo** | 399.04997 | 52.42345 | 0.11121 |
| **Danao Norte** | 220.25597 | 238.00138 | 418.68445 |
| **Danao Sur** | 121.22394 | 69.76366 | 0 |
| **Guinbirayan** | 378.78348 | 75.29264 | 13.00286 |
| **Guintigbasan** | 79.95921 | 175.76231 | 224.5776 |
| **Magsaysay** | 450.189 | 344.50787 | 212.79509 |
| **Mat-i** | 640.27192 | 211.80163 | 30.25335 |
| **Pandan** | 197.2034 | 453.80629 | 61.46069 |
| **Poblacion** | 234.52601 | 149.65136 | 0 |
| **Tabugon** | 350.21262 | 36.09808 | 0 |
| **TOTAL** | 3597.2003 | 1893.60094 | 960.88525 |

**Source:** *Geographic Information System (thru ArcGIS) (2017)*

***Figure PN- 9 Tsunami Susceptibility Map***




Source: *Geographic Information System (thru ArcGIS) (2017)*

*Table PN-12 Tsunami Prone Areas*

| Barangay | Prone to Tsunami Areas |
|---|---|
| **Agmanic** | 147.705035 |
| **Canyayo** | 34.300285 |
| **Danao Norte** | 0 |
| **Danao Sur** | 0 |
| **Guinbirayan** | 16.028203 |
| **Guintigbasan** | 0 |
| **Magsaysay** | 3.098943 |
| **Mat-i** | 0 |
| **Pandan** | 27.54369 |
| **Poblacion** | 42.200488 |
| **Tabugon** | 13.756012 |
| **TOTAL** | 284.632656 |

Source: *Geographic Information System (thru ArcGIS) (2017)*

## 2.7 Resources

### Mineral and Forest Resources

The hills and mountains at present are not as barren as before plainly because the DENR, under the reforestation program, introduced to the people the importance of planting trees to avoid the EL NIÑO Phenomenon. This program is under the SRA wherein *Kamagong*, Paper Tree, *Mahogany*, and *Ipil-Ipil* are being planted. Moreover, the Provincial Government of Romblon through Environment and Natural Resources Office (ENRO) conducted rehabilitation of Mt. Calatong in barangay Guintibasan under "cash for work" and reforestation progam that planted several species of forest trees such as *tiga, mahogany, narra, bitaog*, etc. There are already some forest guards who keep watching on people who scorched the trees for their Kaingin system to some portions which are already being considered as a reforestation area. The existing forest comprises 156.8545 hectares. A chalk mine, granite and marble were discovered at barangay Guintigbasan, which was explored and had stopped operation. In addition to that, palladium can also be found along Tablas Strait.

### Non-Mineral Resources

Found in the forest areas of Santa Fe are different species of *nito*, *howag*, *pari-pari*, *rattan*, *hipgid*, *kawayan*, *bulacawe* which are used for waiving of baskets, plates, decorative products, furnitures and etc. *Cogon* and *nipa* are used in waiving shingles *(pawid)* for the construction of roof. In addition, *gugo* which is an alternative for shampoo, is abundant in barangay Magsaysay. Large bulk of cogon grass used to make *nipa* huts can also be found in Canyayo.

### Water Resources

Water is generally obtained from three sources namely: rainfall, ground water, and surface water. Ground water development is evidently increasing as reflected by several constructions of deep well pumps and dug-up wells primarily for domestic uses. There is already construction of spring development and presently there are waterworks systems in barangays Poblacion and Guinbirayan that support the people. Discharges of these wells vary from 0.00025 to 0.00055 $m^3$/sec. with a depth ranging from 4 to 31.5 meters. Tabugon and Mat-i discharge for about 0.00044 $m^3$/sec. with a depth of 10.8 and 7.5 $m^3$/sec, respectively.

Magsaysay and the rest of barangays have their own shallow wells and deep wells. The municipal waters at the southern, western and eastern portions are one of the best fishing grounds in the province. It is also a good site for scuba diving wherein some corals are preserved by the barangay constituents. Because of the LGU's campaign against illegal fishing and with the assistance of the *Bantay-Dagat* and PNP Santa Fe, the rampant illegal fishing especially during summer season was stopped.

## Coastal Resources

### Mangrove

Mangroves are important for nurseries of multiple species of fishery resources. The rapid conversion of mangrove areas to alternative economic uses will inevitably reduce fish catch in coastal waters and consequently undermine the economic well-being of coastal communities.

The major causes of mangrove depletion are cutting of mangroves for livelihood, charcoal making and clearing for fishpond development.

Santa Fe has an area of 112 hectares of mangrove situated along the shoreline from Barangay Mat-i to Barangay Danao Norte. At present, 75% of these mangroves still exist and 25% have been converted into fishponds. Of the entire mangrove area, five (5) hectares are programmed for mangrove development in Cabangahan Island, Magsaysay and Tabugon.

*Table Re- 13 Mangrove Species per Barangay*

| Barangay | Mangrove Species |
|---|---|
| **Agmanic** | BakhawBaye, Bakhaw Lake, Piyape |
| **Canyayo** | Piyape, Bayle, Piyape Lake, Pagatpat |
| **Danao Norte** | Pagatpat, PiyapeBaye, Piyape Lake |
| **Danao Sur** | Nipa |
| **Guinbirayan** | Nipa, BakhawBaye, Bakhaw Lake, piyape |
| **Guintigbasan** | BakhawBaye, Bakhaw Lake, Nipa, Talisay |
| **Magsaysay** | Pagatpat, Piyape Lake, PiyapeBaye, BakhawBaye, Bakhaw Lake, Nipa |
| **Mat-i** | Talisay, Nipa, Pagatpat, BakhawBaye, Bakhaw Lake, PiyapeBaye, Piyape Lake |
| **Pandan** | Piyape Lake, PiyapeBaye, Talisay |
| **Poblacion** | PiyapeBaye, Piyape Lake, Nipa, Pagatpat |
| **Tabugon** | PiyapeBaye, Piyape Lake, Bakhaw Lake |

Source: *Municipal Coastal Environment Profile (2011)*

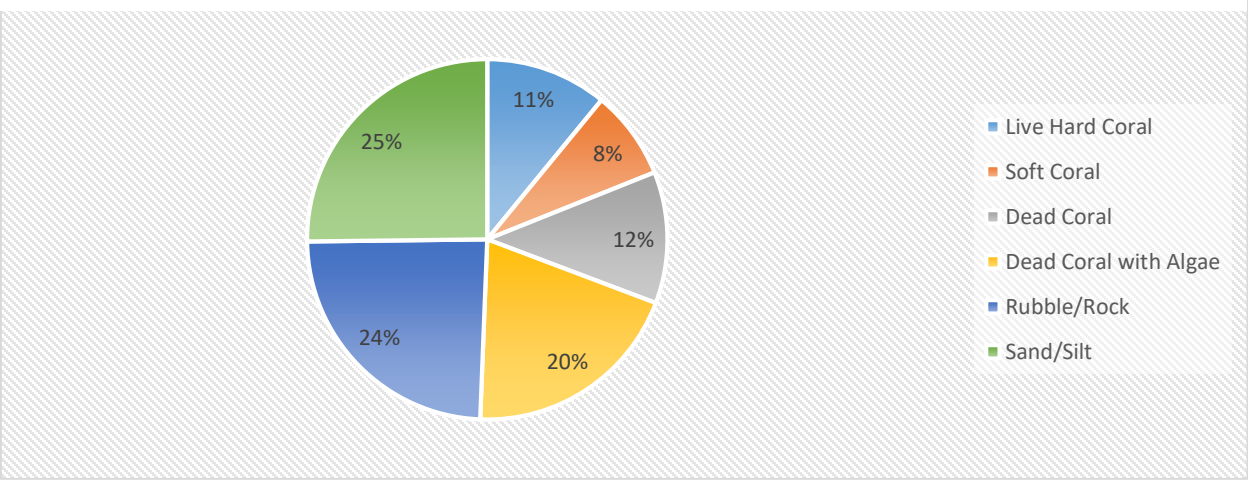
### Seagrasses

Like coral reefs, sea grasses can be found along the coastline of Santa Fe from *Barangay* Mat-i to *Barangay* Danao Norte. The fishermen called this in the local dialect as *lusay*.

Different species of fishes harbouring in these sea grasses are *seganidae, teraponadde, lunanidae, mugiidae*, crabs, shrimps and many others. Species of sea grasses found in 10 coastal *barangays* are green, brown, and red sea grasses.

### Coral Reef

*Figure PN- 10 Condition of Coral Reef*




The overall condition of the coral reefs is poor. The corals near Mat-i and in select locations in Canyayo and Guinbirayan are in very good condition. The condition of these reefs is largely due to the following reasons: they are 1) protected from illegal fishing because of their proximity to the shore or their location inside of a bay; and 2) protected from strong wave or typhoon action because of their location. These spots are very rare. The necessity to save these particular reefs by establishing marine protected areas and stopping illegal fishing is evident when the rest of the municipality's coral condition is taken into consideration.

Along the eastern coast heading north from Cabali-an point the coral is almost completely dead. It is clear evidence of the destructive cost of dynamite, sodium cyanide, and other illegal fishing methods. It is also a result of the natural forces acting against the reefs. The eastern side recieves the brunt of the habagat winds and waves for the greater part of the year. This can break and damage coral naturally. But the effects of destructive fishing are much more detrimental when coupled with this natural destruction. They result in terrible coral conditions and accompanying marine organism population collapse.

### Fisheries

There is an average of eight (8) families of fish dominated by Acanthuridae (Labahita), particularly in the coastal areas of Barangays Canyayo, Poblacion, Agmanic and Tabugon. The low species diversity is influenced by an equally poor benthic habitat configuration. However, this is complimented by the presence of relatively robust pelagic fisheries.

Siganidae (burawis) was also abundant in Santa Fe. Other fish species found in the survey sites were moorish idol (*Zanclidae*), parrot fish (*Scaridae*), butterfly fish (*Chaetodontidae*), damsel fish (*Pomacentridae*), grouper(*Serranidae*), rabbitfish *(Siganidae)* andgoat fishes (*Mullidae*).

The dominance of herbivores (plant feeder) Acanthurids and Siganids in the coastal waters of Santa Fe may be due to the abundance of their food (algae) that grows in the dead corals and the relatively low habitat profile that can support a rich thropic structure and a wide area of sea grasses.

**Flora and Fauna**

*Figure PN- 11 Pictures showing the Flora and Fauna in Santa Fe, Romblon*

Santa Fe coast is blessed to house one of the most endangered species in the world, the sea turtles or pawikan. According to EPAFI (Environmental Protection of Asia Inc.), out of the five (5) endangered species of sea turtles; the coast of Santa Fe is a favorite nesting place of three (3) endangered species of marine turtles, which include the ridley, green-sea turtle, hawksbill and the most common sea turtle, the olive ridley.

The coastal barangays of Santa Fe are known to be a hatching place of pawikan. These barangays are Canyayo, Agmanic, Tabugon, Guinbirayan, Guintigbasan and Danao Norte, agreed to conserve and protect the marine turtles.

# 3. DEMOGRAPHY

## 3.1 Demographic Profiling

### 3.1.1 Provincial Population by Municipality, Year 2015

The Province of Romblon posted a total population of 292,781 for the censal year 2015. This represents a 9.88 percent share in the total population of MIMAROPA. The Municipality of Odiongan in the Island of Tablas has the most numbers of population comprising approximately 15.5 percent of the province's total followed by the Municipality of Romblon with 13.24 percent. The least populous municipality in the province is the Municipality of Concepcion.

The Municipality of Santa Fe in Tablas Island posted a total population of 16,098 representing 5.50 percent in the total population of Province of Romblon. Table 3.1.1 shows the provincial population, household population, and number of households per municipality. Refer to Table De-01 for more information.

*Table De- 14 Provincial Population, 2015*

| MUNICIPALITY | TOTAL POPULATION | HOUSEHOLD POPULATION | NUMBER OF HOUSEHOLDS |
|---|---|---|---|
| **Alcantara** | 16,351 | 16,343 | 3,673 |
| **Banton** | 5,536 | 5,531 | 1,420 |
| **Cajidiocan** | 21,861 | 21,849 | 4,983 |
| **Calatrava** | 10,275 | 10,274 | 2,334 |
| **Concepcion** | 4,037 | 4,036 | 1,048 |
| **Corcuera** | 10,283 | 10,271 | 2,471 |
| **Ferrol** | 6,694 | 6,963 | 1,656 |
| **Looc** | 22,264 | 22,243 | 5,380 |
| **Magdiwang** | 14,142 | 14,133 | 3,079 |
| **Odiongan** | 45,367 | 44,638 | 11,460 |
| **Romblon** | 38,758 | 38,466 | 8,997 |
| **San Agustin** | 22,598 | 22,541 | 5,273 |
| **San Andres** | 15,589 | 15,589 | 3,550 |
| **San Fernando** | 23,271 | 23,244 | 5,055 |
| **San Jose** | 10,881 | 10,848 | 2,392 |
| **Santa Fe** | 16,098 | 16,094 | 3,711 |
| **Santa Maria** | 8,508 | 8,506 | 1,880 |
| **TOTAL** | **292,781** | **291,569** | **68,362** |

Source: *Philippine Statistics Authority (2015)*

### 3.1.2 Historical Population Growth, from 1903-latest census (2015)

The population of Santa Fe is consistently increasing from 1975 to 2007 censal years. In 2010, there was a decrease in growth rate at 1.27 percent that may be attributed in out-migration to Boracay Island. In 2015, the population growth rate increased from to 0.50. The Rate of Natural Increase of the municipality is 16.87 per 1000 persons which indicates that the population is growing at a rate of 1.687 percent through natural increase.

*Table De- 15 Historical Growth Rate (1903-2015)*

| | | | ANNUAL GROWTH RATE (%) | | | |
|---|---|---|---|---|---|---|
| **YEAR** | **POPULATION** | **INCREASE/ DECREASE** | **MUNICIPAL** | **PROVINCIAL** | **REGIONAL** | **NATIONAL** |
| **1903** | 3,746 | — | — | — | — | — |
| **1948** | 8,168 | ↑ 4,422 | 1.75 | — | — | 2.25 |
| **1960** | 8,987 | ↑ 819 | 0.80 | — | — | 3.40 |
| **1970** | 8,032 | ↓ 955 | -1.12 | 2.41 | — | 3.54 |
| **1975** | 8,939 | ↑ 907 | 2.16 | 1.75 | — | 2.94 |
| **1980** | 9,948 | ↑ 1,009 | 2.16 | 1.18 | 2.31 | 2.87 |
| **1990** | 11,628 | ↑ 1,680 | 1.57 | 1.65 | 2.73 | 2.62 |
| **1995** | 12,665 | ↑ 1,037 | 1.72 | 1.45 | 2.46 | 2.61 |
| **2000** | 14,140 | ↑ 1,475 | 2.23 | 1.56 | 2.59 | 2.30 |
| **2007** | 16,315 | ↑ 2,175 | 2.06 | 0.81 | — | 2.25 |
| **2010** | 15,700 | ↓ 615 | -1.27 | 0.49 | 1.79 | 1.42 |
| **2015** | 16,098 | ↑ 398 | 0.50 | 0.62 | 1.47 | 1.87 |

Source: *National Statistics Office (1995, 2000, and 2010), Philippine Statistics Authority (2015)*
**Computed using Geometric Method*

### 3.1.3. Population Distribution

#### 3.1.3.1 Total Population by Barangay (2015)

The municipality posted a total population of 16,098 in 2015. The highest population were accounted in Barangays Poblacion and Tabugon with 2,342 and 2,109 or 14.55 percent and 13.10 percent, respectively. Barangay Guintigbasan is the least populated barangay with a total population share of 741 or 4.60 percent.

#### 3.1.3.2 Urban-Rural Households by Barangay

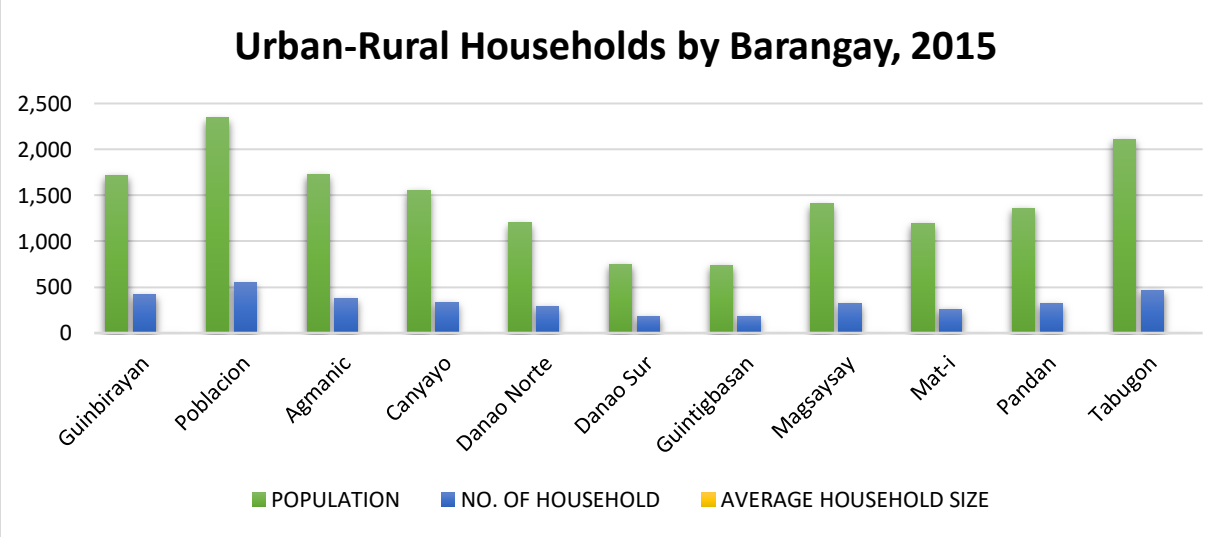
Latest census shows that out of 16,098 total population, 25.20 percent resides in urban barangays composed of Poblacion and Guinbirayan. The rest are distributed in eight rural barangays. The data likewise manifest total households of 3,711 with an average household size (AHS) of four (4). However, looking at average household size by barangay data shows that Barangays Agmanic, Canyayo, Mat-i, and Tabugon have higher average household size compared with the computed municipal average.

*Table De- 16 Urban-Rural Households Population and Average Household Size by Barangay*

| BARANGAY | POPULATION | NO. OF HOUSEHOLD | AVERAGE HOUSEHOLD SIZE |
|---|---|---|---|
| **Urban** | | | |
| **Guinbirayan** | 1,714 | 416 | 4.12 |
| **Poblacion** | 2,342 | 549 | 4.27 |
| Sub-Total | 4,056 | 965 | — |
| **Rural** | | | |
| **Agmanic** | 1,729 | 379 | 4.56 |
| **Canyayo** | 1,552 | 338 | 4.59 |
| **Danao Norte** | 1,200 | 292 | 4.11 |
| **Danao Sur** | 751 | 185 | 4.06 |
| **Guintigbasan** | 741 | 180 | 4.12 |
| **Magsaysay** | 1,409 | 321 | 4.39 |
| **Mat-i** | 1,191 | 259 | 4.60 |
| **Pandan** | 1,360 | 324 | 4.20 |
| **Tabugon** | 2,109 | 468 | 4.51 |
| **Sub-Total** | **12,042** | **2,746** | **—** |
| **Total** | **16,098** | **3,711** | **4.32** |

Source: *Philippine Statistics Authority (2015)*

*Figure 12 Urban-Rural Households by Barangay, 2015*




Source: *Philippine Statistics Authority (2015)*

### 3.1.3.3 Population Projection by Barangay, 2015-2028

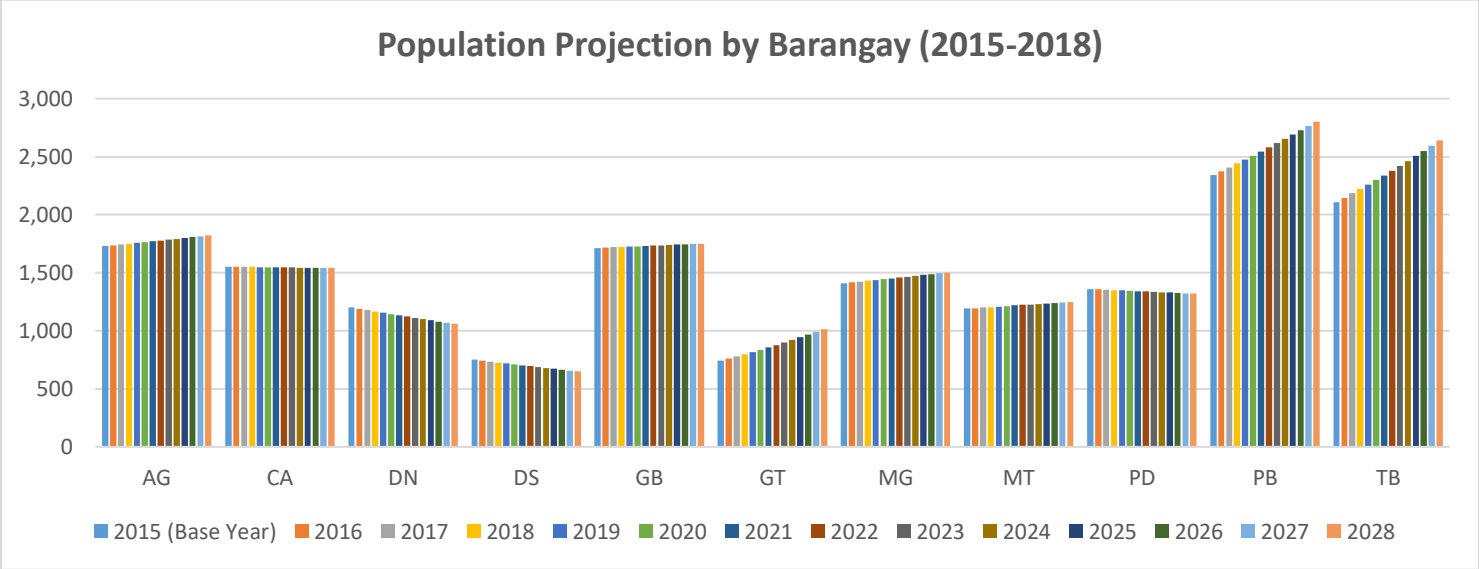
At an annual growth rate (APGR) of .50 percent, the total population is expected to reach 17,028 by 2025 based from PSA. At this rate, Sta. Fe has a relatively slow rate of increase and will likely double in 139 years or in 2154. Barangay Poblacion is estimated to hold the highest population.

*Table De- 17 Population Projection by Barangay, 2015-2028*

| | May 2010 | 2015 (Base Year) | Annual Population Growth Rate | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | Doubling Time (2154) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AG | 1691 | 1,729 | 0.45 | 1,737 | 1,745 | 1,752 | 1,760 | 1,768 | 1,776 | 1,784 | 1,792 | 1,800 | 1,808 | 1,817 | 1,825 | 1,833 | 3,227 |
| CA | 1557 | 1,552 | -0.06 | 1,551 | 1,550 | 1,549 | 1,548 | 1,547 | 1,546 | 1,545 | 1,545 | 1,544 | 1,543 | 1,541 | 1,540 | 1,540 | 1,428 |
| DN | 1259 | 1,200 | -0.96 | 1,188 | 1,177 | 1,166 | 1,155 | 1,144 | 1,133 | 1,122 | 1,111 | 1,100 | 1,090 | 1,079 | 1,068 | 1,059 | 314 |
| DS | 794 | 751 | -1.11 | 743 | 734 | 726 | 718 | 710 | 702 | 695 | 687 | 679 | 672 | 664 | 657 | 650 | 159 |
| GB | 1700 | 1,714 | 0.16 | 1,717 | 1,719 | 1,722 | 1,725 | 1,728 | 1,731 | 1,733 | 1,736 | 1,739 | 1,742 | 1,744 | 1,747 | 1,750 | 2,141 |
| GT | 657 | 741 | 2.44 | 759 | 778 | 797 | 816 | 836 | 856 | 877 | 899 | 921 | 943 | 966 | 990 | 1,014 | 21,139 |
| MG | 1375 | 1,409 | 0.49 | 1,416 | 1,423 | 1,430 | 1,437 | 1,444 | 1,451 | 1,458 | 1,465 | 1,472 | 1,480 | 1,488 | 1,494 | 1,501 | 2,780 |
| MT | 1170 | 1,191 | 0.36 | 1,195 | 1,200 | 1,204 | 1,208 | 1,213 | 1,219 | 1,224 | 1,226 | 1,230 | 1,235 | 1,239 | 1,243 | 1,248 | 1,963 |
| PD | 1376 | 1,360 | -0.23 | 1,357 | 1,354 | 1,351 | 1,348 | 1,344 | 1,341 | 1,338 | 1,335 | 1,332 | 1,329 | 1,326 | 1,323 | 1,320 | 987 |
| PB | 2186 | 2,342 | 1.39 | 2,375 | 2,408 | 2,441 | 2,475 | 2,509 | 2,544 | 2,580 | 2,615 | 2,653 | 2,689 | 2,726 | 2,764 | 2,802 | 15,955 |
| TB | 1935 | 2,109 | 1.74 | 2,146 | 2,183 | 2,221 | 2,260 | 2,299 | 2,339 | 2,380 | 2,421 | 2,463 | 2,506 | 2,550 | 2,594 | 2,639 | 23,197 |
| STF (Total) | **15700** | **16,098** | **0.50** | **16,178** | **16,259** | **16,341** | **16,422** | **16,504** | **16,587** | **16,670** | **16,753** | **16,837** | **16,921** | **17,006** | **17,091** | **17,176** | **32,200** |

Source: *Philippine Statistics Authority (2015)*
**Computed using Geometric Method*
*AG-Agmanic CA-Canyayo DN-Danao Norte DS-Danao Sur GB-Guinbirayan GT-Guintigbasan MG-Magsaysay MT-Mat-i*
*PD-Pandan PB-Poblacion TB-Tabugon STF-Santa Fe*

*Figure 13 Population Projection by Barangay*




Source: *Philippine Statistics Authority (2015)*

### 3.1.3.4 Male-Female Population by Age-Group

The population of the municipality is generally expansive where population ages 0-24 years old represent 55.68 percent of its total population.

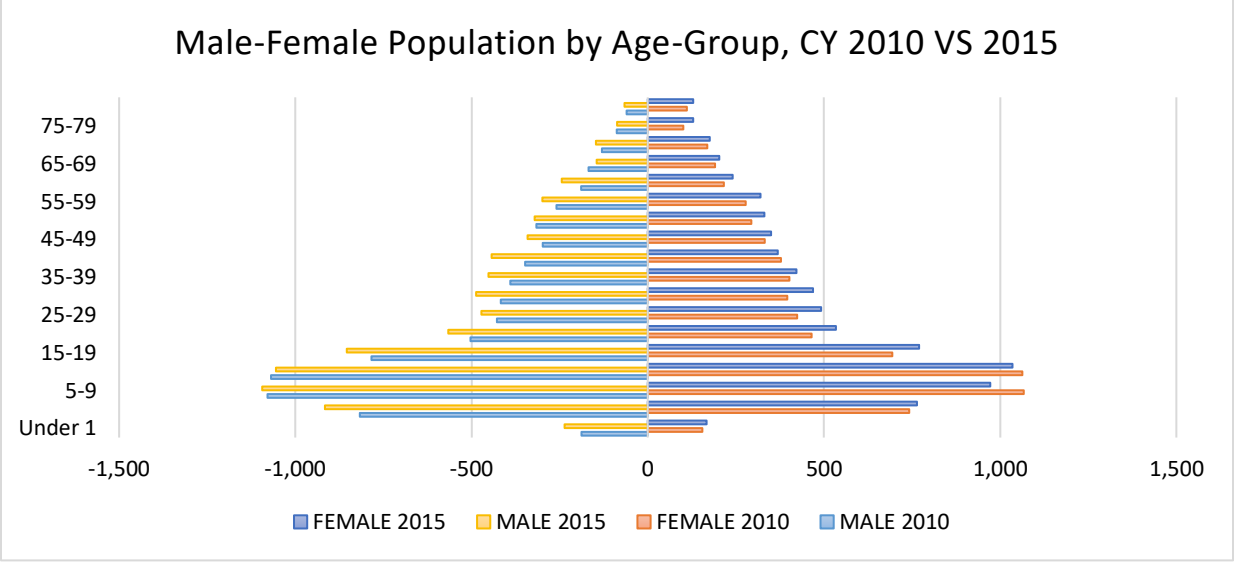
The population pyramid below shows that the male population is higher than the female population for two consecutive population the census (2010 and 2015). The sex ratio is 1.11 which means that there are 111 males for every 100 females. Dependency ratio on the other hand was computed at 83:100 which means that every 100 labor force has 83 dependents. Young dependents largely comprised the dependent group at 85 percent while old dependents share 15 percent of the dependent group.

*Table De- 18 Population Distribution by Age Group and Gender, CY 2010 VS 2015*

| AGE GROUP | 2010 | | | 2015 | | |
|---|---|---|---|---|---|---|
| | MALE | FEMALE | TOTAL | MALE | FEMALE | TOTAL |
| Under 1 | 188 | 155 | 343 | 236 | 167 | 403 |
| 1-4 | 817 | 742 | 1,559 | 916 | 764 | 1,680 |
| 5-9 | 1,079 | 1,067 | 2,146 | 1,094 | 972 | 2,066 |
| 10-14 | 1,069 | 1,063 | 2,132 | 1,055 | 1,035 | 2,090 |
| 15-19 | 784 | 694 | 1,478 | 854 | 770 | 1,624 |
| 20-24 | 503 | 465 | 968 | 566 | 534 | 1,100 |
| 25-29 | 428 | 424 | 852 | 472 | 492 | 694 |
| 30-34 | 417 | 396 | 813 | 487 | 469 | 956 |
| 35-39 | 390 | 402 | 792 | 452 | 422 | 874 |
| 40-44 | 348 | 378 | 726 | 443 | 369 | 812 |
| 45-49 | 298 | 332 | 630 | 341 | 350 | 691 |
| 50-54 | 316 | 294 | 610 | 321 | 331 | 652 |
| 55-59 | 259 | 278 | 537 | 299 | 320 | 619 |
| 60-64 | 189 | 216 | 405 | 244 | 241 | 485 |
| 65 and over | 446 | 572 | 1,018 | 445 | 637 | 1,082 |
| **Total** | **7,531** | **7,478** | **15,009** | **8,225** | **7,873** | **16,098** |

Source: Computation from National Statistics Office (2010) and *Philippine Statistics Authority (2015)*

*Figure 14 Male-Female Population by Age-Group*




Source: *Computation from National Statistics Office (2010)* and *Philippine Statistics Authority (2015)*

#### 3.1.3.5 Population Density/ Residential Density

Considering a total population of 16,098 and total land area of 7,309.3437 hectares, the municipal gross density was computed at 2.20 persons/hectare. Highest population density was derived in Poblacion (6 persons/hectare) followed by Tabugon (5 persons/hectare). Magsaysay, Mat-I and Danao Norte has the least population density (1person/hectare). With this density, population is sparsely distributed in the municipality.

*Table De- 19 Population Density, Gross Density (2015)*

| BARANGAY | AREA (HECTARES) | POPULATION DENSITY |
|---|---|---|
| **URBAN** | | |
| **Guinbirayan** | 450.4863 | 4 |
| **Poblacion** | 363.534 | 6 |
| **RURAL** | | |
| **Agmanic** | 618.1209 | 3 |
| **Canyayo** | 429.1914 | 4 |
| **Danao Norte** | 902.981 | 1 |
| **Danao Sur** | 184.5766 | 4 |
| **Guintigbasan** | 450.7415 | 2 |
| **Magsaysay** | 1987.6725 | 1 |
| **Mat-i** | 834.444 | 1 |
| **Pandan** | 702.7065 | 2 |
| **Tabugon** | 384.8869 | 5 |
| **TOTAL** | **7,309.3437** | |

Source: *Land area was derived from the Cadastral Survey; Population from PSA Census of 2015*

### 3.1.4. Population Composition

#### 3.1.4.1 Population by Age Group

The municipal population by age-group may be generally divided into three groups: school-going age, labor force, and dependents. Among these groups, those belonging to the labor force comprise the most number of individuals with 9,859 that corresponds to 61 percent of the total population of the municipality followed by those school going age with a total number of 7,053 that corresponds to 44 percent while the dependents are accounted to 7,321 (45 percent).

On the other hand, children ages six to 12 years old have the most number among the school going age with 6,435 that corresponds to 17 percent of the total population of the municipality. See Table De-20 for other population statistics.

*Table De- 20 Population by Composition by School Age, Working Age, Dependent Age Groups and Sex, 2015*

| AGE-GROUP | BOTH SEXES | MALE | | FEMALE | | SEX RATIO |
|---|---|---|---|---|---|---|
| | | NO. | % | NO. | % | |
| **PRE-SCHOOL (3-6)** | 1660 | 899 | 54.19 | 760 | 45.81 | 118 |
| **ELEMENTARY (7-12)** | 2494 | 1289 | 51.68 | 1205 | 48.32 | 107 |
| **SECONDARY (13-16)** | 1486 | 854 | 57.47 | 632 | 42.53 | 135 |

| AGE-GROUP | BOTH SEXES | MALE | | FEMALE | | SEX RATIO |
|---|---|---|---|---|---|---|
| | | NO. | % | NO. | % | |
| **TERTIARY (17-21)** | 1414 | 738 | 52.19 | 676 | 47.81 | 109 |
| **WORKING AGE (15-64)** | 8773 | 4475 | 51.01 | 4298 | 48.99 | 104 |
| **Labor Force (15 years and over)** | 9855 | 4920 | 49.92 | 4935 | 50.08 | 100 |
| **Young dependent (0-14)** | 6239 | 3301 | 52.91 | 2938 | 47.09 | 112 |
| **Old dependent (65 and over)** | 1082 | 445 | 41.13 | 637 | 58.87 | 70 |

Source: *Computed based on the PSA 2015 on Household Population by Age Group using interpolation method*

### 3.1.4.2 Population Projection by Age Group (2015-2024)

In the year 2025, the school-going population is projected to reach 7,445 when the population at 0.50 percent annually. On the other hand, the labor force and the dependent population is projected to come at 10,322 and 7,614 by year 2015, respectively. Table De-08 would show other details on projected population by age-group.

*Table De- 21 Projected School Age Population, Labor Force, and Dependent Population, 2015-2025*

| GROUPING | Base Year (2015) | Participation | PROJECTION | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Rate | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2028 |
| **POPULATION** | 16098 | 1 | 16504 | 16587 | 16670 | 16753 | 16837 | 16921 | 17176 |
| **SCHOOL GOING POPULATION** | 7054 | 0.44 | 7262 | 7298 | 7335 | 7371 | 7408 | 7445 | 7557 |
| **Pre Elementary** | 1660 | 0.10 | 1650 | 1659 | 1667 | 1675 | 1684 | 1692 | 1718 |
| **Elementary** | 2494 | 0.15 | 2476 | 2488 | 2501 | 2513 | 2526 | 2538 | 2576 |
| **Secondary** | 1486 | 0.09 | 1485 | 1493 | 1500 | 1508 | 1515 | 1523 | 1546 |
| **Tertiary** | 1414 | 0.09 | 1485 | 1493 | 1500 | 1508 | 1515 | 1523 | 1546 |
| **LABOR FORCE** | 9855 | 0.61 | 10067 | 10118 | 10169 | 10219 | 10271 | 10322 | 10477 |
| **DEPENDENT** | 7321 | 0.45 | 7427 | 7464 | 7502 | 7539 | 7577 | 7614 | 7729 |
| **Young** | 6239 | 0.39 | 6437 | 6469 | 6501 | 6534 | 6566 | 6599 | 6699 |
| **Old** | 1082 | 0.07 | 1155 | 1161 | 1167 | 1173 | 1179 | 1184 | 1202 |

Source: *Computed based on the latest PSA data on Household Population*

### 3.1.4.3 Age Dependency Ratio

In year 2015, there were 83 dependents for every 100 individuals in the working group. Child dependents in the same year accounts to 71 for every 100 children ages 0-14 while old dependents 12 for every 100 person ages 65 and over. There are more young dependents than old dependents in the municipality in the same censal year. Refer to Table 3.1.4.2 for more information.

