

MUNICIPAL PHYSICAL FRAMEWORK PLAN

OVERVIEW / RATIONALE

The Municipal Comprehensive Land Use of Binangonan was prepared by a multi-disciplinary group with backgrounds in Engineering, Agriculture, Economics, Real Estate Development and Commerce. Their orientation and varied experiences in public administration, agriculture, education and business, plus their frequent consultations with the socio-political structure and exposure to local development plans and programs, qualify them to present a fair assessment of the economic as well as the physical potentials of the locality. That assessment will serve as basis in planning and determining the needs and direction that land use policy must take over the next decade.

The proximity of Binangonan to the burgeoning business and commercial districts of Metro Manila is leading to rapid urbanization and possible overpopulation. People are migrating to and residing in the town faster than it can provide jobs, housing, water, good roads, medical services, sanitation, and other amenities. The eastward shift pattern looks irreversible. It is in that context that the Land Use policy of the Municipality must be viewed and shaped.

People or Industries? There is no accepted body of principles that establishes the order of priority. Ideally, it is enough that one complements the other. Thus, while housing development momentarily appears to take precedence, it is only so because national policy and private investment initiative sets the pace. Given the opportunity, it is ready to host the spillover of industries from the congested areas of Metro Manila, with preferences for environment-friendly and labor-intensive concerns. The intention is to achieve a level of growth and development consistent with the need to gradually liberate marginal income groups from the throe of poverty by providing employment opportunities, adequate medical and social services, educational facilities and other physical amenities, thereby raising their standards of living and quality of life. These, we hope to achieve, with the dedication and commitment of the leadership in cooperation with its people.

*Office of the Municipal Planning & Development Coordinator
Municipality of Binangonan*

SOCIO
ECONOMIC
PROFILE
(Part I)

CHAPTER I

GOALS AND OBJECTIVES

The Comprehensive Land Use Plan for the municipality has the following goals:

- a) To optimize/maximize use of the municipality's resources considering environmental protection as well as common customs and traditions; and
- b) To attain economic development thru the judicious use of those resources.

To achieve the foregoing goals, the following objectives must be undertaken:

1. Identify the existing resources of the municipality.
2. Identify potential resources for growth.
3. Identify development potentials and constraints in socio-economic sectors and the physical resources.
4. Tap the potentials of the municipality for its own advantage in the pursuit of economic growth.
5. Suggest remedial measures to overcome identified constraints for development.
6. Prepare a comprehensive plan of action that includes adoption of policies that will stimulate private investments.
7. Improve institutional linkages to effort a smooth implementation of the municipality's development plan.

Information on population, socio-economic conditions, existing infrastructure projects, actual land uses, and development constraints and opportunities are considered in the formulation of the Comprehensive Land Use Plan intended to improve existing condition of the municipality and its people.

Under the plan, the municipal territory including portions of the Laguna Lake is classified into:

- Residential
- Agricultural
- Industrial/Commercial
- Tourism; and
- Forestry
- Institutional

CHAPTER II

BINANGONAN REVISITED

1. Brief Origin

A number of theories have been advanced on the origin of Binangonan yet none could exactly point to the real beginning of this town. Some observations can be noted thus:

- a) Binangonan is a pure Tagalog word for the place where something or someone has voluntarily risen.
- b) All barangays and sitios from Tayuman to Talim, with the exception of Janosa, have pure Tagalog names indicating that these places could have existed even before the Spanish rule.
- c) A village in Infanta, Laguna was called Binangonan de Lampon which led some historians to theorize that settlers of the lake region could have originated from this place.
- d) The history of Taytay includes a place called Batasin whose inhabitants were believed to be the ancestors of the few remaining tribes of Negritos. There is no Batasin in Taytay at present but there is one in Binangonan.

Aetas inhabited Binangonan until 1928. Evidence of their culture is found in Lungga Ita in Pila-Pila and in Aeta words like Wawa and Ithan.

2. Historical Background

According to the records of Huerta Cavada, Binangonan, originally a *visita* of Morong was separated and became independent parish in 1621. Another version stated, however, that Binangonan was separated from Morong in 1737.

Binangonan was first under the ecclesiastical administration of the Franciscans. A treaty between the Franciscans and the Jesuits in 1679 assigned Binangonan to the latter in exchange of the former dominion over Baras.

After 18 years, the Jesuits transferred their power over Binangonan to the Calced Augustinians in 1697. Forty years later, the Calced Augustinians restored it back to the Franciscans in 1731.

In 1766, the *Superior Gobierno* licensed Angono as an independent parish separating it from Binangonan. Angono's ecclesiastical activities were placed under the care of the secular clergy.

In 1835, Binangonan was separated from the province of Laguna and incorporated in the newly created *Districts de los Mateo*, later on renamed *Distrito Politico Militar de Morong*.

On August 6, 1898, the natives of Binangonan joined the revolutionary government of General Emilio Aguinaldo against the Spanish rule.

Under the American regime, Binangonan became an independent municipality under General Order No. 40 of March 29, 1900. On June 11, 1901, Act No. 137 of the Philippine Commission incorporated this town with the newly created Province of Rizal.

Binangonan temporarily lost independence when it was combined with Morong, Baras and Cardona by virtue of Act. No. 942 in 1903.

Act. No. 948 of November 6, 1903 restored independence to Binangonan and made Angono a part of Binangonan again. On January 1, 1939, Angono was made an independent town and part of the province of Rizal.

3. Christianization of the Natives

The first missionary group to work in the Philippines in 1574 was the Augustinians. In Rizal province, the Franciscans, led by Fr. Juan de la Plesencia and Fr. Diego de Oropera, started evangelical work with the conversion of people from the Morong region.

The missionaries built a chapel near the lake to gain access in the native settlements around the lake area. The largest settlement was Batasin, a tribe of Negritos from Taytay, which was discovered during Salcedo's first expedition in 1571. This occupied the rocky terrain overlooking the Laguna de Bay, located west of the chapel.

Population growth started with families living near the chapel and added with converts from the outlying villages in the mainland and Talim Island. The gradual expansion of population around the chapel area was accomplished through the system of *reducciones* designed by Fr. Juan de Plasencia in 1577.

The expansion and increase in population could have been the basis for the name *Binangonan*, meaning the *place where the new settlement rose*. Unlike other towns which grew from within going outwards, Binangonan expanded from outside going inwards. The name was given at a time when the Spanish language had not made its impact yet on the native tongue.

4. Political History

a) Spanish Period

During the Spanish period, the town head was the Captain and the seat of government, the Tribunal located in the heart of the poblacion. The second highest town official was the Teniente Mayor. Next in rank was the Teniente de Ganado, whose main function was to register carabaos, horses and other animals, collecting fees and taxes in the process. The Teniente de Montera was in charge of real estate matters in the municipality.

In 1772, a Spanish priest from Aliaga, Pampanga requested the Captain to send delinquent taxpayers to work at the construction of the church. All male delinquent taxpayers worked until the church's completion in 1800. During this period, old folks claimed that the cross in the Kalbaryo in Libid grew out of the hill's summit.

In later part of the Spanish period, pirates from the other side of Laguna de Bay landed in Lunsad and plundered the town. They were repulsed in 1897 by policemen called *Commisarios* under Captain Pedro Capistrano.

When the *insurrectos* revolted against the Spanish authorities, Captain Capistrano joined the rebels and changed his name to Tirana while Pedro Mechilina adopted the name Del Rosario to elude arrest.

In 1896, the natives of Binangonan joined the revolutionary government under General Aguinaldo. The following events might have taken place between the execution of Dr. Jose Rizal and the enlistment of Binangonan in the evolutionary government. These were assumed to be part of the national revolution.

Katipuneros from Binangonan attacked the Spanish headquarters in Casadores at night when the enemies were asleep. A white handkerchief spread out at the second floor signaled the invasion that killed many Spaniards. Dead bodies were loaded in carabao sleds and buried at Kay-Pantina.

Two Spaniards escaped death: Sgt. Francisco Lagarejos sought refuge from his Filipina wife while Sgt. Arceo was spared because of his kindness to the Filipinos.

Katipuneros from Binangonan together with the forces from San Guillermo captured the Spaniards in Morong. The Spaniards were made to walk barefooted in columns parading amidst the people shouting *Viva Garrovillas* in honor of the leader Candido Garrovillas. Called Kumander Kunding, Garrovillas was believed to have possessed *anting-anting* which made him invisible.

b) American Period

In 1898, the first Americans to reach Binangonan aboard a steamboat at *Pagsanjan* fired cannon at the church hitting its bells. A week later, another boat from Marikina, *C Vocals* shelled the town proper simultaneous with *Pagsanjan's* continued firing in Pritil. More Americans arrived by land and water after a week-long raid.

The people planned attacks against invading Americans; intercepted horse riding Americans at Mambog, killing 12 of them. In retaliation, the Americans captured native males in Malanggam and turned the place into a concentration camp.

Despite the punishments inflicted on the captured Filipinos, the Americans failed to squeeze out information about the natives' counter activities. The Americans stationed bancas at Navotas Strait to guard their camp and prevent the escape of prisoners using the Laguna de Bay as passageway.

When the Filipino-American war ended, the Laguna de Bay became the major mode of transportation in Binangonan. The regular passenger and cargo vessels were the *Margarita* and the *Nueva York*. The Americans were allowed to use the places they occupied as their headquarters even after the war.

c) Municipal Government during the American Regime

In 1901, **Don Jose Ynares Y Granados** was appointed *Presidente* by the American Governor. He won the first municipal election held in 1902 and served for four years holding office at his house as the *Presidencia*. With help from the Americans, Ynares made remarkable improvements in the town.

The second elected President was **Manuel Ison**, a former councilor. Seeing the need for a municipal building, Ison sought the municipal council's approval and enlisted financiers for the construction of the structure. Money collected was deposited in the local treasury. Ison also approached an American mining engineer at the San Guillermo quarry for material donations, which were granted after his term.

The municipal building was realized during the term of **Clemente Antiporda**. The house of Maria Cortez and Francisco Fuentes was purchased and remodeled in 1912 to accommodate the various municipal offices. Antiporda was also responsible for the construction of public roads, artesian wells and repair of the public market.

The present site of the Binangonan Elementary School was purchased during the term of **Valentino C. Antazo**. A former teacher and Municipal Secretary, Antazo was responsible for the construction of Home Economics building, elementary school, Puericulture Center, and improvement of the Public Market.

The next mayor was **Julio Antiporda**, son of Clemente Antiporda. His accomplishments included the construction of additional rooms in the municipal building, artesian wells, and barrio roads. He even funded, out of his personal money, the establishment of a school in Janosa.

d) Mayors during the American Period

- | | |
|---------------------------|---|
| JOSE G. YNARES | - (1901-1905) First appointed executive of the Municipality in 1901 and elected <i>President</i> the following year |
| MANUEL Y. ISON | - (1906-1907) He raised funds for the construction of the first municipal building. |
| CLEMENTE ANTIPORDA | - (1908-1912) During his term, a permanent municipal building was constructed. |
| ANTONIO SISANTE | - (1913-1915) His achievement was the construction of three artesian wells. |
| LORENZO FLORES | - (1916-1922) Roads and bridges were built and the old market was repaired during his term. |
| VALENTIN ANTAZO | - (1922-1928) He purchased the present Binangonan Central Elementary School site; built the H.E. Building and the Puericulture Center for the Women's Club. |
| JULIO ANTIPORDA | - (1928-1936) He planned the establishment of a public market in Pila-pila |

e) Japanese Occupation

During World War II, Binangonan was one of the evacuation centers for the residents of Manila and neighboring suburbs. People hid in the mountains and in Talim Island. The war brought untold difficulties and sufferings. Schools were temporary's closed;

professionals turned to fishing, buy and sell for living. Many died of starvation, malnutrition and diseases while others survived by eating camote tops, papaya, corn, coconut and vegetables. Several people were killed when the Japanese machine-gunned the Rizal Cement Factory.

Months after the Japanese occupied the town; Faustino Antiporda organized *Bantay Sunog*, a brigade tasked in maintaining peace and order by providing volunteer males as nightly guards against looters and trouble makers. At that time, Col. Augustin Marking was recruiting members for his guerilla unit. Thus, the brigade became the local guerillas secretly affiliated with Marking's group.

Major Teofilo Cenido was appointed Mayor of the Provost Marshall of Military Police. Weapons available then were one Spring Field Rifle and five Granadora from five USAFFE soldiers who escaped from Bataan.

In 1942, Japanese troop, guided by two Filipinas, landed in Matikiw and inspected the Rizal Cement Factory. Resisting local guerillas were killed by the invaders. Filipino reinforcement retaliated by wiping out the entire Japanese troop. Dead soldiers, initially buried in the factory, were dug up and fed to the kiln. Even Japanese vessels were sunk in the lake to hide the massacre.

Because of this, the Japanese held *sona* or the screening of all males in the town. The Japanese *Kempetai* punished suspected guerillas. In spite of the brutal torture inflicted on them, the Filipinos did not betray the guerilla organization.

Talim Island was also subjected to Japanese *sona*. On August 7, 1942, bombs were dropped in the neighboring towns killing four in Janosa and claiming a number of casualties in Cardona. Suspected guerillas were brought to Sta. Cruz, Laguna. Even the parish priest at that time, a Columbian Fr. Martin Strong, was held in Los Banos concentration camp.

Late in 1944, the *Makapilis*, a group of pro-Japanese Filipinos, occupied the convent and served as Japanese interpreters. They were instruments in the cruelties suffered by the Filipinos.

In January 1945, the Japanese took the convent from the *Makapilis* and put up their headquarters. But they only stayed there for one week, scared of the nightly apparitions of a white lady believed to be the ghost haunting the convent.

Mayor Emerenciano Unida was killed by the Japanese when he refused to reveal the guerilla organization.

f) Mayors during the Japanese Period

- | | |
|-----------------------------|---|
| FELIX KATIPUNAN | - (1936-1942) He built roads and artesian wells and added rooms to the municipal building. |
| EMERENCIANO M. UNIDA | - (1942-1945) He was the deputy mayor when Katipunan got ill. He supplied starving residents with foods and worked for the release of captured Filipinos. |

JUAN JERUSALEM - (1945) He took over as Mayor after Unida's death. He was shot in the Rizal Cement Compound before the Americans liberated the country.

g) Period of Independence

Binangonan was liberated from the Japanese forces in February 25, 1945, the feast day of the patroness of the town, Sta. Ursula. The Japanese' plan to burn the town was prevented by the timely arrival of American forces on the eve of the feast day. The local guerillas, with Major Ceñido deploying his men in Bunot Mountain, prevented the escape of Japanese forces. The Japanese peacefully retreated and pulled their forces out.

The liberation was quite peaceful for no fighting ever took place. It was also a glorious celebration as barrio folks rode on top of tanks and jeepneys with the Americans. People lined along the streets, jumping with glee, weeping tears of joy while shouting "Victory".

The American commander instructed the guerillas led by Major Ceñido to set up temporary headquarters in poblacion and to do surveillance work. When the American troops proceeded to Angono, they left the command under the local Military Police, composed of all units in Binangonan.

Napoleon Antazo, the town commander of the ROTC Hunter guerillas, was appointed Mayor through the orders of the 43rd Infantry Division of the U.S. army. Next to be appointed town mayor from 1945 to 1946 was Casimiro Ynares, Sr., son of Don Jose Ynares. When the Philippines became a Republic in 1946, the municipal government was allowed greater autonomy.

h) Post -War Accomplishments (1946 - 1951)

The first Mayor after World War II was Dr. Jose Pacis. Among his accomplishments were:

- Construction of wharf linking the Muella de Sta. Ursula to Pritil.
- Construction of a modern public market, a self-liquidating project funded by the Rehabilitation Finance Corporation.
- Construction of combined basketball courts and tennis courts in the town's plaza.
- Beautification of the Kalbaryo.
- Additional artesian wells.
- Construction of a new street extending from Munting Bundok to M. H. del Pilar Street.
- Construction of a double market tienda, the only one in eastern Rizal at that time, which was completed with the P25,000.00 funds donated by ex- Senator Vicente Madrigal to Mayor Jose Pacis.

i) Mayors from 1952 to 2007

CASIMIRO YNARES, SR. was elected Mayor and served from 1952 to 1956. Other officials were Vice Mayor Pedro Fineza, Councilors Bonifacio Gahol, Policarpio Aralar, Aniano Bautista, Bonifacio Capre, Antonio Antiporda and Alfredo Bonifacio.

DR. JOSE PACIS was the Mayor for two consecutive terms. Antonio Antiporda was the Vice-Mayor while the reelected councilors were Mariano Cervo, Francisco Matematico and Romulo de los Reyes. Newly elected councilors were Zoilo Estacio, Monico Tirana, Graciano Plegaria, and Lucio Cenina. During Pacis' term, a resolution specifying the construction of new municipal building in Calumpang was approved.

ATTY. PEDRO FINEZA was elected Mayor in 1963. Under his banner, Vice-Mayor Zoilo Estacio and eight councilors also won. The same line up made a clean sweep of the elections that followed. A lone opposition, Reynaldo Aralar, joined the council.

CASIMIRO YNARES, JR., the youngest mayor, was elected in 1971. Other officers were Vice-Mayor Zoilo Estacio and Councilors Mariano Erasga, Reynaldo Aralar, Pedro Vital Jr., Felimon Gonzales, Remedios Paralejas, Lorenzo Barlinan, Pedro San Felipe and Macario Cenidoza. Mayor Ynares remained unchallenged for 15 years because no elections were held after President Ferdinand Marcos declared Martial Law in 1972.

ATTY. MARIANO CERVO was appointed Officer in Charge (OIC) of Binangonan under the Revolutionary Government of President Corazon Aquino in 1986.

In the 1988 elections, **CASIMIRO YNARES, JR.** won by a landslide victory over the protégés of the national leaders. Atty. Joaquin Mendoza was the Vice Mayor. The elected councilors were Dr. Amos P. Callanta, Emiliana Rivera, Longino del Mundo, Ronaldo Cenidoza, Antonio Reyes III, Mauricio A. Mixto, Jr., Lorenzo Lirio, and Raul Miguel.

In 1992, in the first synchronized national and local elections that saw the fielding of multi-party candidates, **ENGR. ISIDRO B. PACIS** won over six mayoralty aspirants. The Sangguniang Bayan was headed by Vice-Mayor Amos Callanta with the following member-councilors: Raul Antazo, Esmer Discimulacion, Manuel Barretto, Jaime Aragonés, Reynaldo Punelas, Jhoulan Aralar, Enrique Lirio and Arnel Chulvo.

MAYOR ISIDRO PACIS was reelected in 1995. Also reelected were Vice-Mayor Callanta along with Councilors Reynaldo Punelas, Manuel Barretto, Jaime Aragonés, Jhoulan Aralar and Esmer Discimulacion. Newly elected councilors were Allan Sunglao, Rhoniél Rivera and Mar S.J. Cenidoza.

ENGR. CESAR M. YNARES was elected in 1998 by an overwhelming majority vote against incumbent Mayor Isidro B. Pacis and Raul A. Miguel was elected as Vice Mayor. Elected Councilor's were Alfredo O. Cenidoza, Esmeraldo A. Discimulacion, Allan D. Sunglao, Reynaldo C. Dela Cuesta, Jaime A. Aragonés, Ian P. Cervo, Jhoulan Aralar, and Miguel P. Manuson.

In 2001 election, **ENGR. CESAR M. YNARES** was reelected against former Mayor Isidro B. Pacis. Also reelected was Engr. Raul A. Miguel as Vice-Mayor along with Councilors Alfredo C. Ceñidoza, Allan D. Sunglao, Newly elected councilors were Jane Z. Apostadero, Cresencio M. Ojoy, Donato O. Paralejas, Ruben M. Patag, Domingo C. Francisco and Gilderaldo D. Antiporda.

The year 2004 proved to be another victorious year for Engr. Cesar M. Ynares who was the sole candidate for mayoralty seat. He was again re-elected together with Engr. Raul A. Miguel as Vice Mayor along with Councilors Jane Z. Apostadero, Crisencio M. Ojoy, Alfredo C. Ceñidoza, Donato Paralejas, Ruben M. Patag and Gilderaldo D. Antiporda, newly elected councilor were Mr. Cecilio M. Ynares.

In 2007 election, **CECILIO M. YNARES** was elected against Brgy. Captain Manuel Reyes of Brgy. Lunsad. Former Administrator Engr. Reynaldo dela Cuesta was elected as Vice Mayor. Re-elected Councilors were Jane Z. Apostadero, Cresencio M. Ojoy, Donato Paralejas, Ruben Patag, Gilderaldo Antiporda, Napo Mesa and newly elected Councilors were Ruben Magdalena and Rodel Cerrero.

The year 2010 proved to be another year for **CECILIO M. YNARES** who was elected again as Mayor against Raul Antazo while Engr. Reynaldo dela Cuesta was elected as Vice Mayor against Manuel Reyes. Re-elected Councilors were Napoleon Mesa, Rodel C. Cerrero and Ruben M. Magdalena while the newly elected Councilors were Reynaldo Punelas, Felix Apostadero, Miguel P. Manuson, Rona P. Roldan and Isidro M. Pacis.

The year 2013 election, **CECILIO M. YNARES** who was elected again as Mayor for his 3rd consecutive term against Brgy. Captain Manuel Reyes of Brgy. Lunsad, while Engr. Reynaldo C. Dela Cuesta also for his 3rd and last term as Vice-Mayor. Re-elected Councilors were Reynaldo S. Punelas, Isidro M. Pacis Jr. Ruben M. Magdalena, Felix A. Apostadero, Maria Rona P. Roldan, Rodel C. Cerrero, Miguel P. Manuson while newly elected Councilor is Nicanor C. Del Mundo.

TABLE 1
LIST OF NEWLY ELECTED BRGY. CAPTAINS

MAINLAND	
Pag-Asa	Cirila B. Ceremonia
Tayuman	Raymundo H. Villadiego
San Carlos	Filipinas E. Agustin
Tagpos	Seth G. Barrameda
Bilibiran	Oscarlito C. Cequeña
Palangoy	Cresencio M. Ojoy
Pantok	Noel C. Picones
Darangan	Longino L. Del Mundo, Jr.
Calumpang	Ireneo S. Apostadero
Macamot	Edward F. Basa
Tatala	Bernabe S. Santos
Mambog	Ignacio I. Giray
Mahabang Parang	Dominador L. Arago
Batingan	Joel B. Nadal
Layunan	Ma. Cristina E. Cerda
Libis	Vincent R. Pajarillo
Libid	Wilfredo B. Ceñal
Lunsad	Tiburcio U. Mesa
Pila-Pila	Frisco F. Celis
Limbon-Limbon	Alfredo C. Aragones
Ithan	Roberto L. Bobotioc
Kalinawan	Virgilio B. Cerda
Pipindan	Vergel Anthony U. Celebre
TALIM ISLAND	
Kasile	Adolfo R. Celestra
Bombong	Ruben S. Discutido
Kinagatan	Michael A. Villariña
Kinaboogan	Alexander V. Paralejas
Bangad	Efren F. Francisco
Buhangin	Raymundo C. Rivera
Janosa	Henry T. Arambulo
Kaytome	Florencio M. Dominguez
Gulod	Reynante M. Arambulo
Sapang	Joevillo D. Celozza
Malakaban	Avelino A. Villadiego
Pinagdilawan	Nolan C. Gonzales
Ginoong Sanay	Narciso A. Anore
Binitagan	Ricky M. Magsino
Tabon	Conrado B. Mesa
Habagatan	Diomedes P. Lirio
Rayap	Jaime B. Celones

CHAPTER III

PHYSICAL CHARACTERISTICS

1. Location

Binangonan is one of the fourteen municipalities of Rizal. It is triangular in shape and lies between the foothills of Sierra Madre Mountain and the northeastern part of Laguna de Bay. The Municipality is bounded on the north by Angono, on the east by Cardona, on the northeast by Morong and Teresa and on the southeast by Laguna de Bay. The municipality is composed of the mainland and a half of Talim Island. The mainland portion is on the western side of Sierra Madre extending to the middle portion of Laguna de Bay. Talim Island, on the other hand, is divided between Cardona, the eastern side and Binangonan, the western side. Diablo Pass or Navotas Strait separates the Island from the mainland.

The town is approximately situated twenty four (24) kilometers east of the Provincial Capitol of Rizal. The seat of government is located in Barangay Calumpang along the Manila East Road and approximately six (6) kilometers after the boundary of Angono and five (5) kilometers from Cardona.

2. Land Area

Binangonan has a total land area of **SEVEN THOUSAND TWO HUNDRED SEVENTY (7,270) hectares**. The area of the mainland is 5,820.55 hectares while Talim Island is 1,449.45 hectares. Binangonan ranks the fifth biggest in the province in terms of area. *(Please take note of the difference in area as per Tax Mapping of the Municipal Assessor which is 5,871.4436 hectares).*

3. Composition

Binangonan, which lies 37 kilometers from Manila and 24 kilometers from Pasig, is entirely nestled between the foothills of Sierra Madre and Laguna de Bay. The poblacion is located in the center of 39 barangays. On the northernmost part lie Pagasa, Tayuman, San Carlos, Tagpos, Bilibiran, Palangoy, Pantok, Darangan and Calumpang. On the northeast towards Morong are Batingan, Tatala, Mambog, Macamot and Mahabang Parang. On the southeast are Lunsad, Libis, Layunan, Libid, Pilapila, Limbon-limbon, Ithan, Kalinawan, Pipindan and the barangays in Talim Island namely: Kasile, Bombong, Kinagatan, Kinaboogan, Bangad, Buhangin, Janosa, Kaytome, Gulod, Sapang, Malacaban, Pinagdilawan, Ginoong Sanay, Binitagan, Tabon, Habagatan-Talim and Rayap-Talim.

TABLE 2
LAND AREA PER BARANGAY

Name of Barangay	Area In Sq. Km.	Area in Hectares
Pag-asa	0.89213	89.213
Tayuman	5.19	519
Tagpos	1.306895	130.6895
San Carlos	1.13	113
Bilibiran	2.465024	246.5024
Pantok	3.961867	396.1867
Palangoy	4.707701	470.7701
Darangan	4.631535	463.1535
Calumpang	1.591299	159.1299
Macamot	2.348285	234.8285
Tatala	3.562322	553.2622
Mambog	1.329626	132.9626
Mahabang Parang	3.128198	312.8198
Batingan	1.097120	109.7120
Layunan	2.53604	253.604
Libis	2.348285	234.828
Libid	2.530	253
Lunsad	2.53	177.5135
Pilapila	2.789107	278.9107
Ithan	1.022041	102.2041
Kalinawan	.640669	64.0669
Limbon-Limbon	.305672	30.5672
Pipindan	0.504420	50.4420
Kasile	0.305672	30.5672
Bombong	0.988464	98.8464
Kinagatan	0.550664	58.0664
Kinaboogan	1.136003	113.6003
Bangad	1.095081	109.5081
Buhangin	1.103080	110.3080
Janosa	1.743514	174.3314
Kaytome	0.791287	79.1287
Gulod	0.708557	70.8557
Sapang	1.120725	112.0725
Malacaban	1.039942	103.9942
Ginoong Sanay	.879306	87.9308
Pinagdilawan	.331358	33.1358
Binitagan	.418454	41.8454
Tabon	.806707	80.6707
Habagatan	0.657025	65.7028
Rayap	0.788656	78.8656
TOTAL	72.70	7,270

Source: Assessor's Office

4. Topography

About 65% of Binangonan areas have hilly terrain while the rest are generally plain. The highest peak is 750 meters above the sea level. There are seven barangays with slopes ranging from 0-3 degrees; eight barangays with 3-8; fifteen barangays with 8-18; and nine barangays with 18-30.