### 3.1.4.4 Projected Labor Force

There were 9,859 members of the labor force in the year 2015 as projected from the 2010 Census of Population by the PSA. It is projected that by the year 2025 those in the labor force shall reach 10,322 (Table De-08).

### 3.1.4.5 Labor Force and Employment

The data from Community-Based Monitoring System (CBMS) were used to represent the section of employment. According to the 2016 data, there were 4,332 people aged 15 years old and above, about 70 percent were males (3,039) and 30 percent were females (1,293). The results showed that there were more males in the labor force than females. It also showed that 95.92 percent of the males and 93.21 percent of the females were employed.

Employed persons account to 4,119 corresponding to 95.08 percent of the total population ages 15 years old and over whereas those unemployed account 213 or 4.92 percent of the same age bracket (Table De-09).

*Table De- 22 Labor Force by Sex and Employment Status, 2016*

| | POPULATION 15 YEARS OLD AND OVER | LABOR FORCE | | | | NOT IN THE LABOR FORCE |
|---|---|---|---|---|---|---|
| | | Employed | % | Unemployed | % | |
| **MALE** | 3039 | 2,915 | 95.92 | 124 | 4.08 | 4,401 |
| **FEMALE** | 1293 | 1,204 | 93.12 | 89 | 6.88 | 6,044 |
| **TOTAL** | **4,332** | **4,119** | **95.08** | **213** | **4.92** | **10,445** |

Source: *Community-Based Monitoring System (2016 census)*

## 3.2 Population Exposure and Risk to Hazards

Population exposure shall indicate the spatial location and the number of potentially-affected persons as well as the demographic characteristics of local inhabitants that shall be used in analysing the sensitivity, vulnerability, and adaptive capacity. In developing the exposure data base, the 2016 population record from Community-Based Monitoring System (CBMS) was used. According to the record, there is a total population of 14,777 in 3,387 households. Unfortunately, 59.70% of the total population belong to the poverty threshold. In addition to that, 49.54% are living in makeshift houses while 2.36% are informal settlers. Furthermore, the percentage of young and old dependents, or those aged younger than 15 years and older than 65 years, is 25.68%. Lastly, malnourished individuals and persons with disabilities are to 2.41% and 1.38%, respectively. Given these vulnerabilities, the need to reduce the exposure and risk to hazards of population must be given necessary attention.

There is high percentage of population who are living below the poverty threshold in the municipality. Barangay Canyayo has the highest percentage with 87.32% followed by Pandan (69.37%) and Mat-i (68.16). Barangay Agmanic has the lowest percentage with 46.06%.

Barangay Poblacion has the highest percentage of informal settlers with 5.61%, followed by Barangays Canyayo and Guinbirayan with 4.58% and 3.05%, respectively. Barangay Magsaysay has the lowest percentage with 0.33%.

Barangay Canyayo (59.37%), along with barangays Danao Norte (56.52%), Pandan (54.93%), Guintigbasan (53.41%), Agmanic (53.33%), and Mat-i (51.43%), were found to have high percentage of population living in dwelling units with walls made from light materials. Barangay Danao Sur has the lowest percentage with 35.26%.

Barangay Agmanic was found to have highest percentage of malnourished individuals with 4.17% of their population. It is followed by barangays Magsaysay (3.85), Tabugon (3.60%), Danao Norte (3.37%), and Guintigbasan (3.06%). Barangay Mat-i was found to have lowest percentage of malnourished individuals

Barangay Agmanic was found to also have the highest percentage of people with disabilities. It is followed by Mat-I (1.84%), Guinbirayan (1.78%), and Guintigbasan (1.58%). Barangay Canyayo has the lowest percentage of persons with disabilities.

Young (<15 years of age) and old (>65 years of age) dependents are also considered in vulnerability of population. Barangay Danao Norte was found to have the highest percentage of young and old dependents with 29.78%. It is followed by Guinbirayan, Magsaysay, and Poblacion with 28.38%, 27.60%, and 26.19%, respectively. Barangay Canyayo has the lowest percentage of young and old dependents.

Households with access to financial assistance and to infrastructure-related mitigation measures (IRMM) such as evacuation centers, riprap, and sea walls, amount to more than 10 percent but less than 20 percent of the affected households. Pantawid Pamilyang Pilipino Program (4Ps), Aid to Individuals in Crisis Situations (AICS), and financial assistance to victims of disasters are being implemented. Different facilities like schools, barangay halls, (covered) courts, and churches in each barangay can be utilized as evacuation centers except to facilities that are exposed to hazards. Not more than 20 percent of the affected households have the capacity and willingness to retrofit and relocate. Households with access to climate, climate change, and hazards-related information in affected areas only amount to five (5) to 10 percent. Furthermore, the local government of Santa Fe

has moderate capacity to invest in risk management and climate change adaptation or mitigation projects. Given the vulnerabilities, adaptive capacities must be improved to reduce the negative impacts of climate change.

**Flood Exposure and Risk**

All barangays of Santa Fe have population exposed to flood. These areas with population exposed to flood are low-lying and located near creeks or river systems. The percent exposure of population to hazards are: Agmanic (34.85%), Canyayo (30.56%), Danao Norte (13.36%), Danao Sur (2.48%), Guinbirayan (32.84%), Guintigbasan (40.31%), Magsaysay (11.01%), Mat-i (20.32%), Pandan (85.62%), Poblacion (59.16%), and Tabugon (77.06%).

The population exposed to flood in 11 barangays are categorized with moderate risk to flood. Barangays Pandan, Poblacion, and Tabugon were identified to have highest percentage of population at moderate risk to flood with 85.62%, 59.16%, and 77.06%, respectively. Furthermore, barangay Danao Sur has the lowest percentage of population at moderate risk to flood with only 2.48%.

**Landslide Exposure and Risk**

All 11 barangays of Santa Fe have population exposed to landslide. This can be attributed to the geophysical environment of the municipality having hills and mountain ridges that divided each barangay.

The population with low susceptibility to landslide are: Agmanic (100%), Canyayo (82%), Danao Norte (87%), Danao Sur (96%), Guinbirayan (98%), Guintigbasan (80%), Magsaysay (58%), Mat-i (87%), Pandan (73%), Poblacion (99%), and Tabugon (100%).

Furthermore, barangays whose population have moderate susceptibility to landslide are Canyayo (20%), Danao Norte (13%), Danao Sur (4%), Guinbirayan (2%), Guintigbasan (20%), Magsaysay (42%), Mat-i (13%), Pandan (20%), and Poblacion (1%).

In addition to that, only barangay Pandan with seven percent (7%) of its population is exposed to high susceptibility to landslide. These barangays were all categorized with moderate risk to landslide.

**Tsunami Exposure and Risk**

Five (5) barangays are exposed to tsunami namely Agmanic, Guinbirayan, Pandan, Poblacion, and Tabugon. The total population exposed to tsunami is 1,926 people. Poblacion has the highest number of population exposed to tsunami with 760 people followed by Pandan with 529 people. Barangays with least number of population exposed to tsunami are Guinbirayan and Tabugon with 69 and 85, respectively. Agmanic has 482 people exposed to tsunami. All of these barangays are at low risk to tsunami.

*Table 23 Population Exposure and Risk to Hazards*

| DATABASE | | | | FLOOD | | | | LANDSLIDE | | | | TSUNAMI | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | Barangay Population | Estimated Residential Area (Hectares) | Residential Area to Population Density | Flood Susceptibility | Affected Area | Exposed Population | Risk Category | Landslide Susceptibility | Affected Area (Hectares) | Affected Population | RISK CATEGORY | Tsunami Susceptibility | Affected Area (Hectares) | Affected Population | RISK CATEGORY |
| AG | 1489 | 42.34294 | 35.16525 | H | 4.7385 | 167 | MODERATE | | | | | L | 13.71 | 482 | Low |
| | | | | M | 2.9065 | 102 | MODERATE | | | | | | | | |
| | | | | L | 7.1151 | 250 | MODERATE | L | 42.34294 | 1489 | MODERATE | | | | |
| CA | 1511 | 22.87779 | 66.04658 | | | | | M | 4.554326 | 301 | MODERATE | | | | |
| | | | | | | | | L | 18.6715 | 1233 | MODERATE | | | | |
| DN | 1163 | 7.402925 | 157.1001 | H | 0.494178 | 78 | MODERATE | M | 0.954826 | 150 | MODERATE | | | | |
| | | | | L | 0.49418 | 78 | MODERATE | L | 6.448073 | 1013 | MODERATE | | | | |
| DS | 712 | 3.296264 | 216.0021 | | | | | M | 0.128258 | 28 | MODERATE | | | | |
| | | | | | | | | L | 3.168045 | 684 | MODERATE | | | | |
| GB | 1571 | 39.17324 | 40.10391 | H | 5.1509 | 207 | MODERATE | | | | | L | 1.731 | 69 | Low |
| | | | | M | 1.1592 | 46 | MODERATE | M | 0.595478 | 24 | MODERATE | | | | |
| | | | | L | 6.5523 | 263 | MODERATE | L | 38.50368 | 1544 | MODERATE | | | | |
| GT | 696 | 14.28615 | 48.7185 | H | 0.9945 | 48 | MODERATE | | | | | | | | |
| | | | | M | 1.6202 | 79 | MODERATE | M | 2.914094 | 142 | MODERATE | | | | |
| | | | | L | 3.1445 | 153 | MODERATE | L | 11.37195 | 554 | MODERATE | | | | |
| MG | 1322 | 17.08833 | 77.36275 | H | 0.9945 | 48 | MODERATE | | | | | | | | |
| | | | | M | 1.6202 | 79 | MODERATE | M | 7.128064 | 551 | MODERATE | | | | |
| | | | | L | 3.1445 | 153 | MODERATE | L | 9.960263 | 771 | MODERATE | | | | |
| MT | 1033 | 22.84333 | 45.22107 | H | 3.3945 | 154 | MODERATE | M | 3.019889 | 137 | MODERATE | | | | |
| | 1033 | 22.84333 | 45.22107 | M | 1.2471 | 56 | MODERATE | L | 19.82411 | 896 | MODERATE | | | | |
| PD | 1282 | 37.76147 | 33.94995 | H | 13.263 | 450 | MODERATE | H | 2.774562 | 94 | MODERATE | L | 15.59 | 529 | Low |
| | 1282 | 37.76147 | 33.94995 | M | 2.1561 | 73 | MODERATE | M | 7.376137 | 250 | MODERATE | | | | |

| DATABASE | | | | FLOOD | | | | LANDSLIDE | | | | TSUNAMI | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | Barangay Population | Estimated Residential Area (Hectares) | Residential Area to Population Density | Flood Susceptibility | Affected Area | Exposed Population | Risk Category | Landslide Susceptibility | Affected Area (Hectares) | Affected Population | RISK CATEGORY | Tsunami Susceptibility | Affected Area (Hectares) | Affected Population | RISK CATEGORY |
| | 1282 | 37.76147 | 33.94995 | L | 16.914 | 574 | MODERATE | L | 27.66396 | 939 | MODERATE | | | | |
| PB | 2147 | 43.42607 | 49.44034 | H | 7.9906 | 395 | MODERATE | | | | | L | 15.38 | 760 | Low |
| | | | | M | 3.5769 | 177 | MODERATE | M | 0.564337 | 28 | MODERATE | | | | |
| | | | | L | 14.121 | 698 | MODERATE | L | 42.85588 | 2119 | MODERATE | | | | |
| TB | 1851 | 15.88301 | 116.5396 | H | 5.683 | 662 | MODERATE | | | | | L | 0.73 | 85 | Low |
| | | | | M | 0.436180 | 51 | MODERATE | | | | | | | | |
| | | | | L | 6.1191 | 713 | MODERATE | L | 15.82488 | 1844 | MODERATE | | | | |

# 4. SOCIAL SECTOR

## 4.1 Education

The municipality has a total of 20 schools, 17 of which are public schools and three (3) are private schools. The three (3) private schools offer preschool education only while 14 public schools offer preschool and elementary education, and two (2) public schools offer secondary education. For tertiary education, the Romblon State University-Sta. Fe Campus in barangay Poblacion offers three degree courses namely, Bachelor of Science in Fisheries, Bachelor in Elementary Education, and Bachelor in Secondary Education.

### 4.1.1 Number of Enrollment

School records show that the total student population for the year 2015-2016 is 5,024, which is lower than the enrolment record of the academic year 2014-2015. The highest numbers of enrolees come from elementary and secondary with a total of 2,774 and 1,537 students, respectively. By academic year 2015-2016, all elementary schools showed a decrease in enrollment which can be attributed to the implementation of the K-12 Program. The program requires children aged three (3) to six (6) years old to enrol to Kinder I and Kinder II before enrolling at Primary Schools, thus, affecting the enrollment at Elementary Schools. On the other hand, for the secondary level, the Santa Fe National High School had an increase in its number of enrolees while the Guinbirayan National High School had maintained its number of enrolees for the year 2015-2016.

*Table SS-Ed 24 Historical Enrollment by Level for the Last Three (3) School Years*

| Type/Level | AY 2013-2014 | AY 2014-2015 | | AY 2015-2016 | |
|---|---|---|---|---|---|
| | Number | Number | Increase/Decrease (%) | Number | Increase/Decrease (%) |
| **Pre-school** | | | | | |
| **Public** | | | | | |
| **Agmanic Elementary School** | 38 | 44 | ↑16 | 43 | ↓2 |
| **Canyayo Elementary School** | 11 | 30 | ↑173 | 11 | ↓63 |
| **Danao Norte Elementary School** | 17 | 32 | ↑88 | 29 | ↓9 |
| **Danao Sur Elementary School** | 20 | 8 | ↓60 | 20 | 150 |
| **Guinbirayan Elementary School** | 46 | 40 | ↓13 | 45 | 13 |
| **Guintigbasan Elementary School** | 33 | 29 | ↓12 | | |
| **Guinpoingan Elementary School** | 16 | 16 | 0 | 17 | 6 |

| Type/Level | AY 2013-2014 | AY 2014-2015 | | AY 2015-2016 | |
|---|---|---|---|---|---|
| | Number | Number | Increase/Decrease (%) | Number | Increase/Decrease (%) |
| **Lamberto Antaran Memorial School** | 31 | 25 | ↓19 | 23 | ↓8 |
| **Magsaysay Elemetary School** | 29 | 27 | ↓7 | 22 | ↓19 |
| **Mat-i Elementary School** | 44 | 36 | ↓18 | 33 | ↓8 |
| **Pandan Elememtary School** | 30 | 20 | ↓33 | 30 | ↑50 |
| **Santa Fe Central Elementary** | 38 | 26 | ↓32 | 41 | ↑58 |
| **Tabugon Elementary School** | 34 | 35 | ↑3 | 22 | ↓37 |
| **Vicente Anselma Gutierrez Montiel Memorial School** | 13 | 9 | ↓31 | 5 | ↓44 |
| **Private** | | | | | |
| **Light of Hope Integrated Academy, Incorporated** | Not Yet Operational | Not Yet Operational | Not Yet Operational | 7 | No changes |
| **St. Vincent Ferrer Catholic School of Sta. Fe, Romblon, Inc.** | 88 | 82 | ↓7 | 67 | ↓18 |
| **Stepping Stone Christian Learning School** | 24 | 27 | ↑13 | 25 | ↓7 |
| **Elementary** | | | | | |
| **Agmanic Elementary School** | 266 | 304 | ↑14 | 259 | ↓15 |
| **Canyayo Elementary School** | 75 | 91 | ↑21 | 85 | ↓7 |
| **Danao Norte Elementary School** | 170 | 192 | ↑13 | 169 | ↓12 |
| **Danao Sur Elementary School** | 98 | 110 | ↑12 | 89 | ↓19 |
| **Guinbirayan Elementary School** | 292 | 330 | ↑13 | 278 | ↓16 |
| **Guintigbasan Elementary School** | 201 | 234 | ↑16 | 201 | ↓14 |
| **Guinpoingan Elementary School** | 160 | 153 | ↓4 | 135 | ↓12 |
| **Lamberto Antaran Memorial School** | 197 | 214 | ↑9 | 184 | ↓14 |

| Type/Level | AY 2013-2014 | AY 2014-2015 | | AY 2015-2016 | |
|---|---|---|---|---|---|
| | Number | Number | Increase/Decrease (%) | Number | Increase/Decrease (%) |
| **Magsaysay Elemetary School** | 200 | 224 | ↑12 | 193 | ↓14 |
| **Mat-i Elementary School** | 241 | 244 | ↑1 | 210 | ↓14 |
| **Pandan Elememtary School** | 200 | 221 | ↑11 | 183 | ↓17 |
| **Santa Fe Central Elementary** | 520 | 534 | ↑3 | 495 | ↓7 |
| **Tabugon Elementary School** | 241 | 266 | ↑10 | 231 | ↓13 |
| **Vicente Anselma Gutierrez Montiel Memorial School** | 61 | 72 | ↑18 | 63 | ↓13 |
| **Secondary** | | | | | |
| **Santa Fe National High School** | 1003 | 1032 | ↑3 | 1073 | ↑4 |
| **Mat-i Extension** | | | | | |
| **Tabugon Extension** | | | | | |
| **Guinbirayan National High School** | 467 | 464 | ↓1 | 464 | 0 |
| **Tertiary** | | | | | |
| **Romblon State University** | 157 | 206 | ↑31 | 252 | ↑22 |

**Sources: DepEd, Secondary/Tertiary Schools (2017)**

**Enrollment Participation Ratio (EPR).** The total enrollment of all school levels for the academic year 2015-2016 is 5,597 with enrollment participation rate of 79 percent. To compute the EPR, interpolation technique was used and the results are summarized in Table SS-Ed 02.

- *Pre-School Education.* There 14 public elementary schools and three (3) private schools that offer pre-school education. For the academic year 2015-2016, the total enrollment for pre-school is 1,034 students with 83 percent EPR. This indicates that for 100 children aged 3-6 years old, there are about 83 children who actually attended pre-school.

- *Elementary Education.* There are 14 public elementary schools in the municipality. The total enrollment in elementary education for academic year 2015-2016 is 2,774 students with 95 percent EPR. This indicates that only five (5) out of 100 children aged 6-12 years old did not attend school.

- *Secondary Education.* There are two (2) public schools that offer secondary education in the municipality. The total enrollment in secondary education for academic year 2015-2016 is 1,537 students with 103 percent EPR.

- *Tertiary Education.* There is only one (1) school that offers tertiary education in the municipality. The total number of enrollment in tertiary education is 252 with only 18 percent EPR. This indicates that more than half of the school-going population aged 17-21 did not attend school in the municipality.

*Table SS-Ed 25 Enrollment Participation Ratio (EPR), AY 2015-2016*

| TYPE/LEVEL | SCHOOL GOING AGE | NUMBER OF ENROLLEES | | | EPR |
|---|---|---|---|---|---|
| | | Public | Private | Total | |
| **Pre-School (3-6)** | 1246 | 935 | 99 | 1,034 | 83 |
| **Elementary (6-12)** | 2907 | 2774 | — | 2,774 | 95 |
| **Secondary (13-16)** | 1486 | 1,537 | — | 1,537 | 103 |
| **Tertiary/Vocational (17-21)** | 1414 | 252 | — | 252 | 18 |
| **TOTAL** | **7053** | | | **5,597** | **79** |

Source: *Elementary/Secondary/Tertiary Schools*
**Interpolated from the PSA 2015 census; age is adjusted to present age of enrolled students not employing the age groups in the HLURB 2nd Guidebook.*

**Student-Teacher and Student-Classroom Ratios.** The average student–teacher and student-classroom ratios in the pre-school level for the academic year 2015-2016 I s 33:1 and 27:1, respectively. The recommended standards of the Department of Education is 25:1 which means these ratios are relatively higher indicating insufficiency of teachers and classrooms for pre-school level.

In the elementary level, the student-teacher and student-classroom ratios are 30:1 and 31:1, respectively. These ratios are satisfactory to the recommended ratio of the DepEd which is 35:1 indicating that there are sufficient teachers and classrooms in the elementary level.

Furthermore, the student-teacher and student-classroom ratios in the secondary level are 25:1 and 51:1, respectively. The student-teacher ratio is satisfactory to the DepEd recommendation of 40:1. It means there are sufficient teachers in the secondary level. However, the student-classroom ratio is not satisfactory to the DepEd recommendation. It indicates that the classrooms are not sufficient to the population of high school students.

Table SS-Ed 28 provides more information on the student-teacher and student-classroom ratios by level for the academic year 2015-2016.

*Table SS-Ed 26 Student-Teacher and Student-Classroom Ratio by Level, AY 2015-2016*

| TYPE/LEVEL | NUMBER OF ENROLLEES | | | NO. OF TEACHERS | NO. OF CLASS-ROOMS | STUDENT-TEACHER RATIO | STUDENT-CLASSROOM RATIO |
|---|---|---|---|---|---|---|---|
| | Male | Female | Total | | | | |
| **Pre-School** | | | | | | | |
| **Public** | | | | | | | |
| Agmanic Elementary School | 31 | 12 | 43 | 1 | 1 | 43:1 | 43:1 |
| Canyayo Elementary School | 8 | 3 | 11 | | 1 | | 11:1 |
| Danao Norte Elementary School | 15 | 13 | 28 | 1 | 1 | 28:1 | 28:1 |
| Danao Sur Elementary School | 9 | 11 | 20 | | 1 | | 20:1 |
| Guinbirayan Elementary School | 26 | 19 | 45 | 1 | 1 | 45:1 | 45:1 |
| Guinbirayan Elementary School | 17 | 12 | 29 | | 1 | | 29:1 |
| Guinpoingan Elementary School | 10 | 7 | 17 | 1 | 1 | 17:1 | 17:1 |
| Lamberto Antaran Memorial | 14 | 9 | 23 | 1 | 1 | 23:1 | 23:1 |
| Magsaysay Elementary School | 10 | 12 | 22 | 1 | 1 | 22:1 | 22:1 |
| Mat-I Elementary School | 13 | 20 | 33 | 1 | 1 | 33:1 | 33:1 |
| Pandan Elementary School | 18 | 12 | 30 | 1 | 1 | 30:1 | 30:1 |
| Santa Fe Central Elementary | 25 | 16 | 41 | 1 | 1 | 41:1 | 41:1 |
| Tabugon Elementary School | 11 | 11 | 22 | | 1 | | 22:1 |
| Vicente Anselma Gutierrez Montiel Memorial School | 3 | 2 | 5 | 1 | 0 | 5:1 | |
| **Private** | | | | | | | |
| Light of Hope Integrated Academy, Incorporated | 6 | 1 | 7 | 1 | 1 | 7:1 | 7:1 |
| St. Vincent Ferrer Catholic School of Sta. Fe, Romblon, Inc. | 49 | 50 | 99 | 2 | 2 | 49:1 | 49:1 |
| Stepping Stone Christian Learning School | 20 | 5 | 25 | 1 | 1 | 25:1 | 25:1 |
| **Elementary** | | | | | | | |
| **Public** | | | | | | | |
| Agmanic Elementary School | 135 | 124 | 259 | 6 | 6 | 43:1 | 43:1 |
| Canyayo Elementary School | 50 | 35 | 85 | 3 | 3 | 28:1 | 28:1 |
| Danao Norte Elementary School | 72 | 96 | 168 | 6 | 6 | 28:1 | 28:1 |
| Danao Sur Elementary School | 46 | 43 | 89 | 4 | 4 | 22:1 | 22:1 |
| Guinbirayan Elementary School | 133 | 145 | 278 | 8 | 8 | 35:1 | 35:1 |
| Guintigbasan Elementary School | 93 | 108 | 201 | 6 | 6 | 34:1 | 34:1 |
| Guinpoingan Elementary School | 75 | 60 | 135 | 6 | 6 | 23:1 | 23:1 |
| Lamberto Antaran Memorial School | 101 | 83 | 184 | 6 | 6 | 31:1 | 31:1 |
| Magsaysay Elementary School | 109 | 84 | 193 | 6 | 6 | 32:1 | 32:1 |
| Mat-I Elementary School | 115 | 95 | 210 | 6 | 6 | 35:1 | 35:1 |

| TYPE/LEVEL | NUMBER OF ENROLLEES | | | NO. OF TEACHERS | NO. OF CLASS-ROOMS | STUDENT-TEACHER RATIO | STUDENT-CLASSROOM RATIO |
|---|---|---|---|---|---|---|---|
| | Male | Female | Total | | | | |
| Pandan Elementary School | 96 | 87 | 183 | 6 | 6 | 31:1 | 31:1 |
| Santa Fe Central Elementary School | 258 | 237 | 495 | 20 | 17 | 25:1 | 29:1 |
| Tabugon Elementary School | 125 | 106 | 231 | 6 | 6 | 39:1 | 39:1 |
| Vicente Anselma Gutierrez Montiel Memorial School | 34 | 9 | 63 | 3 | 3 | 21:1 | 21:1 |
| **Secondary** | | | | | | | |
| **Public** | | | | | | | |
| Sta. Fe National High School | 518 | 555 | 1073 | 44 | 18 | 24:1 | 60:1 |
| Guinbirayan National High School | 217 | 228 | 445 | 18 | 12 | 35:1 | 35:1 |
| | | | | | | | |
| **Tertiary** | | | | | | | |
| **Public** | | | | | | | |
| Romblon State University | 84 | 168 | 252 | 8 | 8 | 32:1 | 32:1 |

Source: *Elementary/Secondary/Tertiary Schools*

### 4.1.2 Inventory of Educational Facilities

Different school facilities should be available to the school-going population. Unfortunately, most of the schools in the municipality lack or need further improvement of their school facilities to be able to give an environment that is conducive for learning. Laboratories, libraries, shops, clinic, and rest rooms need further improvement.

In pre-schools, only one school has a library and the rest of the schools have rest rooms that are in good condition.

In elementary level, only four (4) schools have rest rooms that are still in good condition and the others need further improvement while only three (3) schools have a library while most have none. Santa Fe Central Elementary School is the only elementary school with almost complete facilities with canteen and computer room.

For secondary level, Guinbirayan National High School has complete facilities that need further improvement. The laboratory, library, and rest room facilities are all in good condition.

For tertiary level, the laboratory of Romblon State University-Santa Fe Campus is in critical condition and needs immediate action. The rest of the facilities are either in good condition or not available.

The table below would provide more school information with the condition of facilities.

*Table SS-Ed 27 School by Level, Type, Facilities, and Condition*

| Name of Schools | Location (Barangay) | Area Occupied (sq.m) | Facilities and Condition | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Lab | Shop | Lib | Clinic | Rest Room | Play Ground | Others (Specify) |
| **Preschool** | | | | | | | | | |
| **Private** | | | | | | | | | |
| St. Vincent Ferrer Catholic School of Sta. Fe, Romblon, Inc. | Poblacion, Tabugon, Agmanic | 15.5 | N | N | N | N | G | N | — |
| Light of Hope Integrated Academy, Inc | Guinbirayan | 300 | N | N | G | N | G | P | — |
| Stepping Stone Christian Learning School | Poblacion | 15.5 | N | N | N | N | G | N | — |
| **Public** | | | | | | | | | |
| **Elementary** | | | | | | | | | |
| **Public** | | | | | | | | | |
| Agmanic Elementary School | Agmanic | 1,007.224 | N | N | — | N | N | N | — |
| Canyayo Elementary School | Canyayo | 621.253 | N | N | — | N | N | N | — |
| Danao Norte Elementary School | Danao Norte | 8,512 | N | N | — | N | G | G | Reading Area |
| Danao Sur Elementary School | Danao Sur | 4,298 | N | N | — | N | N | N | — |
| Guinbirayan Elementary School | Guinbirayan | 7,740 | N | N | — | N | G | G | — |
| Guintigbasan Elementary School | Guintigbasan | 270.591 | N | N | — | N | N | N | — |
| Guinpoingan Elementary School | Guinpoingan, Tabugon | 774.896 | N | N | — | N | G | G | — |
| Lamberto Antaran Memorial School | Lunoc, Canyayo | 10,000 | N | N | — | N | N | N | — |
| Magsaysay Elementary School | Magsaysay | 10,000 | N | N | — | N | G | N | Computer Room, Office |

| Name of Schools | Location (Barangay) | Area Occupied (sq.m) | Facilities and Condition | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | Lab | Shop | Lib | Clinic | Rest Room | Play Ground | Others (Specify) |
| Mat-I Elementary School | Mat-i | 9,432 | N | N | — | N | N | G | — |
| Pandan Elementary School | Pandan | 5000 | N | N | N | N | G | G | Computer Room |
| Santa Fe Central Elementary School | Poblacion | 10,046 | N | N | — | P | G | G | Canteen, Computer Room, Office |
| Tabugon Elementary School | Tabugon | 708.932 | N | N | — | N | N | N | — |
| Vicente Anselma Gutierrez Montiel Memorial School | Cabangahan, Guinbirayan | 6,405 | N | N | N | N | N | N | — |
| **Secondary** | | | | | | | | | |
| **Public** | | | | | | | | | |
| Sta. Fe National High School | Poblacion | 4,280 | G | N | G | N | G | G | — |
| Tabugon Extension | Tabugon | | N | N | N | N | G | N | — |
| Mat-i Extension | Mat-i | | N | N | N | N | G | N | — |
| Guinbirayan National High School | Guinbirayan | 1000 | P | N | P | P | P | P | Canteen, P |
| **Tertiary** | | | | | | | | | |
| **Public** | | | | | | | | | |
| Romblon State University | Poblacion | 500 | C | N | G | N | G | G | N |

Source: *Elementary/Secondary/Tertiary School*

**For public preschool, facilities and equipment are the same with public elementary*

G – Good condition, P-poor, C- critical or requiring priority action, N- none or no such facility

### 4.1.3 Tertiary Education

The only tertiary school operating in the municipality is the Romblon State University-Santa Fe Campus located in Barangay Poblacion. RSU offers three (3) courses namely, Bachelor in Elementary Education, Bachelor in Secondary Education, and Bachelor of Science in Fisheries. It is a state university with P100 per unit tuition fee. Table below shows total enrollment for academic year 2015-2016 by course offered by RSU.

*Table SS-Ed 28 Tertiary and Technical/Vocational Schools by Type and Total Enrollment, AY 2015-2016*

| BARANGAY | NAME OF SCHOOL | AREA (sq. m) | TYPE | NO. OF ENROLLEES | COURSE OFFERED |
|---|---|---|---|---|---|
| Poblacion | Romblon State University | 1,220 | University | 80 | BS Fisheries |
| | | | | 98 | Bachelor in Elementary Education |
| | | | | 74 | Bachelor in Secondary Education |
| **TOTAL** | | | | **252** | |

Source: *Romblon State University-Santa Fe Campus Records (2017)*

*Table SS-Ed 29 Education Sector Analysis Matrix*

| Technical Findings/ Observations | Implications (Effects) | Policy Options/ Interventions |
|---|---|---|
| Increase of students in 2019; Lack of Teachers; Lack of instructional room and other facilities | Lack of Classrooms; Teachers were overloaded; Overcrowded rooms | Request funds for construction of additional classrooms; Request additional teacher items; Request additional classrooms |
| Inadequate books and other references (reading materials) | Poor quality education | Request for book donors and funds for books distribution |
| Lack of computers and other equipment | Illiteracy of students as well as of teachers to technology | Request funds for provision of necessary school equipment |
| Unsafe and unsecured school environment due to: (1) sloppy areas that need to be riprapped; (2) unfinished construction of perimeter fence; no building permit | Poor condition of learning environment and unsafe school facilities; accessible to thieves/ stray animals | Ask financial assistance from LGU and other stakeholders; enforce issuance of building perrmit |

# 4.2 HEALTH AND SANITATION

## 4.2.1 Health Resources

### 4.2.1.1 Health Personnel-Population Ratio

The municipality is served by only one (1) physician resulting into a doctor-population ratio of 1:16,098 considering the 2015 total population from PSA. This shows adequacy in compared with the standard doctor-population of 1:30,000 based on the RHU personnel population ratio per R.A. 1082 of Department of Health. However, the adequacy is not reflected on the number of recorded cases for the top ten leading causes of morbidity shown in Table SS-He 03.

With regards to medical support personnel, the municipality was able to deploy one (1) nurse with permanent plantilla position. The Department of Health (DoH) augmented four (4) nurses under Nurse Deployment Project. The nurse-population ratio accounts to 1:3,220. Other health personnel available include one (1) Rural Sanitary Inspector (also the Municipal Nutrition Officer) and one (1) Dentist. Other health personnel accounted are the two (2) midwives from Rural Health Midwives Place Program, 1 HRAP, and 1 personnel from Public Health Associate Deployment Project. As of 2016, each barangay is provided with a health station or barangay health center with at least 5 health workers with honorarium.

### 4.2.1.2. Health Personnel, Facilities, and Services Rendered

The Rural Health Unit (RHU) located in Poblacion, is the only major health facility in the municipality with an ambulance for emergency situation. The RHU only provides basic health facilities that are listed below. For cases requiring major surgery, patient are brought to nearby municipalities particularly Looc and Odiongan or to Metro Manila if advance treatment necessary.

Health services offered in the RHU include:

- Out-patient Consultation
- Dental Services
- Minor Surgery
- Communicable and Non-communicable diseases management
- Family Planning Counselling
- Operation Timbang
- Expanded Program on Immunization
- Environmental Sanitation
- Maternal, Newborn and Child Health and Nutrition Services
- Basic Emergency Obstretrics and Newborn Care
- Medico Legal Consultation

Tables SS-He 30 and SS-He 31 show the list of medical health personnel and facilities in year 2016 of the RHU and other barangay health stations and centers within the municipality.