The main mountain range is the Sierra Madre. In Talim Island, the mountainous peaks are the Susong Dalaga in the center and the Dolores Hill in the southernmost part. There are four islets namely: Bunga, Malahi, Pulong Gitna and Pulong Ithan.

5. Climate

Binangonan has two distinct seasons: dry from November to April and wet during the rest of the year. The haviest rains usually occur in the months of July, August and September. The coolest period occurs the months of November to February.

Although the municipality is shielded by the Sierra Madre on the north, it is open to southwest monsoon and cyclonic storms.

6. Soil Type

Soil classification is based on the data gathered from the soil survey division of the bureau of soil and water management, these are...

1. BOULEVARD CLAY

Soil mapping unit symbol	Soil mapping unit description
BD Af3	0-2% slope

Found in the shorelines of barangay Pag-asa, Tayuman and Tagpos severely flooded during rainy season which rendered it idle.

The boulevard series is a member of the fine, mixed, isohyperthermie family of Aeric Tropacuepts. These soils are moderately deep, poorly to very poorly drained, occurring on level to nearly level narrow lake terraces of the lacustrine landscape. The soils have gray or dark clay a horizons not more than 30 cm. thick. Cambic BG horizons extending down 50 to 100 cm. thick are gray; light gray to dark gray or greenish gray clay with distinct clear yellowish brown, strong brown, red, yellowish red mottles. Decomposed plant remains and lacustrine shells may sometimes occur. Cg horizons or substratum are greenish gray or dark greenish gray, silty clay loam or clay loam with common weathered Lacustrine shells and decomposed plant remains. Due to its approximate to the lake, the soil is subject to slight to severe flooding.

This is least extensive mapping unit, covering only about 26 percent of the series and occupying the first bottom lake terraces. This was mapped north of Bagumbayan in Muntinlupa extending towards North and Northeast of Hagonoy, Taguig just above the fresh water marshes. Another large area is found in between Napindan, Taguig and Tayuman, Binangonan. Some isolated areas are found north of Tanay and west of Caniogan, Municipality of Morong. Most soil profile characteristics are similar to that described representative profile for the series. Included are small areas with fine loamy texture in the

control section and limited with deeper soil. Most of this unit is cultivated to rainfed paddy rice. This covers approximately 0.21 percent of the project.

2. BARAS CLAY

Soil mapping unit symbol	Soil mapping unit description
BrA	0.2 % slope
BrB	2.5 % slope

Found along the National road of barangay Pag-asa, Tayuman shoreline of Pila-Pila, Limbon-Limbon, and Ithan in Mainland. Bombong, Bangad, Buhangin, Janosa and Kaytome in Talim Island

The Baras series is a member of the very fine montmorillonitic isohyperthermic family of udorthentic Pellusterts. The soils are deep, poorly drained occurring on level to very gently sloping (0-5 percent slope) minor alluvial plain. The color ranges from dark gray clay (hues of 10 YR to 5Y) with no more than 40 cm. thick Ag horizon. Bg horizon is composed predominantly of gray dark gray, light gray to gray and olive gray with distinct brown and olive mottles. Cg horizon below 110-150 cm. from the surface are olive gray, olive and pale gray with distinct clear gray, and light yellowish brown mottles, few soft and hard Fe-Mn concretions may be presenting the horizon. CaCO₃ nodules and weathered tuffaceous fragments may also be present and generally increases with depth.

Cracking of the surface soil with a width of 2 to 3 centimeters to a depth of 50 to one meter is commonly observed during dry season.

3. BINANGONAN CLAY

Soil mapping unit symbol	Soil mapping unit description
BnA	0-2% slope
BnB	2-5% slope

Found in the upland portion of barangay Pantok and Palangoy in the vicinity of Sitio Mata and in Mabuhay Homes in Bgy. Darangan.

The Binangonan series is a member of the very fine, montmorillomitic, isohyperthermic family of Undorthentic Pellusterts. They are deep poorly drained soils occurring on level to gently sloping (0-5 percent slope) narrow mini-plain of the alluvial landscape. The soils are developed from alluvium of volcanic and limestone origin.

Ag horizons not more than 40 centimeters thick are gray, dark gray clay overlying cambic BG horizon predominantly of gray to very dark gray, olive gray with distinct clear (dark) yellowish brown, grayish brown, olive gray and gray mottles. Few soft and hard Fe-Mn concretions and CaCO₃ nodules commonly occur. Cg horizon below 100 to 150 centimeters from the soil surface are olive gray, pale olive or mottled light olive brown, olive, grayish brown clay. Concretions of iron and manganese and CaCO₃ nodules are present.

4. TERESA CLAY

Soil mapping unit symbol	Soil mapping unit description
TaA	0.2% slope
TaB	2.5% slope

Found along the municipal boundary of Binangonan, Teresa and Morong triangle. In the upper portion of barangay Pantok and Darangan and in the vicinity of Rizal Cement Quarry.

The Teresa series is a member of the very fine, montmorillonitic, isohyperthermic family of Udorthentic Pellusterts. They are moderately deep to deep poorly drained soils occurring on nearly level to gently sloping (0-5 percent slopes) narrow mini-plain of the alluvial landscape. The soil, this series are developed mainly from alluvium, derived from weathered tuffaceous materials, and perhaps from deposited bio-chemically weathered products of limestone, basalt and site and conglomerate from the adjacent hills and mountains fringing the area. Ag horizons are gray, dark gray to very dark gray clay and not more than 40 cm thick. Cambic BG horizons composed predominantly or light to very dark gray or olive gray have distinct brown and gray mottles. Slightly and strongly weathered rock fragments with Fe-Mn concretions commonly occur. Cg horizons, 60-150 cm. deep from the soil surface are olive gray, dark gray clay and sometimes with gray, yellowish brown and light yellowish brown mottles with few Fe-Mn concretion and CaCO₃ nodules.

5. ANTIPOLLO CLAY

Soil mapping unit symbol	Soil mapping unit description
Article I. ApD1	8-15% slope
ApF2	25-45% slope

Found on large part of barangay Tayuman, Bilibiran in the vicinity of Village East Subdivision and the East Ridge Golf Course and in the upland portion of barangay Pantok and Palangoy.

The Antipollo series is a member of the fine, mixed, isohyperthermic family of typic Tropudalfs. They are moderately deep to deep well drained soils occurring on undulating to rolling basaltic hills and ridges with localized valley. Horizons are brown to dark brown, dark brown, yellowish brown or dark reddish brown clay, clay loam or silty clay loam. Argillic BT horizons are yellowish red, strong brown, reddish brown or yellowish brown clay with none to few distinct clear brown, reddish brown, dark reddish brown or yellowish red mottles and sometimes light gray to gray when used for paddy rice. Partially and highly weathered rock fragments are present and increase in abundance with depth. Iron and manganese concretions may occur. C horizons, 40-90 cm. deep, are strong brown or yellowish red clay which are common to many weathered rock fragments. Few Fe-Mn concretions may also occur in this layer. Underlying this horizon is hard consolidated bedrock.

6. TUTULO CLAY

Soil mapping unit symbol	Soil mapping unit description
Ttb	2-5 % slope
TtB/C	2-8 % slope
Ttc	5-8 % slope
TtD	8-15 % slope

Found in the upland portion of barangay Pantok, predominant in the part of barangay Darangan, Macamot, Tatala including Balatik Area, Calumpang, and in most part of Mahabang Parang.

The Tutulo series is a member of the very fine, mixed, isohyperthermic family of Udorthentic Pallusterts. They are shallow to moderately deep poorly drained soil occurring both on undulating to rolling moderately dissected agglomerate plateau with concave slopes and convex ridges and gently sloping volcanic foot slopes. The soil has gray to very dark gray clay a horizon not more than 25 cm. thick. BG horizons, 40-100 cm. deep, are gray to very dark clay with distinct clear brown to dark brown, light olive gray or yellowish brown mottles. Few small soft Fe-Mn concretions and CaCO₃ nodules are also present. Few to common weathered tuff occur in this layer.

7. CALANTAS CLAY

Soil mapping unit symbol	Soil mapping unit description
CaC1	5-8% slope slight eroded
CaD1	8-15% slope slight eroded
Cae1	15-25% slope slight eroded
Caf2	25-45% slope slight eroded
CaG2	45-65% slope slight eroded

Found in the lower area of barangay Macamot, Tatala and Mambog along the national highway, most part of barangay Lunsad in mainland, barangay Kasile, Bombong, Bangad, Janosa, Kaytome, Gulod, Sapang, Malakaban, Pinagdilawan, Ginoong Sanay, Tabon, Habagatan and Rayap in Talim Island.

The Calantas series is a member of the fine, mixed, isohyperthermic family of Lithic Troorthents. They are well drained shallow soils occurring on low tuffaceous hills and ridges and rolling to steep convex agglomerate hills of the volcanic hills landscape. The soils have brown to dark brown, dark yellowish brown, very dark grayish brown clay, clay loam or silty clay A horizon not more than 20 cm thick. The C horizon is dark, brown, and brown to dark brown, yellowish brown clay or clay loams which are common to many weathered volcanic tuff fragments. Below this layer is hard tuff.

Few too many surface stones and boulders commonly occur. Erosion is slight to moderate.

TABLE 3
SOIL TYPES/AREA COVERED

Landscape	Landform	Parent Material	Soil Series/ Taxonomic Name	Soil Mapping Unit Symbol	Soil Mapping Unit Description	Area Hectares		
Lacustrine	Narrow Lake Terraces	Lacustrine Deposits	Boulevard (Bd)	BdAF3	Boulevard clay, 0-2% slope, severely Flooded	68.85		
	Narrow Mini-Plain	Alluvium	Binangonan (Bg)	BnA	Binangonan clay, 0-2% slope	46		
				BnB	Binangonan clay, 2-5% slope	75.36		
	Minor Alluvial Plain		Baras (Br)	BrB	Baras clay, 2-5% slope	283.74		
				BrA	Baras clay, 0-2% slope	1,219.65		
	Narrow Mini-Plain		San Manuel (Sm)	SmA	San Manuel clay, 0-2% slope	93.82		
				Jala-Jala (Ja)	JaA	Jala-Jala clay, 0-2% slope	84.72	
					Teresa (Ta)	TaA	Teresa clay, 0-2% slope	104.09
	Basalt		Tulay (Ty)	SICl	SICl	San Luis clay, 5-8% slope, Slightly eroded	141	
					TyBl	Tulay clay, 2-5% slope, Slightly eroded	10.50	
				TyDl	Tulay clay, 8-15% slope, Slightly eroded	16.38		
		Volcanic Tuff	Kay Borbon	KbF2	Kay Borbon clay, 25- 45% slope, moderately eroded	115.29		
		Basalt	Antipolo (Ap)	ApDl	Antipolo clay, 8-15% slope, Slightly eroded	336.38		
				ApE2	Antipolo clay, 25-45% slope, Moderately eroded	758.30		
		Volcanic Tuff/ Agglomerate	Tutulo (Tt)	TtB	Tutulo clay, 2-5% slope	149.52		
				TtB-C	Tutulo clay, 2-8% slope	864.50		
				TtC	Tutulo clay, 5-8% slope	491.50		
				TtD	Tutulo clay, 8-15% slope	94.98		
			Calantas (Ca)	CaCl	Calantas clay, 5-8% slope, Slightly eroded	17.30		
				CaDl	Calantas clay, 8-15% slope Slightly eroded	195		
				CaEl	Calantas clay, 8-15% slope Slightly eroded	149.40		
				CaF2	Calantas clay, 25-45% slope Moderately eroded	693.65		
				CaG2	Calantas clay, 45-65 slope Moderately eroded	572.57		
				Miscellaneous Land Types				VR
		Ept	Escarpment					166.20
		Rte	River Terraced Escarpment					10.78
		QY	Quarry					7.95
	1) GRAND TOTAL							7,270 Hec.

7. Geology

Pure hard crystalline limestone deposits about in large quantity in the town. Gypsum deposits, mined in Bilibiran quarry, are being manufactured into Portland cement by the Rizal Cement Company since 1914.

8. Natural Drainage

In mainland, there are three rivers and one creek serving as natural drainage and Laguna Lake tributaries. These are rivers Lasi, Bilibiran and Darangan, and Gupiing creek.

The Lasi River serves as the draining area of the poblacion. The river source lies between the hilly portion of Mahabang Parang, passes the northern slopes of Kalbaryo in Libid, circles around the poblacion and flows out to Laguna Lake. It does not have a spring and its source of water is the rain.

The twisting river in Bilibiran continuously feeds Laguna Lake with cool, fresh water coming from a spring located in the hilly pasture land called Ray Tupas. The river is also a rich source of fresh water fish particularly water eels which are considered a delicacy. It is also a source of irrigation for rice fields along the bank and it nestles duck raising ventures in the area.

Darangan River serves as a repository of water from upland area during Rainy season. It is used as canal for irrigation system installed between the river bank and Laguna Lake. Natural processes silted the mouth of the river but it is widened and deepened by dredging to induce inflow of lake water.

In Talim Island, each barangay has at least one natural creek which drains rain water coming from mountainous areas to the Laguna Lake.