*Table SS-He 30 Medical Personnel, 2016*

| PERSONNEL | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Type of Health Services / Facilities** | **Location** | **No. of Doctors** | **No. of Nurses** | **No. of Midwives (Permanent)** | **RSI/ MNAO** | **Dentist II** | **Others / HRH** | **Total** |
| **Main RHU** | Poblacion | 1 | 1 | — | 1 | 1 | 2 RHMPP<br>1 HRAP<br>1 PHA<br>4 NDPs | 12 |
| **BHS** | Mat-i | — | — | — | — | — | 5 BHW, 1 BNS | 5 |
| **BHS** | Magsaysay | — | — | — | — | — | 5 BHW, 1 BNS | 5 |
| **BHC** | Tabugon | — | — | 1 | — | — | 5 BHW, 1 BNS | 6 |
| **BHC** | Danao Norte | — | — | 1 | — | — | 5 BHW, 1 BNS | 6 |
| **BHS** | Guinbirayan | — | — | 1 | — | — | 5 BHW, 1 BNS | 6 |
| **BHC** | Pandan | — | — | 1 | — | — | 5 BHW, 1 BNS | 6 |
| **BHC** | Canyayo | — | — | — | — | — | 5 BHW, 1 BNS | 5 |
| **BHC** | Danao Sur | — | — | — | — | — | 5 BHW, 1 BNS | 5 |
| **BHC** | Agmanic | — | — | — | — | — | 5 BHW, 1 BNS | 5 |
| **BHC** | Guintigbasan | — | — | — | — | — | 5 BHW, 1 BNS | 5 |

Source: *Rural Health Unit, 2016*

*Table SS-He 31 Health Facilities, 2016*

| FACILITY | | | | |
|---|---|---|---|---|
| **Type of Health Services/ Facilities** | Capacity (No. of Beds) | Physical Condition | Location | Area Occupied (Sq.m) |
| **Main RHU** | 3 | For rehabilitation | Poblacion | 579 |

| | | | | |
|---|---|---|---|---|
| **BHS** | — | For upgrading | Mat-i | 16 |
| **BHS** | — | | Magsaysay | 9 |
| **BHC** | — | For upgrading | Tabugon | 21 |
| **BHC** | — | For upgrading | Danao Norte | 9 |
| **BHS** | — | | Guinbirayan | 20 |
| **BHC** | — | | Pandan | 12 |
| **BHC** | — | For upgrading | Canyayo | 20 |
| **BHC** | — | For new construction | Danao Sur | 6 |
| **BHC** | — | For repair | Agmanic | 12 |
| **BHC** | — | For repair | Guintigbasan | 12 |

Source: *Rural Health Unit, 2016*

#### 4.2.1.3. Leading Causes of Morbidity

For the last three (3) years since 2014, Upper Respiratory Tract Infection (URTI) and Hypertensive Cardiovascular Disease (HCVD) were the two (2) leading causes of morbidity in the municipality with a total of 1,423 and 1,372 cases, respectively by the year 2016. Upper Respiratory Tract Infection represents the most common acute illness evaluated in the outpatient setting. It ranges from the common cold to life-threatening illness such as epiglottitis. On the other hand, hypertensive cardiovascular disease is the number one (1) cause of death associated with high blood pressure. It refers to a group of disorders that includes ischemic heart disease, heart failure, and left ventricular hypertrophy.

By year 2016, there was an outbreak of Chikungunia Virus Disease that started from barangay Guinbirayan sometime around June 2016 and was reported to have a total of 158 cases by the end of the same year. No further cases of the virus disease were recorded after the sumilarv and misting in the municipality. Chikungunia is a viral disease transmitted to humans by infected mosquitoes that causes fever and severe joint pains. After the bite of an infected mosquito, illness will usually occur between four (4) to eight (8) days but can last up to 12 days.

Dental problem ranked sixth (6$^{th}$) on top 10 leading causes of morbidity. According to RHU, most of the people are only seeking treatment when there are symptoms of dental problems as oral health is not a main issue with regards to overall health status.

*Table SS-He 32 Ten Leading Causes of Morbidity for the Last Three (3) Years, 2014-2016*

| 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|
| **CAUSES** | | CASES | CAUSES | | CASES | CAUSES | | CASES |
| **1** | Upper Respiratory Tract Infection | 475 | 1 | Upper Respiratory Tract Infection | 443 | 1 | Hypertensive Cardiovascular Disease | 663 |
| **2** | Hypertensive Cardiovascular Disease | 374 | 2 | Hypertensive Cardiovascular Disease | 335 | 2 | Upper Respiratory Tract Infection | 505 |

| 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|
| **CAUSES** | | CASES | CAUSES | | CASES | CAUSES | | CASES |
| **3** | Wounds (all types) | 174 | 3 | Wounds (all types) | 172 | 3 | Wounds (all types) | 274 |
| **4** | Diarrhea | 117 | 4 | Pneumonia | 146 | 4 | Diabetes Mellitus II | 180 |
| **5** | Influenza-like Illness | 79 | 5 | Urinary Tract Infection | 139 | 5 | Chikungunia | 158 |
| **6** | Pneumonia | 75 | 6 | Diarrhea | 121 | 6 | Dental Problems | 148 |
| **7** | Urinary Tract Infection | 74 | 7 | Dental Problems | 81 | 7 | Diarrhea | 131 |
| **8** | Tuberculosis (all forms) | 72 | 8 | Dyspepsia/ Abdominal Colic | 70 | 8 | Pneumonia | 93 |
| **9** | Allergies (all types) | 59 | 9 | Skin Problems | 56 | 9 | Allergies (all types) | 85 |
| **10** | Bronchial Asthma | 38 | 10 | Tuberculosis (all forms) | 55 | 10 | Urinary Tract Infection | 85 |

Source: *Rural Health Unit (2014-2016)*

#### 4.2.1.4 Leading Causes of Mortality Rate

For the last three (3) years, the leading cause of death in the municipality is Hypertensive Cardiovascular Disease (HCVD) with 29, 14, and 15 cases for the years 2014, 2015, and 2016, respectively. It was followed by Cancer with eight (8), 13, and 11 cases for the years 2014, 2015, and 2016, respectively.

According to RHU, high prevalence of HCVD is attributed to lifestyle attitudes, food preferences (especially fatty and salty foods), poor health seeking behaviour, and non-compliance to medication and health education.

Table SS-He-35 shows the 10 leading causes of mortality for the last three (3) years from 2014 until 2015.

*Table SS-He 33 Leading Causes of Mortality Rate for the Last Three (3) Years, 2014-2016*

| 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|
| **CAUSES** | | CASES | CAUSES | | CASES | CAUSES | | CASES |
| **1** | Hypertensive Cardiovascular Disease | 29 | 1 | Hypertensive Cardiovascular Disease | 14 | 1 | Hypertensive Cardiovascular Disease | 15 |
| **2** | Cancer (all kinds) | 8 | 2 | Cancer (all kinds) | 13 | 2 | Cancer (all kinds) | 11 |
| **3** | Chronic Obstructive Pulmonary Disease | 6 | 3 | Chronic Obstructive Pulmonary Disease | 6 | 3 | TB (all forms) | 5 |
| **4** | Degenerative Osteoarthropathy | 5 | 4 | Diseases of the Heart | 5 | 4 | Chronic Obstructive | 5 |

| 2014 | | | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|---|---|
| CAUSES | | CASES | CAUSES | | CASES | CAUSES | | CASES |
| | | | | | | | Pulmonary Disease | |
| 5 | Diabetes Mellitus II | 5 | 5 | Liver Diseases | 5 | 5 | Degenerative Osteoarthropathy | 5 |
| 6 | Diseases of the Heart | 4 | 6 | Seizure Disorder | 4 | 6 | Pneumonia | 3 |
| 7 | Liver Diseases | 3 | 7 | Peptic Ulcer Disease | 3 | 7 | Diseases of the Heart | 3 |
| 8 | Asphyxia | 2 | 8 | Pneumonia | 3 | 8 | Diabetes Mellitus II | 2 |
| 9 | Peptic Ulcer Disease | 2 | 9 | Pulmonary Tuberculosis | 2 | 9 | Peptic Ulcer Disease | 2 |
| 10 | Pulmonary Tuberculosis | 2 | 10 | Renal Failure | 2 | 10 | Aspiration | 2 |

Source: *Rural Health Unit (2014-2016)*

### 4.2.1.5 Fertility, Morbidity, Mortality for the Last Five (5) Years, 2011-2015

According to RHU, increase in infant mortality in 2015 is attributed to poverty and poor education, poor attitudes, poor health seeking behaviour, unavailability of emergency transportation, and poor, health condition of the mother.

*Table SS-He 34 Vital Indices for the Last Five (5) Years, 2011-2015*

| Health Indicator | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| ***Fertility*** | | | | | | |
| **Crude Birth Rates (CBR)** | 21.32 | 21.05 | 21.48 | 21.30 | 21.96 | 18.57 |
| **Total Fertility Rate (TFR)** | | | | | | |
| ***Morbidity*** | | | | | | |
| **General Medical** | 1641 | 2169 | 2024 | 2068 | 2175 | 2322 |
| **Consultative Rate** | 1641 | 2169 | 2024 | 2068 | 2175 | 2322 |
| **Hospitalization Rate** | — | — | — | — | — | — |
| ***Mortality*** | | | | | | |
| **Crude Death Rate (CDR)** | 2.70 | 4.49 | 3.82 | 4.8 | 5.09 | 4.44 |
| **Proportioned Mortality Rate (PMR)** | — | — | — | — | — | — |
| **Infant Mortality Rate (IMR)** | 5.51/1000 LB | 5.54/1000 LB | 2.69 /1000 LB | 2.87 /1000 LB | 22.09 /1000 LB | 19.41/1000 LB |
| **Young Mortality Rate (YMR)** | — | — | — | — | — | — |
| **Maternal Mortality Rate (MMR)** | 0 | 0 | 0 | 0 | 5.51 | 0.12 |

**Source: Municipal Health Office**

#### 4.2.1.6 NUTRITION STATUS

In many countries including the Philippines, the prevalence of overweight and obesity is increasing. The Body Mass Index (BMI) represents a relative weight based on an individual's mass and height. The BMI is used as a simple method to assess how much one's body weight departs from what is normal or desirable for a person of one's height. A healthy BMI measurement is between 20 and 25, while a value below 20 indicates that a person may be underweight and a value above 25 indicates that a person may be overweight. The BMI range of 16-18.5 kg/m$^2$ means a person is underweight while BMI ranging 15-16 kg/m$^2$ signifies severely underweight. A BMI range of 25-30 kg/m$^2$ indicates that a person is overweight.

From year 2014, the cases of underweight and severely underweight children decreased from 172 and 42, respectively, to 135 and 39 in year 2016, respectively. Although some cases of malnutrition increased in year 2016, the total number of malnourished children has still decreased from 888 cases in 2014 down to 718 cases by the end of 2016. These improvements are caused by massive campaign awareness on the importance of healthy diets to prevent malnutrition and contribute to the reduction of overweight and obesity and non-communicable diseases; advocacy to help the public distinguish the difference between healthy and unhealthy foods for better food choices; encouraging the food industry including farmers, manufacturers, distributors, and food establishments to produce and make available healthier food options; advocacy for the enactment of national and local legislation or policies supportive of an enabling environment for healthy diets; annual campaign nationwide held every July to create greater awareness on the importance of nutrition among Filipinos and has been institutionalized by schools and local government units as well as other stakeholders; and lastly, provision of potable water, sanitary toilets, and maintaining clean environment.

Highest prevalence of underweight and/or severely underweight were recorded in Barangays Tabugon (21.79), Canyayo (18.27), and Pandan (10.81). In addition to that, reported cases of wasted and/or severely wasted were from Barangays Agmanic (11.22), Guinbirayan (10.30 and 39.05. For stunted and/or severely stunted, highest prevalence were recorded from Barangay Mat-i (48.11 and 46.11) for years 2013 and 2014, and Barangay Magsaysay (40.49) for year 2015. According to the Municipal Nutritionist, the high prevalence of malnutrition in these *Barangays* can be attributed to inadequate food intake due to food insecurity — poor food production, limited money to buy food, unemployment and large family size; inadequate care for mothers and children due to poor feeding practice, limited knowledge on nutrition and too many household chores; low compliance on exclusive breastfeeding among zero (0) to six (6) months, bottle feeding with "am" and sugar are given; limited knowledge and skills on proper feeding practice; and lastly limited family planning acceptors in families with large household size.

One of the issues concerning health facilities and equipment is the worn-out salter weighing scales. As of 2016, there are 11 units of weighing scales for 11 barangays/ 11 BNS that need replacement. Refer to Table SS-He 06 for number of malnourished children for the last three (3) years from 2014-2016.

*Table SS-He 35 Malnourished Children for the Last Three (3) Years, 2014-2016*

| Degree of Malnutrition | 2014 | 2015 | | 2016 | |
|---|---|---|---|---|---|
| | Number | Number | Increase/ Decrease (%) | Number | Increase/ Decrease (%) |
| **Underweight** | 172 | 121 | ↓ 30 | 135 | ↑ 12 |

| Degree of Malnutrition | 2014 | 2015 | | 2016 | |
|---|---|---|---|---|---|
| | Number | Number | Increase/ Decrease (%) | Number | Increase/ Decrease (%) |
| **Severely Underweight** | 42 | 34 | ↓ 19 | 39 | ↑ 15 |
| **Stunted** | 384 | 386 | ↑ 0.5 | 347 | ↓ 10 |
| **Severely Stunted** | 198 | 143 | ↓ 28 | 121 | ↓ 15 |
| **Wasted** | 51 | 36 | ↓ 29 | 54 | ↑ 50 |
| **Severely Wasted** | 41 | 35 | ↓ 14 | 22 | ↓ 37 |
| **Total** | 888 | 755 | ↓ 15 | 718 | ↓ 4.9 |

Source: *Municipal Health Office (2014-2016)*

### 4.2.2 SANITATION

#### 4.2.2.1 Household Distribution by Type of Toilet Facility

The most dominant type of toilet facilities in the municipality used by 2,395 households is water-sealed flush to sewerage with owned septic tank. However, it is followed by 381 households with no toilet facilities. The least common type of toilet facility used only by 45 households is open pit. Refer to Table SS-Sa 38 for more information.

*Table SS-Sa 36 Number of Households by Type of Toilet Facilities, 2016*

| Type of Toilet Facilities | Number of Households |
|---|---|
| **Water-sealed Flush to sewerage, septic tank, own** | 2395 |
| **Water-sealed Flush to sewerage, septic tank, shared** | 155 |
| **Water-sealed, other depository, own** | 295 |
| **Water-sealed, other depository, shared** | 59 |
| **Closed Pit** | 75 |
| **Open Pit** | 45 |
| **No Toilet** | 381 |
| **Others** | — |
| **TOTAL** | **3405** |

Source: *Community-Based Monitoring System (2016)*

### 4.2.3 Burial Ground

There are three (3) are public and one (1) private cemeteries in the municipality. Three cemeteries are situated in Poblacion and one (1) in Guinbirayan which are all considered in good condition. However, Roman Catholic Cemetery is already congested which requires an expansion area if continuously utilized for the next ten years.

*Table SS-Bu 37 Existing Cemeteries and Memorial Parks in the Municipality*

| Name of Cemetery Memorial Parks | Barangay | Type of Ownership | Area (Ha) | Remarks |
|---|---|---|---|---|
| **Roman Catholic Cemetery** | Poblacion | Public | 0.55 | Good |
| **Poblacion Public Cemetery** | | Public | 0.27 | Good |
| **Lotereña Private Cemetery** | | Private | 0.14 | Good |
| **Guinbirayan Public Cemetery** | Guinbirayan | Public | 0.67 | Good |

Source: *Municipal Planning and Development Coordinator*

### 4.2.4 Solid Waste and Waste Water Facilities

#### 4.2.4.1 Volume of Waste Generation, Waste Composition, and Source

According to the Solid Waste Management of the municipality (2013-2022), the estimated volume (kilogram/day) of disposed waste from Waste Analysis and Characterization Survey (WACS) was 224.66 kilograms. This was composed of biodegradable, recyclable, residual and special wastes. Biodegradable wastes with a total of 131.22 kilograms were composed of yard waste, vegetables and fruit residues, fish cleanings, and food/kitchen wastes among others. Recyclable materials with a total of 27.33 kilograms were composed of PET bottles, tin cans, paper, and carton among others. Some of these wastes are sold to junk shop and mobile scrap buyers. Residual wastes with potential for diversion amount to 22.11 kilograms and were composed of sando bags, candy and/or biscuit wrappers, PPE (thin and elastic) and metallic tetra pack, while residual wastes for disposal amount to 42.99 kilograms and were composed of diapers, textile trimmings, metallic foil laminates and composites, and rags among others. Special waste with a total of 1.19 kilograms are composed of busted bulb/tube/lamps, container of paints/thinner and other solvents, grease and oil, and worn out appliances among others.

Although there are Material Recovery Facilities around the municipality, none of these MRFs are operational. Fortunately, there is a garbage collector truck that is scheduled to collect wastes every Monday, Wednesday, sometimes Thursday, and Friday from seven to ten in the morning. The collected wastes are dumped in a dump site located in Barangay Magsaysay.

Table below shows the volume of waste generation, waste composition, and source.

*Table SS-SW 38 Volume of Waste Generation, Waste Composition, and Source (2013)*

| Major Sources | PCG* kgs/person / day | Total Waste Generation (kgs/day) | | | Waste Composition (kgs/day) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol./day | Volume Generated on Samples | Percentage | Biodegradable | Recyclable | Residual | | | | Special |
| | | | | | | | ***Sando bags/ candy & bisc wrap | PPE (Thin/Elastic) | ***Metallic/Tetra Pack | Other (RW for Disposal) | |
| RESIDENTIAL | | | | | | | | | | | |
| URBAN | **0.43282** | 1708.431 | 58.43107 | 26.01 | 32.10517 | 6.31507 | 1.04673 | 1.01667 | 0.90110 | 16.93333 | 0.11300 |
| RURAL | **0.42922** | 5278.136 | 101.72500 | 45.28 | 63.46526 | 10.23541 | 2.11417 | 1.55966 | 1.58450 | 22.70700 | 0.05900 |
| **Total** | | **6,986.567** | **160.15607** | | **95.57043** | **16.55048** | **3.16090** | **2.57633** | **2.48560** | **39.64033** | **0.17200** |

| Major Sources | PCG* kgs/person / day | Total Waste Generation (kgs/day) | | | Waste Composition (kgs/day) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol./day | Volume Generated on Samples | Percentage | Biodegradable | Recyclable | Residual | | | Other (RW for Disposal) | Special |
| | | | | | | | ***Sando bags/ candy & bisc wrap | PPE (Thin/Elastic) | ***Metallic/Tetra Pack | | |
| | | | | | | | 8.22 | | | | |
| | ***PERCENTAGE BY WASTE COMPOSITION*** | | | | 59.67 | 10.33 | 5.13 | | | 24.75 | 0.107 |
| COMMERCIAL | | | | | | | | | | | |
| GENERAL STORES | **0.4366** | 146.273 | 5.217 | 2.32 | 2.598 | 1.764 | 0.04 | 0.485 | 0.045 | 0.285 | 0.00040 |
| | | | | | | | 0.57 | | | | |
| | ***PERCENTAGE BY WASTE COMPOSITION*** | | | | 49.80 | 33.81 | 10.93 | | | 5.46 | 0.008 |
| WET MARKET | **0.2080** | 2.496 | 5.998 | 2.67 | 2.357 | 2.08 | 0.0013 | 1.257 | 0.022 | 0.271 | 0.00004 |
| | | | | | | | 1.2803 | | | | |
| | ***PERCENTAGE BY WASTE COMPOSITION*** | | | | 39.30 | 34.68 | 21.35 | | | 4.52 | 0.008 |
| FOOD ESTABLISHMENT | **0.1927** | 46.237 | 11.41 | 5.08 | 9.961 | 0.479 | 0.073 | 0.232 | 0.323 | 0.339 | 0.00300 |
| | | | | | | | 0.628 | | | | |
| | ***PERCENTAGE BY WASTE COMPOSITION*** | | | | 87.30 | 4.20 | 5.50 | | | 2.97 | 0.026 |
| INSTITUTIONAL | | | | | | | | | | | |
| OFFICES | **0.1236** | 11.743 | 5.33 | 2.37 | 1.304 | 2.214 | 0.1419 | 0.1334 | 0.1816 | 0.347 | 1.00700 |
| | | | | | | | 0.4569 | | | | |
| | ***PERCENTAGE BY WASTE COMPOSITION*** | | | | 24.47 | 41.54 | 8.57 | | | 6.50 | 18.89 |
| SCHOOL | **0.0399** | 202.931 | 36.55 | 16.27 | 19.430 | 4.25 | 6.83 | 2.87 | 1.25 | 1.92 | |

| Major Sources | PCG* kgs/person / day | Total Waste Generation (kgs/day) | | | Waste Composition (kgs/day) | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Vol./day | Volume Generated on Samples | Percentage | Biodegradable | Recyclable | Residual | | | | Special |
| | | | | | | | ***Sando bags/ candy & bisc wrap | PPE (Thin/Elastic) | ***Metallic/Tetra Pack | Other (RW for Disposal) | |
| | | | | | | | 10.95 | | | | 0.00400 |
| | *PERCENTAGE BY WASTE COMPOSITION* | | | | 53.15 | 11.63 | 39.96 | | | 5.25 | 0.011 |
| **TOTAL** | | **7,396.25** | **224.664** | | **131.224** | **27.33** | **22.10803** | | | **42.80193** | **1.18640** |
| % of Total | | | | | 58.41 | 12.16 | 9.84 | | | 19.05 | 0.53 |

Source: *Municipal Solid Waste Management Plan (2016)*

*Table SS-He 39 Health and Sanitation Sector Analysis Matrix*

| Technical Findings/ Observations | Implications (Effects) | Policy Options/ Interventions |
|---|---|---|
| Lack of emergency vehicle | Quick response cannot be given to medical cases requiring immediate medical attention | Procurement of emergency vehicle/ ambulance |
| Poor condition of health equipment (i.e. salter weighing scales) | Misreading the weights of patients | Procurement of necessary health equipment |
| No functional Material Recovery Facility; no landfill for garbage; no proper waste disposal practices | Dumping of garbage in areas not allocated for landfill | Procurement of land for landfill |
| Existence of backyard piggery and poultry in residential areas | Improper waste disposal; foul odour in the neighbourhood | Enforce existing law/ ordinance (if any) on backyard piggery and poultry |

## 4.3. HOUSING

The data used for analysing the housing situation was based on the 2015 survey of the municipality's Community-Based Monitoring System due to unavailable survey on housing by the PSA.

According to CBMS, the total number of households is 3,387 with 481 coming from Barangay Poblacion followed by 401 from barangay Tubugan. Highest numbers of informal settlers are from Barangays Poblacion and Guinbirayan with 27 and 12, respectively. Both barangays are considered urban barangays. 13 households in Barangay Canyayo are living in makeshift houses while 11 are from Barangay Pandan.

Table below shows the housing situation in 2015.

*Table SS-Ho 40 Housing Situation, 2015*

| BARANGAYS | HOUSEHOLD | NO. OF INFORMAL SETTLERS | NO. OF HOUSES LIVING IN MAKESHIFT HOUSES |
|---|---|---|---|
| **Agmanic** | 330 | 5 | 2 |
| **Canyayo** | 347 | 2 | 13 |
| **Danao Norte** | 253 | 1 | 2 |
| **Danao Sur** | 173 | 2 | 1 |
| **Guinbirayan** | 393 | 12 | 6 |
| **Guintigbasan** | 176 | 5 | 3 |
| **Magsaysay** | 304 | 1 | 0 |
| **Mat-i** | 245 | 4 | 3 |
| **Pandan** | 284 | 13 | 11 |
| **Poblacion** | 481 | 27 | 4 |
| **Tubugan** | 401 | 8 | 7 |

Source: *Community-Based Monitoring System (2015)*

#### 4.3.1.1 Tenure Status by Housing Units and Lots

From the records of CBMS for tenure status, there are 2,285 housing units owned, 23 are being rented, 115 are being occupied for free with consent of owner, and three (3) are being occupied for free without consent of owner as of 2015 CBMS census. No housing unit is being amortized as of 2015 CBMS census. Refer to table 4.3.1.1 for more information on tenure status by housing units and lots.

*Table SS-Ho 41 Tenure Status by Housing Units and Lots*

| Tenure of Status | Housing Unit | | Lot | |
|---|---|---|---|---|
| | No. | % | No. | % |
| **Owned** | 2285 | 67.46 | 2285 | 67.46 |
| **Being Amortized** | — | — | — | — |
| **Rented** | 23 | 0.68 | 10 | 0.30 |
| **Own house, rent lot** | 10 | | | |
| **Own house, rent-free lot, with consent of owner** | 890 | — | — | — |
| **Own house, rent-free lot, without consent of owner** | 19 | — | — | — |
| **Being Occupied for Free with Consent of owner** | 115 | 3.40 | 115 | 3.40 |
| **Being Occupied for Free without Consent of Owner** | 3 | 0.09 | 3 | 0.09 |
| **Living in a public space with rent** | 2 | — | — | — |
| **Living in public space without rent** | 57 | — | — | — |
| **Total** | **3,404** | **—** | **2413** | **—** |

Source: *Community-Based Monitoring System (2015)*

*Table SS-Ho 42 Housing Sector Analysis Matrix*

| Technical Findings/ Observations | Implications (Effects) | Policy Options/ Interventions |
|---|---|---|
| More than half of population in each of six (6) barangays, namely Agmanic, Canyayo, Danao Norte, Guintigbasan, Mat-I, and Pandan, are living in dwelling units made from light materials | Higher sensitivity of these barangays to hazards | Retrofit houses |
| Settlements in flood and/or landslide prone areas | Residents are exposed to natural calamities | Relocate residents living in high risk areas |

# 4.4. SOCIAL WELFARE SERVICES

### 4.3.2 Facilities and Manpower

Facilities for Social Welfare Services include 16 Child Development Centers (formerly Day Care Centers), five (5) barangays has 2 CDCs in Sitio Cabalian of Barangay Agmanic, Sitio Campong of Barangay Canyayo, Sitio Puro of Barangay Guinbirayan, Sitio Tipolo of Barangay Poblacion and Sitio Guinpoingan of Barangay Tabugon. For 2017, another Sitio in Barangay Magsaysay will open a CDC. Only one (1) CDC is not permanent but the construction is on-going.

The LGU complies the responsibility towards the maintenance of the Child Development Service Program is through fund allocation for the maintenance of the physical structure and provision of program materials to all CDCs. The program materials include tables and chairs, wooden shelves, manipulative toys and blocks, supplies and materials, playground apparatus and the like. This is funded from the LGU GAD fund.

One (1) Senior Citizen Day Center, located near the Municipal Hall Building, is constructed as temporary Office of the Senior Citizens Affairs (OSCA). The permanent Senior Citizen Day Center will be constructed this year 2017 which will be funded by the Department of Social Welfare and Development under the Protective Services Program-Assistance to Community in Need (PSP-ACN) in the amount of P1,000,000.00. 10 Senior Citizen office are in the Barangay level which are located at the barangay halls.

For 2017, the DSWD provided fund augmentation for nine (9) CDCs' repair or improvement of P400,000.00 each and two (2) CDCs' construction of P800,000.00 each with a total of P5,200,000.00.

From the 16 CDCs, only three (3) CDCs have no kitchen and mess hall. In support to the Supplementary Feeding Program (SFP) of the DSWD-FOIV MiMaRoPa, the LGU prioritized the construction and/or extension of CDCs for the kitchen and mess hall. The DSWD allocates P15.00 per day per child for 120 days. To date, the implementation of SFP is on its 7$^{th}$ year. Four (4) CDCs with two (2) sessions in a day and 12 CDCs have only one session. All CDCs have an organized Parents Group with elected officers and they are the partners of Child Development Workers (CDWs). The Child Development Service Program is devolved to Barangays that CDWs are considered barangay employees whose honorarium ranges from 1,800.00-4,000.00. The meagre honorarium from the Barangay is augmented by the Municipal Government ranging from P3,000-P3,500.00 depending on the star rating garnered during the accreditation/assessment of CDWS AND CDCs.

The MSWDO provides technical assistance to all CDWs. This office is responsible for the continuing education thru seminars, trainings, and workshops. Monthly meeting is conducted. The Senior Citizens are organized in the barangay level. The Municipal Federation of Senior Citizens Association of Santa Fe is affiliated to the Provincial, Regional, and National Federation. The OSCA head receives P5,000.00 honorarium per month from the one percent OP/PWD Funds. The Municipal Federation President and the OSCA attend the regular quarterly meeting while the Municipal Federation President and the OSCA attend the regular quarterly Provincial meeting.

### 4.4.2 ADEQUACY

The MSWDO manpower include two (2) permanent employees, one (1) MSWDO and one (1) administrative assistant II; and three (3) job orders, 1 assigned as LGU link manpower support to Pantawid Program, 1 assigned as Focal Person for CDS Program, and 1 assigned in the SF Program.

### 4.4.3 SERVICES RENDERED

The LGU of Santa Fe has transparent social welfare services namely, Child's Welfare Program, Women Welfare Program, Family Welfare Program, Person-with-Disability Welfare Program, Senior Citizens, and Special cases.

The services of the MSWDO for Child's Welfare Program include Child Development Service Program, Supplementary Feeding Program, Financial Assistance, Educational Assistance, Counselling, and Referral. As for the Women Welfare Program, Counselling, Financial Assistance, and Referrals are the services that can be rendered.

Other services rendered under the Family Welfare Program include Aid to Individual in Crisis Situation (AICS), Solo Parents, and Victims of Disasters. Solo Parents are given referral, financial assistance, and identification cards. Because there were no calamities for year 2016, no services were rendered for victims of disasters.

Persons with disability are given financial assistance, referral for other services such as assistive devices, medical, educational, financial assistance (through "Tuloy Aral Walang Sagabal") and PWD SOCPEN (Social Pension). To be able to render these services under the Person-with-Disability Welfare Program, PWDs should register and be issued an ID card.

Senior Citizens, on the other hand, are given financial assistance, burial/funeral assistance, referrals for other services like financial assistance, Sulong Family Health Access Program. Senior Citizens receive a monthly pension amounting to P500.00 from DSWD's Social Pension (SOCPEN) Program. To render these services, senior citizens are encouraged to register to be issued an OSCA ID cards.

The MSWDO offers services for Special Cases. These services are for Women in Especially Difficult Circumstances (WEDC), or those who are victims of Republic Act 9262 – Violence Against Women and Children (VAWC); and for Children in Need of Special Protection (CNSP), or those children who are abused physically and/or sexually. The municipality has one (1) case under Children in Conflict with the Law (CICL). To date he is detained at Odiongan District Jail due to the crime committed (rape). However, the MSWDO had already recommended to the Public Attorney's Office for the Release on Recognizance.

*Table SS-SWS 43 Historical Number of Population Served by Type of Clientele System*

| TYPE OF CLIENTELE | PREVIOUS YEARS | | CURRENT YEAR | |
|---|---|---|---|---|
| | 2014 | 2015 | 2016 | Percentage |
| SENIOR CITIZENS | 445 | 787 | 1087 | 23.41 |
| AICS | 265 | 245 | 232 | 5.00 |
| DAY CARE CHILDREN | 470 | 532 | 580 | 12.49 |
| EDUCATIONAL ASSISTANCE | — | — | 15 | 0.32 |
| WOMEN | 360 | 400 | 889 | 19.15 |
| PERSON WITH DISABILITY | 188 | 227 | 264 | 5.69 |
| PWD CHILDREN | 37 | 39 | 39 | 0.84 |
| SOLO PARENT | 164 | 177 | 213 | 4.59 |
| 4Ps BENEFICIARY | 1,314 | 1,314 | 1,314 | 28.30 |
| SPECIAL CASES (e.g. Abandoned, Child Abuse Victims, Battered Wives, With | 10 | — | 10 | 0.22 |
| **TOTAL** | **3,253** | **3,721** | **4,643** | **100%** |

Source: *Municipal Social Welfare and Development Office*

*Table SS-SWS 44 Inventory of Day Care Centers, 2016*

| Facilities | Physical Condition | Remarks | Services | Organization |
|---|---|---|---|---|
| **Agmanic Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Day Care Service Parents' Group |
| **Cabalian Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Day Care Service Parents' Group |
| **Canyayo Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Campong Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Danao Norte Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Danao Sur Day Care** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Guinbirayan Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Puro Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Guintigbasan Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Magsaysay Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Mat-i Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Pandan Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |

| Facilities | Physical Condition | Remarks | Services | Organization |
|---|---|---|---|---|
| **Poblacion Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Tipolo Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Tabugon Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |
| **Guinpoingan Day Care Center** | Concrete | Good | Supplementary Feeding Program; Dental Services; ECCD | Sta. Fe Municipal Day Care Workers' Association |

Source: *Municipal Social Welfare and Development Office (2017)*

*Table SS-SWS 45 Social Welfare Services Sector Analysis Matrix*

| Technical Findings/ Observations | Implications (Effects) | Policy Options/ Interventions |
|---|---|---|
| Rise in the number of clients rendering services from the MSWDO | Unmet demands/assistance for individuals who are in need | Allocate higher budget for various social services |

## 4.5. Protective Services

### 4.5.1 Police

Police Senior Inspector Francis Manito heads the Santa Fe Municipal Police Station (MPS) with one (1) commissioned officer, 20 Police Non-Commissioned Officers (PNCOs), and four (4) non-uniformed personnel (NUPs). This gives a force-population ratio of 1:805 as of PSA 2015 population.

The supposed substation of the MPS located in Barangay Guinbirayan is not in use. From the first month to the last month of the year 2015 and 2016, the municipality is generally peaceful and orderly in spite of crime incidents that occurred which are not considered sensational cases. For two years (2015-2016), there 57 are registered crime incidences.

For the police services, facilities, and equipment, there is one (1) headquarter with 25 personnel, one unit each of Toyota Hi-Lux and Mahindra Enforcer for patrol vehicles, and one motorcycle. Unfortunately, the patrol car (Toyota Hi-Lux) is not serviceable.