9. Natural Vegetation and Wildlife

Local forest is generally classified as Savana. Its vegetation is characterized by the growth of talahib cogon, native Ipil-Ipil, madre cacao and bamboos. Fruit bearing trees like mango, atis, duhat, bignay are grown in both the upland and lowland. Trees of dipterocarp species, the source of lumber, are seldom found in the municipality. However, there are species like narra and mahogany cultivated in the lowland. Monkeys can be found in Mt. Susong Dalaga in Talim Island. There are no more wild animals, only birds in the town upland areas.

10. Environmental Situation

Assessment of the municipality's environmental situation includes the problems on the critical ecosystem like the Laguna Lake basin, erosion, pollution, waste management and sanitation.

a) Laguna De Bay Basin

The Laguna Lake provides food supply and livelihood to countless families in the community and it is the nearest and largest source of potable water for domestic use. As such, it must be protected from disturbances pollution coming from industrial, agricultural

and domestic sources, siltation due to erosion and man-made structures that are environmentally disastrous.

The concentration of industries in Metro Manila and Laguna side of the lake makes the Central Bay, the municipal territorial water, a dumping area of the waste discharge from industries that have no waste water treatment facilities. Forty-one percent (41%) of these industrial waste discharges contain toxic and hazardous substances which exceed the safe criteria for the protection of aquatic life.

Domestic wastes are being discharge through the river tributaries. Other pollutants include pesticides and fertilizers used by farmers and thriving livestock industries not only in Binangonan but the whole coastal areas of the lake. The total pesticide used in 1976 amounted to 104,000 kg. (dry form) and 184,000 kg. (liquid form) which increased by 20 to 25% with the completion of the Regional Irrigation Projects. The major BOD loading to the lake by major contributors are as follow:

- Industries - 225 kg/day
- Domestic - 226,000 kg/day
- Agri-business - 300,000 kg/day

Sedimentation and siltation of the lake, as a result of forest denudation within the basin watershed, is another factor. The average volume of derived sediments is approximately 1.5×10^{-6} cubic meters/day retaining 2/3 of sediments in the lake. This decreases the lake's depth thereby increasing water turbidity affecting the productivity.

The quality of lake water generally meets class C standard. This can be said for propagation of fish and aquatic resources, recreational boating, and industrial water supply class which is used for manufacturing processes after treatment. But class C standard is not met in areas near the mouths of polluted rivers. Water quality even in Central Bay is generally worse than in the East and South Bays bordering Laguna because it has the highest contents of nitrates, inorganic phosphates and MPN coliform. The lake water is below the more desirable class B used for recreation, and classes A and AA used for public water supply.

Man-made structure like the Napindan locks prevents the entry of saline water from Manila Bay necessary to maintain the lake ecosystem.

The thermal pollution, traceable to about 1,075 industries that use the lake water as cooling agent and ultimately discharge it as heated water, has negligible effect on the biotic-abiotic relationships.

To address the pressing problems of the lake basin, the following solutions are recommended:

- A program for effective control of urban/domestic and agro-industrial waste.
- A program for the reforestation of areas identified with moderate and severe erosion potentials.
- Evaluation of the benefits of pollution control and other forms of technology.
- Re-assess tourism as a key to development without negating environment protection.
- Provide a ceiling for urban and industrial development.
- Intensification of Zero Waste technology.

TABLE 4
WATER QUALITY DATA ON LAGUNA DE BAY

Parameters	Station				Class C Standard
	W Bay	C Bay	E Bay	S Bay	
Ammonia mg/l	47.5	36.6	37.2	25.5	
Nitrate mg/l	150	198	151	145	
Inorganic phosphate mg/l	88.4	1.4	90.7	91	
Dis. O mg/l	7.4	7.5	7.6	7.3	5
Ph	8	8.2	65	8.5	
Temperature C	29	29.1	29.2	29.6	
Turbidity (mg/l S 102)	42	38	38	33	
Total dis. Solids (mg/l)	389	384	295	323	1,000
MPN Coliform (unit/MI)	1,290	2,750	1,290	4,720	5,000
Net primary Production (gc/m ² /d)	0.66	0.69	0.6	0.67	

Source: Water quality data on laguna de Bay Vol 5, LLDA

b) Erosion

Although erosion problem is not critical yet, the danger posed by the conversion of upper portion of northern barangays into subdivisions cannot be taken lightly. The recent policy to prevent soil erosion is the requirement for land developers to plant trees and to allocate spaces for vegetation cover in urban land use, proposed for the construction of grouted Rip-Rap structure on all critical area of erosion.

In Talim Island, the areas observed to have severe erosion potential are those with slopes and converted into the production of charcoal and firewood, the alternative livelihood during the months when fish catch is marginal.

c) Flooding

Flash floods due to siltation usually occur in the northern part of the municipality particularly Pag-Asa, and part of Tayuman, Bilibiran, Darangan, Calumpang, Layunan, part of Libis, Libid and Lunsad. These areas are briefly under water during heavy rains. The dredging of natural drainage, construction of CHB-lined canal and cross pipes leading to the lake are the proposed remedies for flash floods in some areas which is highly populated. Areas Reinforced Concrete Pipe (RCP) is Highly Recommendable drainage system because it is friction free and garbage cannot easily accommodate on tributary system.

d) Pollution

Although the Pollution Threatened Areas Map indicates the mainland as a potentially threatened area, the municipality as a whole is still a safe, livable place because inland, air and noise pollution can be considered minimal.

There are no immediate solutions at hand for noise pollution caused by tricycles that are affecting the poblacion residents. For underground pollution, LLDA has the following assessments:

“Water samples in Binangonan have high total absolute salts and unsuitable chloride ions. They also have high sodium content which could have come from fertilizers and detergents used in bathing and washing activities.”

e) Waste and Garbage Management

With the increasing development and rising standard of living here in Binangonan it is likely that per capita generation of waste will also grow. The lack of sustainable and affordable waste management has led the widespread open dumping and burning of waste creating an environmental problem that plagues the municipality the most.

The Municipality of Binangonan is progressively urbanized community of approximately 255,949 located in the Province of Rizal. The municipality is implementing a 10 year –solid waste management program aimed at addressing the problem on solid waste management using simple and tested sustainable systems avoiding further aggravation of the environmental problem. The program contains information education campaigns to promote public awareness on segregation of biodegradable and non-biodegradable wastes and on re-use and reduce recyclable wastes.

A portion of land about 3000 sq. meters at the existing dumpsite where the MRF is also located is being developed as a processing center for the segregation solid waste. (i.e. composting biodegradable waste, re-using recyclables materials and storing residual waste waiting for a process on technical know how on how to make good use of it.)

The site is located at Sitio Bunot, Barangay Lunsad having a total land area of 1.8 hectares. The center shall accept and process segregation wastes coming from the 23 mainland barangays as the 17 island barangays have their own individually managed disposal sites and processing centers.

A series of information and education campaign was launched at the Barangay level to inform the residents the proper way of segregating their wastes like how biodegradable recyclable and residual wastes are classified. The wastes are collected and deposited at the solid waste – processing center, where the recyclable waste is stored temporarily to be picked up by the local junkshop and the biodegradable waste is composted.

The Solid Waste Management programs of the Municipality is one of the priority plans of the municipality that can be seen from its vision for a hygienic and healthy environment, good governance and public services and the economic dynamism of the community.

Collection

Garbage collection in the Municipality of Binangonan is done by the Binangonan Solid Waste Services in partnership with the individual Barangay Solid Waste Services. The municipality has a total of 8 garbage trucks with 5 trucks each having a capacity of 10 cubic meter and 3 trucks each having a capacity of 7 cubic meters. With a total household of 51, 190 from the mainland barangays about 60% or 30,714 households are serviced by the Binangonan Solid Waste garbage trucks.

The solid waste services has been instructed not to collect solid waste that are not properly segregated likewise special wastes/hazardous wastes has to be collected separately for proper disposal at the Municipal Recovery Facility at the Municipal Dumpsite, located at Sitio Bunot, Barangay Lunsad.

Business and commercial establishments were also informed about the scheme through the Information Education campaign program. However, establishments and factories are allowed to dispose off their solid waste at the dumpsite with their own garbage haulers as long it is done in conformity with the municipality's scheme.

Collection Schedule and Disposal

In coordination with the 19 Mainland Barangays being serviced by the Municipal trucks at present, a collection schedule was planned. The other barangays shall be serviced in future when transport system through the barangays is available. Wherein they were grouped/clustered as to the planned collection route. Biodegradable wastes are collected from Monday to Friday between 6 to 7 in the morning. Non-biodegradable wasted (recyclable and residual wastes) are collected on the 2nd and 4th Saturdays between 6 to 7 in the morning. Special wastes are planned for collection on a separate truck during Fridays. No collection of wastes is planned during Sundays except for the Public Market.

Prior to waste segregation at source, households were predicated as to how wastes are segregated into Biodegradable and Non- biodegradable, emphasizing the benefits that can be derived from it. Composting of biodegradable are encouraged in each households especially for those with ample spaces, where the products are to be used in their eco-gardens.

The Municipality provides a sack initially for each household where the solid wastes are placed and tied firmly for sanitation purposes. Likewise the garbage trucks are also covered with net.

Existing recycling practice occur in three levels. One at the waste generation level, where a small percentage of households kept and sell their own recyclables. Two and three during the collection and transport to the disposal site. This is usually done by the garbage collectors. Although this practice is being discouraged. Also the plan is for all the 40 Barangays in the Municipality to build their own Material Recovery Facility. Majority or recyclables are taken to the Municipal Dumpsite at Sitio Bunot, Barangay Lunsad where a group of scavengers sift through the waste to be sold at private junkshops near the dumpsite.

A.	Volume of Garbage	-	7,700.10 cubic meters/month
B.	Average Daily Collection	-	256.67 cubic meters/day
C.	Method of Disposal	-	controlled dumpsite
D.	Location of Dumpsite	-	Sitio Bunot Lunsad Binangonan, Rizal
E.	No. of Dumptruck/	-	8 units Garbage trucks

11. Existing Land Use

Presently, 1,450.56 have. Or 19.95% of its total land area only is devoted to agriculture due to the conversion and reclassification of its original uses mostly to residential purposes. 1,234.56 have. Of the total agricultural land are considered production prime agricultural land.

The physical development mode of the municipality can be described as linear. People tend to concentrate along areas where roads and water transportations are available. Thus, built-up areas are scattered along the major roads and the coastline of Laguna de Bay.

TABLE 5
HOUSEHOLDS BY USUAL MANNER OF GARBAGE DISPOSAL

Total households	51,190	100%
Usual Manner of Garbage disposal		
Picked by garbage truck	40,952	80
Dumping in individual Pit	3,583	7
Burning	3,071	6
Composting (as Fertilizer)	921	1.8
Burying	564	1.1
Feeding to animals	1,172	2.29
Others	927	1.81

TABLE 6
LAND USE DISTRIBUTION, 2009

Land Uses	Area (Has)	Percent (%)
Agricultural/others	4,238.56	70.39
Res/Com/Ind/Min	1,341.58	22.28
Special cases	411.81	6.84
Religious/charitable	4.54	0.07
Gov't/others	25.30	0.42

Source: Assessor's Office

In the 1990's, the town experienced rapid urbanization brought by increased commercial and industrial activities both within and the surrounding areas of the municipality. As a result of this condition, demand for more spaces was altogether felt. The most visible impact of urbanization was the conversion of agricultural lands to urban uses such as residential, commercial and industrial.

The area of agricultural lands was 2,472.4 hectares. This area represents around 49% of the municipalities total land area. Riceland occupies the largest portion with 522.45 hectares or 15% of total agricultural lands.

Cemeteries are concentrated in southern portion of the mainland. These are the privately-owned Catholic Cemetery in Layunan and Santo Rosario Memorial Park in Gupiing, Lunsad, and the old municipal cemetery in Batingan which was bulldozed to give way to a new plan for development. On the other hand, the island barangays have three cemeteries located in Kaytome, Malacaban, and Habagatan-Talim. Only one cemetery on the northern part of the mainland specifically at Barangay Bilibiran was constructed last 2005 and now operational, the East Garden Memorial Park,.

On the other hand, urban land uses are distributed for residential, commercial, institutional and industrial purposes. Though, it can be noted, that there is a mix of uses that are incompatible such as residential and industrial establishment. Examples of these are the Rizal Cement Company, Inc. in Calumpang, Grandspan Corporation in Tagpos, and Ford Truck Philippines in Batingan. Commercial establishments are largely concentrated within the center of the town and cater to the needs of the local population. Other built-up areas of the municipality which are distributed municipal wide also have commercial activities interspersed with residential uses.

The dominant commercial establishments in the municipality include retail stores and groceries, from input stores, business and personal services.

CHAPTER IV

NATURAL RESOURCES ENDOWMENTS

1. Land Use Potential Based on Pedo-Ecological Zones

There are three pedo-ecological zones identified in the municipality namely:

- a) Warm Lowland, 8% slope, 100 m elevation, 25 degree's Centigrade
- b) Warm Cool Upland, 18% slope, 100-500 m. elevation, 22.5 degrees C, 18% slope, 400 m. elevation, 25 degree C.
- c) Warm Cool Hillyland, 18% slope, 500 m. elevation, 22.5 degrees C.

The first PEZ comprising 243 hectares or 3.34% is used as residential, industrial, infrastructure and other social amenities. The second PEZ, the biggest at 79.89% or 5,808 hectares, is ideal for the cultivation of annual and perennial crops. The third PEZ has 3.22% or 324 hectares, and needs soil cover like fruit trees and other permanent crops to prevent land degradation and soil erosion. The rest, with 13.55% or 985 hectares, are considered as miscellaneous land type and include the built up areas, coastal, open pit, quarry, and kaingin and water bodies.

There are twelve identified Land Management Units as shown in Table 6. Five for the Warm Cool Upland PEZ, three for the Warm Lowland, two for the Warm Cool Hillyland, and two for the miscellaneous land type.