*Table SS-PS 46 Protective Services by Facilities and Equipment, 2015*

| Types of Services | Location | Area (Sq.m) | No. of Personnel | Personnel to Population Ratio | Facilities/ Equipment | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Vehicle | Condition | Others | Condition |
| **Police** | | | | | | | | |
| **Headquarters** | Poblacion | 80 | 21 | 1:767 | 1 patrol jeep | G | 5 Computers | G |
| | | | | | 2 motorcycles | G | 2 detention cells | G |
| | | | | | 1 patrol car | P | | |
| **Fire Protection** | | | | | | | | |
| **Headquarters** | Poblacion | 20 | 6 | 1:2,683 | 1 fire truck | G | 2 pairs fire boots | G |
| | | | | | | | 2 pcs helmet | G |
| | | | | | | | 3 pairs gloves | G |
| | | | | | | | 5 pcs 1.5 fire hose | G |
| | | | | | | | 1 pc 2.5 nozzle | G |
| | | | | | | | 2 pcs 1.5 helmet | G |
| **Barangay Peace and Order** | | | | | | | | |
| | Agmanic | 39.5 | 16 | 1:108 | | | Batuta | G |
| | | | | | | | Whistle | G |
| | | | | | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | Canyayo | 67.3 | 9 | 1:172 | | | Batuta | G |
| | | | | | | | Whistle | G |
| | | | | | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | Danao Norte | 109 | — | | | | Batuta | G |
| | | | | | | | Whistle | G |

| Types of Services | Location | Area (Sq.m) | No. of Personnel | Personnel to Population Ratio | Facilities/ Equipment | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Vehicle | Condition | Others | Condition |
| | | | | | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Danao Sur | 20 | — | | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Guinbirayan | 63.5 | 14 | 1:122 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Guintigbasan | 76.2 | 8 | 1:93 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Magsaysay | 119 | 10 | 1:141 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Mat-i | 68.6 | 7 | 1:170 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Pandan | 71.8 | 15 | 1:91 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Poblacion | 34.2 | 14 | 1:167 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |
| | | | | | | | Batuta | G |
| | | | | | | | Whistle | G |
| | Tabugon | 64.4 | 10 | 1:211 | | | Megaphone | G |
| | | | | | | | Boots | G |
| | | | | | | | Flashlight | G |

**Source:** ***Municipal Police Station, Municipal Bureau of Fire Protection, DILG***

*Table SS-PS 47 Crime Incidence by Barangay, by Type, by Sex of Victim for the Last Two (2) Years*

| BARANGAY | TYPE OF CRIME | 2015 | | 2016 | |
|---|---|---|---|---|---|
| | | M | F | M | F |
| AGMANIC | Physical Injury | 1 | | | |
| | Frustrated Homicide | 1 | | 1 | |
| | Direct Assault to the Person in Authority/Resisting Arrest | 1 | | | |
| | Murder | | | | |
| | Attempted Rape | | | | 1 |
| CANYAYO | Threat | | 1 | | |
| | Rape in Relation to R.A. 7610 | | 1 | | |
| | Qualified Theft | 1 | | | |
| | Attempted Homicide | | | 1 | |
| DANAO NORTE | Rape (Art. 266-A RC & R.A. 8353) (PERSONS) | | | | 1 |
| DANAO SUR | Rape in Relation to R.A. 7610 | | 1 | | |
| | Violation of R.A. 9262 (VAWC) | | 1 | | |
| GUINBIRAYAN | Robbery | 1 | | | |
| | Less Serious Physical Injury | | 1 | | |
| | Frustrated Homicide | 1 | | 1 | |
| | Grave threat | | | 1 | |
| | Slander | | | | 1 |
| | Violation of R.A. 9262 (VAWC) | | | 1 | |
| | Violation of R.A. 7610 (Child Abuse Act) | | | 1 | |
| GUINTIGBASAN | Illegal Logging | 1 | | | |
| | Murder | | | 1 | |
| | Homicide | | | 1 | |
| | Frustrated Homicide | | | 1 | |
| MAGSAYSAY | Cattle Rustling | | | | |
| | Homicide | 1 | | | |
| | Theft | | 1 | | |
| | Violation of R.A. 4136 | | | | |
| | Robbery | | | | 1 |
| | Violation of R.A. 7610 (Child Abuse Act) | | | 1 | |
| | Attempted Rape | | | 1 | |
| | Rape (Art. 266-A RC & R.A. 8353) (PERSONS) | | 1 | | 1 |
| MAT-I | Malicious Mischief | | | | |
| | Alarm and Scandal | | | | |
| | Resistance and Disobedience to a Person in Authority | 1 | | | |
| | Violation of R.A. 7610 (Child Abuse Act) | | 1 | | |
| | Frustrated Homicide | | | 1 | |

| BARANGAY | TYPE OF CRIME | 2015 | | 2016 | |
|---|---|---|---|---|---|
| | | M | F | M | F |
| | Physical Injury | | | 1 | |
| | Rape (Art. 266-A RC & R.A. 8353) (PERSONS) | | | | 1 |
| | Kidnapping and Serious Illegal Detention | | | | 1 |
| PANDAN | Attempted Homicide | 1 | | | |
| | Robbery | | | 1 | |
| | Violation of R.A. 4136 | | | | |
| POBLACION | Carnapping (MC) | 1 | | | |
| | Trespass to Dwelling | | 1 | | |
| | Libelous Remarks | | 1 | | |
| | Theft | | 1 | | |
| | Violation of P.D. 1602 (Illegal Gambling) | | | 1 | |
| | Physical Injury | 1 | | | |
| | Alarm and Scandal | | | | |
| | Violation of R.A. 7610 (Child Abuse Act) | | 1 | | |
| | Robbery | | | 2 | |
| | Frustrated Parricide | | | 1 | |
| | Violation of R.A. 4136 | | | | |
| | Malicious Mischief | | | 1 | |
| | Illegal Possession of Firearms | | | 1 | |
| | Resistance and Disobedience to a Person in Authority | | | 1 | |
| TABUGON | Rape in Relation to R.A. 7610 | | 2 | | |
| | Violation of R.A. 7610 (Child Abuse Act) | | 1 | | |
| | Grave threat | | | 1 | |
| | Violation of R.A. 9262 (VAWC) | | | | 1 |
| **TOTAL** | | **12** | **15** | **22** | **8** |

Source: *Municipal Police Station (2017)*

### 4.5.2 FIRE PROTECTION

The Bureau of Fire Protection (BFP) is currently headed by Chief Supt. Leonard Bañago and the Municipal Fire Station is headed by F03 Jose G. Asis with five (5) (excluding himself) other fire protection personnel which totals to six (6) personnel. This gives a personnel to population ratio of 1:2,683 based on the PSA 2015 census population.

The bureau has one serviceable (1) fire truck and the personnel are equipped with personal protective equipment such as 2 pairs fire boots, 2 pcs helmet, and 3 pairs gloves, and fire fighting equipment such as 5 pcs 2.5 fire hose, 5 pcs 1.5 fire hose, 1 pc 2.5 Nozzle, and 2 pcs 1.5 Nozzle.

Regular activities conducted by the bureau include quarterly fire drill participated by barangay brigade, and student and teachers; quarterly earthquake drill participated by MDRRMC, PNP, Coastguard, Health Department, School Head and students; and Kiddy Junior Fire Marshall participated by student and teachers. Furthermore, monthly activities of the bureau included Fire Code Revenue Awareness, Government Occupancy Month, Fire Prevention Month, Fire

Safety Month, Barangay Fire Brigade, School Opening Fire Safety, Emergency and Disaster Preparedness Month, Special People Fire Safety, Assemblies Occupancies Fire Safety Awareness, Industrial Fire and Hazardous Materials Month, Fire Safety Technology Promotion, and Holiday Fire Hazard Month.

There were only two cases of fire incident in the municipality for the last five (5) years since 2012, one happened in 2015, and another in 2016. The fire incident that happened in Danao Sur started from a kerosene lamp while the incident in Pandan started from an unattended charcoal stove.

*Table SS-PS 48 Fire Incidence for the Last Five (5) Years, 2011-2015*

| BARANGAY | ORIGIN/CAUSE | FREQUENCY OF OCCURENCE | | | | |
|---|---|---|---|---|---|---|
| | | 2012 | 2013 | 2014 | 2015 | 2016 |
| Danao Sur | Kerosene lamp | — | — | — | 1 | — |
| Pandan | Unattended charcoal stove | — | — | — | — | 1 |

Source: *Bureau of Fire Protection (2017)*

### 4.5.3 JAIL MANAGEMENT

The municipal jail is located within the premises of the Municipal Police Station (MPS). The same personnel serving the police station are also in-charge in the municipal jail. The jail has two cells to separate the male from female inmates. It lacks beds and other equipment inside it.

*Table SS-PS 49 Protective Services Sector Analysis Matrix*

| Technical Findings/ Observations | Implications (Effects) | Policy Options/ Interventions |
|---|---|---|
| Non-functional police vehicle | Slower police response | Repair or procure police vehicle |
| Firemen are not skilled enough to drive the fire truck | Slower response in case of fire | Train firemen to drive fire truck |
| Lack of necessary fire fighting equipment | Fire is not contained easily | Procure necessary equipment |
| Minimal increase of (non)index crimes | Deterioration of peace and order | Increase police visibility, police patrol |

## Social Services Map

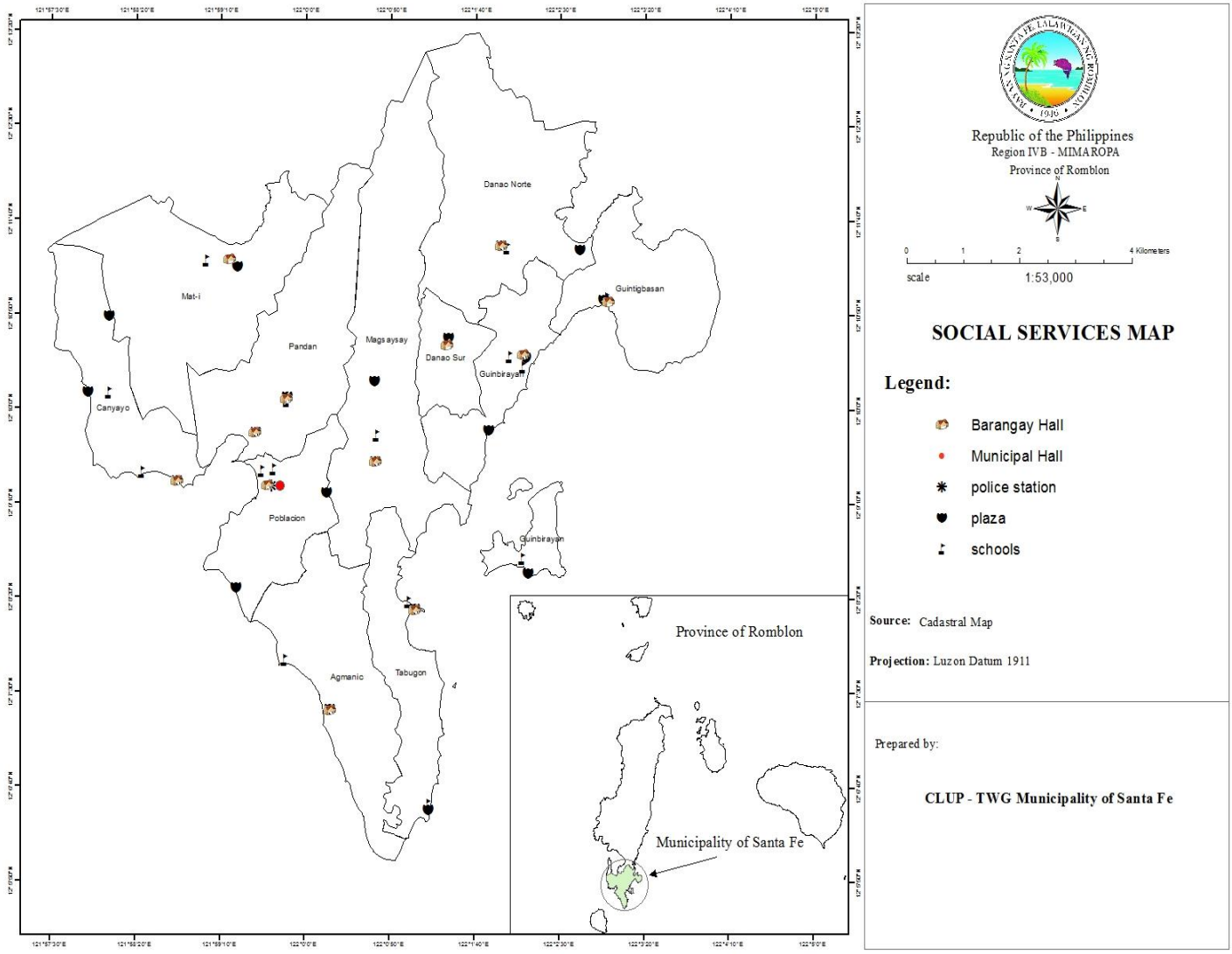



*Figure 15 Social Services Map*

## 4.6. SPORTS AND RECREATION

The municipal hall is near a covered basketball court and the Municipal Plaza. The 652-square meter covered court also serves as a multi-purpose court wherein it serves as a venue for different events or gatherings. It is equipped with a stage and bleachers surrounding the court. All barangays have a basketball court for sports facilities that also serve as multi-purpose pavement. Barangays Tabugon, Magsaysay, Guinbirayan, Poblacion all have covered basketball courts. A cockpit arena in Barangay Poblacion is the only recreation facility in the municipality.

Most of the basketball courts are in good condition except for the ones in Barangays Danao Norte, Guintigbasan, and Pandan. Refer to table SS-SR 52 for existing sports and recreational facility in the municipality.

*Table SS-SR 50 Existing Sports and Recreational Facilities by Barangay, 2016*

| BARANGAY | AREA (square meters) | SPORTS FACILITIES | RECREATION FACILITIES | OWNERSHIP | PHYSICAL CONDITION |
|---|---|---|---|---|---|
| **Agmanic** | 548 | Basketball Court/ MPP | — | Public | Good |
| **Canyayo** | 325 | Basketball Court/ MPP | — | Public | Good |
| **Danao Norte** | 562 | Basketball Court/ MPP | — | Public | Fair |
| **Danao Sur** | 464 | Basketball Court/ MPP | — | Public | Good |
| **Guinbirayan** | 564 | Basketball Court/ MPP | — | Public | Good |
| **Guintigbasan** | 271 | Basketball Court/ MPP | — | Public | Fair |
| **Magsaysay** | 439 | Basketball Court/ MPP | — | Public | Good |
| **Mat-i** | 340 | Basketball Court/ MPP | — | Public | Good |
| **Pandan** | 375 | Basketball Court/ MPP | — | Public | Fair |
| **Poblacion** | 652 | Basketball Court/ MPP | Cockpit Arena (152 sq. m) | Public | Good |
| **Tabugon** | 468 | Basketball Court/ MPP | — | Public | Good |

Source: *Municipal Planning and Development Coordinator (2017)*

*Table SS-SR 51 Sports and Recreation Sector Analysis Matrix*

| Technical Findings/ Observations | Implications (Effects) | Policy Options/ Interventions |
|---|---|---|
| Limited recreational facilities | Limited opportunity for residents to indulge to recreational activities | Provide areas for sports and recreation |
| Poor condition of basketball courts in some barangays | Dissatisfaction of residents indulging in sports activities | Renovate/ rebuild basketball courts |
| Existence of cockpit arena in residential area | Disturbance in the residential area | Cockpit arena must be relocated |

## 4.7 CRITICAL POINT FACILITIES EXPOSURE

Critical point facilities are facilities that provide key socio-economic support services such as schools, hospitals/rural health units, local government buildings, roads, bridges, air/sea ports, communication towers, and power-related and water-related facilities. These facilities are often utilized by the community as evacuation centers in times of calamity.

About 31 facilities are exposed to flood. These facilities are located in barangays Canyayo, Guinbirayan, Guintigbasan, Magsaysay, Mat-i, Pandan, Poblacion, and Tabugon. In addition to that, 81 facilities located in all barangays of the municipality are exposed to landslide. These facilities are necessary in each barangay as they provide different basic social services.

According to the HLURB Guidelines, vulnerability conditions for critical point facilities should focus mainly on the structural design characteristics of buildings and structures. One of the adaptive capacities for critical point facilities is the employment of hazard-resistant design. Out of 80 critical point facilities susceptible to hazards in the municipality, only three (3) are in fair condition while the rest are in good condition. These facilities are Puro Day Care Center, Pandan Foursquare, and Santa Fe Central Elementary School. The first two mentioned facilities are made from light materials and do not employ hazard-resistant design. Unlike the three (3) mentioned facilities, the rest of the facilities in the municipality are in good condition, employ hazard-resistant design, and the wall materials are concrete.

One of the adaptive capacities for critical point facilities is the capacity and willingness to retrofit. Generally for Santa Fe, according to TWG, the owners or the concerned administrators have the capacity to retrofit but are not willing to retrofit. In addition to that, less than or equal to five percent of the facilities are covered by property insurance and infrastructure-related mitigation measures such as sea walls and flood control measures. Furthermore, the local government has moderate capacity to invest in risk management and climate change adaptation or mitigation.

Since the construction of evacuation centers are still going on, the municipality utilizes schools and barangay halls as alternative evacuation centers. In addition to that, the Municipal Disaster Risk Reduction Office has designated households whose houses employ hazard-resistant design to serve as alternative evacuation areas in times of disasters.

**Flood Exposure and Risk**

There are 31 facilities exposed to flood in eight (8) barangays of the municipality. These barangays are Canyayo, Guinbirayan, Guintigbasan, Magsaysay, Mat-i, Pandan, Poblacion, and Tabugon. Based on MGB, there are 18 facilities highly susceptible to flood. Facilities with high flood susceptibility have expected flood depth of greater than or equal to one (1) meter. Six (6) of these are churches, six (6) are day care centers, two (2) are health facilities, three are barangay halls, and one (1) is a public plaza. Furthermore, there are 11 facilities that are moderately susceptible to flood. These include three (3) churches, two (2) elementary schools, two (2) day care centers, two (2) health stations and one (1) Rural Health Unit, and one (1) barangay hall. Facilities with moderate susceptibility can expect up to one meter high of flood. Moreover, three (3) facilities have low susceptibility to flood including one (1) day care center, one (1) barangay hall, and one (1) public plaza.

On the other hand, despite having different susceptibility to flood, 30 facilities are categorized with moderate risk to flood while one (1) facility is categorized with high risk to flood. The facility identified to be located in high risk area is Foursquare Church in Pandan. Among these facilities, only Puro Day Care Center and Pandan Foursquare Church are made from light materials, in fair condition,

and do not employ hazard-resistant design. The rest of the facilities are made of concrete walls, in good condition, and employ a hazard-resistant design.

**Landslide Exposure and Risk**

About 80 facilities are exposed to landslide in all 11 barangays of the municipality. According to landslide susceptibility map of MGB, there are 73 facilities have low susceptibility to landslide. 22 of which are churches, 14 are schools, 12 are day care centers, 12 are health stations, 10 are barangay halls, and three (3) are public plazas. Furthermore, there are six (6) facilities with moderate susceptibility to landslide and three (3) of which are churches, one (1) is a day care center, one (1) is a school and one (1) is a barangay hall. Lastly, only Baptist Church in barangay Danao Norte has high susceptibility to landslide.

However, despite having low, moderate, and high susceptibilities to landslide, all 80 facilities in all 11 barangays are all categorized with moderate risk. Among these facilities, only Puro Day Care Center in Guinbirayan and Foursquare Church in Pandan do not employ hazard-resistant design as these two (2) are made up of light materials. The two mentioned facilities, along with Santa Fe Central Elementary School, are all in fair condition.

**Tsunami Exposure and Risk**

47 facilities from eight (8) barangays are exposed to tsunami. Of these facilities, only Puro Day Care Center is in fair condition and does not employ hazard-resistant design standards while the rest are in good condition with hazard-resistant design standards. In addition to this, the Puro Day Care Center is made up of light materials while the rest are made concrete materials. All of these facilities are at low risk to tsunami.

**Decision Areas and Policy Interventions**

To mitigate negative impacts of climate change to critical point facilities, like the other exposure units, policy interventions were formulated and decision areas were identified. According to risk categories on flood and landslide, Foursquare Church located in Barangay Pandan is at high risk to flood and must therefore be prioritized. In addition to that, there are about 26 critical point facilities that need to be prioritized. These include eight (8) churches, three (3) schools, six (6) day care centers, three (3) health centers, and four (4) barangay halls.

The decision areas for flood include Tabugon, Poblacion, Pandan, Guintigbasan, and Guinbirayan while Danao Norte, Mat-i, Poblacion, Guinbirayan, and Tabugon are the decision areas for landslide. The facilities in these barangays are identified to have higher sensitivity and are more exposed to hazards.

Because these facilities also serve as alternative evacuation centers but are exposed to hazards, the policy interventions include construction of evacuation centers or alternative evacuation centers in safe areas not exposed to hazards which must also employ hazard-resistant design.

In addition to that, facilities must be covered with infrastructure-related mitigation measures such as sea walls, and riprap to lessen the damages to facilities caused by hazards. Furthermore, it is recommended that facilities needing urgent assistance must have property insurance. On the other hand, facilities in fair condition must be repaired employing hazard-resistant design standards. With this, there must also be regular monitoring and maintenance check of the facilities. Furthermore, emergency vehicles must also be procured for faster and more efficient rescue missions and other necessary rescue equipment must also be provided for by the Municipal Disaster Risk Reduction Office.

*Table 52 Critical Point Facilities Exposure and Risk to Hazards*

| DATABASE | | FLOOD | | LANDSLIDE | |
|---|---|---|---|---|---|
| BARANGAY | FACILITY | FLOOD SUSCEPTIBILITY | RISK CATEGORY | LANDSLIDE SUSCEPTIBILITY | RISK CATEGORY |
| AG | Barangay Hall | | | L | MODERATE |
| | Catholic Church | | | L | MODERATE |
| | Day Care Center | | | L | MODERATE |
| | Agmanic Elementary School | | | L | MODERATE |
| | Barangay Health Center | | | L | MODERATE |
| CA | Canyayo Catholic Church | H | MODERATE | L | MODERATE |
| | Canyayo Baptist Church | | | L | MODERATE |
| | Barangay Hall | | | L | MODERATE |
| | Lamberto Antaran Memorial School | | | L | MODERATE |
| | Day Care Center | H | MODERATE | L | MODERATE |
| | Canyayo Elementary School | | | L | MODERATE |
| | Health Center | H | MODERATE | L | MODERATE |
| DN | Baptist Church | | | H | MODERATE |
| | Barangay Hall | | | L | MODERATE |
| | Catholic Church | | | L | MODERATE |
| | Day Care Center | | | L | MODERATE |
| | Danao Norte Elementary School | | | L | MODERATE |
| | Foursquare Church | | | L | MODERATE |
| | Health Center | | | L | MODERATE |
| | Seventh Day Adventist | | | M | MODERATE |
| DS | Barangay Hall | | | L | MODERATE |
| | Catholic Church | | | L | MODERATE |
| | Day Care Center | | | L | MODERATE |
| | Danao Sur Elementary School | | | L | MODERATE |
| | Foursquare Church | | | L | MODERATE |
| | Health Center | | | L | MODERATE |
| GB | Catholic Church | | | L | MODERATE |
| | Baptist Church | | | L | MODERATE |
| | Barangay Hall | | | L | MODERATE |

| DATABASE | | FLOOD | | LANDSLIDE | |
|---|---|---|---|---|---|
| BARANGAY | FACILITY | FLOOD SUSCEPTIBILITY | RISK CATEGORY | LANDSLIDE SUSCEPTIBILITY | RISK CATEGORY |
| | Puro Catholic Church | H | MODERATE | L | MODERATE |
| | Day Care Center | | | L | MODERATE |
| | Guinbirayan Elementary School | | | L | MODERATE |
| | Foursquare Church | | | L | MODERATE |
| | Vicente Antaran Memorial School | | | L | MODERATE |
| | Puro Health Station | H | MODERATE | L | MODERATE |
| | Health Center | | | L | MODERATE |
| | Guinbirayan National High School | | | L | MODERATE |
| | Philippine Independent Church | | | L | MODERATE |
| | Public Plaza | | | L | MODERATE |
| | Puro Day Care Center | H | MODERATE | L | MODERATE |
| GT | Barangay Hall | | | L | MODERATE |
| | Catholic Church | H | MODERATE | L | MODERATE |
| | Day Care Center | H | MODERATE | L | MODERATE |
| | Guintigbasan Elementary School | M | MODERATE | L | MODERATE |
| | Health Center | M | MODERATE | L | MODERATE |
| MG | Baptist Church | | | L | MODERATE |
| | Barangay Hall | L | MODERATE | L | MODERATE |
| | Catholic Church | | | L | MODERATE |
| | Day Care Center | L | MODERATE | L | MODERATE |
| | Magsaysay Elementary School | | | L | MODERATE |
| | Health Center | | | L | MODERATE |
| | Public Plaza | L | MODERATE | L | MODERATE |
| MT | Catholic Church | | | L | MODERATE |
| | Day Care Center | H | MODERATE | M | MODERATE |
| | Barangay Hall | H | MODERATE | M | MODERATE |
| PD | Day Care Center | M | MODERATE | L | MODERATE |
| | Barangay Hall | H | MODERATE | L | MODERATE |
| | Pandan Elementary School | M | MODERATE | L | MODERATE |

| DATABASE | | FLOOD | | LANDSLIDE | |
|---|---|---|---|---|---|
| BARANGAY | FACILITY | FLOOD SUSCEPTIBILITY | RISK CATEGORY | LANDSLIDE SUSCEPTIBILITY | RISK CATEGORY |
| | Foursquare Church | H | HIGH | M | MODERATE |
| | Health Center | M | MODERATE | L | MODERATE |
| | Saint Joseph Chapel | H | MODERATE | L | MODERATE |
| PB | Assembly of God | | | L | MODERATE |
| | Baptist Church | M | MODERATE | L | MODERATE |
| | Barangay Hall | M | MODERATE | L | MODERATE |
| | Catholic Church | M | MODERATE | L | MODERATE |
| | Day Care Center | M | MODERATE | L | MODERATE |
| | Seventh Day Adventist | | | L | MODERATE |
| | Rural Health Unit | M | MODERATE | L | MODERATE |
| | Romblon State University (Santa Fe Campus) | | | M | MODERATE |
| | Santa Fe Central Elementary School | | | L | MODERATE |
| | Santa Fe National High School | | | L | MODERATE |
| TB | Guinpoingan Day Care Center | H | MODERATE | L | MODERATE |
| | Baptist Church | M | MODERATE | L | MODERATE |
| | Barangay Hall | H | MODERATE | L | MODERATE |
| | Day Care Center | H | MODERATE | L | MODERATE |
| | Tabugon Elementary School | | | L | MODERATE |
| | Guinpoingan Health Center | | | L | MODERATE |
| | Guinpoingan Elementary School | | | L | MODERATE |
| | Health Center | | | L | MODERATE |
| | Public Plaza | H | MODERATE | L | MODERATE |

# 5. ECONOMIC SECTOR

## 5.1 Agriculture

The Municipality of Santa Fe is predominantly an agriculture-based area. It is best known for its seaweed culture in Region IV-B. In year 2010, under the assistance of Bureau of Fisheries and Aquatic Resources (BFAR), the municipality ranked 2nd after Palawan on seaweed production in the region. Hereof, Santa Fe is the only municipality in Romblon that supplies dried and fresh sea weeds to the country particularly to Cebu, Lucena, and Manila.

Aside from seaweed production, other agricultural activities in the municipality are the production of crops, livestock and poultry products, and marine products which are sold not only locally but as well as to its neighboring towns, provinces, and cities i.e. Looc, San Jose, Odiongan, Panay Island, Mindoro, Batangas, Lucena, and Manila. Importation of agricultural products also happen in the municipality due the rapid increase in demand as the population increases. Imported products include vegetables, marine products, and rice. Vegetables sold in the public market located in Barangay Poblacion usually comes from the Municipality of Looc. Marine products such as *nile tilapia* and milk fish are also imported from Batangas. Meanwhile, to solve the rice shortage of 60%, importation from the Municipality of Odiongan and Looc serves as the mediation.

### 5.1.1 Agricultural Production and Land Utilization by Type

Based on GIS, the accumulated land area devoted for agricultural production sums up to 6,122.3818 hectares or 95.27 percent of the municipality's land area. This is subdivided into crop production, fish ponds, and forest production areas or timber lands. Because livestock and poultry raising in the municipality are practiced on a backyard scale farming, areas used are excluded from the total agricultural area. Areas for crop production totals to 5,146.88 hectares or 84.07 percent of the accumulated agricultural lands. Fish ponds, on the other hand, total to 121.17 hectares, while 780.57 hectares are categorized as grasslands which are used for pasture and the remaining 133.92 hectares account to the forest production areas or timber lands.

#### i. Crop Production and Land Utilization by Type

Major crops harvested in Santa Fe include coconut, rice, and banana. Coconut, having an average production of 500 metric tons per hectare, is the prime crop produced. Harvested coconut fruits, particularly copra, are sold directly to Lucena City, known as the *"Cocopalm City of the South*", where coconut processing facilities are available to produce coconut cooking oil. Most coconut trees are intercropped with fruit-bearing trees (usually mango and banana), root crops, and vegetables. Based from the Office of the Municipal Agriculturist, coconut plantation has an accumulated area of 2,180.88 hectares which is distributed in all barangays. Locally, coconuts are sold from ten to twelve pesos per nutshell while copra are sold at 15-35 pesos per kilo. Rice, on the other hand, are planted in all barangays. There are four existing irrigation systems in the municipality but only one is operational. This is located in Barangay Magsaysay which covers 55.40 hectares of rice field while the remaining 266.65 hectares are rainfed. Per *caban*, *palay* is sold from Php 800 to Php 1,000 while *bigas* costs Php 2,200 to Php 2,300 per caban. Banana, another high value crop produced in the municipality, has three varieties: saba, latundan, and lakatan which are harvested from all barangays. Among these types, *saba* has the highest production amount with 213.43 metric tons in 2016 as well as the widest area coverage with 69.13 hectares.

Other crops harvested in the municipality includes mango (pico, carabao and indian), lime, cashew, rambutan, coffee, cacao, ginger, watermelon, tomato, bitter gourd, bottle gourd, sponge gourd, corn, long beans, squash, eggplant, *lady's finger*, radish, cabbage, and cucumber, to name some.

Vegetable seeds and fruit-bearing trees seedlings are provided by the Department of Agriculture Regional Field Office (DARFO) and Office of the Municipal Agriculturist. Seeds and seedlings are distributed without payment not only to professional agriculture practitioners but also to local residents who are interested in backyard farming.

*Table AG- 53 Existing Major Agricultural Crops by Area, Production and Market, 2016*

| CROPS | AREA | | PRODUCTION | | PRODUCT MARKET | |
|---|---|---|---|---|---|---|
| | Hectares | % total | Volume (MT) | Value | Local | Export/ Other Areas |
| **RICE** | | | | | | |
| Irrigated | 55.40 | 2.07 | 385.55 | 6,425,833.33 | All barangays | |
| Non-Irrigated | 266.65 | 9.98 | 2,866.59 | 47,776,500.00 | All barangays | |
| **COCONUT** | 2,180.88 | 81.63 | 1,090,440.15 | 27,261,003.75 | All barangays | Lucena |
| **BANANA** | 86.67 | 3.24 | 245.19 | 2,601,000.00 | All barangays | Boracay |
| **MANGO** | 70.65 | 2.64 | 2.56 | 123,503.00 | All barangays | |
| **LIME** | 10.97 | 0.41 | 12.05 | 421,750.00 | All barangays | Boracay |
| **VEGETABLES** | 0.38 | 0.01 | 1.8945 | 66,307.50 | All barangays | |
| **TOTAL** | 2671.59 | 100 | 1,093,952.09 | 84,609,590.08 | | |

*Source: Office of the Municipal Agriculturist and GIS*

In year 2016, El Niño, a phenomenon where the surface temperature increases by at least 0.5°C (0.9 degrees Fahrenheit) that occurs in the Equatorial Pacific Ocean which lasts for an average of three consecutive months (NOAA, 2005), devastated the municipal agricultural lands. Consequently, production of rice and vegetables had decreased. The occurrence decreased the production volume of rice from 4,023.80 metric tons in 2015 to 3,252.14 metric tons in 2016 with total decrease of 771.66 metric tons. Rendering to importance, the municipality then, prioritized production of rice rather than vegetables in the following year. Coconut production volume has not changed from year 2015 to 2016 while banana production has increased by 50% due to expansion of plantation areas by 33.724 hectares and the rehabilitation of fertilizer to *abono*.

*Table AG- 54 Comparative Agricultural Crop Areas and Production, 2015-2016*

| MAJOR CROPS | AREA (Hectares) | | | VOLUME OF PRODUCTION (MT) | | |
|---|---|---|---|---|---|---|
| | 2015 | 2016 | Increase/ Decrease | 2015 | 2016 | Increase/ Decrease |
| **Rice** | 322.05 | 322.05 | - | 4,023.8 | 3,252.14 | Decrease |
| **Coconut** | 2,180.880 | 2,180.880 | - | 1,090,440.15 | 1,090,440.15 | - |

| MAJOR CROPS | AREA (Hectares) | | | VOLUME OF PRODUCTION (MT) | | |
|---|---|---|---|---|---|---|
| | 2015 | 2016 | Increase/ Decrease | 2015 | 2016 | Increase/ Decrease |
| **Banana** | 52.724 | 86.6677 | Increase | 107 | 160.5 | Increase |

*Source: Office of the Municipal Agriculturist and GIS*

All barangays are well represented in agricultural sector. Based from the data gathered by MAO through survey, individuals engaged in agricultural occupation totals to 11,482 which is 13.81% higher than the labor force. This is for the reason that some of the agricultural practitioners are engaged in two or more agricultural activities (e.g. inland fishermen who also catch fish in the deep-sea waters and sea weed farmers who are also engaged in farming or fishing). Another factor on why the number of employment is higher than the labor force is because as early as 12 years old, progenies of agricultural practitioners already help their parents on the field.

Most of the agricultural practitioners (81.12%) are from the rural barangays while the remaining 18.89% or 2,159 are from the urban barangays. Livestock raisers account the highest number with 4,463 or 45.07% of the labor force followed by poultry raisers with 2,803. For 2016, most of the livestock and poultry animals come from Danao Norte (3,274), Magsaysay (2,874), Agmanic (2,533), and Canyayo (2,475).

Having 10 coastal barangays, fishing is the primary source of income for the constituents of the municipality. Residents engage in fishing totals to 2,192 where in 32 are also engaged in inland fishing or in fish ponds. From year 2015, the number of fisher folks has increased by 7 individuals. Another primary source of income in the municipality is the crop production. The existing area, devoted for crop production totals to 6,122.3818 hectares which makes a density of 5.03 hectares per farmer from the 1, 217 crop farmers. Vegetable farmers, in addition the number of crop farmers has a total of 322 excluding the vegetable farmers engaged in backyard scale. In 2015, the MAO has recorded 1,704 including individuals engaged in backyard farming.

*Table AG- 55 Major and Minor Agricultural Occupations/Groups in Urban and Rural Areas, 2016*

| MAJOR AND MINOR OCCUPATION GROUPS | LOCATION | URBAN | RURAL | TOTAL |
|---|---|---|---|---|
| **FARMERS** | | | | |
| **Crop Farmers** | All barangay | 212 | 1,005 | 1,217 |
| **Poultry Farmers** | All barangay | 646 | 2,157 | 2,803 |
| **Livestock Farmers** | All barangay | 1,246 | 3,217 | 4,463 |
| **Vegetable Farmers** | All barangay | 55 | 267 | 322 |
| **Seaweeds Farmers** | Agmanic, Danao Norte, Guinbirayan, Guintigbasan, Magsaysay, Tabugon | 65 | 335 | 400 |
| **FISHERMEN** | | | | |
| *Inland fishermen/fish ponds | Agmanic, Canyayo, Danao Norte, Danao Sur, Guintigbasan, | 12 | 20 | 32 |

| MAJOR AND MINOR OCCUPATION GROUPS | LOCATION | URBAN | RURAL | TOTAL |
|---|---|---|---|---|
| | Magsaysay, Mat-i, Pandan, Tabugon | | | |
| **Coastal and deep-sea fishermen** | All Barangay | 380 | 1,811 | 2,191 |

*Source: Office of the Municipal Agriculturist*

Agrarian Reform Community (ARC) was awarded to Barangay Magsaysay in 1994 and extended the agrarian reform areas to adjacent barangays, Mat-I and Pandan, in the following years. The ARC assists the Palate-Maambong Multi-Purpose Cooperative (PMMPC) as the Agrarian Reform Beneficiaries Organization (ARBO). 75.68% of the *carpable* lands are under the program code of Voluntary Land Transfer (VLT). 16.94% is Compulsory Acquisition (CA), 5.00% is Operation Land Transfer (OLT), and 2.38% is under the Government Financial Institution Lands (GFI). Agrarian Reform Beneficiaries total to 984 where in only 44.72% are members of the Magsaysay Agrarian Reform Community.

**AGRARIAN RELATED CONCERNS, 2016**

| CONCERNS | LOCATION | AREA IN HECTARES | NO. OF FARMER BENEFICIARIES |
|---|---|---|---|
| A. CARPABLE LANDS | | | |
| 1. Covered | AGMANIC | 109.3968 | 68 |
| | CANYAYO | 139.2599 | 83 |
| | DANAO NORTE | 441.2934 | 196 |
| | DANAO SUR | 4.5858 | 7 |
| | GUINBIRAYAN | 52.3886 | 34 |
| | GUINTIGBASAN | 20.4588 | 15 |
| | MAGSAYSAY | 425.5202 | 237 |
| | MAT-I | 189.0916 | 98 |
| | PANDAN | 244.9025 | 105 |
| | POBLACION | 97.5453 | 85 |
| | TABUGON | 58.7272 | 56 |
| 2. To be Covered | none | none | none |
| B. AGRARIAN REFORM COMMUNITIES (ARCs) | | | |
| MAGSAYSAY AGRARIAN REFORM COMMUNITY | MAGSAYSAY<br>MAT-I<br>PANDAN | 859.5143 | 440 |
| **TOTAL** | | **1,783.17 HA** | **984 ARBs** |

Source: *Department of Agrarian Reform*

### ii. Livestock and Poultry Production

Livestock and poultry raising in Santa Fe is composed of carabao, cattle, hog, goat, chicken, ducks, and turkey. A continuous increase in livestock and poultry animals from year 2011 to 2016 can be observed in Table AG-56. On the contrary, the outbreak of Newcastle Disease Virus, a contagious and fatal virus that affects the respiratory, nervous, and digestive systems of birds, affected 71.07% of the poultry population in year 2014. Likewise, the number of livestock animals decreased by 53.16%

when the livestock raisers took advantage of selling the animals for higher cost compared to local price in 2014. Livestock and poultry products are sold within the province of Romblon, Panay Island, Batangas, and Lucena.

*Table AG- 56 Livestock and Poultry Production, 2011-2015*

| ANIMALS | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| **Carabao** | 808 | 877 | 908 | 609 | 662 | 698 |
| **Cattle** | 489 | 551 | 605 | 386 | 272 | 326 |
| **Hog** | 2,826 | 2,964 | 3,194 | 1,493 | 2,216 | 2,376 |
| **Goat** | 1,450 | 1,625 | 1,741 | 940 | 1,195 | 1,296 |
| **Chicken** | 17,456 | 18,599 | 19,019 | 13,384 | 13,886 | 14,255 |
| **Ducks** | 541 | 684 | 768 | 567 | 574 | 675 |
| **Turkey** | 259 | 266 | 292 | 320 | 380 | 459 |

*Source: Office of the Municipal Agriculturist*

### iii. Fisheries and Aquaculture

Fishing is an important livelihood activity in the municipality not only as a source of income but as well as to sustain the food demand of the constituents. The municipality is endowed with the abundant availability of marine products offered by the Santa Fe Bay, Guinbirayan Bay, Tablas Strait, and Sibuyan Sea that makes fishing the primary source of income for the residents of the municipality. Municipal sea waters cover approximately 368.8 square kilometer marine area and 125.28 hectares brackish water. Based from the fish visual census survey conducted by DA-BFAR in 2010, the coastal areas of the municipality are dominated by Acanthuridae (Labahita). It is also the niche for pelagic fishes such as Siganidae (burawis), Zanclidae (Moorish idol), Scaridae (Parrot fish), Chaetodontidae (butterfly fish), Pomacentridae (Damsel fish), Serranidae (grouper), Siganidae (Rabbitfish), Mullidae (Goat fish), anchovy, Indian sardines, mackerel, yellow fin tuna, flying fish, grouper, mugil, snapper and sail fish. Marine products are usually sold directly outside of the municipality right after fish harvest. Product markets include Looc, Odiongan, San Jose, Panay Island, Mindoro, Batangas, Cebu, Lucena, and Manila.

In addition, the municipal coast is also a nesting place for three out of the five endangered sea turtle or *pawikan* which are the green-sea turtle, hawksbill, and the olive ridley. These sea turtles were observed on Barangay Agmanic, Canyayo, Danao Norte, Guinbirayan, Guintigbasan, and in Tabugon.

*Table AG- 57 Existing Fishing Grounds and Aquaculture Production, 2016*

| FISHING GROUNDS | BARANGAY | PRODUCTION | | PRODUCT MARKET | |
|---|---|---|---|---|---|
| | | Volume (MT) | Value in Pesos | Local | Export/ Other Market |
| **MUNICIPAL SEA WATERS** | Agmanic | 25 | 2,500,000 | Santa Fe, Looc Odiongan, San Jose | Boracay, Panay Island, Mindoro |
| | Canyayo | 45 | 4,500,000 | | |
| | Danao Norte | 18 | 1,800,000 | | |
| | Guinbirayan | 35 | 3,500,000 | | |
| | Guintigbasan | 20 | 2,000,000 | | |
| | Magsaysay | 10 | 1,000,000 | | |

| FISHING GROUNDS | BARANGAY | PRODUCTION | | PRODUCT MARKET | |
|---|---|---|---|---|---|
| | | Volume (MT) | Value in Pesos | Local | Export/ Other Market |
| | Mat-i | 15 | 1,500,000 | | |
| | Pandan | 5 | 500,000 | | |
| | Poblacion | 9.1 | 910,000 | | |
| | Tabugon | 30 | 3,000,000 | | |
| **Sub-Total** | | **212.1** | **21,210,000** | | |
| | Agmanic | 18.2 | 2,184,000 | | |
| | Canyayo | 2 | 240,000 | | |
| **FISH PONDS** | Guinbirayan | 22.2 | 2,664,000 | Santa Fe, Looc, San Jose, Odiongan | Boracay, Batangas |
| | Guintigbasan | 3 | 360,000 | | |
| | Magsaysay | 15 | 1,800,000 | | |
| | Mat-i | 20.2 | 2,424,000 | | |
| | Pandan | 7 | 840,000 | | |
| | Poblacion | 5 | 600,000 | | |
| | Tabugon | 9.1 | 1,092,000 | | |
| **Sub-Total** | | **101.7** | **12,204,000** | | |
| **SEAWEEDS AREAS** | Agmanic | 1.035 | 40,365 | Santa Fe, Looc, Odiongan | Lucena, Manila, Cebu |
| | Danao Sur | 2.28 | 88,920 | | |
| | Guinbirayan | 8.060 | 314,340 | | |
| | Guintigbasan | .370 | 14,430 | | |
| | Magsaysay | .370 | 14,430 | | |
| | Tabugon | 9.699 | 378,261 | | |
| **Sub-Total** | | **21.814** | **836,316** | | |
| **TOTAL** | | **335.614** | **34,250,316** | | |

*Source: Office of the Municipal Agriculturist*

#### iv. Forest Production

Forest production areas account to 133.9193 hectares or 2.19 percent of the agricultural areas located in Barangay Guinbirayan. Products gathered from the municipal forest can be categorized into timber such as logs, for local consumption like making house, pandan china for making *banig*, and bamboo for sawali, balsa and floating cottage, and non-timber such as nipa which is used for making *pawid*, a rood used for cottages and old houses, and rattan used for making tying materials.

### 5.1.1 Support System

#### i. Physical Infrastructure

The municipality has 4 communal irrigation system constructed and established by the National Irrigation Administration (NIA). Two of the irrigation systems are check gate type and the other two are dam or trapezoidal. Due to low budget for maintenance, two of the irrigations are non-operational.

*Table AG- 58 Water Irrigation System, 2017*

| IRRIGATION SYSTEM | YEAR CONS TRUCTED | TYPE OF OWNERSHIP | TYPE OF IRRIGA-TION | AREA SERVED (has) | STATUS |
|---|---|---|---|---|---|
| **DANAO SUR CIS** | Feb. 27,1982 | Amortized | Check gate | 41 | Operational |
| **MAGSAYSAY CIS** | Jan. 15, 1989 | Amortized | Dam/ Trapezoidal | 20 | Operational |
| **MAT-I CIS** | Jan. 19, 1990 | Amortized | Dam/ Trapezoidal | 12 | Non-Operational |
| **PANDAN CIS** | Sept.14, 1989 | Amortized | Check gate | 13 | Non-Operational |

*Source: National Irrigation Administration - Odiongan, Romblon*

The most common facility present in all barangay is the hand tractor used to pull a plow and harrow in preparing a wide range of land, followed by threshers for separating grain crops into grain or seeds and straw, and (12) rice mills to remove the bran layers, producing edible, white rice kernels.

Aside from the aforementioned equipment, there are seven warehouses which serve as the storage of the agricultural products like *palay, copra,* and seaweeds; 18 available multi-purpose drying pavements (MPDP) or also known as solar dryers, used by farmers to dry various agricultural crops such as rice and corn, seven blowers, two market centers and one mechanical dryer are also available in the municipality.

Agricultural facilities and services, though available, need proper monitoring, maintenance, and should be distributed municipal-wide considering the proximity of agricultural areas to the municipal town center. Transportation is an essential part in the agricultural cycle, primarily affects the product quality if prolonged transportation due to road quality and vehicular mishaps may lead to spoilage of goods and also increases the transportation fee thus makes the agricultural product more expensive.

*Table AG- 59 Existing Agricultural Support Facilities and Services, 2015*

| POST HARVEST FACILITIES AND SUPPORT FACILITIES | LOCATION | NO. | TYPE/ CAPACITY | PERCENT UTILIZATION | REMARKS |
|---|---|---|---|---|---|
| **Rice Mill** | Danao Norte | 1 | Mobile | 100% | Operational |
| | Danao Sur | 1 | Mobile | 100% | Operational |
| | Guinbirayan | 2 | Mobile | 100% | Operational |
| | Magsaysay | 2 | Stationary | 100% | Operational |
| | Mat-i | 2 | Stationary | 100% | Operational |
| | Pandan | 2 | Stationary | 100% | Operational |
| | Poblacion | 2 | Mobile | 100% | Operational |
| **Multi-purpose Drying Pavement** | Agmanic | 1 | 100 cavs. | 100% | Operational |
| | Canyayo | 1 | 100 cavs. | 100% | Operational |
| | Danao Norte | 3 | 100 cavs. | 100% | Operational |

| POST HARVEST FACILITIES AND SUPPORT FACILITIES | LOCATION | NO. | TYPE/ CAPACITY | PERCENT UTILIZATION | REMARKS |
|---|---|---|---|---|---|
| | Danao Sur | 2 | 100 cavs. | 100% | Operational |
| | Guinbirayan | 3 | 100 cavs. | 100% | Operational |
| | Magsaysay | 2 | 100 cavs. | 100% | Operational |
| | Mat-I | 1 | 100 cavs. | 100% | Operational |
| | Poblacion | 2 | 100 cavs. | 100% | Operational |
| | Pandan | 2 | 100 cavs. | 100% | Operational |
| | Tabugon | 1 | 100 cavs. | 100% | Operational |
| **Mechanical Dryer** | Magsaysay | 1 | Flatbed Dryer | 100% | Operational |
| **Hand Tractor** | Agmanic | 2 | Diesel | 100% | Operational |
| | | 1 | Gasoline | 100% | Operational |
| | Canyayo | 2 | Diesel | 100% | Operational |
| | Danao Norte | 3 | Diesel | 100% | Operational |
| | | 1 | Gasoline | 100% | Operational |
| | Danao Sur | 2 | Diesel | 100% | Operational |
| | Guinbirayan | 4 | Diesel | 100% | Operational |
| | Guintigbasan | 1 | Diesel | 100% | Operational |
| | Magsaysay | 7 | Diesel | 100% | Operational |
| | | 1 | Gasoline | 100% | Operational |
| | Mat-I | 3 | Diesel | 100% | Operational |
| | Poblacion | 7 | Diesel | 100% | Operational |
| | Pandan | 7 | Diesel | 100% | Operational |
| | Tabugon | 2 | Gasoline | 100% | Operational |
| **Blowers** | Danao Norte | 2 | Manual | 100% | Operational |
| | Guinbirayan | 2 | Manual | 100% | Operational |
| | Magsaysay | 1 | Manual | 100% | Operational |
| | Mat-i | 1 | Manual | 100% | Operational |
| | Tabugon | 1 | Manual | 100% | Operational |
| **Private Thresher** | Agmanic | 2 | Diesel | 100% | Operational |
| | | 1 | Gasoline | 100% | Operational |
| | Canyayo | 2 | Diesel | 100% | Operational |
| | Danao Norte | 3 | Diesel | 100% | Operational |
| | | 2 | Gasoline | 100% | Operational |
| | Danao Sur | 2 | Diesel | 100% | Operational |
| | Guinbirayan | 3 | Diesel | 100% | Operational |
| | Magsaysay | 6 | Diesel | 100% | Operational |
| | Mat-I | 7 | Diesel | 100% | Operational |
| | | 1 | Gasoline | 100% | Operational |
| | Poblacion | 3 | Diesel | 100% | Operational |
| | Pandan | 7 | Diesel | 100% | Operational |
| | Tabugon | 7 | Diesel | 100% | Operational |
| | | 2 | Gasoline | 100% | Operational |
| **Market Center** | Guinbirayan | 1 | Wet Market | 100% | Operational |
| | Poblacion | 1 | Wet Market | 100% | Operational |
| | | 1 | Dry Market | 100% | Operational |

| POST HARVEST FACILITIES AND SUPPORT FACILITIES | LOCATION | NO. | TYPE/ CAPACITY | PERCENT UTILIZATION | REMARKS |
|---|---|---|---|---|---|
| **Warehouses** | Guinbirayan | 1 | Copra | 100% | Operational |
| | Magsaysay | 2 | Copra | 100% | Operational |
| | | 1 | Palay Shed | 100% | Operational |
| | Pandan | 1 | Copra | 100% | Operational |
| | Tabugon | 1 | Copra | 100% | Operational |
| | | 1 | Seaweeds | 100% | Operational |

*Source: Office of the Municipal Agriculturist*

### ii. Credit and Finance

There are only two financial intermediation establishments that assists farmers in the municipality, namely, Rural bank of Santa Fe and Palate Maambong Cooperative. The Rural bank of Santa Fe offers an assistance through Agricultural Loaning while Palate Maambong Cooperative offers fertilizer loans, production loans, agricultural loans, and personal financial loans. The latter cooperative also provides rice seeds to farmers for production through loan.

### iii. Agricultural and Forest Support Program and Technical Assistance

Most of the municipal programs and projects in Santa Fe are assisted by national government agencies which are Department of Agriculture (DA), Department of Agrarian Reforms (DAR), and National Irrigation Association (NIA). One of the most effective program implemented in the municipality is the Rice Banner Program which includes projects such as crop techno-demo farms, usapang palay, and palay check (AG-60).

For fishing sector, coastal resource management, distribution of sea weeds and planting equipment, provision of *payaw* or fish shelters, distribution of paddle boats, and other fishing paraphernalia are some of the fishery projects conducted in the municipality while for livestock and poultry production, the only mentioned project in the municipality is the animal health program which includes vaccination, animal dispersal, deworming, and castration are performed.

*Table AG- 60 Agricultural and Forest Support Program and Technical Assistance*

| NAME/TYPE OF PROJECT | LOCATION | TYPE | PROPONENT (GOVERNMENT, PRIVATE, OTHER) | ESTIMATED START DATE | ESTIMATED DATE OF COMPLETION |
|---|---|---|---|---|---|
| **AGRICULTURAL-RELATED PROJECTS** | | | | | |
| **RICE BANNER PROGRAM** | | | | | |
| **Community Seed Banking** | Danao Norte, Danao Sur, Magsaysay, Pandan, Tabugon | Rice | DA | 2014 | 2017 |
| **High Yielding Technology Adaptation (Certified Seeds)** | Tabugon Danao Norte | Rice | DA | 2014 | 2016 |

| NAME/TYPE OF PROJECT | LOCATION | TYPE | PROPONENT (GOVERNMENT, PRIVATE, OTHER) | ESTIMATED START DATE | ESTIMATED DATE OF COMPLETION |
|---|---|---|---|---|---|
| **High Yielding Technology Adaptation (Fertilizer)** | Tabugon Danao Norte | Urea | DA | 2014 | 2016 |
| **Certified Seeds Buffer Stocking** | Agmanic, Canyayo, Danao Norte, Guintigbasan, Mat-I, Poblacion, Tabugon | Rice | DA | 2015 | 2016 |
| **Hybridization Program** | Agmanic, Guinbirayan, Magsaysay, Pandan, Poblacion, Tabugon | Rice | DA | 2015 | 2016 |
| **Certified Seeds Subsidy** | Agmanic, Magsaysay, Mat-I, Pandan, Poblacion | Rice | DA | 2015 | 2017 |
| **Community-Based Seed Bank** | Canyayo, Danao Norte, Mat-I, Pandan | Rice | DA | 2015 | 2016 |
| **Farmers Field School** | Guintigbasan Pandan | Rice | DA | 2014 | 2016 |
| **Fertilizer Loan Program** | All barangay | Urea/ Complete | DA | 2013 | 2016 |
| **Rehabilitation Intervention (Certified Seeds)** | Danao Norte, Guintigbasan, Pandan, Tabugon | Rice | DA | 2017 | 2017 |
| **Rice Crop Manager** | All barangay | Rice | DA/MAO | 2015 | 2017 |
| **Rice Model Farm (Hybridization Program)** | Danao Norte Danao Sur | Rice | DA/MAO | 2017 | 2017 |
| **Distribution of Farm Equipment** | Danao Norte Guintigbasan Magsaysay | Hand Tractor | DA-Region | 2014 | 2017 |
| | All barangay | Water Pump | DA-Region | 2010 | 2017 |
| | Magsaysay | Thresher | DA-Region | 2013 | 2013 |
| **HIGH VALUE CROPS DEVELOPMENT PROGRAM** | | | | | |
| **Farmers Field School (Production)** | Danao Sur | Vegetable | DA/LGU | 2015 | 2016 |
| **Communal Garden** | Canyayo, Guinbirayan, Pandan, Poblacion | Vegetable | DA/LGU | 2015 | 2017 |
| **Distribution of Seeds** | All barangay | Vegetable | LGU-MAO | 2015 | 2017 |
| **Distribution of Seedlings (Rehabilitation Typhoon Yolanda)** | | | | | |
| | All barangay | Fruit Trees Seedlings | DA | 2017 | 2017 |
| | Danao Norte, Magsaysay | Coffee and Cacao Seedlings | DA | 2017 | 2017 |
| **Other HVCDP Interventions** | | | | | |

| NAME/TYPE OF PROJECT | LOCATION | TYPE | PROPONENT (GOVERNMENT, PRIVATE, OTHER) | ESTIMATED START DATE | ESTIMATED DATE OF COMPLETION |
|---|---|---|---|---|---|
| | Guinbirayan | Plow & Harrow | DA | 2015 | 2015 |
| | Guinbirayan | Knapsack Sprayer | DA | 2015 | 2015 |
| | Canyayo, Danao Norte, Danao Sur Guinbirayan, Mat-I Pandan, Poblacion Tabugon | Flower Inducer | DA | 2016 | 2016 |
| | All Barangays | Farm Tools | DA | 2017 | 2017 |
| | All Barangay | Peanut Seeds | DA | 2016 | 2016 |
| | Canyayo, Guinbirayan, Magsaysay, Poblacion, Tabugon | Sweet Potato Cuttings | DA | 2016 | 2016 |
| | All Barangay | Black Pepper Cuttings | DA | 2017 | 2017 |
| **Establishment of Nursery & Learning Sites** | | | | | |
| | Poblacion | Municipal Nursery | DA | 2016 | 2016 |
| | Guinbirayan | Organic Learning Site | DA | 2014 | 2017 |
| **Corn & Cassava Program** | | | | | |
| | Mat-I | Water Pump | DA | 2015 | 2015 |
| | Magsaysay, Mat-I | Cassava Grater | DA | 2015 | 2016 |
| | Mat-I | Hybridization (Corn) | DA | 2016 | 2017 |
| | Danao Sur, Mat-I | FFS (Corn) | DA | 2015 | 2015 |
| **Organic Agriculture Program** | | | | | |
| | All Barangay | Vermi Compost Production | LGU-MAO | 2014 | 2017 |
| | Danao Norte, Danao Sur Guinbirayan Magsaysay | Vermi Worms Dispersal | LGU-MAO | 2014 | 2017 |
| | All Barangay | Vermi Tea Production | LGU-MAO | 2014 | 2017 |
| **FISHERY** | | | | | |
| **Processing & Landing Centers** | | | | | |
| | Poblacion | Seaweeds Processing | DTI | 2017 | 2017 |
| | Poblacion | Fish Processing | DTI | | |
| | Poblacion | Fish Landing | BFAR | 2015 | 2016 |
| **Distribution of Fishing Paraphernalia** | | | | | |

| NAME/TYPE OF PROJECT | LOCATION | TYPE | PROPONENT (GOVERNMENT, PRIVATE, OTHER) | ESTIMATED START DATE | ESTIMATED DATE OF COMPLETION |
|---|---|---|---|---|---|
| | All Barangay | Gill Net, Hook & Line and Puddle Boat | BFAR | 2015 | 2017 |
| **Distribution of Seaweeds Paraphernalia** | | | | | |
| | Agmanic Canyayo Danao Norte Danao Sur Guitigbasan Guinbirayan Tabugon | Straw Lace, PE Rope | BFAR | 2016 | 2017 |
| **Distribution of Seedlings** | | | | | |
| | Danao Sur Guinbirayan Tabugon | Seaweeds Seedlings | BFAR | 2017 | 2017 |
| **Fish Cages** | | | | | |
| | Danao Norte | Fixed | SAMKUTSA | 2015 | 2017 |
| | Guinbirayan | Floating | Private | 2015 | 2017 |
| | Guintigbasan | Fixed | Private | 2017 | 2017 |
| | Mat-I | Fixed | Private | 2014 | 2017 |
| | | Fixed | Private | 2015 | 2017 |
| | Pandan | Floating | Private | 2016 | 2017 |
| | | Fixed | RSU | 2012 | 2017 |
| **Fisherfolk Registration** | | | | | |
| | All Barangay | Registered | BFAR/LGU-MAO | 2013 | 2017 |
| **Boat Registration** | | | | | |
| | All Barangay | Registered | BFAR/LGU-MAO | 2015 | 2015 |
| **Coastal Resource Management** | | | | | |
| | Guinbirayan | Fish Sanctuary | BFAR/LGU-MAO | 2007 | 2017 |
| | All Barangay | Mangrove Rehabilitation | BFAR/LGU-MAO | 2013 | 2017 |
| **Livestock & Poultry Animal Health Program** | | | | | |
| | All Barangay | Deworming, Castration, Vaccination | LGU/MAO | Yearly | |
| | Danao Norte Magsaysay Tabugon | Animal Dispersal (Cow & Carabao) | LGU/MAO | 2010 | 2017 |
| **Native Chicken Multiplier Farm** | Magsaysay | 120 heads | LGU/MAO | 2017 | 2017 |
| **IRRIGATION** | | | | | |
| **Communal Irrigation System** | | | | | |
| | Danao Sur | Rehabilitation | NIA | February 2018 | June 2018 |

*Source: Office of the Municipal Agriculturist*

## 5.2 Commerce and Trade

Based from the List of Business with Permits issued by the Business Permit and Licensing Office (BPLO), the total business in year 2016 is 418 which declined by 35.49 percent from year 2015 with 648 and 1.18 percent from year 2014 with 423 registered business. The significant decline of business permits from the preceding years is due to the unlisted businesses who get permits late but collection from business revenue has increased from year 2015 to 2016.

Fees collected from business owners includes the local tax and fees for regulatory and charges. Local taxes include the gross sale tax, tax on delivery vans/trucks, tax on storage for combustible/flammable or explosive substances, and tax on signboards or billboards, if any. While the regulatory fees and charges is subdivided into the mayor's permit fee, garbage charges, sanitary inspection fee, building inspection fee, electrical inspection fee, mechanical inspection fee, plumbing inspection fee, signboard or billboard renewal fee, storage and sale of combustion, flammable, or explosive substances, sticker, and document stamp. This falls on the category of other receipts of the cash flows which constitutes the 26.60 percent of the cash inflows.

For retailers such as sari-sari stores, the rate of two percent per annum shall be imposed on sales not exceeding 400,000 pesos while the rate of 1% per annum shall be imposed on sales in excess of the first 400,000. However, barangays should have the exclusive power to levy taxes on stores whose gross sales or receipts of the preceding calendar year does not exceed P30,000 subject to existing laws and regulations.

### 5.2.1 Inventory and Distribution of Commercial Establishment by Type

Based form the list of business permits CY 2016, commerce and trade concentrates in the two urban barangays, Poblacion and Guinbirayan. Poblacion, being the municipal town center has the most number of commercial establishment which has a total of 143 out of 297 establishments in the municipality. Most of the business located in the municipal town center are stores (52), dry goods (15), and business related to food services (13). Business establishments that are only located in the town proper are drugstores, funeral services, billiard halls, birthing home, boarding houses, cockpits, computer shops, general merchandise, banks and pawnshops, and private school. A commercial strip managed by the local government unit is located in Sitio Proper along the sea wall which can be rented for selling purposes. Commercial establishments located in rural barangays are usually sari-sari stores. Among the rural barangays, Magsaysay has the most number of commercial establishments with 33 structures. The total area devoted for business establishments excluding the sari-sari stores is 0.8632 hectares. Businesses which are categorized as non-establishment, or those that do not need a structure in order to operate includes rice mills, chainsaw, motor boats, and other registered fishing equipment such as fish nets and fishing boats. This accounts to the 119 business with permit from the mayor thus, subjected to payment of fees.

From year 2015 to 2016, the most frequent nature of business is categorized under wholesale and retail trade. Particularly sari-sari stores, commodities sold are bought from the Municipality of Odiongan. Table CT-61, shows the changes on the number of commercial establishments in year 2015 and 2016 categorized per economic activity. Aside from wholesale and retail trade all other type of economic activity under commerce and trade has retained or increased. 7.65% of the labor force or 758 individuals depend on commerce and trade as their source of income.

*Table CT-61 Inventory of Commercial Establishments by Economic Activity, 2015-2016*

| ECONOMIC ACTIVITIES | 2015 | 2016 | INCREASE/ DECREASE (%) |
|---|---|---|---|
| | Number of Establishments | Number of Establishments | Number of Establishments |
| Wholesale and Retail Trade | 310 | 226 | 27.0968↓ |
| Hotel and restaurants, Transport & Storage | 2 | 5 | 150↑ |
| Communication | 2 | 2 | same |
| Financial inter-mediation | 7 | 8 | 14.28571↑ |
| Real Estate renting and Business activities | 4 | 6 | 50↑ |
| Education | 1 | 1 | same |
| Health and Social work | 2 | 3 | 50↑ |
| Other Community, Social and Personal Services Activities | 32 | 46 | 43.75↑ |
| **TOTAL** | 360 | 297 | 17.5↓ |

*Source: Business Permit and Licensing Office*

*Table CT- 62 Employment by Type/Classification of Business and Trade, 2016*

| TYPE/ CLASSIFICATION KIND OF BUSINESS AND TRADE | NUMBER OF EMPLOYMENT | REVENUE (PESO) |
|---|---|---|
| WHOLESALE TRADE AND RENTAL | 440 | 13,478,040.00 |
| BANKING AND FINANCES | 23 | 4,200,303.75 |
| REAL ESTATE/CONSTRUCTION SERVICE | 31 | 1,142,000.00 |
| OTHERS | 264 | 4,983,638.00 |
| **TOTAL** | **758** | **23,803981.80** |

*Source: Municipal Mayor's Office*

### 5.2.2 Growth Pattern

48.15% of the commercial establishments are located in Barangay Poblacion with a total area of 0.52 hectares. This is followed by Guinbirayan and Magsaysay having 33 registered establishments each with approximately 0.12 hectares each. Commercial centers or markets are located in Barangay Poblacion and Guinbirayan but most of the products are traded in the municipal town center along G. Molina Boulevard, R. Gomez Street, and P. Condes Street. Majority of the business for personal service such as parlors, funerals, and drugstores can only be found in the municipal center.

## 5.3 Industry

### 5.3.1 Inventory of Industries by Type

Agriculture, being the top source of income for most of the constituents of the municipality reflects the availability of the industries present in the municipality. The most frequent industry type in the municipality is rice mill, accumulating 14 out of the 20 industries in the municipality. Four of the these are situated in Magsaysay where most of the crops are harvested. Other industries present in the municipality are hollow block making and weaving which produces native products such as hats, bags, baskets and mats which are made of palm leaves. These industrial activities serve as source of income for 14 individuals or 0.14% of the labor force. Most of the identified industries (14) are classified as $I_2$ intensity classification or industries that are pollutant but non-hazardous.

*Table IN- 63 Inventory of Existing Industrial Businesses by Intensity and Employment, 2016*

| BARANGAY | NAME OF INDUSTRIAL BUSINESS | AREA (has) | INTENSITY CLASSIFICATION | EMPLOY-MENT |
|---|---|---|---|---|
| **Danao Norte** | Alcantara Travelling Rice Mill | Unidentified | $I_2$ | 3 |
| **Danao Norte** | Lorenzo Alcantara Travelling Rice Mill | Unidentified | $I_2$ | 1 |
| **Danao Sur** | Carlos Fillarca's Mobile Rice Mill | Unidentified | $I_2$ | 3 |
| **Danao Sur** | Gado's Bakery | Residential | $I_1$ | 1 |
| **Guinbirayan** | Merlinda Lerog Rice Mill | Unidentified | $I_2$ | 1 |
| **Guinbirayan** | Lito Yap's Rice Mill | Unidentified | $I_2$ | 1 |
| **Magsaysay** | ACV Stationary Rice Mill | Unidentified | $I_2$ | 1 |
| **Magsaysay** | ACV Hollow Block Making | 48 sq.m. | $I_1$ | 2 |
| **Magsaysay** | Razel Asis' Stationary Rice Mill | Unidentified | $I_2$ | 1 |
| **Magsaysay** | Stationary Rice Mill | Unidentified | $I_2$ | 2 |
| **Magsaysay** | Super Vince Rice Mill | Unidentified | $I_2$ | 2 |
| **Mat-i** | Saturnino Cahilig's Stationary Rice Mill | Unidentified | $I_2$ | 1 |
| **Mat-i** | JCA Rice Mill | Unidentified | $I_2$ | 3 |
| **Mat-i** | Mila Rice Mill | Unidentified | $I_2$ | 3 |
| **Pandan** | Perfas Native Products | 20 sq.m. | $I_1$ | 1 |
| **Pandan** | Eva Fernando's Travelling Rice Mill | Unidentified | $I_2$ | 3 |
| **Poblacion** | Ambassador's Bakery | 6 sq m | $I_1$ | 2 |
| **Poblacion** | Bilog's Bakeshop | 24 sq.m. | $I_1$ | 4 |
| **Tabugon** | Yuan's Bakery | 18 sq.m. | $I_1$ | 3 |

*Source: Municipal Mayor's Office*

### 5.3.2. GROWTH PATTERN

There are seven Barangays with industrial activities, namely, Danao Norte, Danao Sur, Magsaysay, Mat-I, Pandan, Poblacion, and Tabugon. In terms of area, only six out of the 20 industries require an area devoted for it to operate. These are the hollow block making in Magsaysay, *Perfas* Native Products made in Pandan but sold in Poblacion, and the bakeries. Other types of industries in the municipality use their residential areas. Seen as Barangay Magsaysay harvests most of the agricultural products, makes it reasonable why most of the rice mills (4) are located in the barangay. In chronological order, barangays with industries are Magsaysay (5), Danao Norte and Mat-I (3), Danao Sur, Guinbirayan, Pandan, and Poblacion (2), and Tabugon (1).

## 5.4 Tourism

5.4.1. Inventory of Tourism Facilities

There are 26 tourism establishments that cater both local and international visitors (refer to Table T-64). These establishments are found in Barangay Agmanic, Canyayo, Danao Norte, Guinbirayan, Guintigbasan, and Poblacion. 10 of these are privately owned

*Table T- 64 Inventory of Tourism Establishments*

| LOCATION (Barangay) | NAME OF TOURISM ESTABISHMENT | AREA (ha) | TYPE OF ATTRACION | OWNERSHIP |
|---|---|---|---|---|
| Agmanic | Tablas Point | 1.43 | Natural | Private |
| Agmanic | Pair-a-dice Beach Resort | +.500 ha | Natural | Private |
| Canyayo | By the Sea Resort | *1 ha | Natural/Man-made | Private |
| Canyayo | Balisa Point Resort | *300 sq.m. | Natural | Private |
| Guinbirayan | Puro Island Beach | +11 ha | Man made | Private |
| Guinigbasan | Kalatong Camping | *250 ha | Man made | Private |
| Poblacion | Morillo's Restaurant | *20 sq.m. | Man made | Private |
| Poblacion | Fernando's Place | *15 sq.m. | Man made | Private |
| Poblacion | In Kanto | *6 sq.m. | Man made | Private |
| Poblacion | Food Sarap | *20 sq.m. | Man made | Private |
| Poblacion | La Cuchara | *16 sq.m. | Man made | Private |
| Poblacion | Gab's food Corner | *12 sq.m. | Man made | Private |
| Poblacion | Eat Tambayan | *150 sq.m. | Man made | Private |
| Poblacion | Uncle John's Burger | *20 sq.m. | Man made | Private |
| Poblacion | Perfa's Native Products | *20 sq.m. | Man made | Private |
| Poblacion | Maratad's Boarding House | *110 sq.m. | Man made | Private |
| Poblacion | Urbina's Boarding House | *80 sq.m. | Man made | Private |
| Poblacion | Rasgo's Boarding House | *63 sq.m. | Man made | Private |
| Poblacion | Gallos' Boarding House | *112 sq.m. | Man made | Private |
| Poblacion | Fernando's Residence Boarding House | *20 sq.m. | Man made | Private |
| Poblacion | White House (Boarding House) | *540 sq.m. | Man made | Private |
| Poblacion | Loterena Boarding House's | *90 sq.m. | Man made | Private |
| Poblacion | Cruz' Boarding House | *30 sq.m. | Man made | Private |

| LOCATION (Barangay) | NAME OF TOURISM ESTABISHMENT | AREA (ha) | TYPE OF ATTRACION | OWNERSHIP |
|---|---|---|---|---|
| Poblacion | Mendoza's Boarding House | *60 sq.m. | Man made | Private |

*Source: Municipal Planning and Development Office and Business Processing and Licensing Office*
**approximate*
*+land area*

Aside from building facilities, the most important factor seen by the municipality is to improve the transport facilities and develop the access roads. The earth surface road has been a constraint for some especially when rainy season because it becomes muddy and sometimes un-passable. Though transport through the sea can be another option, having concrete roads will make people's travel experience smooth for them to appreciate the beauty of Santa Fe even more. Most of the tourism sites in the municipality are beaches and resorts that can be reached both through land and water transportation.

*Table T- 65 Accessibility of Existing Tourism Establishment*

| NAME OF TOURISM ESTABLISHMENT | MEANS OF AVAILABLE TRANS-PORTATION | ACCESS ROAD | | ACCESSIBILITY |
|---|---|---|---|---|
| | | Pavement | Condition | |
| Balisa Point Resort | Water/ Land | **Unpaved** | **Fair** | **6,7** |
| By the Sea Resort | **Water/ Land** | Unpaved | Fair | 6,7 |
| Puro Island Property Corporation (PIPCO) | Water/ Land | Unpaved | Fair | 6,7 |
| Tablas Point | Water/ Land | Unpaved | Fair | 6,7 |
| RSU Fishcage | Water | | | 7 |
| Enchanted Mountain of Calatong | Land | Paved | Good | 6,7 |
| Kalatong Camping | Land | Paved | Good | 6 |
| Uncle John's Burger | Land | Paved | Good | 6 |
| Eat Tambayan | Land | Paved | Good | 6 |
| Fernando's Place | Land | Paved | Good | 6 |
| Food Sarap | Land | Paved | Good | 6 |
| Gab's food Corner | Land | Paved | Good | 6 |
| In Kanto | Land | Paved | Good | 6 |
| La Cuchara | Land | Paved | Good | 6 |
| Morillo's Restaurant | Land | Paved | Good | 6 |
| Cruz' Boarding House | Land | Paved | Good | 6 |
| Fernando's Residence Boarding House | Land | Paved | Good | 6 |
| Gallos' Boarding House | Land | Paved | Good | 6 |
| Loterena Boarding House's | Land | Paved | Good | 6 |
| Maratad's Boarding House | Land | Paved | Good | 6 |
| Mendoza's Boarding House | Land | Paved | Good | 6 |
| Rasgo's Boarding House | Land | Paved | Good | 6 |

| NAME OF TOURISM ESTABLISHMENT | MEANS OF AVAILABLE TRANS-PORTATION | ACCESS ROAD | | ACCESSIBILITY |
|---|---|---|---|---|
| | | Pavement | Condition | |
| Urbina's Boarding House | Land | Paved | Good | 6 |
| White House (Boarding House) | Land | Paved | Good | 6 |
| Perfa's Native Products | Land | Paved | Good | 6 |

*Source: Key Informant Interview 2017*
*sites from other barangays use Poblacion as the point of origin

The enticing ambiance of the municipality catches the interest of different people, mostly foreigners. Due to this, existence of resorts along the municipal coast have been emerging which affects the number of tourist visits. In order to encourage more visitors, these resorts invest on the facilities that will make visitors want to come back. Such facilities are rooms for accommodation usually made of native grasses such as cogon. The availability of food and water also affects the reaction of visitors thus some of the resorts have their own bar which serves such. Most of the resorts cater international visitors while local establishments such as boarding houses and eateries accommodate local to international individuals.