TABLE 7

DISTRIBUTION OF VARIOUS LMU'S BY PEDO-ECOLOGICAL ZONES

Pedo Eco Zone	Nat'l. LMU Symbol	Old LMU Symbol	Land Form	Type	Total Area Hectares:%
Warm LL	15	12	Broad Alluvial	Plain 2	0.024
8% slope	14	14	Narrow Alluvial	Plain 212	2.92
25 deg. C	19	19	- do -	29	0.40
Sub-total				243	3.34
Warm Cool					
Upland	43	20	Minor Alluvial	Plain 554	7.62
<18% slope	52	31	Foot slopePiedmont	1965	27.03
100-500 m.	70	58	Plateau	31	0.43
8-18% slope					
400 m.	82m	85	Volcanic hills	118	1.62
>22.5C	81	91	Volcanic hills	3140	43.19
Sub-total				5008	79.89
-Warm cool					
Hillyland	111	65	Sedimentary hills	108	1.49
>18% slope					
>500m22.5C	115	54	Plateau	126	1.73
Sub-total				234	3.22
-Misc. Land					
Type	191	171	Miscellaneous	112	1.54
	180	177	- do -	130	1.79
	-	-	- do -	743	10.22
-Sub-total				985	100%
TOTAL				7,270	100%

Source: Municipal Assessor's Office

2. Forest Resources

The 273 hectare-forest area has no timberland of dipterocap species. Only minor forest products are grown such as: ipil-ipil, madre de cacao and shrubs used as firewood or made into charcoal; bamboos used as construction and handicraft materials; and fruit trees like mango, atis, tamarind and santol.

The rapid decrease of forest in the mainland is attributed to the development of housing subdivisions. The island portion has lesser degree of deforestation because it is still untouched by land developers. However, negotiation in the Talim Island is also being threatened due to charcoal making activities of the people.

3. Mineral Resources

There are no metallic minerals in Binangonan. There exist only non-metallic deposits used as construction materials. Table 8 & 9 would reflect the types of non-metallic resources in the municipality.

TABLE 8
NON-METALLIC RESERVES

Location	Deposit	Metric Tons
Binangonan-San Guillermo	Limestone	202,878,022
Binangonan-Cardona	Rock Aggregates	45,360,000
Binangonan-San Guillermo	Tuff (Adobe)	38,321,145

TABLE 9
NON-METALLIC RESERVES

Location	Operator	Positive & Prob.	Grade or Reserve (MT)	Status Analysis
Mambog	Non Operation	45,360,000	Rock Aggregates	Geologically Investigative
Pantok (Quarry)	Operation	38,321,425	Tuff (adobe)	Producing
Pantok (Quarry)	Operation	198,878,022	(limestone) 88 % CaCO ₃	Producing

Source: *Phil. Non-Metallic Ore Reserves, Mines & Geo-Science Bureau*

4. Water Resources

Tutulo, Mahabang Parang - weak flow
 Ginoong Sanay Hot Spring - weak flow
 Ray Tupas Spring, Bilibiran - source of Bilibiran river

Abundant ground water storage being adjacent to the Laguna Lake basis. It is a great potential for commercial water cooperatives and water utility companies and also in the development of water resources, and treatment plant.

The degradation of Laguna Lake that will affect the water table particularly artesian wells due to waste discharge from industries and domestic waste around the lake. Siltation to Lake and River system due to human intervention.

5. Fishery Resources

As one of the major occupations in 33 coastal barangays, fishing is engaged in by small and marginal fisherfolks using baklad, pants, bubo, pangahig, sakag, and dala as well as by medium and big fish farming operators with their fishpens and fishcages. Traditional fishing methods catch native and seasonal species like dulong, ayungin, biya, kanduli, hipon, suso, and gurami. Fishpens and fishcages produce tons of tilapia, bangus, big-head carps and catfish supplying the needs of the municipality including Metro Manila, Cavite, Laguna and Batangas.

The number of registered fishpens in the Municipality of Binangonan as of 2007 is seventeen (17) with the total area of 543.000 hectares or 5,430,000 square meters. The long battle between the LLDA and local government units (LGU) over the authority to issue fishpen permits has resulted in uncontrolled growth of fishpens displacing small and marginal fishermen in the municipality.

Fish pond culture that can be developed as an industry is still negligible except for some backyard ponds for catfish.

CHAPTER V

POPULATION AND SOCIO-DEMOGRAPHIC CHARACTERISTICS

1. Population Size and Density

The population of Binangonan as of the 2015 census is 282,474. The population increased by an average of 2.48% between 2015 to 2024.

The estimated population density at the end of 2015 is 4,258 inhabitants per square kilometer (up from 43 inhabitants per hectare). As of the 2009 figures, the densest barangays are Kalawaan, Pag-Asa, Calumpang, Bilibiran, Palangoy and Pantok while the sparsest or least populated is barangay Kasile. Nineteen barangays are above the average municipal density while 21 are below, mostly island barangays.

Figure 1: Comparative Data on Population from 1995-2015

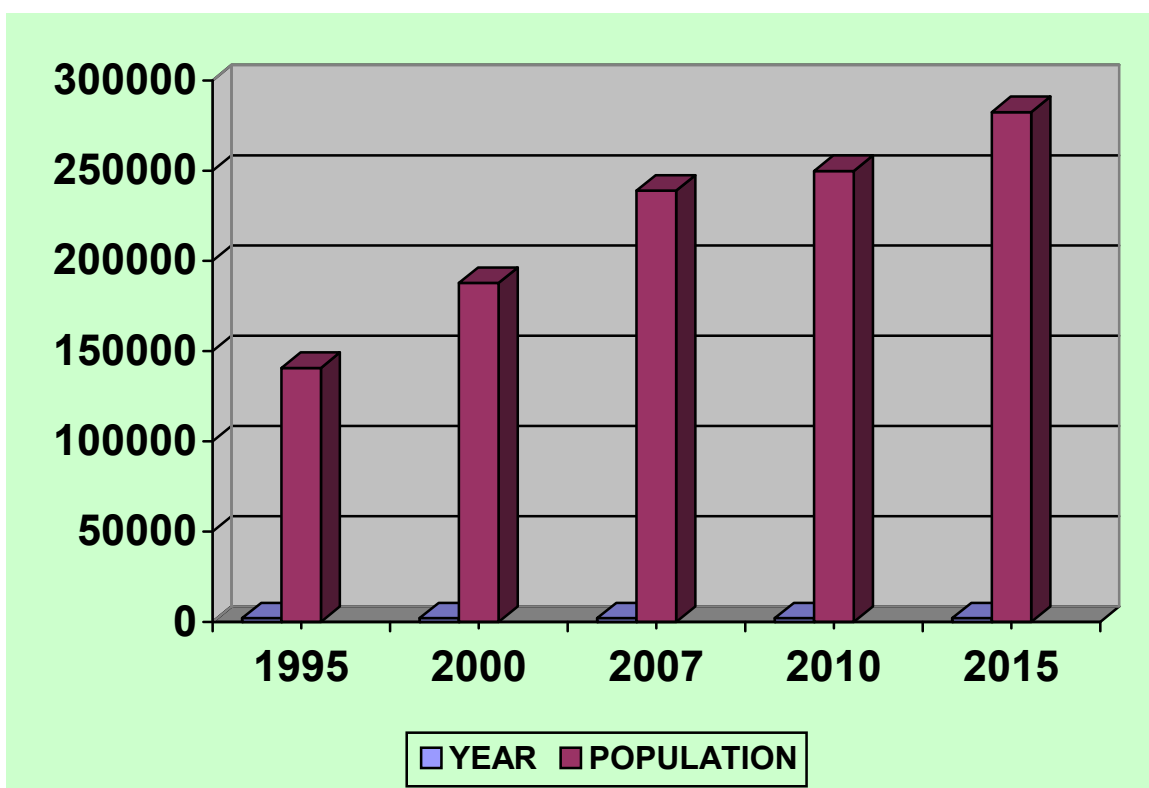


TABLE 10
COMPARATIVE DATA ON POPULATION FROM 1995 to 2015 and Population Density per Square Kilometer.

YEAR	POPULATION	GROWTH RATE	POP.DENSITY/SQKM.
1995	140,700		1,936
2000	187,691	5.9	2,582
2007	238,931	3.4	3,287
2010	249,872	1.5	3,767
2015	282,474	2.48	4,258

Source: NSO

TABLE 11
POPULATION DENSITY PER SQUARE
KILOMETER BY BARANGAY (2009)

BARANGAY	LAND AREA (Sqkm)	DENSITY (Sqkm)
MAINLAND		
1. Pag-asa	.89213	18,747
2. Tayuman	5.19	2,259
3. Tagpos	1.306895	9,969
4. Bilibiran	2.465024	6,031
5. Pantok	3.961867	3,556
6. Palangoy	4.707701	3,083
7. Darangan	4.631535	6,480
8. Calumpang	1.591299	9,969
9. Macamot	2.348285	3,223
10. Tatala	3.562322	1,763
11. Mambog	1.329626	5,358
12. Mahabang Parang	3.128198	2,234
13. Batingan	1.097120	11,732
14. Layunan	2.53604	1,418
15. Libis	2.348285	2,989
16. Libid	2.530	3,004
17. Lunsad	2.53	3,771
18. Pilapila	2.789107	2,890
19. Limbonlimbon	.305672	5,015
20. Ithan	1.022041	2,940
21. Kalinawan	.64.669	3,736
22. Pipindan	.504420	5,963
23. San Carlos	1.13	10,287
TALIM ISLAND		
24. Kasile	.305672	1,780
25. Bombong	.988464	2,923
26. Kinagatan	0.550664	2,980
27. Kinaboogan	1.136003	1,056
28. Bangad	1.095081	1,336
29. Buhangin	1.103080	1,980
30. Janosa	1.743514	1,500
31. Gulod	.708557	1,763
32. Kaytome	.791287	2,995
33. Sapang	1.120725	1,913
34. Malakaban	1.039942	1,243
35. Ginoong Sanay	.879308	2,001
36. Pinagdilawan	.331358	1,971
37. Binitagan	.418454	1,618
38. Tabon	.806707	1,087
39. Habagatan	.657025	2,572
40. Rayap	.788656	2,418
TOTAL	67.726	

TABLE 12
Household Population by Age Group

BOTH SEXES											
Age Group	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Under 1	5,312	5,392	5,473	5,555	5,638	5,723	5,809	5,896	5,984	6,074	6,165
1-4	21,969	22,299	22,634	22,974	23,319	23,669	24,024	24,384	24,750	25,121	25,498
5-9	27,030	27,435	27,847	28,265	28,689	29,119	29,556	29,999	30,449	30,906	31,369
10-14	26,504	26,901	27,305	27,715	28,131	28,553	28,981	29,415	29,856	30,304	30,759
15-19	25,066	25,442	25,824	26,211	26,604	27,003	27,408	27,819	28,236	28,659	29,089
20-24	22,641	22,981	23,326	23,676	24,031	24,392	24,758	25,129	25,506	25,889	26,277
25-29	21,618	21,942	22,271	22,605	22,944	23,288	23,637	23,992	24,352	24,717	25,088
30-34	20,592	20,901	21,214	21,532	21,855	22,183	22,516	22,854	23,197	23,545	23,898
35-39	17,891	18,159	18,431	18,707	18,988	19,273	19,562	19,855	20,153	20,455	20,762
40-44	15,859	16,097	16,338	16,583	16,832	17,084	17,340	17,600	17,864	18,132	18,404
45-49	13,133	13,330	13,530	13,733	13,939	14,148	14,360	14,575	14,794	15,016	15,241
50-54	10,892	11,055	11,221	11,390	11,561	11,734	11,910	12,089	12,270	12,454	12,641
55-59	8,089	8,210	8,333	8,458	8,585	8,714	8,845	8,978	9,113	9,250	9,389
60-64	5,600	5,684	5,769	5,855	5,943	6,032	6,122	6,214	6,307	6,402	6,498
65-69	3,211	3,260	3,309	3,359	3,409	3,460	3,512	3,565	3,618	3,672	3,727
70-74	2,193	2,226	2,259	2,293	2,327	2,362	2,398	2,434	2,471	2,508	2,546
75-79	1,254	1,273	1,292	1,311	1,330	1,350	1,371	1,392	1,413	1,434	1,455
80 & over	1,018	1,033	1,048	1,604	1,080	1,096	1,112	1,129	1,146	1,163	1,181
TOTAL	249,872	253,620	257,424	261,826	265,205	269,183	273,221	277,319	281,479	285,701	289,987

Household Population by Age Group and Sex, and
Sex Ratio by Age Group

MALE											
Age Group	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Under 1	2,770	2,812	2,854	2,897	2,940	2,984	3,029	3,074	3,120	3,167	3,214
1-4	11,415	11,586	11,760	11,936	12,115	12,297	12,481	12,668	12,858	13,051	13,247
5-9	14,011	14,221	14,434	14,651	14,871	15,094	15,321	15,551	15,784	16,021	16,261
10-14	13,621	13,825	14,033	14,244	14,458	14,675	14,895	15,118	15,345	15,575	15,809
15-19	12,513	12,701	12,892	13,085	13,281	13,480	13,682	13,887	14,095	14,306	14,521
20-24	11,102	11,269	11,438	11,610	11,784	11,961	12,140	12,322	12,507	12,695	12,885
25-29	10,540	10,698	10,858	11,021	11,186	11,354	11,524	11,697	11,873	12,051	12,232
30-34	10,194	10,347	10,502	10,660	10,820	10,982	11,147	11,314	11,484	11,656	11,830
35-39	8,963	9,097	9,233	9,371	9,512	9,655	9,800	9,947	10,096	10,247	10,401
40-44	7,885	8,003	8,123	8,245	8,369	8,494	8,621	8,750	8,881	9,014	9,149
45-49	6,550	6,648	6,748	6,849	6,952	7,056	7,162	7,269	7,378	7,489	7,601
50-54	5,356	5,436	5,518	5,601	5,685	5,770	5,857	5,945	6,034	6,125	6,217
55-59	3,946	4,005	4,065	4,126	4,188	4,251	4,315	4,380	4,446	4,513	4,581
60-64	2,670	2,710	2,751	2,792	2,834	2,876	2,919	2,963	3,007	3,052	3,098
65-69	1,444	1,466	1,488	1,510	1,533	1,556	1,579	1,603	1,627	1,651	1,676
70-74	913	927	941	955	969	984	999	1,014	1,030	1,045	1,061
75-79	476	483	490	497	504	512	520	528	536	544	552
80 & Over	329	334	339	344	349	354	359	365	370	376	382
TOTAL	124,698	126,568	128,467	130,394	132,350	134,335	136,350	138,395	140,471	142,578	144,717

Household Population by Age Group and Sex, and Sex Ratio by Age Group

FEMALE											
Age Group	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Under 1	2,542	2,580	2,619	2,658	2,698	2,739	2,780	2,822	2,864	2,907	2,951
1-4	10,554	10,713	10,874	11,038	11,204	11,372	11,543	11,716	11,892	12,070	12,251
5-9	13,019	13,214	13,413	13,614	13,818	14,025	14,235	14,448	14,665	14,885	15,108
10-14	12,883	13,076	13,272	13,471	13,673	13,878	14,086	14,297	14,511	14,729	14,950
15-19	12,553	12,741	12,932	13,126	13,323	13,523	13,726	13,932	14,141	14,353	14,568
20-24	11,539	11,712	11,888	12,066	12,247	12,431	12,618	12,807	12,999	13,194	13,392
25-29	11,078	11,244	11,413	11,584	11,758	11,934	12,113	12,295	12,479	12,666	12,856
30-34	10,398	10,554	10,712	10,872	11,035	11,201	11,369	11,540	11,713	11,889	12,068
35-39	8,928	9,062	9,198	9,336	9,476	9,618	9,762	9,908	10,057	10,208	10,361
40-44	7,974	8,094	8,215	8,338	8,463	8,590	8,719	8,850	8,983	9,118	9,255
45-49	6,583	6,682	6,782	6,884	6,987	7,092	7,198	7,306	7,416	7,527	7,640
50-54	5,536	5,619	5,703	5,789	5,876	5,964	6,053	6,144	6,236	6,329	6,424
55-59	4,143	4,205	4,268	4,332	4,397	4,463	4,530	4,598	4,667	4,737	4,808
60-64	2,930	2,974	3,018	3,063	3,109	3,156	3,203	3,251	3,300	3,350	3,400
65-69	1,767	1,794	1,821	1,849	1,876	1,904	1,933	1,962	1,991	2,021	2,051
70-74	1,280	1,299	1,318	1,338	1,358	1,378	1,399	1,420	1,441	1,463	1,485
75-79	778	790	802	814	826	838	851	864	877	890	903
80 & over	689	699	709	720	731	742	753	764	776	787	799
TOTAL	125,174	127,052	128,957	130,892	132,855	134,848	136,871	138,924	141,008	143,123	145,270

TABLE 13

Household Population 10 years old and over by Marital Status and Sex

BOTH SEXES											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Single	83,209	84,457	85,724	87,010	88,315	89,640	90,985	92,350	93,735	95,141	96,568
Married	85,620	86,904	88,207	89,530	90,873	92,236	93,619	95,023	96,448	97,895	99,364
Widowed	7,003	7,108	7,215	7,323	7,432	7,543	7,656	7,771	7,888	8,006	8,126
Divorced/ Separated	2,967	3,011	3,056	3,102	3,149	3,196	3,244	3,293	3,343	3,393	3,444
Common Law/Live-in	16,458	16,705	16,955	17,209	17,467	17,729	17,995	18,265	18,539	18,817	19,099
Unknown	305	310	315	320	325	330	335	340	345	350	355
TOTAL	195,562	198,495	201,472	204,494	207,561	210,674	213,834	217,042	220,298	223,602	226,956

MALE											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Single	43,475	44,127	44,789	45,461	46,143	46,835	47,538	48,251	48,975	49,710	50,456
Married	42,362	42,997	43,642	44,296	44,960	45,634	46,318	47,012	47,717	48,433	49,160
Widowed	1,438	1,460	1,482	1,506	1,526	1,549	1,572	1,596	1,620	1,644	1,669
Divorced/ Separated	955	969	983	998	1,013	1,028	1,043	1,059	1,076	1,092	1,108
Common Law/Live-in	8,135	8,257	8,381	8,507	8,635	8,765	8,897	9,030	9,165	9,303	9,442
Unknown	138	140	142	144	146	148	150	153	155	157	159
TOTAL	96,503	97,950	99,419	100,912	102,423	103,959	105,518	107,101	108,708	110,339	111,994

FEMALE											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Single	39,733	40,330	40,935	41,549	42,172	42,805	43,447	44,099	44,760	45,431	46,112
Married	43,258	43,907	44,565	45,234	45,913	46,602	47,301	48,011	48,731	49,462	50,204
Widowed	5,565	5,648	5,733	5,819	5,906	5,994	6,084	6,175	6,268	6,362	6,457
Divorced/ Separated	2,012	2,042	2,073	2,104	2,136	2,168	2,201	2,234	2,267	2,301	2,336
Common Law/Live-in	8,323	8,448	8,574	8,702	8,832	8,964	9,098	9,235	9,374	9,514	9,657
Unknown	168	170	173	176	179	182	185	187	190	193	196
TOTAL	99,059	100,545	102,053	103,584	105,138	106,715	108,316	109,941	111,590	113,263	114,962

TABLE 14
Household Population with Disability by Age Group Sex

BOTH SEXES											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Below 15	683	694	704	715	726	737	748	759	770	781	793
15-64	2,997	3,041	3,087	3,133	3,180	3,228	3,276	3,325	3,375	3,426	3,477
65 and over	705	716	727	738	749	760	772	784	796	808	820
TOTAL	4,385	4,451	4,518	4,586	4,655	4,725	4,796	4,868	4,941	5,015	5,090

MALE											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Below 15	369	375	381	387	393	399	405	411	417	423	429
15-64	1,514	1,536	1,559	1,583	1,607	1,631	1,655	1,680	1,705	1,731	1,757
65 and over	283	288	292	296	300	305	310	315	320	325	330
TOTAL	2,166	2,199	2,232	2,266	2,300	2,335	2,370	2,406	2,442	2,479	2,516

FEMALE											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Below 15	314	319	323	328	333	338	343	348	353	358	364
15-64	1,483	1,505	1,528	1,550	1,573	1,597	1,621	1,645	1,670	1,695	1,720
65 and over	422	428	435	442	449	455	462	469	476	483	490
TOTAL	2,219	2,252	2,286	2,320	2,355	2,390	2,426	2,462	2,499	2,536	2,574

2. Age Composition, Sex and Household Distribution

Based on the 2010 survey, the population of the Municipality of Binangonan is young, 105,881 or 42.37% are below 20 years of age in terms of sex distribution, females outnumber males 50.10% versus 49.90% or 125,174 females and 124,698 for males.

TABLE 15
HOUSEHOLD POPULATION 2010

	Household Population	Household Population
	Number of Total	Percent to Total
Male	124,698	49.90
Female	125,174	50.10
Total	249,872	100.00

Source: NSO

TABLE 16

BARANGAY	NSO DATA	PROJECTED NUMBER OF POPULATION								
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bangad	1,563	1,602	1,641	1,682	1,724	1,767	1,810	1,855	1,901	1,949
Batingan	13,931	14,276	14,631	14,993	15,365	15,746	16,137	16,537	16,947	17,367
Bilibiran	16,905	17,324	17,754	18,194	18,645	19,108	19,582	20,067	20,565	21,075
Binitagan	598	613	628	644	660	676	693	710	727	746
Bombong	3,256	3,337	3,420	3,504	3,591	3,680	3,772	3,865	3,961	4,059
Buhangin	1,871	1,917	1,965	2,014	2,064	2,115	2,167	2,221	2,276	2,333
Calumpang	18,596	19,057	19,530	20,014	20,510	21,019	21,540	22,075	22,622	23,183
G. Sanay	1,638	1,679	1,720	1,763	1,807	1,851	1,897	1,944	1,993	2,042
Gulod	1,197	1,227	1,257	1,288	1,320	1,353	1,387	1,421	1,456	1,492
Habagatan	1,275	1,307	1,339	1,372	1,406	1,441	1,477	1,514	1,551	1,590
Ithan	3,090	3,167	3,245	3,326	3,408	3,493	3,579	3,668	3,759	3,852
Janosa	2,917	2,989	3,063	3,139	3,217	3,297	3,379	3,463	3,549	3,637
Kalawaan	36,853	37,767	38,704	39,663	40,647	41,655	42,688	43,747	44,832	45,944
Kalinawan	2,062	2,113	2,166	2,219	2,274	2,331	2,388	2,448	2,508	2,571
Kasile	475	487	499	511	524	537	550	564	578	592
Kaytome	2,296	2,353	2,411	2,471	2,532	2,595	2,660	2,725	2,793	2,862
Kinaboogan	1,370	1,404	1,439	1,474	1,511	1,549	1,587	1,626	1,667	1,708
Kinagatan	1,466	1,502	1,540	1,578	1,617	1,657	1,698	1,740	1,783	1,828
Libis (Pob.)	6,738	6,905	7,076	7,252	7,432	7,616	7,805	7,998	8,197	8,400
Limbon-Limbon	1,590	1,629	1,670	1,711	1,754	1,797	1,842	1,887	1,934	1,982
Lunsad	10,800	11,068	11,342	11,624	11,912	12,207	12,510	12,820	13,138	13,464
M. Parang	8,935	9,157	9,384	9,616	9,855	10,099	10,350	10,606	10,869	11,139
Macamot	9,221	9,450	9,684	9,924	10,170	10,423	10,681	10,946	11,217	11,496
Mambog	9,988	10,236	10,490	10,750	11,016	11,289	11,569	11,856	12,150	12,452
Palangoy	14,038	14,386	14,743	15,109	15,483	15,867	16,261	16,664	17,077	17,501
Pantok	15,116	15,491	15,875	16,269	16,672	17,086	17,509	17,944	18,389	18,845
Pila-Pila	9,190	9,418	9,651	9,891	10,136	10,388	10,645	10,909	11,180	11,457
Pinagdilawan	778	797	817	837	858	879	901	924	946	970
Pipindan	2,429	2,489	2,551	2,614	2,679	2,746	2,814	2,883	2,955	3,028
Rayap	2,001	2,051	2,101	2,154	2,207	2,262	2,318	2,375	2,434	2,495
Sapang	2,265	2,321	2,379	2,438	2,498	2,560	2,624	2,689	2,755	2,824
Tabon	823	843	864	886	908	930	953	977	1,001	1,026
Tagpos	15,560	15,946	16,341	16,747	17,162	17,588	18,024	18,471	18,929	19,398
Tatala	10,773	11,040	11,314	11,595	11,882	12,177	12,479	12,788	13,105	13,430
Tayuman	11,243	11,522	11,808	12,100	12,400	12,708	13,023	13,346	13,677	14,016
Layunan (Pob)	2,491	2,553	2,616	2,681	2,747	2,816	2,885	2,957	3,030	3,105
Libid (Pob.)	7,089	7,265	7,445	7,630	7,819	8,013	8,211	8,415	8,624	8,838
Malakaban	1,216	1,246	1,277	1,309	1,341	1,374	1,409	1,443	1,479	1,516
Pag-asa	16,848	17,266	17,694	18,133	18,583	19,043	19,516	20,000	20,496	21,004
San Carlos	11,983	12,280	12,585	12,897	13,217	13,544	13,880	14,225	14,577	14,939
TOTAL	282,474	289,479	296,658	304,016	311,555	319,282	327,200	335,314	343,630	352,152