*Table T- 66 Facilities in Existing Tourism Establishments and Markets Catered*

| NAME OF TOURISM ESTABLISHMENTS | *FACILITIES PRESENT | | | | | | | NO. OF EMPLOYEES | MARKET CATERED | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | af | Ff | cf | Mf | Ef | sf | Others | | Local | National | Inter-national |
| **RESORTS** | | | | | | | | | | | |
| By the Sea Resort | ✓ | | ✓ | | ✓ | | ✓ | 5 | ✓ | ✓ | ✓ |
| Balisa Point Resort | ✓ | | ✓ | | ✓ | | ✓ | Family | ✓ | ✓ | |
| Tablas Point Resort | ✓ | | ✓ | | ✓ | | ✓ | 6 | ✓ | ✓ | ✓ |
| Hopson Beach Resort | ✓ | | | | | | | | | | |
| Pair-a-dice Beach Resort | ✓ | | | | | | | | | | |
| Puro Island | ✓ | | ✓ | | ✓ | | ✓ | 3 | ✓ | ✓ | ✓ |
| Enchanted Mountain of Calatong | | | ✓ | | | | | Barangay Officials | ✓ | | |
| RSU fishcage | | | ✓ | | ✓ | | ✓ | 2 | ✓ | ✓ | |
| **FOOD ESTABLISHMENTS** | | | | | | | | | | | |
| Uncle John's Burger | ✓ | | ✓ | | ✓ | | | 2 | ✓ | ✓ | |
| Eat Tambayan | ✓ | | ✓ | | ✓ | | | | ✓ | ✓ | |
| Fernando's Place | ✓ | | ✓ | | ✓ | | | 2 | ✓ | ✓ | |
| Food Sarap | ✓ | | ✓ | | ✓ | | | 2 | ✓ | ✓ | |
| Gab's food Corner | ✓ | | ✓ | | ✓ | | | 2 | ✓ | ✓ | |
| In Kanto | ✓ | | ✓ | | ✓ | | | 3 | ✓ | ✓ | |
| La Cuchara | ✓ | | ✓ | | ✓ | | | | ✓ | ✓ | |
| Morillo's Restaurant | ✓ | | ✓ | | ✓ | | | 2 | ✓ | ✓ | |

| NAME OF TOURISM ESTABLISHMENTS | *FACILITIES PRESENT | | | | | | | NO. OF EMPLOYEES | MARKET CATERED | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | af | Ff | cf | Mf | Ef | sf | Others | | Local | National | Inter-national |
| **ACCOMMODATION ESTABLISHMENTS** | | | | | | | | | | | |
| Cruz' Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| Fernando's Residence Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| Gallos' Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| Loterena Boarding House's | ✓ | | | | | | | Family | ✓ | ✓ | |
| Maratad's Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| Mendoza's Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| Rasgo's Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| Urbina's Boarding House | ✓ | | | | | | | Family | ✓ | ✓ | |
| White House (Boarding House) | ✓ | | | | | | | Family | ✓ | ✓ | |
| Perfa's Native Products | ✓ | | | | | ✓ | | 1 | ✓ | ✓ | ✓ |

*Source: Key Informant Interview 2017*

*Facilities:
af- accommodation facilities (hotels, resorts, picnic huts, cottages, comfort rooms, dressing/change rooms, swimming pool, vehicular parking);
ff- financial facilities (bank and money changers);
cf- communication facilities (telecommunications);
mf- medical facilities (hospitals, clinics);
ef- eating facilities (restaurants and other food and beverage facilities);
sf- shopping facilities (shopping centers/malls, handicraft stores/souvenir shops);
others- travel agencies and tour operators, airline offices, passenger ferry/shipping services, tourist transport operators, airline offices, passengers ferry/shipping services, tourist transport operators/rent-a-car, churches and other religious facilities, town plaza/parks/zoos, recreational facilities, other entertainment facility

***Bugsayan Festival*** is celebrated every 18th of April in the municipality. *Bugasayan* means paddling in local dialect. Events such as *Tiangge sa* sea wall where products from each barangay such as fishes, crabs, and sea shells are sold. There is also a contest on biggest fish catch, boat raising using paddle, and fluvial parade where contestants of beauty pageant aboard. Each barangay has their own cultural festivities which they celebrate for three days. The most prominent among these are the *Pangoma Festival* where *carabaos* get a make-over and displayed using a chariot and *Engkanto Festival*. Usual activities in barangay festivals are street dancing and pageant nights.

*Table TS-1. CULTURAL AND TOURISM ACTIVITIES/FESTIVALS*

| ACTIVITY | FREQUENCY OF ACTIVITY | DURATION |
|---|---|---|
| *Bugsayan* Festival | Annually | 1 day |
| **Barangay** | **Name of Festival** | |
| Agmanic | Civic and Religious Fiesta | |
| Canyayo | Civic and Religious Fiesta | |
| Danao Norte | Civic and Religious Fiesta | |

| | |
|---|---|
| Danao Sur | Civic and Religious Fiesta |
| Guinbirayan | Carabao Festival; Civic and Religious Fiesta |
| Guintigbasan | Engkanto Festival; Civic and Religious Fiesta |
| Magsaysay | Civic and Religious Fiesta |
| Mat-i | Civic and Religious Fiesta |
| Pandan | Civic and Religious Fiesta |
| Poblacion | Bugsayan Festival; Civic and Religious Fiesta |
| Tabugon | Civic and Religious Fiesta |

## EXISTING AND POTENTIAL TOURISM SITES

Santa Fe serves as the gateway to Boracay can also establish tourism industry with its comparable potentials to high end tourism sites in the Philippines. The municipality is endowed with beach galore and hill ranges that can be developed for tourism purposes.

1. **Enchanted Mountain of Calatong or *City of Fairies*.** Located in Guintigbasan, this mountain, according to locals, is literally enchanting as it is believed to be a home to mystical nature spirits locally known as *engkantos.* Supported by hearsays and stories, locals said that a golden ship is sometimes seen docking near the mountain where exquisite rock formations can also be seen. Because of these stories, the mountain is naturally protected as locals refrain from disturbing the mystical creatures living in the area by performing some rituals. The mountain is rich in chalk deposits and is also home to different flora and fauna like wild orchids, and wild birds like *kilyaw*. As you reach the top of this mountain rocks that are black in color engrained with crystal like particles that shine under the sun can be seen which is a perfect landscape for picture-taking. The top of the mountain will also take your breath away as you witness the beauty of Santa Fe and an overlook at Panay Island and Carabao Island.

2. **Hill ranges of Danao Norte.** The grassy hills in Danao Norte located near the boundary of Santa Fe and Alcantara, with an altitude of 120 meters above sea level, is overlooking Panay Island, Sibuyan Island, and Romblon Island. It has three (3) natural reservoirs and is dubbed as Little Tagaytay of Santa Fe because of cool winds especially early in the morning and late afternoon.

3. **Stretch of Agmanic and Tabugon.** Coastal areas of these two barangays are comparable to Boracay with its white sand and crystal clear waters. It is 9.38 kilometer-wide which is ideal for various activities on family and barkada outings. Upsurge of resorts are usually on the side of Agmanic. Among the resorts located are By the Sea Resort, Pair a Dice, and Tablas Point. Owners of these resorts are usually foreigners who promote their business to their foreign friends from Boracay.

4. **Cabangahan Island.** Adjacent to the Sibuyan Sea, this detached island of Guinbirayan is popularly known as the *Puro* by the locals which means Island in Onhan language. *Puro* is an enticing venue to build resorts especially to foreigners. Currently, there is a beach resorts located in the island owned by a German which is named Puro Island Properties Corporations (PIPCO). Surrounding it are Medicon, Manunga East, ang Mangunga South Islets which are ideal for diving site as assessed by Bureau of fisheries and Aquatic Resources.

5. **Fish Sanctuary in Manunga South Islet.** Also known as the Charles' Islet, this Marine Protected Area has a total area of 225 hectares including the buffer zone. This MPA is the biggest contiguous area in the Island of Tablas. Aside from fish varieties, there are also sightings of shark, crabs, and sea turtles within the area of the MPA.

6. ***Tipulo beach***. This white beach is located in Poblacion, far from the busy areas of the barangay. The beach has rock formation which is home to crabs and sea shells locally known as *sihi.*

7. ***Mangrove Ecosystems***. Several mangrove ecosystems are found in Guinbirayan, Magsaysay, Mat-i, Tabugon, and Poblacion. Mangrove ecosystems are home to many flora and fauna. The mangrove ecosystem in Poblacion shall feature an eco-park with canopy walk and aquasilviculture in partnership with Romblon State University (RSU) as it will also serve as a protection buffer from flood.

8. ***Tinagong Dagat***. An inland body of saltwater locally known as Tinagong Dagat can be found in Agmanic, conducive for water sports like wakeboarding. The name itself describes the location as it is hidden behind the white beaches of Agmanic, mangrove areas, surrounded by the hills of Agmanic.

9. ***Canyayo beaches***. The white beaches located in Canyayo is perfect for swimming and sunset viewing. Its crystal clear water is home to many flora and fauna like sea grasses, seaweeds, and starfishes among others. The rock formation in the area is also home to crabs and seashells. Balisa point, a private resort, has native cottages and rooms that serve as their accommodation facilities.

10. ***Guinpoingan-Lictenon Beach***. These white beaches are located in Barangay Tabugon. Lictenon beach is an islet which can be reached by boating or walking when the water in the area is shallow. The islet also features a diving site. At present, seaweed farming exists along the white beaches of Tabugon.

11. ***Demo Farm Tourism.*** These demo farms are located in Danao Norte and Danao Sur. These demo farms have complete facilities and are well equipped as they produce vegetables without the use chemicals. Native Chicken Multiplier Farm is one of its agri-tourism potentials.

12. ***Fish Cages.*** These are two existing fish cages located in Barangay Pandan and Danao Norte which are managed by are managed by RSU and SAMPUTSYA, respectively.

## 5.5 Production Areas Exposure and Risk to Hazards

Natural resource-based production areas refer to the land parcels used for agricultural production. In the Municipality of Santa Fe, these are categorized into areas devoted for the production of crops, livestock and poultry products, marine products, and forest products. The municipality exports some of its agricultural products to neighboring cities and municipalities such as Looc, Panay Island, and Lucena, to name a few. Among the agricultural products, the municipality is best known for its sea weed production where it exports dry and fresh products nationally.

Exposure can be expressed in terms of type of resource (i.e. rice, corn, fish, timber or non-timber forest resource) or by area in terms of hectares and replacement cost (cost of replanting for crops or restocking for fisheries). Sensitivity/vulnerability and adaptive indicators pertain to current production practices (with emphasis on use of hazard resistant varieties and/or climate adapted production techniques), access to infrastructure (i.e. irrigation, water impoundment, flood control) and climate/hazard information, presence or use of risk transfer instruments and access to extension services.

Based from the existing land use derived from the google satellite image 2015, the municipality's natural resource-based production areas are categorized into rice production areas (irrigated and rain fed), mixed trees where fruit bearing trees such as coconut, mango, and banana are usually intercropped, forest areas, grass lands which serves as the pasture area for livestock production, and fish ponds. The total area devoted for agricultural production is 6,098.159 hectares.

Irrigation is a farming method wherein controlled amounts of water are collected, stored, and distributed to crops. This is useful during summer time where water is usually insufficient. Out of 11 barangays, five has plantation that is covered by national irrigation systems namely Pandan, Poblacion, Magsaysay, Danao Sur, and Guinbirayan. There are four irrigation systems but only two of these are operational which are located in Barangay Magsaysay and Danao Sur. Percentage of dependent households that are engaged in sustainable production techniques such as integrated farming and organic farming ranges from 10 to 20 percent per barangay, Magsaysay having the highest percentage among the barangays.

Natural resource-based production areas are located along the coast that allows it to be covered with hazard mitigating measures or structures such as sea wall or shore protections. Crop insurance is not yet mainstreamed in the municipality. Farmers with affected crops during calamities are helped by the Municipal Agriculture Office (MAO) where they prioritize crops that are vital in the municipality-i.e. rice. Population engaged in production who are aware of the natural hazards associated with climate change or those that attended the climate field school

All barangays of the municipality have production areas that are susceptible to flooding. Of the 6,122.3818 hectares, 353.541 hectares or 5.77 percent of the agriculture production areas are susceptible to flooding. 234.205 hectares or 66.25 percent is highly susceptible, 77.015 hectares or 21.78 percent is moderately susceptible, and 42.321 hectares or 11.97 percent are lowly susceptible, based from the flood map released by Mines and Geosciences Bureau (MGB) in 2016. Results of the disaster risk assessment showed that all of the areas susceptible to flooding are moderate at risk. Flood occurrence is likely to repeat affecting the production areas every three to ten years for flood

not exceeding 1 meter while 30 to 100 years for flood with depth of above one meter. Estimated affected value totals to Php 33,417,841.86.

Based from the landslide susceptibility map released by MGB in 2016, about 6,028.203 hectares or 98.85 percent of the natural resource-based production areas are susceptible to landslide where in 958.78 hectares (15.91%) are highly susceptible, 1,849.90 hectares (30.69%) is moderately susceptible, and 3,219.52 hectares (53.41%) is lowly susceptible to landslide.

Risk categories of the susceptible areas are categorized to low and moderate risk as affected by the improbable to rare likelihood of occurrence. Moderate risk areas total to 958.779 hectares or 15.90 percent while areas that are low risk totals to 5,069.42 hectares or 84.10 percent of the production areas. Expected barangay loss on the areas at risk extents Php 298,052,567.60.

Barangays with natural resource-based production areas that are prone to tsunami are Agmanic, Canyayo, Guinbirayan, Magsaysay, Pandan, Poblacion, and Tabugon. Following the map released by PhilVolcs, a total of 208.10 hectares or 3.41 percent of the production areas are prone to tsunami. These areas however are categorized as low risk as affected by rare likelihood of occurrence score since the municipality has not yet experienced this occurrence. Expected total loss is Php 18,184,322.31.

The exposure, sensitivity, and the adaptive capacity per barangay were considered by the TWG in identifying the decision areas. For flood, five barangays were chosen to be prioritized namely, Pandan, Mat-I, Danao Norte, Agmanic, and Guinbirayan. For landslide, Danao Norte, Guintigbasan, Magsaysay, and Pandan are the barangays chosen as decision areas. Meanwhile, decision areas for tsunami are Poblacion, Agmanic, Pandan, and Canyayo. Particularly rice fields (irrigated and rainfed) are chosen to be given primacy in times of disaster to avoid intensification of rice insufficiency.

In mitigating the climate change impacts affecting the natural resource-based production areas, mitigation measures were formulated by the TWG which are usually pre-disaster. the primary intervention proposed is the construction of flood protection measures such to protect the natural resources which will also benefit other elements. Crop insurance, a post disaster economic protection that allows immediate recovery in times of hazards, needs to be familiarized by the agriculture dependents thru conducting Information Education Campaign (IEC) per barangay. One of the problems encountered by the agriculture dependents is lack of post-harvest facilities particularly equipment used in drying products. Former drying pavements were converted to basketball courts or plazas. an alternative facility for drying is located in Barangay Magsaysay, far from rice fields. It was managed by the Palate-Maambong Cooperative which led to mismanagement when the cooperative disbanded. Aside from that, it has a capacity of 120 which is too large for local farmers. Conveyed interventions to avoid disruption of production cycle is recruitment of someone to work as a maintenance on the mechanical dryer, to purchase mechanical dryers with 20/20 capacity which will be situated on barangay cluster basis. Another problem that needs urgent solution is the cropping season. Harvesting falls during the rainy seasons. Cropping is on months of October to January due to absence of water for irrigation thus, make plants smaller. This can be resolved through provision of reservoir to be used for second cropping. Promoting sustainable production technique is also seen as an intervention. Production of organic crops and native chicken is planned to be implemented by the Municipal Agriculturist Office.

*Table NatRes- 67 Natural Resources Exposure and Risk to Hazards*

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | CROPS | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| AGMANIC | FRUIT BEARING TREES | 535.21826 | H | 17.7516 | MODERATE | | | | | | |
| | FRUIT BEARING TREES | 535.21826 | M | 9.807187 | MODERATE | M | 41.6503 | LOW | | | |
| | FRUIT BEARING TREES | 535.21826 | L | 5.85742 | MODERATE | L | 331.497 | LOW | L | 67.1681 | LOW |
| | GRASSLANDS | 535.21826 | M | | | M | 44.1151 | LOW | | | |
| | GRASSLANDS | 535.21826 | L | | | L | 45.1515 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 535.21826 | H | 2.440835 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 535.21826 | M | 1.380906 | MODERATE | M | 0.14748 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 535.21826 | L | 1.861611 | MODERATE | L | 10.0228 | LOW | L | 23.6199 | LOW |
| | FISH PONDS | 535.21826 | H | 17.57134 | MODERATE | H | 0.11121 | MODERATE | | | |
| | FISH PONDS | 535.21826 | M | 0.959756 | MODERATE | | | | | | |
| | FISH PONDS | 535.21826 | L | 0.338001 | MODERATE | L | 20.2959 | LOW | L | 19.2991 | LOW |
| CANYAYO | FRUIT BEARING TREES | 437.771269 | H | 21.43519 | MODERATE | | | | | | |
| | FRUIT BEARING TREES | 437.771269 | M | 8.211326 | MODERATE | M | 41.5808 | LOW | | | |
| | FRUIT BEARING TREES | 437.771269 | L | 4.221999 | MODERATE | L | 354.866 | LOW | L | 29.2128 | LOW |
| | GRASSLANDS | 437.771269 | H | 0.011293 | MODERATE | | | | | | |
| | GRASSLANDS | 437.771269 | M | | | M | 10.4007 | LOW | | | |
| | GRASSLANDS | 437.771269 | L | | | L | 30.8122 | LOW | L | 0.00755 | LOW |
| DANAO NORTE | FRUIT BEARING TREES | 859.284698 | H | 9.352862 | MODERATE | H | 260.14 | MODERATE | | | |
| | FRUIT BEARING TREES | 859.284698 | M | 2.887595 | MODERATE | M | 181.933 | LOW | | | |
| | FRUIT BEARING TREES | 859.284698 | L | 0.900507 | MODERATE | L | 168.954 | LOW | | | |
| | GRASSLANDS | 859.284698 | | | | H | 157.657 | MODERATE | | | |
| | GRASSLANDS | 859.284698 | | | | M | 50.4685 | LOW | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | CROPS | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | GRASSLANDS | 859.284698 | | | | L | 4.95966 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 859.284698 | H | 6.387737 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 859.284698 | M | 4.154691 | MODERATE | M | 1.12649 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 859.284698 | L | 2.922187 | MODERATE | L | 34.0463 | LOW | | | |
| DANAO SUR | FRUIT BEARING TREES | 183.415147 | H | 6.733317 | MODERATE | | | | | | |
| | FRUIT BEARING TREES | 183.415147 | M | 4.30589 | MODERATE | M | 68.7242 | LOW | | | |
| | FRUIT BEARING TREES | 183.415147 | L | 0.962195 | MODERATE | L | 72.3216 | LOW | | | |
| | IRRIGATED RICEFIELDS | 183.415147 | H | 3.13785 | MODERATE | | | | | | |
| | IRRIGATED RICEFIELDS | 183.415147 | M | 4.840422 | MODERATE | M | 0.02045 | LOW | | | |
| | IRRIGATED RICEFIELDS | 183.415147 | L | 2.929439 | MODERATE | L | 32.1775 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 183.415147 | H | 0.014449 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 183.415147 | M | 0.288483 | MODERATE | M | 0.34454 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 183.415147 | | | | L | 9.66839 | LOW | | | |
| | FISH PONDS | 183.415147 | H | 0.0057619 | MODERATE | | | | | | |
| | FISH PONDS | 183.415147 | | | | L | 0.15848 | LOW | | | |
| GUINBIRAYAN | FRUIT BEARING TREES | 439.347224 | H | 25.93695 | MODERATE | H | 12.8773 | MODERATE | | | |
| | FRUIT BEARING TREES | 439.347224 | M | 7.206018 | MODERATE | M | 72.4574 | LOW | | | |
| | FRUIT BEARING TREES | 439.347224 | L | 3.021984 | MODERATE | L | 306.841 | LOW | L | 15.212 | LOW |
| | IRRIGATED RICEFIELDS | 439.347224 | L | 0.000033 | MODERATE | L | 0.00184 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 439.347224 | H | 0.944291 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 439.347224 | M | 0.555549 | MODERATE | M | 0.0299 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 439.347224 | L | 0.011833 | MODERATE | L | 18.0137 | LOW | | | |
| | FISH PONDS | 439.347224 | H | 14.89123 | MODERATE | | | | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | CROPS | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | FISH PONDS | 439.347224 | M | 0.00042 | MODERATE | | | | | | |
| | FISH PONDS | 439.347224 | | | | L | 18.409 | LOW | L | 0.70806 | LOW |
| | GRASSLANDS | 439.347224 | | | | H | 0.12553 | MODERATE | | | |
| | GRASSLANDS | 439.347224 | | | | M | 1.52318 | LOW | | | |
| | GRASSLANDS | 439.347224 | | | | L | 9.06856 | LOW | | | |
| GUINTIGBASAN | FOREST | 474.688682 | | | | H | 118.756 | MODERATE | | | |
| | FOREST | 474.688682 | | | | M | 15.1638 | LOW | | | |
| | FRUIT BEARING TREES | 474.688682 | H | 11.40306 | MODERATE | H | 81.1791 | MODERATE | | | |
| | FRUIT BEARING TREES | 474.688682 | M | 2.956473 | MODERATE | M | 127.468 | LOW | | | |
| | FRUIT BEARING TREES | 474.688682 | L | 0.148835 | MODERATE | L | 53.7641 | LOW | | | |
| | GRASSLANDS | 474.688682 | | | | H | 24.6271 | MODERATE | | | |
| | GRASSLANDS | 474.688682 | | | | M | 29.0274 | LOW | | | |
| | GRASSLANDS | 474.688682 | | | | L | 10.8073 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 474.688682 | H | 3.296532 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 474.688682 | M | 0.793659 | MODERATE | M | 1.40073 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 474.688682 | L | 0.250694 | MODERATE | L | 12.4953 | LOW | | | |
| MAGSAYSAY | FRUIT BEARING TREES | 963.624795 | H | 12.7744 | MODERATE | H | 121.994 | MODERATE | | | |
| | FRUIT BEARING TREES | 963.624795 | M | 0.002862 | MODERATE | M | 325.373 | LOW | | | |
| | FRUIT BEARING TREES | 963.624795 | L | 2.557151 | MODERATE | L | 362.299 | LOW | L | 0.44754 | LOW |
| | GRASSLANDS | 963.624795 | | | | H | 89.8097 | MODERATE | | | |
| | GRASSLANDS | 963.624795 | | | | M | 2.6638 | LOW | | | |
| | IRRIGATED RICEFIELDS | 963.624795 | H | 0.023709 | MODERATE | | | | | | |
| | IRRIGATED RICEFIELDS | 963.624795 | M | 0.733533 | MODERATE | M | 0.0005 | LOW | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | CROPS | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | IRRIGATED RICEFIELDS | 963.910509 | L | 1.739649 | MODERATE | L | 14.079 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 963.946224 | H | 0.687124 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 963.981938 | M | 0.527183 | MODERATE | M | 0.63249 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 964.017652 | L | 0.686031 | MODERATE | L | 25.9312 | LOW | | | |
| | FISH PONDS | 964.053366 | H | 6.260545 | MODERATE | | | | | | |
| | FISH PONDS | 964.089081 | M | 0.059394 | MODERATE | | | | | | |
| | FISH PONDS | 964.124795 | | | | L | 6.32715 | LOW | | | |
| MAT-I | FRUIT BEARING TREES | 823.356378 | H | 26.3497 | MODERATE | H | 30.2248 | MODERATE | | | |
| | FRUIT BEARING TREES | 823.356378 | M | 7.334065 | MODERATE | M | 198.591 | LOW | | | |
| | FRUIT BEARING TREES | 823.356378 | L | 0.999244 | MODERATE | L | 477.11 | LOW | | | |
| | GRASSLANDS | 823.356378 | H | 0.120757 | MODERATE | | | | | | |
| | GRASSLANDS | 823.356378 | M | 0.390311 | MODERATE | M | 5.57931 | LOW | | | |
| | GRASSLANDS | 823.356378 | | | | L | 51.6181 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 823.356378 | H | 7.940905 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 823.356378 | M | 2.415352 | MODERATE | M | 1.85957 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 823.356378 | L | 0.528978 | MODERATE | L | 44.6051 | LOW | | | |
| | FISH PONDS | 823.356378 | H | 1.319247 | MODERATE | | | | | | |
| | FISH PONDS | 823.356378 | | | | L | 13.7687 | LOW | | | |
| PANDAN | FRUIT BEARING TREES | 687.343024 | H | 10.57742 | MODERATE | H | 36.3134 | MODERATE | | | |
| | FRUIT BEARING TREES | 687.343024 | M | 5.931943 | MODERATE | M | 344.292 | LOW | | | |
| | FRUIT BEARING TREES | 687.343024 | L | 5.323765 | MODERATE | L | 139.529 | LOW | L | 11.8557 | LOW |
| | GRASSLANDS | 687.343024 | | | | H | 24.9643 | MODERATE | | | |
| | GRASSLANDS | 687.343024 | | | | M | 104.105 | LOW | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | CROPS | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | GRASSLANDS | 687.343024 | | | | L | 19.4847 | LOW | | | |
| | IRRIGATED RICEFIELDS | 687.343024 | H | 0.492655 | MODERATE | | | | | | |
| | IRRIGATED RICEFIELDS | 687.343024 | M | 0.360809 | MODERATE | M | 0.82169 | LOW | | | |
| | IRRIGATED RICEFIELDS | 687.343024 | L | 0.305275 | MODERATE | L | 11.8927 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 687.343024 | H | 1.132824 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 687.343024 | M | 0.878279 | MODERATE | M | 0.27417 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 687.343024 | L | 0.736361 | MODERATE | L | 5.72295 | LOW | | | |
| | FISH PONDS | 687.343024 | H | 1.447907 | MODERATE | | | | | | |
| | FISH PONDS | 687.343024 | | | | L | 1.44791 | LOW | L | 1.44474 | LOW |
| POBLACION | FRUIT BEARING TREES | 347.699687 | H | 5.486583 | MODERATE | | | | | | |
| | FRUIT BEARING TREES | 347.699687 | M | 2.829635 | MODERATE | M | 100.73 | LOW | | | |
| | FRUIT BEARING TREES | 347.699687 | L | 1.663502 | MODERATE | L | 156.532 | LOW | L | 18.3332 | LOW |
| | GRASSLANDS | 347.699687 | | | | M | 40.7988 | LOW | | | |
| | GRASSLANDS | 347.699687 | | | | L | 3.37849 | LOW | | | |
| | IRRIGATED RICEFIELDS | 347.699687 | M | 0.001778 | MODERATE | | | | | | |
| | IRRIGATED RICEFIELDS | 347.699687 | L | 0.014618 | MODERATE | L | 0.06537 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 347.699687 | H | 2.618722 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 347.699687 | M | 2.71279 | MODERATE | M | 0.62989 | LOW | | | |
| | NON IRRIGATED RICEFIELD | 347.699687 | L | 2.570882 | MODERATE | L | 3.97751 | LOW | L | 7.97706 | LOW |
| | FISH PONDS | 347.699687 | H | 0.064382 | MODERATE | | | | | | |
| | FISH PONDS | 347.699687 | M | 0.180924 | MODERATE | | | | | | |
| | FISH PONDS | 347.699687 | L | 0.265949 | MODERATE | L | 0.60562 | LOW | L | 0.34846 | LOW |
| TABU | FRUIT BEARING TREES | 372.784629 | H | 13.45031 | MODERATE | | | | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Barangay | CROPS | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | FRUIT BEARING TREES | 372.784629 | M | 4.008959 | MODERATE | M | 29.8912 | LOW | | | |
| | FRUIT BEARING TREES | 372.784629 | L | 1.358003 | MODERATE | L | 312.63 | LOW | L | 9.3542 | LOW |
| | NON IRRIGATED RICEFIELD | 372.784629 | H | 1.43427 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 372.784629 | M | 0.022471 | MODERATE | | | | | | |
| | NON IRRIGATED RICEFIELD | 372.784629 | | | | L | 17.3154 | LOW | L | 3.11565 | LOW |
| | FISH PONDS | 372.784629 | H | 0.709124 | MODERATE | | | | | | |
| | FISH PONDS | 372.784629 | M | 0.276388 | MODERATE | | | | | | |
| | FISH PONDS | 372.784629 | L | 0.144877 | MODERATE | L | 1.25852 | LOW | | | |
| | GRASSLANDS | 372.784629 | | | | M | 6.07847 | LOW | | | |
| | GRASSLANDS | 372.784629 | | | | L | 5.61064 | LOW | | | |

# 6. INFRASTRUCTURE

## 6.1 Transportation

### 6.1.1 Inventory of Roads and Bridges

Transportation is an important criterion in a municipal development. With good condition, services may reach the municipality more accessible thus, make development faster. Having concretized roads instead of dirt roads or earth roads will make the transportation of services easier and will make the municipality accessible from other municipalities. From Santa Fe, there are two accessible routes to Odiongan. One is passing through Looc which is the normal route taken by public utility vehicles and another is passing through Alcantara which is usually taken by private vehicles especially trucks used for delivery.

The aggregated road length is 79.45 kilometers which is constituted of 38.60% provincial road, 3.41% municipal roads, and 57.99% barangay roads. Provincial roads traverse all municipality except in Barangay Canyayo. The provincial road is composed of 55% concrete and 45% earth road. Municipal roads, on the other hand, are 100% concrete with a legal right of way of 10 meters but only 6 meters is left in actual which is the same for provincial roads. Most of the concrete part of barangay roads are in good condition. Concrete roads with poor condition are located in Guinbirayan and in Danao Norte with a total length of 1.99 kilometers. Due to impediment on transportation, especially during rainy seasons, earth surface roads are considered fair to poor in condition.

*Table TR- 68 Inventory of Roads by System Classification and Type of Pavement, 2016*

| ROADS BY SYSTEM CLASSIFICATION | ROAD SURFACE TYPE | | | | | | Right of Way (km) | Total Length (km) |
|---|---|---|---|---|---|---|---|---|
| | Concrete | | | Earth | | | | |
| | Km | % | C | Km | % | C | | |
| **PROVINCIAL ROAD** | 16.87 | 55 | GOOD | 13.80 | 45 | FAIR | 6 | 30.67 |
| **MUNICIPAL ROAD** | 2.71 | 100 | GOOD | - | - | - | 6 | 2.71 |
| **Agmanic** | 2.33 | 35 | GOOD | 4.33 | 65 | FAIR | 4 | 6.66 |
| **Canyayo** | 1.38 | 25 | GOOD | 4.13 | 75 | FAIR | 4 | 5.51 |
| **Danao Norte** | 0.55 | 20 | POOR | 2.22 | 80 | POOR | 4 | 2.77 |
| **Danao Sur** | 2.58 | 85 | GOOD | 0.45 | 15 | FAIR | 4 | 3.03 |
| **Guinbirayan** | 1.44 | 35 | POOR | 2.67 | 65 | FAIR | 4 | 4.11 |
| **Guintigbasan** | 0.15 | 15 | GOOD | 0.86 | 85 | FAIR | 4 | 1.01 |
| **Magsaysay** | 2.98 | 40 | GOOD | 4.47 | 60 | POOR | 4 | 7.45 |
| **Mat-i** | 0.84 | 35 | GOOD | 1.57 | 65 | POOR | 4 | 2.41 |
| **Pandan** | 2.33 | 55 | GOOD | 1.90 | 45 | FAIR | 4 | 4.23 |
| **Poblacion** | 4.20 | 85 | GOOD | 0.74 | 15 | POOR | 4 | 4.94 |
| **Tabugon** | 2.37 | 60 | GOOD | 1.58 | 40 | POOR | 4 | 3.95 |
| **TOTAL** | | | | | | | | 79.45 |

*Source: Office of the Municipal Planning and Development/Google Earth via Arc GIS (2017)*

There are 13 existing bridges in the municipality where 11 of these are concrete where in four are fair and five are in good condition. The only footbridge is made of timber which is located in Barangay Guinbirayan and is in fair condition. Pandan bridge, made up of steel, has the most torrential capacity with 15 tons among the bridges.

*Table TR- 69 Inventory of Bridges by Location, Type, Capacity and Condition, Year 2016*

| BRIDGE NAME | LOCATION | TYPE | ROAD CAPACITY (Tons) | PHYSICAL CONDITION |
|---|---|---|---|---|
| **Sitio Capdang Bridge** | Agmanic | Concrete | 5 | Fair |
| **Atic Bridge** | Guinbirayan | Concrete | 10 | Fair |
| **Danao Sur Bridge** | Danao Sur | Concrete | 5 | Good |
| **Santol Bridge** | Danao Norte | Concrete | 10 | Good |
| **Guinbirayan Bridge** | Guinbirayan | Concrete | 10 | Good |
| **Guba Footbridge** | Guinbirayan | Timber | 1 | Fair |
| **Magsaysay Bridge** | Magsaysay | Concrete | 10 | Fair |
| **Palati Bridge** | Magsaysay | Concrete | 10 | Good |
| **Pandan Bridge** | Pandan | Steel/I-BEAM | 15 | Poor |
| **Magsaysay-Pandan Bridge** | Pandan | Concrete | 10 | Good |
| **Sitio Longa-og Bridge** | Poblacion | Concrete | 10 | Fair |
| **Barusbos Bridge** | Poblacion | Concrete | 5 | Good |
| **Tabok Bridge** | Poblacion | Concrete | 5 | Excellent |

*Source: Office of the Municipal Planning and Development*

### 6.1.2 Mode of Transportation by Type

The main entry to the Island of Tablas is the Poctoy Port in the Municipality of Odiongan. There are two major shipping lines that transport goods and passengers from Batangas Port, namely, 2GO Travel and Montenegro Shipping Line. 2GO, via Saint John de Padua, departs from Batangas Port every Thursday and Sunday at 10:00 AM and docks at Poctoy Port 5:00 PM the same day; and every Monday at 9:00 PM and arrives at Odiongan by 4:00 AM the following day. Roro vessels of 2GO crosses the Batangas Gulf, Verde Island Passage, and Tablas Strait for seven hours while Montenegro Shipping lines travel approximately for nine hours departing from Batangas port by 5:00 PM daily and arrives at Odiongan the following day. From Poctoy Port, commuters will have to ride a public utility jeepney which can be found in the port terminal or in Odiongan land Terminal in Dapawan, about 10 minutes away from the sea port via tricycle.