TABLE 17

BARANGAY	NSO	PROJECTED NUMBER OF HOUSEHOLD									
	DATA	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Bangad	301	306	310	315	319	324	329	334	339	344	349
Batingan	2,600	2,639	2,678	2,719	2,759	2,801	2,843	2,885	2,929	2,973	3,017
Billbiran	3,098	3,144	3,192	3,240	3,288	3,337	3,387	3,438	3,490	3,542	3,595
Binitagan	136	138	140	142	144	147	149	151	153	156	158
Bombong	586	595	604	613	622	632	641	651	661	670	681
Buhangin	417	423	430	436	443	449	456	463	470	477	484
Calumpang	3,159	3,206	3,254	3,303	3,352	3,403	3,454	3,506	3,558	3,612	3,666
G. Sanay	318	322	327	332	337	342	347	352	358	363	369
Gulod	237	240	244	248	251	255	259	263	267	271	275
Habagatan	317	322	327	332	337	342	347	352	358	363	368
Ithan	581	590	599	608	617	626	636	645	655	665	675
Janosa	521	529	537	545	553	561	570	578	587	596	605
Kalawaan	5,722	5,808	5,895	5,984	6,073	6,164	6,257	6,351	6,446	6,543	6,641
Kalinawan	405	411	417	423	429	436	442	449	456	463	470
Kasile	100	102	103	105	107	108	110	111	113	115	117
Kaytome	448	455	462	469	476	483	490	497	505	512	520
Kinaboogan	233	236	240	243	247	251	255	258	262	266	270
Kinagatan	288	293	297	302	306	311	315	320	325	330	335
Libis (Pob.)	1,334	1,354	1,374	1,395	1,415	1,437	1,458	1,480	1,502	1,525	1,548
Limbon-limbon	291	296	300	305	309	314	319	323	328	333	338
Lunsad	2,075	2,106	2,138	2,170	2,202	2,235	2,269	2,303	2,337	2,373	2,408
M. Parang	1,446	1,467	1,489	1,512	1,534	1,557	1,581	1,604	1,628	1,653	1,678
Macamot	1,634	1,658	1,683	1,708	1,734	1,760	1,786	1,813	1,840	1,868	1,896
Mambog	1,523	1,546	1,569	1,592	1,616	1,640	1,665	1,690	1,715	1,741	1,767
Palangoy	2,701	2,742	2,783	2,824	2,867	2,910	2,953	2,998	3,043	3,088	3,135
Pantok	2,622	2,661	2,701	2,742	2,783	2,825	2,867	2,910	2,954	2,998	3,043
Pila-Pila	1,649	1,674	1,699	1,725	1,751	1,777	1,804	1,831	1,858	1,886	1,914
Pinagdilawan	133	135	137	139	141	143	145	147	150	152	154
Pipindan	568	577	585	594	603	612	621	631	640	650	659
Rayap	377	383	389	394	400	406	412	419	425	431	438
Sapang	410	416	422	429	435	442	448	455	462	469	476
Tabon	167	169	172	174	177	180	182	185	188	191	194
Tagpos	2,466	2,503	2,541	2,579	2,618	2,657	2,697	2,737	2,778	2,820	2,862
Tatala	1,451	1,473	1,495	1,517	1,540	1,563	1,587	1,611	1,635	1,659	1,684
Tayuman	2,165	2,197	2,230	2,264	2,298	2,332	2,367	2,403	2,439	2,475	2,513
Layunan (Pob)	674	684	694	705	715	726	737	748	759	771	782
Libid (Pob)	1,417	1,438	1,460	1,482	1,504	1,527	1,549	1,573	1,596	1,620	1,644
Malakaban	239	243	247	250	254	258	262	266	270	274	278
Pag-asa	3,078	3,125	3,171	3,219	3,267	3,316	3,366	3,417	3,468	3,520	3,573
San Carlos	2,086	2,117	2,149	2,181	2,214	2,247	2,280	2,315	2,349	2,385	2,420
TOTAL	49,974	50,724	51,485	52,257	53,041	53,837	54,644	55,464	56,296	57,140	57,997

TABLE 18
LABOR FORCE AS OF 2010

Age Group	In the Labor Force			Not in the Labor Force (Both Sexes)	
	Total	Male	Female		
Population 15 yrs. Old & over	%	167,421	82,036	85,385	97,486
15-19	16.15	27,038	13,249	13,789	15,744
20-24	14.12	23,640	11,583	12,057	13,765
25-34	20.51	34,338	16,826	17,512	19,995
35-44	18.5	30,973	15,177	15,796	18,035
45-54	14.9	24,946	12,223	12,723	14,525
55-64	8.7	14,566	7,137	7,429	8,481
65 and over	7.12	11,920	5,841	6,079	6,941

TABLE 19
EMPLOYED POPULATION (150,679)

	Male No. of Workers	%	Female No. of Workers	%
Population 15 yrs. Old & over	76,846		73,833	
15-19	4,534	5.9	4,733	6.41
20-24	9,998	13.01	9,827	13.31
25-34	19,534	25.42	17,351	23.5
35-44	18,152	23.62	17,498	23.7
45-54	14,562	18.96	14,087	19.08
55-64	7,300	9.5	7,236	9.8
65 and over	2,766	3.6	3,101	4.2

UNEMPLOYED (16,742)

	Male No. of Workers	%	Female No. of Workers	%
Population 15 yrs. Old & over	11,050		5,692	
15-19	1,831	16.57	929	16.32
20-24	2,747	24.86	2,307	40.53
25-34	2,899	26.24	1,378	24.21
35-44	1,618	14.64	600	10.53
45-54	1,038	9.39	24	4.21
55-64	642	5.81	119	2.1
65 and over	275	2.49	119	2.1

3. Mother Tongue

A significant percentage of 93.44 percent of the municipality's total population are using Tagalog as their dialect. Table 17 would further show other dialects being spoken by the residents of the town.

TABLE 20
HOUSEHOLD POPULATION BY MOTHER TONGUE AND SEX (2000)

Mother Tongue	Both Sexes	Male	Female
TOTAL	140,574	70,561	70,013
% to total	100.00	50.19	49.81
Aklanon	0.08	0.05	0.04
Apayao	*	*	-
Badjao, Sama Dilaut	*	*	*
Bagobo	*	*	-
Bantoanon	0.01	*	*
Bikol	2.06	1.05	1.01
Boholano	0.04	0.02	0.01
Butuanon	0.02	0.01	0.01
B'laan	0.01	*	*
Caviteno – Chavacano	0.01	*	0.01
Cebuano	0.72	0.35	0.38
Cotabatenon – Chavacano	0.01	0.01	0.01
Davao – Chavacano	0.01	0.01	0.01
Hiligaynon, Ilonggo	0.39	0.17	0.21
Ibanag	0.02	0.01	0.01
Ilocano	0.81	0.40	0.41
Ilongot	0.17	0.08	0.09
Kalinga	0.01	*	0.01
Kapampangan	0.20	0.11	0.09
Maguindanao	0.01	0.01	0.01
Maranao	0.02	0.01	0.01
Masbateno	0.11	0.05	0.06
Negrito	*	*	*
Palawan	*	*	*
Pangasinan	0.20	0.11	0.09
Rombloanon	0.03	0.02	0.01
Sambal	0.01	0.01	0.01
Subanon	0.01	*	*
Subanun	0.02	0.02	0.01
Tagalog	93.44	46.98	46.46
Tausug	0.02	0.01	0.01
Zamboangeno-Chavacano	0.04	0.01	0.03
Chinese	0.02	0.01	0.01
English	0.01	*	*
Other Local Dialects	0.06	0.03	0.03
Other Foreign Languages	0.03	0.02	0.01
Not Stated	0.04	0.03	0.02

Source: 2000 Census of Population

YOUNG AND OLD AGE DEPENDENCY RATIO

Age Bracket	Percent
0-14	15.03
15-19	14.07
20-24	12.70
25-29	12.46
30-34	10.58
35-39	9.45
40-44	7.40
45-49	5.77
50-54	3.87
55-59	3.02
60-64	2.17
65-69	1.46
70-74	0.94
75-79	0.58
80-84	0.32
85-over	0.18
TOTAL	100%

TABLE 21

Total Number of Registered Voters
and voters who actually voted (Male & Female 2007)

BARANGAY	Total No. of Registered Voters			Total No. of Voters who Actually Voted		
	Male	Female	Total	Male	Female	Total
BANGAD	464	463	927	266	284	550
BATINGAN	2,547	2,887	5,434	1,310	1,544	2,854
BILIBIRAN	3,561	3,809	7,370	1,610	1,825	3,435
BINITAGAN	225	205	430	95	55	90
BOMBONG	673	693	1,366	464	411	875
BUHANGIN	497	500	997	411	424	835
CALUMPANG	3,403	3,897	7,300	1,588	1,754	3,342
DARANGAN	4,614	5,657	10,271	2,143	2,597	4,740
GINOONG SANAY	372	332	704	240	216	456
GULOD	314	316	630	251	257	508
HABAGATAN	527	525	1,052	308	266	574
ITHAN	565	592	1,157	408	446	854
JANOSA	612	608	1,220	385	391	776
KALINAWAN	457	435	892	336	299	635
KASILE	148	149	297	102	98	200
KAYTOME	556	540	1,096	390	422	812
KINABOOGAN	425	388	813	287	243	530
KINAGATAN	405	411	816	285	239	524
LAYUNAN	1,186	1,366	2,552	626	659	1,285
LIBID	2,126	2,343	4,469	1,312	1,334	2,646
LIBIS	871	1,038	1,909	1,018	1,000	2,018
LIMBON-LIMBON	312	309	630	216	245	461
LUNSAD	1,908	2,164	4,072	1,070	1,249	2,319
M. PARANG	1,108	1,129	2,237	619	670	1,289
MACAMOT	1,294	1,436	2,730	699	773	1,472
MALAKABAN	312	480	792	247	256	503
MAMBOG	1,208	1,329	2,537	679	839	1,518
PAG-ASA	2,169	2,534	4,703	954	1,109	2,063
PALANGOY	2,050	2,326	4,376	1,094	1,156	2,250
PANTOK	3,228	3,603	6,831	1,457	1,612	3,069
PILAPILA	1,736	1,906	3,642	951	999	1,950
PINAGDILAWAN	171	145	316	138	86	224
PIPINDAN	738	660	1,398	462	439	901
RAYAP	684	616	1,300	333	286	619
SAN CARLOS	2,620	2,890	5,510	1,122	1,339	2,461
SAPANG	639	635	1,274	461	473	934
TABON	237	224	461	132	120	252
TAGPOS	2,199	2,212	4,411	998	1,131	2,129
TATALA	1,015	1,062	2,077	585	600	1,185
TAYUMAN	2,330	2,538	4,868	1,059	1,137	2,196
SUBTOTAL	50,515	55,352	105,867	27,111	29,283	56,334

Source: COMELEC

TABLE 22

Total number of Registered Voters
and voters who actually voted (Male & Female 2010)

BARANGAY	Total No. of Registered Voters			Total No. of Voters who Actually Voted		
	Male	Female	Total	Male	Female	Total
BANGAD	501	480	981	307	338	646
BATINGAN	3,213	3,483	6,696	1,806	2,119	3,924
BILIBIRAN	3,650	3,982	7,632	1,998	2,484	4,480
BINITAGAN	310	302	612	146	164	300
BOMBONG	863	801	1,664	616	567	1,173
BUHANGIN	621	589	1,210	502	452	957
CALUMPANG	3,861	4,349	8,210	2,183	2,697	4,880
DARANGAN	5,466	481	11,978	3,318	4,072	7,390
GINOONG SANAY	502	347	983	287	363	650
GULOD	370	583	717	278	282	560
HABAGATAN	532	736	1,145	368	348	716
ITHAN	696	750	1,432	543	592	1,135
JANOSA	804	6,512	1,554	538	488	1,026
KALINAWAN	524	522	1,046	387	386	773
KASILE	180	188	368	127	168	295
KAYTOME	593	569	1,162	442	455	897
KINABOOGAN	468	441	909	299	299	598
KINAGATAN	502	501	1,003	384	374	758
LAYUNAN	1,240	1,404	2,644	716	840	1,566
LIBID	2,422	2,578	4,998	1,527	1,609	3,136
LIBIS	1,940	2,083	4,023	1,181	1,278	2,457
LIMBON-LIMBON	385	389	774	270	281	551
LUNSAD	2,318	2,637	4,955	1,610	1,646	3,256
MACAMOT	1,794	2,035	3,829	1,031	1,292	2,323
M. PARANG	1,453	1,493	2,946	891	950	1,841
MALAKABAN	434	414	848	314	256	570
MAMBOG	1,644	1,785	3,429	1,098	1,152	2,250
PAG-ASA	2,593	3,150	5,743	1,466	1,836	3,302
PALANGOY	2,373	2,268	5,041	1,378	1,822	3,200
PANTOK	3,613	4,089	7,702	1,891	2,335	4,226
PILAPILA	2,223	2,393	4,616	1,499	1,585	3,084
PINAGDILAWAN	223	213	436	133	194	327
PIPINDAN	934	980	1,914	575	578	1,153
RAYAP	739	780	1,469	375	352	717
SAN CARLOS	2,849	3,312	616	1,511	1,849	3,360
SAPANG	672	671	1,343	480	512	992
TABON	279	283	562	169	174	343
TAGPOS	2,401	2,711	5,112	1,368	1,599	2,967
TATALA	1,435	1,576	3,011	930	1,074	2,004
TAYUMAN	2,905	3,217	6,122	1,418	1,640	3,058
SUBTOTAL	60,555	66,427	126,982	36,363	41,493	77,841

Source: COMELEC

TABLE 23

Total Number of Registered Voters
and voters who actually voted (Male & Female 2013)

BARANGAY	Total No. of Registered Voters			Total No. of Voters who Actually Voted		
	Male	Female	Total	Male	Female	Total
BANGAD	621	593	1,214	483	483	966
BATINGAN	3,471	3,830	7,301	1,714	1,952	3,666
BILIBIRAN	3,930	4,462	8,392	1,701	2,050	1,701
BINITAGAN	350	331	681	238	239	477
BOMBONG	1,106	1,020	2,126	901	824	1,724
BUHANGIN	736	678	1,414	583	574	1,157
CALUMPANG	4,535	5,082	9,617	2,288	2,654	4,942
DARANGAN	6,404	7,642	14,046	3,330	4,229	7,559
GINOONG SANAY	514	505	1,019	404	402	801
GULOD	387	375	762	303	288	591
HABAGATAN	623	629	1,252	432	420	852
ITHAN	812	878	1,690	705	773	1,476
JANOSA	863	863	1,726	614	665	1,279
KALINAWAN	666	695	1,361	549	523	1,072
KASILE	188	191	379	141	136	277
KAYTOME	594	572	1,166	421	418	839
KINABOOGAN	546	523	1,069	417	389	806
KINAGATAN	494	492	986	241	263	504
LAYUNAN	1,406	1,567	2,973	823	882	1,705
LIBID	2,436	2,648	5,436	1,498	1,559	2,997
LIBIS	2,131	2,365	4,496	1,157	1,356	2,513
LIMBON-LIMBON	433	462	895	326	354	680
LUNSAD	2,709	3,044	5,753	1,518	1,656	3,174
MACAMOT	2,078	2,397	4,475	1,043	1,279	2,322
M. PARANG	1,737	1,837	3,574	1,147	1,254	2,401
MALAKABAN	427	421	848	262	256	518
MAMBOG	1,841	2,042	3,883	997	1,208	2,205
PAG-ASA	3,181	3,848	7,029	1,286	1,606	2,890
PALANGOY	2,667	3,076	5,743	1,531	1,764	3,349
PANTOK	4,064	4,747	8,811	1,940	2,274	4,214
PILAPILA	2,494	2,698	5,192	1,738	1,826	3,564
PINAGDILAWAN	255	253	508	186	173	346
PIPINDAN	1,026	976	2,002	639	666	1,305
RAYAP	912	889	1,801	653	616	1,269
SAN CARLOS	3,267	3,918	7,205	1,499	1,764	3,265
SAPANG	817	785	1,602	644	662	1,296
TABON	269	302	571	167	168	335
TAGPOS	3,327	3,831	7,158	2,017	2,333	4,253
TATALA	1,834	2,069	3,903	1,302	1,453	2,755
TAYUMAN	3,047	3,424	6,471	1,432	1,733	3,165
SUBTOTAL	69,198	76,960	146,530	39,270	44,124	83,279

Source: COMELEC

CHAPTER VI

THE SOCIAL SERVICES SECTOR

1. Health and Nutrition

There are three hospitals in Binangonan, the Municipal Hospital at Pritil, Pag-asa Hospital and the Binangonan Lakeview Hospital. The nearest government hospitals are in the towns of Angono and Morong. Although most barangays have health centers, there are not enough government health personnel to attend to the needs of residents. Only three Physicians, four Public Health Nurses, four Rural Sanitary Inspectors, two Dentists and 39 Midwives are assigned to four Rural Health Units (RHU) composed of at least nine barangays each.