Santa Fe is about 40 kilometers via Limon Road and 45 kilometers via Malilico away from Odiongan Proper which takes approximately two hours of travel time passing through the Municipalities of Alcantara and Looc via public utility vehicle. However, a private car or motorcycle can reach Odiongan in an hour.

For inter-provincial destination, a sea port in San Agustin accommodates small sea vessels. From Romblon, Romblon, the M/V Maria Querubin sails daily at 1:00 PM and docks in San Agustin Port at 2:00 PM. From Sibuyan, people have to ride another ferry from Romblon, Romblon.

For air transport, Cebu Pacific Airlines is the only airline that transports from Manila to Tablas Island landing at Tugdan port in the Municipality of Alcantara. This leaves every Monday, Wednesday, Friday, and Sunday at 12:05 PM and arrives at 1:20 PM. On Tuesdays and Saturdays, the plane leaves at 8:30 AM and every Thursday leaves at 7:55 AM. Aside from the identified route, the municipality is also very accessible through pump boats since 10 of its barangays are coastal areas. There is also a port in the municipality which caters pumpboats from Caticlan, Boracay, and San Jose.

*Table TR- 70 Municipal Accessibility*

| ROUTE | MEANS OF TRANSPORTATION | TRAVEL TIME |
|---|---|---|
| **Manila- Tugdan, Alcantara** | Air Vessel | 45 minutes |
| **Tugdan, Alcantara-Santa Fe** | Motorcycle | 1 hours |
| **Tugdan, Alcantara- Looc** | PUJ | 20 minutes |
| **Looc- Santa Fe** | PUJ | 45 minutes |
| **San Agustin –Looc** | PUJ | 2 hours |
| **Batangas-Odiongan** | Sea Vessel | 8-9 hours |
| **Romblon, Romblon-Odiongan** | Sea Vessel | 4-5 hours |
| **Romblon, Romblon- San Agustin** | Sea Vessel | 2 hours |
| **Odiongan-Santa Fe** | PUJ/Mini Bus/Van/ Motorcycle | 1.5 hours |
| **Boracay-Santa Fe** | Motorboat | 2 hours |
| **San Jose-Santa Fe** | Motorboat | 1 hour |
| **Caticlan-Santa Fe** | Motorboat | 2 hours |
| **Lucena-Marinduque-Banton-San Agustin** | Sea Vessel | 8 hours |
| **Roxas, Mindoro- Odiongan** | Sea Vessel | 3 Hours |

*Source: Office of the Municipal Planning and Development*

The primary form of transportation in the municipality is through jeepneys and motorcycles. A total number of 13 jeepneys offer transportation services traversing the Santa Fe-Looc-Odiongan route. Aside from transporting passengers, these jeepneys also offer transportation of goods that could be dropped along the way. These public utility jeepneys travel to Odiongan from 5:30 AM to 9:00 AM, once a day. Meanwhile, Jeepneys from Odiongan are available until 12:00 noon. There are also two mini buses and two vans which take the same route as the jeepneys every day. Motorcycles, locally called *habal-habal,* has a number of more than a hundred. *Habal-habal* could accommodate at most three passengers to be transported within Tablas but is more expensive compared to jeepney and bus fare. Tricycles are also available in the municipality but are usually for family use only.

*Table TR- 71 Inventory of Public Transport Vehicles by Type and Service Routes, 2016*

| TYPE OF PUBLIC UTILITY VEHICLE | TOTAL NO. | CAPACITY OF PASSENGERS | FREQUENCY OF SERVICE/TRIPS | ROUTE |
|---|---|---|---|---|
| **Mini Bus** | 2 | 35-40 passengers | Once a day | Santa Fe-Odiongan |
| **Jeepney** | 13 | 22-26 passengers | Once a day | Santa Fe-Odiongan |
| **Van (Guinbirayan, Mat-I)** | 2 | 16 passengers | Once a day | Santa Fe-Odiongan |
| **Passenger Boat** | 5 | 20-30 passengers | One Pumpboat/day (depends on Schedule) | Sta Fe-Boracay, |
| | 4 | 45-55 passengers | | Sta Fe - Caticlan, |
| | 3 | 40-45 passengers | | Sta Fe- San Jose |

*Source: Office of the Municipal Planning and Development*

### 6.1.3 Road Accident

Accidents concerning roads are limited in the municipality by the number of available vehicles. For five consecutive years, 2012-2016, the Municipal Police Station has recorded only five cases of which, two are reckless imprudence resulting to physical injury while the remaining three is reckless imprudence resulting in damage to property which are most frequently experienced in Barangay Poblacion.

*Table TR- 72 Road Accidents by Nature, Location and Frequency for the Last Five (5) Years*

| NATURE | LOCATION | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|
| **Reckless Imprudence Resulting To Physical Injury** | Magsaysay | 0 | 1 | 0 | 0 | 0 |
| | Poblacion | 0 | 0 | 1 | 0 | 0 |
| **Reckless Imprudence Resulting in Damage to Property** | Poblacion | 0 | 2 | 0 | 0 | 0 |
| | Agmanic | 0 | 0 | 1 | 0 | 0 |

*Source: Municipal Police Station*

### 6.1.4 Transport Related Projects

Based from the Annual Investment Plan (AIP) 2017 and 2018 of the municipality, transport related projects are listed in table TR-73. Most of the projects approved are focused on the rehabilitation of roads. Installation of streetlights particularly the solar powered are also planned to be implemented. These projects are crafted for a more efficient and safer transportation system.

*Table TR- 73 Transport Related Projects, Approved/Funded for Implementation*

| NAME OF PROJECT | LOCATION | TYPE | IMPLEMENTING OFFICE/ DEPARTMENT | ESTIMATED DATE OF START | ESTIMATED DATE OF COMPLETION |
|---|---|---|---|---|---|
| **Road Networks:** | | | | | |
| **Rehabilitation of Canyayo Local Access Road** | Sitio Proper, Canyayo | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Feb 2017 | Apr 2017 |
| **Rehabilitation of Guinbirayan Local Access Road** | Sitio Manamoc, Guinbirayan | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Feb 2017 | Apr 2017 |
| **Rehabilitation of Guintigbasan Local Access Road** | Sitio Punta, Guintigbasan | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Feb 2017 | Apr 2017 |
| **Rehabilitation of Magsaysay Local Access Road** | Magsaysay, Magsaysay | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Feb 2017 | Apr 2017 |
| **Rehabilitation of Mat-i Local Access Road** | Sitio Tabuk, Mat-i | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Feb 2017 | Apr 2017 |
| **Rehabilitation of Tabugon Local Access Road** | Purok Liwayway, Tabugon | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Feb 2017 | Apr 2017 |
| **Rehabilitation of Agmanic Local Access Road** | Sitio Capdang, Agmanic | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Canyayo Local Access Road** | Sitio Nahi, Canyayo | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Danao Sur Local Access Road** | Sitio Biga-a, Danao Sur | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Guinbirayan Local Access Road - Phase II** | Sitio Manamoc, Guinbirayan | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Guintigbasan Local Access Road - Phase II** | Sitio Punta, Guintigbasan | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Mat-i Local Access Road - Phase II** | Sitio Tabuk, Mat-i | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Pandan Local Access Road** | Sitio Ilaya, Pandan | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Poblacion Local Access Road** | Sitio Tabuk, Poblacion | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Rehabilitation of Tabugon Local Access Road - Phase II** | Purok Liwayway, Tabugon | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |

| NAME OF PROJECT | LOCATION | TYPE | IMPLEMENTING OFFICE/ DEPARTMENT | ESTIMATED DATE OF START | ESTIMATED DATE OF COMPLETION |
|---|---|---|---|---|---|
| **Rehabilitation of Municipal Roads (Poblacion)** | M. Ataran St., Poblacion | Rehabilitation | Eng'g Office, LGU, Sta. Fe | Jan 2018 | March 2018 |
| **Other Infrastructure Assets:** | | | | | |
| **Purchase and Installation of Danao Norte Solar Street Lighting System** | Danao Norte | Purchase and Installation | Eng'g Office, LGU, Sta. Fe | May 2018 | July 2018 |
| **Purchase and Installation of Magsaysay Solar Street Lighting System** | Magsaysay | Purchase and Installation | Eng'g Office, LGU, Sta. Fe | May 2018 | July 2018 |
| **Purchase and Installation of Pandan Solar Street Lighting System** | Pandan | Purchase and Installation | Eng'g Office, LGU, Sta. Fe | May 2018 | July 2018 |
| **Installation of Street Lighting System** | Poblacion | Installation | Eng'g Office, LGU, Sta. Fe | May 2018 | July 2018 |

*Source: Office of the Municipal Planning and Development*

## 6.2 Power

### 6.2.1 Households Served and Unserved by Electricity, Year 2016

Tablas Island Electric Cooperative (TIELCO), located in Odiongan, is the sole electricity provider in Tablas Island in partnership with Sunwest Water and Electric Co. Inc (SUWECO) and National Power Corporation (NAPOCOR). Through the National Electrification Administration (NEA), Barangay Associations were formed who are responsible for the maintenance of the electric lines and other installed equipment, and the reading and billing of respective member end-users.

In 2015, SUWECO switched to its 8.8-megawatt diesel fired power plant which decreased the occurrence of four to five-hour daily brownout experienced since 2012. As showed in Table Po-74, there is a 38.23% decrease on the number of household unserved from year 2014-2015 and 27.58% the following year considering the increase on the number of households within the years. In year 2016, households served totaled to 3,440 or 92.25% of the potential number of households identified by TIELCO. Barangays where all households have power connection are Agmanic, Danao Sur, and Poblacion. Meanwhile, Barangay Canyayo has the highest number of households unserved by TIELCO with 102 households followed by Barangay Pandan with 62 households. Correspondingly, the two barangays have the highest poverty threshold in the municipality with 87.32% and 69.37%, respectively. To support this, key informants mentioned that households without electric connection are households that do not have the capacity to pay the connection services and the equipment needed.

*Table Po- 74 Household Served and Unserved By Electricity, By Barangay, 2014-2016*

| Barangay | POTENTIAL HOUSEHOLD | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|---|
| | | Served | Unserved | Served | Unserved | Served | Unserved |
| Agmanic | 381 | 323 | 56 | 373 | 6 | 392 | 0 |
| Canyayo | 338 | 190 | 148 | 208 | 130 | 236 | 102 |
| Danao Norte | 289 | 224 | 68 | 251 | 41 | 262 | 30 |
| Danao Sur | 183 | 179 | 6 | 186 | 0 | 187 | 0 |
| Guinbirayan | 417 | 390 | 26 | 402 | 14 | 411 | 5 |
| Guintigbasan | 184 | 147 | 33 | 152 | 28 | 159 | 21 |
| Magsaysay | 323 | 258 | 63 | 276 | 45 | 297 | 24 |
| Mat-i | 260 | 182 | 77 | 204 | 55 | 211 | 48 |
| Pandan | 323 | 212 | 112 | 244 | 80 | 262 | 62 |
| Poblacion | 556 | 529 | 20 | 565 | 0 | 607 | 0 |
| Tabugon | 476 | 308 | 160 | 392 | 76 | 416 | 52 |
| TOTAL | 3,729 | 2,942 | 769 | 3253 | 475 | 3,440 | 344 |

*Source: Tablas Island Electric Cooperative (TIELCO)*

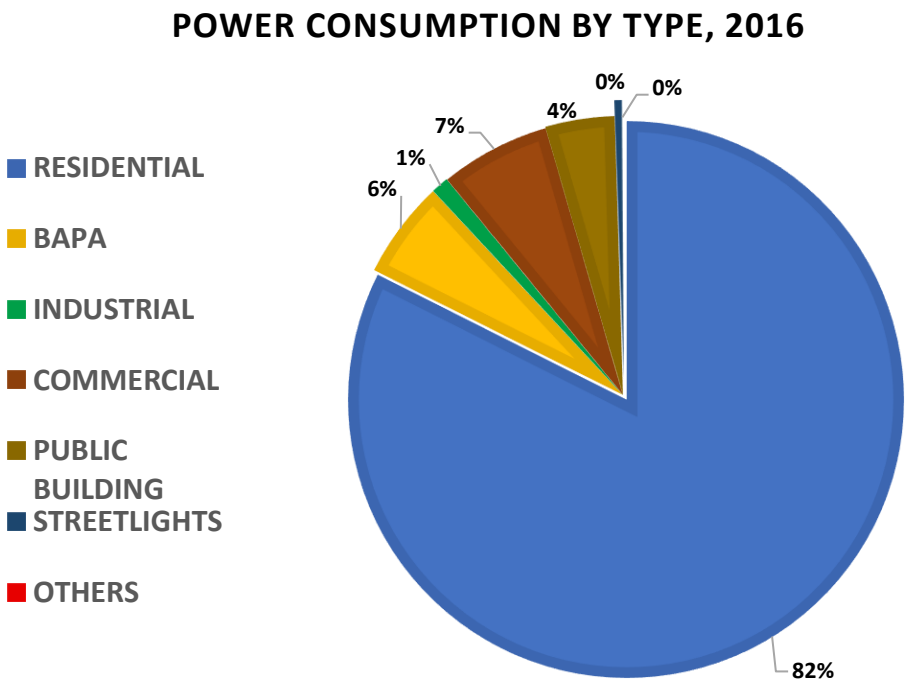
### 6.2.2 Number of Connections by Type of Users and Average Consumption

Inevitably, majority of power connections in the municipality are for domestic purposes which accounted to 885 connections with an average consumption of 60,121.31 kilowatts hour per month. This is followed by the commercial establishments with 69 connections and an average consumption of 9,675.92. However, the type of connection with the highest average consumption is BAPA with 83, 414 kilowatts hour per month from the 61 connections.

*Table Po- 75 Number of Connections by Type of Users and Average Consumption (kwh/month), 2016*

| TYPE OF CONNECTION | NUMBER OF CONNECTIONS | AVERAGE CONSUMPTION (KWHR/MO.) |
|---|---|---|
| RESIDENTIAL | 885 | 60,121.31 |
| BAPA | 61 | 83,414.00 |
| INDUSTRIAL | 11 | 8,432.37 |
| COMMERCIAL | 69 | 9,675.92 |
| PUBLIC BUILDING | 43 | 12,171.15 |
| STREETLIGHTS | 4 | 823.50 |
| OTHERS | 1 | 8.42 |
| TOTAL | 1,074 | 174,646.67 |

*Source: Tablas Island Electric Cooperative (TIELCO)*




Energy demand as computed by TIELCO for 2017-2025 is projected to increase by 111.02% from the current demand of 1,917,903.02 to 4,047,249.07 kilowatts hour. The demand doubles in 2024 with 3,842,351.04 kilowatts hour which will increase by 5.33% the following year.

*Table Po- 76 Projected Energy Sales by type of Connections (KWHR), 2016-2025*

| CONNECTION | PROJECTED ENERGY SALES (KWHR) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| RESIDENTIAL | 691,452.90 | 721,455.75 | 845,735.13 | 930,367.75 | 1,013,593.79 | 1,094,736.96 | 1,173,415.72 | 1,249,433.57 | 1,322,711.74 | 1,393,246.94 |
| BAPA | 895,432.00 | 1,000,968.00 | 1,173,396.71 | 1,290,818.38 | 1,406,288.53 | 1,518,868.85 | 1,628,029.98 | 1,733,499.28 | 1,835,167.47 | 1,933,030.00 |
| INDUSTRIAL | 91,360.00 | 101,188.40 | 118,619.31 | 130,489.53 | 142,162.47 | 153,543.28 | 164,578.44 | 175,240.39 | 185,518.08 | 195,411.05 |
| COMMERCIAL | 77,682.00 | 116,111.00 | 136,112.51 | 149,733.27 | 163,127.66 | 176,186.83 | 188,849.38 | 201,083.69 | 212,877.06 | 224,228.99 |
| PUBLIC BUILDING | 138,054.00 | 146,053.78 | 171,213.29 | 188,346.58 | 205,195.13 | 221,622.01 | 237,549.98 | 252,939.28 | 267,773.94 | 282,053.31 |
| STREET LIGHTS | 18,779.12 | 9,882.00 | 11,584.29 | 12,743.53 | 13,883.50 | 14,994.95 | 16,072.63 | 17,113.87 | 18,117.59 | 19,083.73 |
| OTHERS | 5,143.00 | 101.00 | 118.40 | 130.35 | 141.90 | 153.26 | 164.27 | 174.91 | 185.17 | 195.05 |
| TOTAL | 1,917,903.02 | 2,095,759.93 | 2,456,779.64 | 2,702,629.39 | 2,944,392.98 | 3,180,106.14 | 3,408,660.40 | 3,629,484.99 | 3,842,351.05 | 4,047,249.07 |

*Source: Tablas Island Electric Cooperative (TIELCO)*

## 6.3 Water

### 6.3.1 Number of Households Served by Type of Water System (Level I, II, and III)

The water system in most barangays is operated and managed by the Barangay Water System Association (BAWASA). Barangays with level III water system under BAWASA are Guintigbasan, Guinbirayan, Danao Norte, Agmanic, Pandan and Tabugon. The level III water supply in the municipal town center, Poblacion, comes from a well located in Sitio Longa-og. Water pipes are also connected to Mount Calatong in Barangay Guintigbasan which augments water supply. Other barangay without BAWASA water system and water system under SALINTUBIG gather water from deep wells. In 2017, drilling of new wells to serve Barangay Magsaysay, Guinbirayan, and Poblacion has started. These water systems are implemented under the Sagana at Ligtas na Tubig Para sa Lahat (SALINTUBIG) program which started implementing projects in the municipality in 2013.

Table Wa-84 shows the type of water sources and the corresponding number of users in year of 2015. Level I, based from the CBMS guide, are from rain, stream, or wells; level II are communal faucet systems, while level III are the BAWASA operated water system and the SALINTUBIG which supplies water in Poblacion. In 2015, majority of the municipal households (2,702), which is 72.81% of the total households obtain their water supply from level I water sources. On the other hand, 15.44% of the households depend on the level II water supply while only 8.52% have a level III water connection. In 2015, diarrhea ranked 6$^{th}$ in the leading causes of morbidity where in, most cases are caused by bacteria, virus, or parasite such as Salmonella, Campylobacter, Shigella, and Shiga toxin-producing Escherichia coli which can be transmitted through water.

*Table Wa- 77 Water Supply System by Type and Number of Household Population Served, 2016*

| BARANGAY | HOUSEHOLD | LEVEL I | LEVEL II | LEVEL III | DOUBTFUL SOURCE |
|---|---|---|---|---|---|
| **AGMANIC** | 379 | 333 | 78 | 7 | 0 |
| **CANYAYO** | 338 | 314 | 0 | 6 | 0 |
| **DANAO NORTE** | 292 | 2 | 257 | 6 | 29 |
| **DANAO SUR** | 185 | 178 | 2 | 3 | 0 |
| **GUINBIRAYAN** | 416 | 201 | 84 | 100 | 13 |
| **GUINTIGBASAN** | 180 | 64 | 55 | 67 | 0 |
| **MAGSAYSAY** | 321 | 326 | 0 | 13 | 0 |
| **MAT-I** | 259 | 309 | 34 | 1 | 0 |
| **PANDAN** | 324 | 252 | 16 | 47 | 0 |
| **POBLACION** | 549 | 365 | 66 | 58 | 0 |
| **TABUGON** | 468 | 358 | 4 | 8 | 0 |
| **TOTAL** | **3,711** | **2702** | **573** | **316** | **42** |

*Source: CBMS 2015*

*Table Wa-78 Projecter Water Requirement (lcpd), 2016-2025*

| BARANGAY | Base Year | *PROJECTED WATER DEMAND (LCPD) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 |
| Agmanic | 259,350 | 260,400 | 261,450 | 262,500 | 263,550 | 264,600 | 265,650 | 266,700 | 267,750 | 268,800 | 269,850 |
| Canyayo | 232,800 | 232,650 | 232,500 | 232,350 | 232,200 | 232,050 | 231,900 | 231,750 | 231,750 | 231,600 | 231,450 |
| Danao Norte | 180,000 | 178,200 | 176,550 | 174,900 | 173,250 | 171,600 | 169,950 | 168,300 | 166,650 | 165,000 | 163,500 |
| Danao Sur | 112,650 | 111,450 | 110,100 | 108,900 | 107,700 | 106,500 | 105,300 | 104,250 | 103,050 | 101,850 | 100,800 |
| Guinbirayan | 257,100 | 257,550 | 257,850 | 258,300 | 258,750 | 259,200 | 259,650 | 259,950 | 260,400 | 260,850 | 261,300 |
| Guintigbasan | 11 1,150 | 113,850 | 116,700 | 119,550 | 122,400 | 125,400 | 128,400 | 131,550 | 134,850 | 138,150 | 141,450 |
| Magsaysay | 211,350 | 212,400 | 213,450 | 214,500 | 215,550 | 216,600 | 217,650 | 218,700 | 219,750 | 220,800 | 222,000 |
| Mat-i | 178,650 | 179,250 | 180,000 | 180,600 | 181,200 | 181,950 | 182,850 | 183,600 | 183,900 | 184,500 | 185,250 |
| Pandan | 204,000 | 203,550 | 203,100 | 202,650 | 202,200 | 201,600 | 201,150 | 200,700 | 200,250 | 199,800 | 199,350 |
| Poblacion | 351,300 | 356,250 | 361,200 | 366,150 | 371,250 | 376,350 | 381,600 | 387,000 | 392,250 | 397,950 | 403,350 |
| Tabugon | 316,350 | 321,900 | 327,450 | 333,150 | 339,000 | 344,850 | 350,850 | 357,000 | 363,150 | 369,450 | 376,350 |
| TOTAL | 2,414,700 | 2,427,450 | 2,440,350 | 2,453,550 | 2,467,050 | 2,480,700 | 2,494,950 | 2,509,500 | 2,523,750 | 2,538,750 | 2,554,650 |

*Computed based from the required liter per capita daily connection

*Table Wa- 79 Existing Surface Water Resources by Type and Classification, Year 2017*

| SURFACE WATER (e.g. lakes, rivers, water, impounding structures, etc.) | LOCATION | CLASSIFICATION (e.g. Class AA, A,B, C, D) |
|---|---|---|
| **Pandan River** | Pandan | D |
| **Catolog River** | Magsaysay-Poblacion | D |
| **Atic River** | Danao Norte-Danao Sur- Guinbirayan (Sitio Guba) | D |
| **Danao Sur River** | Danao Sur | D |
| **Guinbirayan River** | Guinbirayan | D |
| **Capdang Creek** | Capdang, Agmanic | B |
| **Bulukawe Creek** | Agmanic | B |
| **Guintigbasan Creek** | Guintigbasan | A/D |
| **Binaluka Creek** | Agmanic | D |
| **Manhac Creek** | Mat-i | A/D |
| **Tinagong Dagat** | Agmanic | C |

Source: MPDO
*based from the actual use in the municipality

DENR AO No. 34 otherwise known as the Revised Water Usage and Classification/Water Quality Criteria provides for the classification of fresh surface water such as rivers, lakes, reservoirs and others and their beneficial uses. In the municipality, there are only two classifications applicable as shown in Table Wa-3, Class C and Class D. These classifications are described further in Table Wa-80 and are based from utilization as per local knowledge.

*Table Wa- 80 Classification of Fresh Surface Water*

| CLASSIFICATION | BENEFICIAL USE |
|---|---|
| **AA** | Public Water Supply Class I. this class is intended primarily for waters having watersheds which are uninhabited and otherwise protected and which require only approved disinfection in order to meet the National Standards for Drinking Water (NSDW) of the Philippines having watersheds |
| **A** | Public Water Supply Class II. For sources of water supply that will require complete treatment (coagulation, sedimentation, filtration and disinfection) in order to meet the NSDW. |
| **B** | Recreational Water Class. For primary contact recreation such as bathing, swimming, ski diving, etc. (particularly those designed for tourism purposes). |
| **C** | 1. Fishery water for the propagation and growth of fish and other aquatic resources.<br>2. Recreational Water Class II (boating, etc.)<br>3. Industrial Water Class I (for manufacturing processes after treatment) |
| **D** | 1. For agriculture, irrigation, livestock watering, etc.<br>2. Industrial Water Supply Class II (e.g. cooling, etc.)<br>3. Other inland waters, by their quality, belong to this classification |

## 6.4 Communication

### 6.4.1 Postal Service Personnel and Equipment Communication Service Facilities

The only postal office is government owned and managed by the Philippine Postal Corporation (PhilPost). Due to the declining number of mails received, the postal office was transferred from Poblacion to Guinbirayan in 2017. Local newspaper is available from Odiongan and Romblon, Romblon. For cable connections, there is only one provider.

Table Co- 81 Postal Service and Equipment Communication Services Facilities, 2016

| NAME OF COMMUNICATION SERVICE FACILITY | TYPE OF COMMUNICATION SERVICE FACILITY | BARANGAY | OWNERSHIP | |
|---|---|---|---|---|
| | | | Public | Private |
| **Santa Fe Postal Office** | Postal Services | Guinbirayan | 1 | 0 |
| **Santa Fe Cable and Internet/CATV** | Internet, Broadcast & Television Network | Poblacion | 0 | 1 |
| **G-Satellite** | Broadcast and Television Network | Poblacion | 0 | 1 |
| **Cignal/ Dream Satellite** | Broadcast and Television Network | Poblacion | 0 | |
| **Internet Providers (Smart and Globe)** | Cell Site Network | Magsaysay Poblacion | 0 | 2 |

*Source: Office of the Municipal Planning and Development*

### 6.4.2 Telecommunication: Inventory of Communication Tower

Two telecommunication companies are serving the Municipality of Santa Fe namely, Globe Telecommunication Inc. and Smart Telecommunication Company. There are two cell sites for each network but all are just parabolic discs that gets signal from San Jose and Sta. Maria in Romblon and from Boracay. The telecommunication facilities offer call, text, and internet services for the constituents of the municipality.

*Table Co- 82 Telecommunication: Inventory of Communication Tower*

| LOCATION OF ANTENNA | HEIGHT | DATE INSTALLED | THE CATCHMENT RADIUS OF THE ANTENNA (km) | OWNER |
|---|---|---|---|---|
| **Poblacion** | 120 ft | 2004 | 7 kms | Smart Communications |
| **Magsaysay** | 200 ft | 2006 | 9 kms | Globe Telecom, Inc. |
| **Guinbirayan** | 80 ft | **2006** | 5 kms | Smart Communications |
| **Mat-i** | 90 ft | 2004 | 7 kms | Globe Telecom, Inc. |

*Source: Office of the Municipal Planning and Development*

*Table CT- 83 List of Establishments, 2016*

| | TYPE OF BUSINESS | No. | | TYPE OF BUSINESS | No. |
|---|---|---|---|---|---|
| 1 | **Accounting firm** | 1 | **28** | **Gas Filling Station** | 2 |
| 2 | **Agricultural Supply** | 3 | **29** | **General Merchandise** | 3 |
| 3 | **Auto/Motor Parts Retailer** | 3 | **30** | **Grocery Shop** | 3 |
| 4 | **Bakery** | 4 | **31** | **Hardware** | 9 |
| 5 | **Bank** | 1 | **32** | **Hollow Block Making** | 1 |

| | | | | | |
|---|---|---|---|---|---|
| 6 | **Bicycle Shop** | 2 | **33** | **Junk Shop** | 3 |
| 7 | **Billiard/Pool Hall** | 1 | **34** | **Kitchenware Retailing** | 1 |
| 8 | **Birthing Home** | 1 | **35** | **Lending Investor** | 1 |
| 9 | **Boarding House** | 6 | **36** | **LPG Retailer** | 1 |
| 10 | **Boutique** | 1 | **37** | **Meat Vendor** | 2 |
| 11 | **Cable TV/ Internet/Telecom** | 2 | **38** | **Native Products** | 1 |
| 12 | **Cattle/Hog Dealer** | 1 | **39** | **Pawnshop** | 3 |
| 13 | **Chainsaw** | 12 | **40** | **Photo Copying and Printing Center** | 1 |
| 14 | **Cockpit** | 2 | **41** | **Photo Studio** | 1 |
| 15 | **Computer/Rental Shop** | 3 | **42** | **Plastic Ware/Glass Ware** | 4 |
| 16 | **Cooperative** | 2 | **43** | **Refreshment/Restaurant/Canteen** | 5 |
| 17 | **Copra Dealer** | 5 | **44** | **Repair Shop** | 1 |
| 18 | **Drugstore** | 2 | **45** | **Retail Construction Materials** | 1 |
| 19 | **Dry Goods** | 15 | **46** | **Rice/Corn Mill** | 13 |
| 20 | **Electronic Shop/ Mobile** | 4 | **47** | **Sari-Sari Store** | 163 |
| 21 | **Fish Retailer/Dealer** | 8 | **48** | **School (Private)** | 1 |
| 22 | **Fish Shelter/ Fish Net** | 4 | **49** | **School and Office Supplies** | 1 |
| 23 | **Fishing Boat/Motor Boat** | 56 | **50** | **Thresher and Hand Tractor** | 15 |
| 24 | **Food Catering Services/ Food Handler** | 18 | **51** | **Trading Services** | 4 |
| 25 | **Forwarding Services** | 1 | **52** | **Videoke Bar** | 3 |
| 26 | **Fruit and Vegetable Vendor** | 8 | **53** | **Water Station** | 5 |
| 27 | **Funeral Parlor** | 2 | **54** | **Welding Shop** | 2 |

*Source: Municipal Mayor's Office*
**establishments included are limited to businesses with permit from the municipality*

*Table CT- 84 List of Business Permits Issued by Type 2014-2016*

| Business Permits | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|
| | NO | % | NO | % | NO | % |
| PRIMARY | | | | | | |
| **Agriculture, Hunting, and Forestry** | 35 | 8.27% | 68 | 10.49% | 49 | 11.72% |
| **Fishing** | 95 | 22.46% | 201 | 31.02% | 68 | 16.27% |
| **Primary Sub-Total** | **130** | **30.73%** | **269** | **41.51%** | **117** | **27.99%** |
| SECONDARY | | | | | | |
| **Electricity, Gas & Water Supply** | 2 | 0.47% | 6 | 0.93% | 8 | 1.91% |
| **Construction** | 4 | 0.95% | 5 | 0.77% | 4 | 0.96% |
| **Secondary Sub-Total** | **6** | **1.42%** | **11** | **1.70%** | **12** | **2.87%** |
| TERTIARY | | | | | | |
| **Wholesale & Retail Trade/Repair of Motor Vehicles Motorcycles, Personal & Household Goods** | 206 | 48.70% | 285 | 43.98% | 213 | 50.96% |
| **Hotels and Restaurants** | 3 | 0.71% | 2 | 0.31% | 5 | 1.20% |
| **Transport, Storage, &** | 6 | 1.42% | 1 | 0.15% | 2 | 0.48% |

| Business Permits | 2014 | | 2015 | | 2016 | |
|---|---|---|---|---|---|---|
| | NO | % | NO | % | NO | % |
| **Communication** | | | | | | |
| **Financial Intermediation** | 10 | 2.36% | 9 | 1.39% | 7 | 1.67% |
| **Real Estate, renting & Business Activities** | 3 | 0.71% | 4 | 0.62% | 6 | 1.44% |
| **Education** | 0 | 0 | 1 | 0.15% | 1 | 0.24% |
| **Health & Social Work** | 3 | 0.71 | 2 | 0.31% | 3 | 0.72% |
| **Other Community, Social, and personal Service activities** | 56 | 13.24 | 64 | 9.88% | 52 | 12.44% |
| **Tertiary Sub-Total** | **287** | **67.85** | **368** | **56.79%** | **289** | **69.14%** |
| TOTAL | **423** | | **648** | | **418** | |

*Source: Business Permit Licensing Office (2017)*

*Table IN- 85 Inventory of Existing Industrial Establishments by Manufacturing/Industrial Process; Raw Material Input; Production and Markets, 2016*

| NAME OF INDUSTRIAL ESTABLISHMENT | MANUFACTURING INDUSTRIAL PROCESS | RAW MATERIAL | | PRODUCTION | MARKET PRODUCT | |
|---|---|---|---|---|---|---|
| | | Material | Source | Product | Local | Export |
| **Mila Rice Mill** | Milling | Rice | Local | Rice | / | None |
| **ACV Stationary Rice Mill** | Milling | Rice | Local | Rice | / | None |
| **ACV Hollow Block Making** | Fabrication | Cement & Sand | Local | Hollow Blocks | / | None |
| **JCA Rice Mill** | Milling | Rice | Local | Rice | / | None |
| **Guardian Glass and Aluminum Works** | Fabrication | Glass | Local | Glass | / | None |
| **Perfas Native Products** | Woodcraft | Palm Leaves | Local | Native Products | / | None |
| **Alcantara Travelling Rice Mill** | Milling | Rice | Local | Rice | / | None |
| **Super Vince Rice Mill** | Milling | Rice | Local | Rice | / | None |

*Source: Municipal Mayor's Office*

## 6.5 LIFELINE UTILITIES EXPOSURE AND RISK TO LANDSLIDE

Lifeline utilities refer to major linkage and distribution systems associated with transportation access systems and power, water, and communication distribution/line systems. Exposure can be expressed in the linear kilometers exposed and the construction cost/replacement values. At the minimum, LGUs limit the scope of establishing exposure for major access or distribution networks. The approximate length of road networks of the municipality are about 79.57298 kilometers while there are a total of 0.101 kilometer of bridges. Like in the other exposure units, the exposure, vulnerability, and adaptive capacities are determined to assess the risk of roads, bridges, and power.

Generally, the percentage of structures affected by hazards is around 20 to 40% and the replacement value per square meter or construction value is more than two (2) million pesos. In addition, the proportion of structures in dilapidated or condemned condition is low which is equivalent to about less than or equal five (5) percent of the structures. Although the structures are constructed in 2000 onwards, the structures employ hazard mitigation design standards of the year 1980s. Furthermore, around 10-20% of the affected areas are covered by infrastructure-related mitigation measures such as sea walls and flood control measures. As for the capacity and willingness to retrofit and relocate, the owner or concerned administrator has the capacity to retrofit but has no plan yet. Moreover, the percentage of structures covered by property insurance is only about less than or equal to five (5) percent. As for the government investments, with Santa Fe being a fifth class municipality, local government has moderate capacity to invest in risk management and climate change adaptation or mitigation. Lastly, the local government is implementing existing regulations on hazard mitigation and structural design standards for the presence and adherence to government regulations.

### A. Roads

Road networks in Santa Fe are classified as provincial road, municipal road, and barangay road. There are a total of 30.6697 kilometers of provincial roads, 2.70681 kilometers of municipal roads, and 46.08518 kilometers of barangay roads. Since the municipality has on-going road construction projects, the surface types of these roads are either concrete, gravel, or dirt. A total of 79.5728 kilometers (100%) of roads do not employ hazard-resistant design. This means roads do not have drainage canals and/or absence of slope protection mitigation measure. A total of 28.824729 kilometers of roads need major repairs while 40.96895 kilometers need minor repairs, and about 9.779301 kilometers are in good condition.

The provincial roads needing minor repairs are about 14.14331 kilometers in length while a total of 10.453643 kilometers need major repairs. Provincial roads in good condition have a total length of 6.02998 kilometers.

On the other hand, the municipal roads are all in good condition with total length of 2.70681 kilometers.

Furthermore, the barangay roads needing minor repairs have a total length of 26.82564 kilometers while approximately 18.371086 kilometers need major repairs. Around 1.042511 kilometer of barangay road is in good condition.

### B. Bridges

Exposure, vulnerability, and adaptive capacities of 11 bridges were determined to identify their risk to hazards. These include Capdang bridge (Agmanic), Santol bridge (Danao Norte), Danao Sur bridge (Danao Sur), Guinbirayan and Atic bridges (Guinbirayan), Magsaysay and Palate bridges (Magsaysay), Pandan bridge (Pandan), and Tabuk, Barusbos, and Longa-og bridges (Poblacion).

The surface type of these bridges is concrete. Capdang and Magsaysay bridges need minor repairs while six (6) of these bridges are in good condition namely Santol, Danao Sur, Guinbirayan, Palate, Tabok and Barusbos bridges. Three (3) bridges are in fair or poor condition which includes Atic, Pandan, and Longa-og bridges.

### C. Electric Posts (Power lines)

The electricity in the municipality is supplied by Tablas Island Electric Cooperative (TIELCO). There are about 310 electric posts in the municipality which are assessed in order to determine the risks. These electric posts are made of steel, in good condition, and employ hazard-resistant design.

**Flood Exposure and Risk**

Approximately 15.1346 kilometers of roads are exposed to flooding. About 1.55113 kilometers are exposed to low flood, 3.47165 kilometers are exposed to moderate flood, and 10.11182 kilometers are exposed to high flood.

Roads that are at moderate risk to flooding have a total length of 11.04424 kilometers and the affected value of these roads amount to a total ₱ 77,390,445.00. These include 3.23418 kilometers of barangays roads with affected value of ₱16,170,900.00, municipal roads with total length of 0.06575 kilometer with affected value amounting to ₱ 328,750.00, and provincial roads with total length of 4.43385 kilometers and affected value of ₱44,338,530.00. Furthermore, roads that are high risk have a total length of 4.09034 kilometers with a total affected value of ₱ 28,165,100.00. Of these, barangay roads have a total length of 2.54770 kilometers valued at ₱ 12,738,500.00 and provincial roads have a total length of 1.54266 kilometers valued at ₱ 15,426,600.00.

There are 11 bridges in the municipality. Of these bridges, four (4) are high risk to flood namely Capdang bridge, Atic bridge, Pandan bridge, and Longa-og bridge with a total length of 0.054 kilometer. The total affected value of bridges at high risk to flood amount to ₱9,100,000.00. The seven (7) remaining bridges are at moderate risk to flood namely Santol bridge, Danao Sur bridge, Guinbirayan bridge, Magsaysay bridge, Palate bridge, Tabok bridge, and Barusbos bridge with a total length of 0.157 kilometer. The total affected value of these bridges amount to ₱ 11,400,000.00.

A total of 68 electric posts are susceptible to flooding. Of these, 10 electric posts are exposed to low flood with affected value of ₱200,000.00 while 22 electric posts are exposed to moderate flood with affected value of ₱420,000.00. In addition, 36 electric posts are exposed to high flood with the total affected value of ₱720,000.00. All these 68 electric posts are at moderate risk to flood with a total affected value of ₱1,340,000.00.

**Landslide Exposure and Risk**

Roads exposed to landslide have a total length of 79.57298 kilometers and a total affected value of ₱565,046,020.00. These include barangay roads with total length of 46.239237 kilometers and affected value of ₱231,708,590.00, municipal roads with 2.70681 kilometers and ₱27,068,100.00 affected value, and provincial roads with total length of 30.626933 kilometers and affected value amounting to ₱306,269,330.00.

A total of 30.262583 kilometers of provincial roads with total affected value of ₱302,625,830.00 are at low risk to landslide while 0.36435 kilometer is at high risk and its affected value amounts to ₱3,643,500.00. As for the barangay roads at low risk, the total length of affected area is 46.198937 kilometers and the total affected value is ₱231,507,090.00. In addition to this, 0.0403 kilometer of barangay roads is at high risk with affected value of ₱201,500.00. Furthermore, 2.70681 kilometers of municipal roads are at low risk and its affected value is ₱27,068,100.00.

All bridges in the municipality are at low risk to landslide.

310 electric posts are exposed to landslide with a total affected value of ₱6,200,000.00. 249 of these electric posts have low susceptibility with affected value amounting to ₱4,980,000.00. The remaining 61 are moderately susceptible with affected value amounting to ₱1,220,000.00. All of this electric posts are low risk to landslide.

**Tsunami Exposure and Risk**

Roads exposed to tsunami have a total length of 18.946072 kilometers and total affected value of ₱122,216,555.00. Some exposed barangay roads are from Agmanic, Canyayo, Magsaysay, Pandan, Poblacion, and Tabugon with a total length of 13.448833 kilometers. Only the municipal road in Poblacion with a total length of 3.42596 kilometers and affected value ₱34,259,600.00 is exposed to tsunami. Provincial roads exposed to tsunami has a total length of 2.071279 kilometers and affected value of ₱20,712,790.00 and these are located in Agmanic, Pandan, and Poblacion. All of these roads are at low risk to tsunami.

25 electric posts located in Agmanic, Pandan, Poblacion, and Tabugon are exposed to tsunami. The total affected value of these posts amount to ₱500,078.00. These electric posts are in good condition and employ hazard-resistant design. The electric posts are at low risk to tsunami.

**Decision Areas and Policy Interventions**

The identified decision areas for lifeline utilities include all barangays with most number of roads, electric posts, and bridges at moderate and high risks to hazards. For flood, the decision areas are Tabugon, Pandan, Poblacion, Danao Sur, and Guinbirayan. For landslide, the decision areas are Danao Norte, Guinbirayan, Guintigbasan, Magsaysay, and Poblacion. For tsunami, the decision areas are Tabugon, Pandan, Poblacion, Canyayo, and Agmanic.

The policy interventions for lifeline utilities include road widening and road reconstruction that shall employ hazard-resistant design. In addition to this, retrofitting and applying mitigation measures for existing roads and bridges is a must. Roads and bridges at high risk areas must be prioritized to avoid higher amount of damages to properties and lives. Furthermore, lifeline utilities and its project design must possess and integrate property insurance. Mitigating measures include elevation of roads, installation of early warning devices, seawall construction, riprapping of damaged river banks,

and Information, Education, Campaign (IEC). Moreover, regular monitoring of conditions of roads, electric posts, and bridges must be conducted to assure prevention of accidents and delay of service.

*Table 86 Lifeline Utilities Exposure and Risk to Hazards*

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| AG | Agmanic Barangay Road | Barangay Road | 6.663 015 | L | 0.497 71 | M | L | 6.663 015 | LOW | L | 4.9020 58 | LOW |
| | | Barangay Road | | M | 0.809 78 | M | M | 0.102 481 | LOW | | | |
| | | Barangay Road | | H | 1.266 48 | M | | | | | | |
| | Provincial Road | Provincial Road | 1.219 703 | | | | L | 1.219 703 | LOW | L | 0.0544 29 | LOW |
| | Electrical Post 276 | | N/A | | | | L | n/a | LOW | | | |
| | Electrical Post 277 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 278 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 279 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 280 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 281 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 282 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 283 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 284 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 285 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 286 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 287 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 288 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 289 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 290 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 291 | | | M | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 292 | | | | | | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 293 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 294 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 295 | | | | | | L | n/a | LOW | | | |
| | Capdang Bridge | Bridges | | H | 0.01 | H | | | | | | |
| CA | Canyayo Barangay Road | Brgy. Roads | 5.511127 | H | 0.59213 | M | L | 5.42802 | LOW | L | 2.63707 | LOW |
| | | Brgy. Roads | | M | 0.14435 | M | M | 0.08256 | LOW | | | |
| DN | Provincial Roads | Provincial Roads | 6.970351 | H | 0.03360 | H | L | 0.96551 | LOW | | | |
| | Provincial Roads | Provincial Roads | | L | 0.00010 | M | M | 2.94122 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.07660 | M | H | 0.26823 | HIGH | | | |
| | Danao Norte-Danao Sur Barangay Road | Barangay Road | 2.77996 | H | 0.10790 | H | L | 1.9595 | LOW | | | |
| | | Barangay Road | | | | | M | 0.7799 | LOW | | | |
| | | Barangay Road | | | | | H | 0.0403 | HIGH | | | |
| | Electrical Post 163 | | N/A | | | | L | n/a | LOW | | | |
| | Electrical Post 164 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 165 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 166 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 167 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 168 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 169 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 296 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 297 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 298 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 299 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 300 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 301 | | | | | | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 302 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 303 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 304 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 305 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 306 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 307 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 308 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 309 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 310 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 311 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 312 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 313 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 314 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 315 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 316 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 317 | | | | | | L | n/a | LOW | | | |
| | Santol Bridge | Bridges | | H | 0.005 | M | | | | | | |
| DS | Danao Norte-Danao Sur Barangay Road | Barangay Road | 3.026905 | L | 0.03450 | M | L | 2.3258 | LOW | | | |
| | | Barangay Road | | H | 0.04920 | H | M | 0.70488 | LOW | | | |
| | | Barangay Road | | M | 0.04350 | M | | | | | | |
| | Provincial Roads | Provincial Roads | 1.101895 | H | 0.14940 | H | L | 0.95053 | LOW | | | |
| | Provincial Roads | Provincial Roads | | L | 0.00550 | M | M | 0.15137 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.11700 | M | | | | | | |
| | Electrical Post 161 | | N/A | | | | L | n/a | LOW | | | |
| | Electrical Post 162 | | | | | | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 170 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 171 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 172 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 173 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 174 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 176 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 177 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 178 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 179 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 180 | | | | | | L | n/a | LOW | | | |
| | Danao Sur Bridge | Bridges | | H | 0.006 | M | | | | | | |
| GB | Guinbirayan Barangay Roads | Barangay Road | 4.113094 | | | | L | 3.98226 | LOW | | | |
| | | Barangay Road | | H | 1.45989 | H | M | 0.13087 | LOW | | | |
| | | Barangay Road | | | | | | | | | | |
| | Santa Fe Municipal Roads | Municipal Roads | 0.95568 | L | 0.06140 | M | L | 0.95568 | LOW | | | |
| | | | | M | 0.00430 | M | | | | | | |
| | Provincial Roads | Provincial Roads | 1.756991 | L | 0.02390 | M | L | 1.4985 | LOW | | | |
| | Provincial Roads | Provincial Roads | | H | 0.06140 | M | M | 0.26073 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.06240 | M | | | | | | |
| | Electrical Post 216 | | N/A | | | | M | n/a | LOW | | | |
| | Electrical Post 217 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 218 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 219 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 181 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 182 | | | | | | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 183 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 184 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 185 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 186 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 187 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 188 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 189 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 190 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 191 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 192 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 193 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 194 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 195 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 196 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 197 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 198 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 199 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 200 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 201 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 202 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 203 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 204 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 205 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 206 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 207 | | | L | n/a | M | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 208 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 209 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 210 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 211 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 212 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 213 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 214 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 215 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 220 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 221 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 222 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 223 | | | | | | L | n/a | LOW | | | |
| | Guinbirayan Bridge | Bridges | | M | 0.01300 | M | | | | | | |
| | Atic Bridge | | | H | 0.00500 | H | | | | | | |
| GT | Provincial Roads | Provincial Roads | 3.466675 | L | 0.01100 | M | L | 1.27642 | LOW | | | |
| | Provincial Roads | Provincial Roads | | H | 0.51910 | M | M | 2.09417 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.06380 | M | H | 0.09612 | HIGH | | | |
| | Guintigbasan Barangay Roads | Barangay Road | 1.01252 | H | 0.3942 | M | L | 0.94003 | LOW | | | |
| | | Barangay Road | | M | 0.0849 | M | | | | | | |
| | Electrical Post 225 | | N/A | | | | M | n/a | LOW | | | |
| | Electrical Post 226 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 227 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 228 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 229 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 230 | | | | | | M | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami [illegible] | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 231 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 232 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 233 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 224 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 234 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 236 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 237 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 238 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 244 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 243 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 239 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 240 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 242 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 241 | | | M | n/a | M | L | n/a | LOW | | | |
| MG | Magsaysay Barangay Road | Barangay Road | 7.451115 | | | | L | 6.99279 | LOW | L | 0.0661 | LOW |
| | | Barangay Road | | H | 0.4762 | H | M | 0.45832 | LOW | | | |
| | | Barangay Road | | M | 0.3333 | M | | | | | | |
| | Provincial Roads | Provincial Roads | 5.27936 | L | 0.2036 | M | L | 3.86924 | LOW | | | |
| | Provincial Roads | Provincial Roads | | H | 0.4047 | M | M | 1.41012 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.1044 | M | | | | | | |
| | Electrical Post 141 | | N/A | | | | M | n/a | LOW | | | |
| | Electrical Post 158 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 159 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 160 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 119 | | | H | n/a | M | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 120 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 121 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 122 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 124 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 125 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 126 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 127 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 128 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 129 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 130 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 131 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 132 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 133 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 134 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 135 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 136 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 137 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 138 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 139 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 140 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 142 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 143 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 144 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 145 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 146 | | | | | | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 147 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 148 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 149 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 151 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 152 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 153 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 154 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 155 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 156 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 157 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 245 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 246 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 247 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 248 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 248 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 250 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 251 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 252 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 253 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 254 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 255 | | | | | | L | n/a | LOW | | | |
| | Magsaysay Bridge | Bridges | | H | 0.005 | M | | | | | | |
| | Palate Bridge | | | H | 0.004 | M | | | | | | |
| Mat-i | Mat-i Barangay Road | Barangay Road | 2.409072 | H | 0.2483 | M | L | 2.40907 | LOW | | | |
| | | Barangay Road | | M | 0.0225 | M | | | | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Provincial Roads | Provincial Roads | 4.788733 | L | 0.0390 | M | L | 3.04433 | LOW | | | |
| | Provincial Roads | Provincial Roads | | H | 0.7765 | M | M | 1.73128 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.4066 | M | | | | | | |
| | Electrical Post 43 | | N/A | | | | M | n/a | LOW | | | |
| | Electrical Post 42 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 41 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 40 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 39 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 38 | | | | | | M | n/a | LOW | | | |
| | Electriclal Post 37 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 36 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 35 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 34 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 33 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 32 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 31 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 30 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 29 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 28 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 27 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 26 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 25 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 24 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 23 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 22 | | | | | | M | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 21 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 20 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 19 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 18 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 17 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 16 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 15 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 14 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 13 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 12 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 10 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 9 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 8 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 7 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 5 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 4 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 3 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 2 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 1 | | | | | | L | n/a | LOW | | | |
| PD | Pandan Barangay Road | Barangay Road | 4.225548 | L | 0.1568 | M | L | 2.71765 | LOW | L | 1.5939 | LOW |
| | | Barangay Road | | H | 0.4544 | H | M | 1.47823 | LOW | | | |
| | | Barangay Road | | M | 0.3132 | M | | | | | | |
| | Provincial Roads | Provincial Roads | 2.974525 | L | 0.0632 | M | L | 1.28676 | LOW | L | 1.82699 | LOW |
| | Provincial Roads | Provincial Roads | | H | 0.6343 | M | M | 1.75856 | LOW | | | |
| | Provincial Roads | Provincial Roads | | M | 0.1177 | M | | | | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 63 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 62 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 61 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 60 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 59 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 58 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 57 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 56 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 55 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 54 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 53 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 51 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 50 | | N/A | | | | M | n/a | LOW | | | |
| | Electrical Post 52 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 49 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 48 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 47 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 46 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 45 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 89 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 88 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 87 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 86 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 85 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 84 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 83 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 82 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 81 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 80 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 79 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 78 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 77 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 76 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 75 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 74 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 73 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 72 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 71 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 70 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 69 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 68 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 67 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 66 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 65 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 64 | | | | | | L | n/a | LOW | | | |
| | Pandan Bridge | Bridges | | H | 0.023 | H | | | | | | |
| PB | Poblacion Barangay Road | Barangay Road | 4.939 21 | L | 0.063 3 | M | L | 4.502 02 | LOW | L | 3.5620 3 | LOW |
| | | Barangay Road | | H | 0.724 7 | M | M | 0.525 09 | LOW | | | |
| | | Barangay Road | | M | 0.159 7 | M | | | | | | |
| | | Municipal Roads | 1.751 134 | | | | L | 1.751 13 | LOW | L | 3.4259 6 | LOW |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Santa Fe Municipal Roads | | | | | | | | | | | |
| | Provincial Roads | Provincial Roads | 1.684738 | L | 0.2709 | M | L | 1.802 | LOW | L | 0.18986 | LOW |
| | Provincial Roads | Provincial Roads | | H | 0.0502 | H | | | | | | |
| | Provincial Roads | Provincial Roads | | M | 0.2442 | M | | | | | | |
| | Electrical Post 118 | | N/A | | | | L | n/a | LOW | | | |
| | Electrical Post 117 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 115 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 116 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 114 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 113 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 112 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 111 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 110 | | | L | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 109 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 108 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 107 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 105 | | | M | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 106 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 104 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 103 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 102 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 101 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 100 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 99 | | | | | | L | n/a | LOW | L | n/a | LOW |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 98 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 97 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 96 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 95 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 94 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 93 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 92 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 91 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 90 | | | | | | L | n/a | LOW | | | |
| | Tabok Bridge | Bridges | | H | 0.017 | M | | | | | | |
| | Barusbos Bridge | | | H | 0.007 | M | | | | | | |
| | Longa-og Bridge | | | H | 0.006 | H | | | | | | |
| TB | Tabugon Barangay Road | Barangay Road | 3.95361 | L | 0.0301 | M | L | 4.016451 | LOW | L | 0.687675 | LOW |
| | | Barangay Road | | H | 0.3998 | M | | | | | | |
| | | Barangay Road | | M | 0.2255 | M | | | | | | |
| | Provincial Road | Provincial Road | 4.0441 | L | 0.0902 | M | M | 0.18013 | LOW | | | |
| | Provincial Road | Provincial Road | | H | 1.30950 | H | L | 3.82201 | LOW | | | |
| | Provincial Road | Provincial Road | | M | 0.13800 | M | | | | | | |
| | Electrical Post 257 | | N/A | | | | M | n/a | LOW | | | |
| | Electrical Post 256 | | | | | | M | n/a | LOW | | | |
| | Electrical Post 275 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 274 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 271 | | | H | n/a | M | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 273 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 272 | | | | | | L | n/a | LOW | | | |

| Barangay | Name | Classification | Total Length (km) | Flood Susceptibility | Affected Length (km) | Risk Category | Landslide Susceptibility | Affected Length (km) | Risk Category | Tsunami Susceptibility | Affected Length (km) | Risk Category |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Electrical Post 270 | | | | | | L | n/a | LOW | L | n/a | LOW |
| | Electrical Post 269 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 268 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 267 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 266 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 265 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 264 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 263 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 262 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 261 | | | | | | L | n/a | LOW | | | |
| | Electrical Post 260 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 259 | | | H | n/a | M | L | n/a | LOW | | | |
| | Electrical Post 258 | | | | | | L | n/a | LOW | | | |

# 7. EXISTING LAND USE

Urban use areas pertain to the built environment currently utilized for residential, commercial, industrial, tourism, sanitary waste management facilities, cemeteries, and other land uses unique to the locality. These are often represented as area/zone in the existing/proposed general or urban land use maps. The exposure information can be expressed in terms of area (in hectares or square meters), type of use, and replacement/construction cost (estimated replacement cost per square meter). For this purpose, the urban uses are extracted from the existing land use map (2015 satellite image). This constitute of 128.382375 hectares (91.62% of the urban use areas)—making the residential area as the largest with hectares, followed by 8.296596 hectares of institutional area (e.g. schools, government buildings, churches), 0.146094 hectares of parks and open spaces (cockpit arena and children's park), 1.459155 hectares of cemeteries, 1.384231 hectares of commercial area, and 0.462053 hectares of dumpsite.

Sensitivity criteria considered in identifying the risks are the structural design and current condition. The proportion of the buildings made of light to salvageable materials is one of the criteria under structural design. For Santa Fe, Barangay Canyayo (60%) has the highest proportion of buildings made of light to salvageable materials followed by Barangay Danao Norte (57%), and Pandan (54%). Another is the hazard resistant design employed per structure such as fire wall and perimeter fence. All barangays have low percentage on this with percentage that ranges from eight to 18 percent. For current condition, the municipal structures have low proportion of structures in condemned condition.

Adaptive measures on the urban use areas especially the residential areas are important intervention to lessen the risks. The capacity and willingness to retrofit or relocate or to conform with new regulations identified using the percentage of owners with the capacity is relatively low in the municipality with 12 to 39 percent only. Barangay Danao Sur has the lowest capacity followed by Danao Norte (17%), and Mat-I (18%). Meanwhile, Barangay Poblacion has the highest percentage of owners who are willing or have the capacity or relocate or retrofit with 39 percent followed by Guinbirayan (35%), and Pandan (33%). Having property insurance is not yet adherent in the municipality seen as none among the barangays possesses this. The municipal government's support climate change adaptation is considered as moderate, according to the TWG. Five percent of the municipal fund is allotted for projects related to climate change such as flood protection, riprapping, and elevation of structures either by adding foundation of adding floor number. Supply of lands which are allotted as alternative sites is also available in all barangays in the municipality.

Areas exposed to flood totals to 16.56395 hectares or 11.74 percent of the urban use areas. Highly exposed areas are constituted of 9.369868 hectares or residential areas, 0.147184 hectares of commercial areas, 0.553575 hectares of institutional areas, 0.00521 hectare of the landfill, and 0.115782 hectare of the parks and open space areas. Agmanic has the widest highly exposed areas with 2.226267 hectares followed by Poblacion, Pandan, and Mat-i. replacement cost for highly exposed urban areas totals to ₱564,793,820.00. Barangay Poblacion, followed by Agmanic, Magsaysay, and Canyayo is where most of the moderately exposed areas are located. This are subcategorized into residential, commercial, institutional, landfill, cemetery, and parks and open space.

Considering the likelihood of occurrence score given by the TWG, all exposed areas were categorized with moderate risk to flooding. This was affected by the severity of consequence score, whereas aforementioned that the municipality has high sensitivity to hazard but moderate adaptive capacity.

Three among the barangays have an area which are highly exposed to landslide, namely, Danao Norte, Mat-I, and Pandan. Of which, 0.570632 hectare is residential while the remaining 0.035285 is institutional area located in Barangay Danao Norte. Affected value on highly exposed area totals ₱ 32,060,100.00. On the other hand, moderately exposed areas are located in all barangays with an area affected of 15.133007 hectares. This is principally composed of residential areas which is 98.08 percent of the moderately exposed, cemetery (1.20%), institutional areas (0.58), and commercial areas (0.02%). Replacement of affected areas will cost ₱ 801,165,550.00. 88.13 percent of the affected areas are lowly exposed to landslide composed of residential (92.36%), institutional (6.61%), commercial (1.12%), cemetery (1.04%), landfill (0.37%), and parks and open spaces (0.12%). The severity of consequence and likelihood occurrence resulted to a moderate risk on all exposed urban areas. A total of ₱ 7,900,018,090.00 replacement cost on all areas at risk.

Six of the seven prone barangays have urban areas that are exposed to tsunami, all of which are low susceptibility. The area of exposed sums to 15.437626 hectares which are categorized into 14.008365 hectares of residential area, 0.220038 hectare of commercial area, 1.179767 hectare of the institutional area, and 0.029456 hectare of the parks and open spaces. The low score of the likelihood of occurrence is because, the municipality has not experienced tsunami yet, all of the exposed are low risk to tsunami.

Next to the natural resource-based production areas, the urban use areas are the most evidently destructed upon hazard occurrence, especially the residential areas. All barangays have an urban use area at risk to flood and landslide but, among these, the TWG identified barangays which should be prioritized considering the exposure, sensitivity, and the current adaptive capacity. For flood, in no particular order, Poblacion, Pandan, Tabugon, Mat-I, and Agmanic were chosen as the decision areas. For landslide, Barangay Pandan, Mat-I, Magsaysay, and Danao Norte. Lastly, for tsunami, priority barangays are Poblacion, Agmanic, and Pandan. Analyzing the result of the decision areas lead that the most vulnerable Barangay is Pandan.

Mitigating the risks posed by the climate change, the need for a strategy which is long term must be formulated. One of the effective strategies to combat the hazard is the preparation. In terms of the urban use areas, the structures must strictly comply with the Presidential Decree No. 1096 or the National Building Code of the Philippines which covers the design, location, siting, construction, alteration, repair, conversion, use/ occupancy, maintenance, moving, demolition of, and addition to public and private buildings and structures, except traditional indigenous family dwellings. Another intervention is the adoption of a hazard resistant design on the structures such as climate proofing and using of alternative strategies such as structure elevation which the municipality is currently doing. Establishment and strict implementation of buffer zones, particularly urban use areas located along the coast, the rivers, and other water ways that may cause flood. Property insurance can also allow immediate recovery. Possessing this is a post-disaster preparation which is effective in a long-term basis. Disaster preparation and response in line with the RA 10121, an act strengthening the Philippine Disaster Risk Reduction and Management System, is also a strategy seen by the municipality. This includes the construction of evacuation centers, socialized housing, and alternative site for evacuation which are all suitable.

*Table ExLU- 87 Urban Use Exposure and Risk to Hazards*

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BARANGAY | CLASSIFICATION | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| AGMANIC | RESIDENTIAL | 37.713093 | H | 2.225545 | MODERATE | | | | | | |
| | RESIDENTIAL | 37.713093 | M | 0.611764 | MODERATE | M | 0.573644 | MODERATE | | | |
| | RESIDENTIAL | 37.713093 | L | 0.526078 | MODERATE | L | 36.7843 | MODERATE | L | 6.136772 | LOW |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BARANGAY | CLASSIFICATION | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | COMMERCIAL | 37.713093 | H | 0.000722 | MODERATE | | | | | | |
| | COMMERCIAL | 37.713093 | | | | L | 0.00458 | MODERATE | L | 0.003858 | LOW |
| | INSTITUTIONAL | 37.713093 | | | | L | 0.350567 | MODERATE | L | 0.117288 | LOW |
| CANYAYO | RESIDENTIAL | 6.184278 | H | 0.569493 | MODERATE | | | | | | |
| | RESIDENTIAL | 6.184278 | M | 0.490869 | MODERATE | M | 0.411742 | MODERATE | | | |
| | RESIDENTIAL | 6.184278 | L | 0.012 | MODERATE | L | 5.202762 | MODERATE | L | 0.371675 | LOW |
| | COMMERCIAL | 6.184278 | M | 0.018617 | MODERATE | | | | | | |
| | COMMERCIAL | 6.184278 | | | | L | 0.08152 | MODERATE | L | 0.018617 | LOW |
| | INSTITUTIONAL | 6.184278 | H | 0.026003 | MODERATE | | | | | | |
| | INSTITUTIONAL | 6.184278 | L | | | L | 0.488254 | MODERATE | L | 0.047241 | LOW |
| DANAO NORTE | RESIDENTIAL | 8.840571 | H | 0.36867 | MODERATE | H | 0.372468 | MODERATE | | | |
| | RESIDENTIAL | 8.840571 | M | 0.05208 | MODERATE | M | 2.275757 | MODERATE | | | |
| | RESIDENTIAL | 8.840571 | L | 0.021768 | MODERATE | L | 5.795377 | MODERATE | | | |
| | COMMERCIAL | 8.840571 | H | 0.000019 | MODERATE | | | | | | |
| | COMMERCIAL | 8.840571 | | | | M | 0.002105 | MODERATE | | | |
| | COMMERCIAL | 8.840571 | | | | L | 0.075281 | MODERATE | | | |
| | INSTITUTIONAL | 8.840571 | | | | H | 0.035285 | MODERATE | | | |
| | INSTITUTIONAL | 8.840571 | | | | L | 0.284298 | MODERATE | | | |
| DANAO SUR | RESIDENTIAL | 2.971541 | H | 0.187498 | MODERATE | | | | | | |
| | RESIDENTIAL | 2.971541 | M | 0.103606 | MODERATE | M | 0.320202 | MODERATE | | | |
| | RESIDENTIAL | 2.971541 | L | 0.00857 | MODERATE | L | 2.450763 | MODERATE | | | |
| | COMMERCIAL | 2.971541 | | | | M | 0.000421 | MODERATE | | | |
| | COMMERCIAL | 2.971541 | | | | L | 0.007713 | MODERATE | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BARANGAY | CLASSIFICATION | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | INSTITUTIONAL | 2.971541 | H | 0.007228 | MODERATE | | | | | | |
| | INSTITUTIONAL | 2.971541 | | | | L | 0.192442 | MODERATE | | | |
| GUINBIRAYAN | RESIDENTIAL | 11.596496 | H | 0.156855 | MODERATE | | | | | | |
| | RESIDENTIAL | 11.596496 | M | 0.000463 | MODERATE | M | 1.032884 | MODERATE | | | |
| | RESIDENTIAL | 11.596496 | L | 0.012386 | MODERATE | L | 7.079632 | MODERATE | L | 0.020917 | LOW |
| | COMMERCIAL | 11.596496 | M | 0.001566 | MODERATE | | | | | | |
| | COMMERCIAL | 11.596496 | | | | L | 0.09874 | MODERATE | | | |
| | INSTITUTIONAL | 11.596496 | | | | L | 2.728937 | MODERATE | | | |
| | CEMETERY | 11.596496 | | | | L | 0.656303 | MODERATE | | | |
| GUINTIGBASAN | RESIDENTIAL | 3.176695 | H | 0.427312 | MODERATE | | | | | | |
| | RESIDENTIAL | 3.176695 | M | 0.412755 | MODERATE | M | 1.444574 | MODERATE | | | |
| | RESIDENTIAL | 3.176695 | L | 0.427312 | MODERATE | L | 1.703689 | MODERATE | | | |
| | COMMERCIAL | 3.176695 | H | 0.006282 | MODERATE | | | | | | |
| | COMMERCIAL | 3.176695 | | | | L | 0.020696 | MODERATE | | | |
| | INSTITUTIONAL | 3.176695 | H | 0.002038 | MODERATE | | | | | | |
| | INSTITUTIONAL | 3.176695 | M | 0.004154 | MODERATE | | | | | | |
| | INSTITUTIONAL | 3.176695 | L | 0.001607 | MODERATE | L | 0.007736 | MODERATE | | | |
| MAGSAYSAY | RESIDENTIAL | 16.739884 | H | 0.885284 | MODERATE | | | | | | |
| | RESIDENTIAL | 16.739884 | M | 0.547364 | MODERATE | M | 1.721282 | MODERATE | | | |
| | RESIDENTIAL | 16.739884 | L | 0.457156 | MODERATE | L | 12.99075 | MODERATE | | | |
| | COMMERCIAL | 16.739884 | H | 0.016782 | MODERATE | | | | | | |
| | COMMERCIAL | 16.739884 | M | 0.003836 | MODERATE | | | | | | |
| | COMMERCIAL | 16.739884 | K | 0.007437 | MODERATE | L | 0.120553 | MODERATE | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BARANGAY | CLASSIFICATION | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | INSTITUTIONAL | 16.739884 | H | 0.007 | MODERATE | | | | | | |
| | INSTITUTIONAL | 16.739884 | | | | M | 0.08737 | MODERATE | | | |
| | INSTITUTIONAL | 16.739884 | L | 0.00373 | MODERATE | L | 1.357873 | MODERATE | | | |
| | DUMPSITE | 16.739884 | H | 0.00521 | MODERATE | | | | | | |
| | DUMPSITE | 16.739884 | M | 0.029836 | MODERATE | | | | | | |
| | DUMPSITE | 16.739884 | | | | L | 0.462053 | MODERATE | | | |
| MAT-I | RESIDENTIAL | 16.010498 | H | 1.505303 | MODERATE | H | 0.026124 | MODERATE | | | |
| | RESIDENTIAL | 16.010498 | M | 0.057725 | MODERATE | M | 3.718131 | MODERATE | | | |
| | RESIDENTIAL | 16.010498 | | | | L | 11.76835 | MODERATE | | | |
| | COMMERCIAL | 16.010498 | H | 0.022391 | MODERATE | | | | | | |
| | COMMERCIAL | 16.010498 | M | 0.026192 | MODERATE | | | | | | |
| | COMMERCIAL | 16.010498 | | | | L | 0.115946 | MODERATE | | | |
| | INSTITUTIONAL | 16.010498 | | | | | | | | | |
| | INSTITUTIONAL | 16.010498 | M | 0.057725 | MODERATE | M | 0.019615 | MODERATE | | | |
| | INSTITUTIONAL | 16.010498 | L | | | L | 0.362335 | MODERATE | | | |
| PANDAN | RESIDENTIAL | 6.677233 | H | 1.3054 | MODERATE | H | 0.17204 | MODERATE | | | |
| | RESIDENTIAL | 6.677233 | M | 0.315372 | MODERATE | M | 1.653339 | MODERATE | | | |
| | RESIDENTIAL | 6.677233 | L | 0.24346 | MODERATE | L | 4.43233 | MODERATE | L | 1.038592 | LOW |
| | COMMERCIAL | 6.677233 | H | 0.016215 | MODERATE | | | | | | |
| | COMMERCIAL | 6.677233 | | | | L | 0.0405 | MODERATE | L | 0.02398 | LOW |
| | INSTITUTIONAL | 6.677233 | H | 0.003471 | MODERATE | | | | | | |
| | INSTITUTIONAL | 6.677233 | | | | M | 0.000002 | MODERATE | | | |
| | INSTITUTIONAL | 6.677233 | | | | L | 0.379022 | MODERATE | L | 0.003471 | LOW |
| POBLACION | RESIDENTIAL | 23.485308 | H | 1.5954 | MODERATE | | | | | | |

| DATABASE | | | FLOOD | | | LANDSLIDE | | | TSUNAMI | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| BARANGAY | CLASSIFICATION | BARANGAY ALLOCATION | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY | SUSCEPTIBILITY | AFFECTED AREA | RISK CATEGORY |
| | RESIDENTIAL | 23.485308 | M | 1.11143 | MODERATE | M | 1.670949 | MODERATE | | | |
| | RESIDENTIAL | 23.485308 | L | 0.598916 | MODERATE | L | 19.4036 | MODERATE | L | 6.440409 | LOW |
| | COMMERCIAL | 23.485308 | | | | L | 0.515286 | MODERATE | L | 0.164393 | LOW |
| | INSTITUTIONAL | 23.485308 | | | | L | 0.945789 | MODERATE | L | 0.631064 | LOW |
| | CEMETERY | 23.485308 | M | 0.000258 | MODERATE | M | 0.181258 | MODERATE | | | |
| | CEMETERY | 23.485308 | L | 0.070165 | MODERATE | L | 0.622331 | MODERATE | | | |
| | PARKS AND OPEN SPACES | 23.485308 | H | 0.115782 | MODERATE | | | | | | |
| | PARKS AND OPEN SPACES | 23.485308 | M | 0.000767 | MODERATE | | | | | | |
| | PARKS AND OPEN SPACES | 23.485308 | | | | L | 0.146094 | MODERATE | L | 0.029456 | LOW |
| TABUGON | RESIDENTIAL | 7.677862 | H | 0.143108 | MODERATE | | | | | | |
| | RESIDENTIAL | 7.677862 | M | 0.037195 | MODERATE | M | 0.019732 | MODERATE | | | |
| | RESIDENTIAL | 7.677862 | L | 0.000146 | MODERATE | L | 6.30428 | MODERATE | | | |
| | COMMERCIAL | 7.677862 | H | 0.084773 | MODERATE | | | | | | |
| | COMMERCIAL | 7.677862 | M | 0.088007 | MODERATE | | | | | | |
| | COMMERCIAL | 7.677862 | L | 0.010019 | MODERATE | L | 0.300319 | MODERATE | L | 0.00919 | LOW |
| | INSTITUTIONAL | 7.677862 | H | 0.507835 | MODERATE | | | | | | |
| | INSTITUTIONAL | 7.677862 | | | | L | 1.053531 | MODERATE | L | 0.380703 | LOW |