There are 50 private medical practitioners with their respective clinics that are mostly based in the mainland. There are no doctors in the Island except for the physicians in Subay General Hospital in Cardona side of Talim.

Based on the 2009 Municipal Health Office report, the leading causes of mortality are Myocardial Infarction, Cardio-Vascular Disease and CVA while the leading causes of morbidity are AURI and wound all kinds.

All RHUs conducted Operation Timbang involving children ages 0-6 and used the result as basis for the government Feeding/Nutrition Program. The municipality was chosen as the special pilot project for *Food and Security for Distressed Families*, a project aimed at providing indigenous food to underweight children and empowering parents and communities to be responsible in the nutritional rehabilitation of children. The program initially served 293 malnourished children in feeding centers in Ithan, Limbon-Limbon, Pag-asa and Bilibiran.

TABLE 24
DEMOGRAPHIC PROFILE 2012

Indicators	NUMBER			Ratio to Population	Interpretation	Recommendation /Actions Taken
	M	F	TOTAL			
Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7
Barangay			40			
Brgy. Health Stations			40			
Doctors	2	1	3			
Dentist	0	2	2			
Nurses	0	5	5			
Midwives	0	39	39			
Nutritionist	0	0	0			
Medical Technologist	0	2	2			
Sanitary Engineers	0	0	0			
Sanitary Inspectors	3	1	4			
Active BHWs	7	278	285			

Source: Municipal Health Office

TABLE 25
Vital Statistic Report Environmental

Households with access to improved or safe water supply	
• Level I	6,023
• Level II doubtful sources	4,014
• Level III	40,154
Households w/ sanitary toilet facilities	43,165
Households w/ satisfactory disposal of solid waste	43,165
Households w/ complete basic sanitation facilities	43,165
Food Establishments	1,994
Food Establishments w/ sanitary permit	1,994
Food Handlers	2,364
Food Handlers w/ health certificate	2,081
Salt Samples Tested	27,423
Salt Samples Tested found (+) for iodine	24,996

Source: Municipal Health Office

TABLE 26
Location of Health Centers

RHU-I	RHU-II	RHU-III	RHU-IV	
Calumpang	Pag-asa	Libid	Kasile	Sapang
Layunan	Tayuman	Lunsad	Bombong	Malakaban
Libis	Tagpos	Pilapila	Kinagatan	Pinagdilawan
Batinagan	Palangoy	Limbon- Limbon	Kinaboogan	G. Sanay
Macamot	Bilibiran	Ithan	Bangad	Binitagan
Tatala	Pantok	Kalinawan	Buhangin	Tabon
Mambog	Darangan	Pipindan	Janosa	Habagatan
M. Parang			Kaytome	Rayap
			Gulod	

TABLE 27
Infant Mortality 2012 (Live Birth – 5479)

Causes	Number	Rate
IUFD	7	0.121
Respiratory Distress Syndrome	6	0.104
Sepsis	5	0.086
Pneumonia	4	0.069
Anencephally	2	0.034
Cord coil	2	0.034
Meningitis	1	0.017
Still Birth	1	0.017
Liver Failure	1	0.017
Premature	1	0.017

Source: Municipal Health Office

TABLE 28
MORTALITY BY AGE GROUP 2012

RHU	<1y/o		1-4		5-9		10-14		15-19		20-24		25-29		30-34	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
I	13	8	27	13	16	5	3	3	2	3	3	6	1	1	4	2
II	18	9	29	17	20	7	5	6	4	4	4	6	1	1	3	3
III	6	6	16	13	4	4	2	2	2	1	1	2	1	1	2	2
IV	6	5	10	13	2	2	2	2	1	2	2	0	1	1	1	2
Total	43	28	82	56	42	18	12	13	9	10	10	14	4	4	10	9

RHU	35-39		40-44		45-49		50-54		55-59		60-64		65-up		TOTAL	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
I	7	6	4	5	6	6	7	6	10	8	10	7	40	42	153	121
II	9	7	5	4	6	7	8	7	12	10	12	6	49	59	185	153
III	6	6	4	3	6	4	5	4	6	6	9	6	33	34	104	94
IV	5	5	3	4	4	2	3	2	6	5	7	6	32	21	85	72
Total	27	24	16	15	22	19	23	19	34	29	38	25	154	156	527	440

Source: Municipal Health Office

TABLE 29
Morbidity Leading Causes 2012

Causes	Number	Rate
URTI	8240	2737
Animal Bite	1758	0.584
Wound All Type	1519	0.504
Allergy	520	0.172
GUTI	430	0.142
Asthma	339	0.112
Dengue (2 deaths)	326	0.108
Diarrhea	193	0.064
Conjunctivitis	135	0.044
PTB	110	0.036

Source: Municipal Health Office

TABLE 30
Mortality 2012 (Live Birth – 5479)

RHU		Neonatal Deaths				Perinatal Deaths				Deaths among Children less than 5 yrs. old			
		M	F	Total	%	M	F	Total	%	M	F	Total	%
I	1680	2	1	3	0.1785	0	0	0	0.00%	0	1	1	0.0003
II	2574	4	0	4	0.1554	0	0	0	0.00%	5	3	8	0.0026
III	1053	1	4	5	0.4748	0	0	0	0.00%	1	2	3	0.0096
IV	442	0	0	0	0	0	0	0	0.00%	0	0	0	0
TOTAL	5749	7	5	12	0.0039	0	0	0	0.00%	6	6	12	0.0039

Source: Municipal Health Office

TABLE 31

Livebirths, Total Deaths, Maternal Deaths,
Infant Deaths 2012

RHU	Population	Live Births			Total Deaths				Maternal Deaths		Infant Deaths			
		M	F	Total	M	F	Total	Rate	No.	Rate	M	F	Total	Rate
I	75,536	827	853	1680	42	47	89	0.29	1	0.0013	4	3	7	12.92
II	141,443	1302	1272	2574	75	61	136	0.24	1	0.0077	3	4	7	7.63
III	45,991	551	502	1053	28	36	64	0.35	1	0.0021	1	2	3	8.5
IV	38,055	238	204	442	32	28	60	0.53	1	0	0	1	1	9.43
Total	301,025	2918	2831	5749	177	172	349	0.3	3	0.0009	8	10	18	9.38

Source: Municipal Health Office

TABLE 32

MATERNAL CARE 2012

RHU	Elig. Pop	Pregnant Women w/ 4 or more prenatal visits		Pregnant Women given 2 doses TT		Pregnant Women given TT2 plus		Pregnant Women given complete iron w/ FA		Pregnant Women given vitamins A supplementation	
		No.	%	No.	%	No.	%	No.	%	No.	%
I	2644	1682	63.62	667	25.23	871	32.95	1664	62.94	1658	62.71
II	4951	2975	60.09	2177	43.98	1745	35.25	2881	58.20	597	12.06
III	1610	1111	69.02	554	34.42	772	47.96	1029	63.93	284	17.64
IV	1332	524	39.34	274	20.57	316	23.73	508	38.14	392	29.43
Total	10536	6292	59.72	3672	34.85	3704	35.16	6082	57.73	2931	27.82

Source: Municipal Health Office

TABLE 33

FAMILY PLANNING (Current Users) 2012

Indicators	NAME OF BHS									
	RHU-1		RHU-2		RHU-3		RHU-4		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Current Users	7,193		19,090		5,266		6,336		37,885	
Female Ster/BTL	1105	15.36	2189	11.47	1480	28.10	892	14.08	5,666	14.96
Male Ster/Vasectomy	6	0.08	48	0.25	10	0.19	7	0.11	71	0.19
Pills	3316	46.10	6530	34.21	1761	33.44	1573	24.38	31,180	34.79
IUD	365	5.07	1826	9.57	326	6.19	2668	42.11	5,185	13.69
Injectables (DMPA)	1797	24.98	3407	17.85	717	13.62	720	11.36	6,641	17.53
NFP-CM	0	0	0	0	0	0	139	2.19	139	0.37
NFP-BBT	0	0	0	0	0	0	1	0.02	1	0.00
NFP-STM	0	0	0	0	0	0	0	0	0	0
NFP-SDM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
NFP-LAM	0	5.85	3818	20.00	830	15.76	263	4.15	5332	14.07
Condom	0	2.54	1272	6.66	142	2.70	73	1.15	1670	4.41

Source: Municipal Health Office

TABLE 34
FAMILY PLANNING (New Acceptors) 2012

Indicators	NAME OF BHS									
	RHU-1		RHU-2		RHU-3		RHU-4		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total New Acceptors	1,192		1,472		1,041		459		4,164	
Female Ster/BTL	30	2.52	92	6.25	57	5.48	14	3.05	193	4.63
Male Ster/Vasectomy	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
Pills	48	4.03	183	12.43	91	8.74	26	5.66	348	8.36
IUD	9	0.76	72	4.89	21	2.02	100	21.79	202	4.85
Injectables (DMPA)	106	8.89	233	15.83	74	7.11	20	4.36	433	10.40
NFP-CM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
NFP-BBT	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
NFP-STM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
NFP-SDM	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
NFP-LAM	988	82.89	793	53.87	785	75.41	292	63.62	2858	68.64
Condom	11	0.92	79	5.37	13	1.25	7	1.53	110	2.64

Source: Municipal Health Office

TABLE 35
DENTAL CARE – 2012

Indicators Col. 1	Elig. Pop. Col. 2	Number			%
		Male Col. 3	Female Col. 4	Total Col. 5	
Orally Fit Children 12-71 months Old		324	390	714	8.95
Children 12-71 months old Provided with BOHC		1052	1154	2206	27.66
Adolescent & Youth (10 – 24 years) Given BOHC		3397	3129	6526	73.65
Pregnant women provided With BOHC		0	358	358	
Older Person 60 years old & above Provided with BOHC		203	271	474	8.77

Source: Municipal Health Office

TABLE 36
TUBERCULOSIS – 2012

	Pop = 75,536			Pop = 141,443			Pop = 45,991			Pop = 38,055			301,025	
	RHU I		T O T A L	RHU II		T O T A L	RHU III		T O T A L	RHU IV		T O T A L		OVER ALL TOTAL
	M	F		M	F		M	F		M	F			
1. TB symptomatics who underwent DSSM	148	83	231	262	212	474	104	88	92	61	27	88	985	
2. Smear (+) discovered	41	14	2	2	0	2	20	12	32	19	4	23	110	
3. New smear (+) case initiated treatment	32	11	82	82	49	131	21	12	33	17	14	31	238	
4. New smear (+) case cured	9	3	62	62	40	102	20	23	43	6	1	7	164	
5. Smear (+) retreatment case initiated treatment	1	0	1	0	0	0	0	0	0	0	0	0	1	

6. Smear (+) retreatment case got cured	0	0	0	1	0	1	0	0	0	0	0	0	1
TBDC (-) / X – RAY (+)													
TBDC Initiated Treatment	49	21	70	60	40	100	32	16	48	4	4	8	226
TBDC Cured	39	18	57	62	29	91	37	16	53	5	4	9	210
T.B. IN CHILDREN													
Initiated Treatment	0	0	0	5	1	6	1	0	1	0	0	0	7
Treatment Cured	2	0	2	7	5	12	0	0	0	0	0	0	14

Source: Municipal Health Office

TABLE 37
NATALITY – DELIVERIES 2012

Indicators	RHU – I		RHU – II		RHU – III		RHU – IV		TOTAL	
	No.	%	No.	%	No.	%	No.	%	No.	%
Total Livebirths	168		2574		1053		714		6021	
Total Deliveries	1680		2274		1053		442		5749	
BIRTHS BY TYPE OF PREGNANCY										
Normal Pregnancy	1491	88.75	2261	87.83	1034	98.19	708	98.64	5494	90.83
Risk Pregnancy	141	8.39	305	11.84	17	1.61	3	0.68	466	8.10
Unknown Pregnancy	48	2.85	8	0.31	2	0.18	3	0.68	61	1.06
Normal Deliveries										
Normal Deliveries at Home	926	53.21	1153	47.35	687	64.19	137	30.31	2903	50.84
BeMONC	0		82				190			
Normal Deliveries at Hospital	592	35.23	976	37.91	202	19.18	266	42.98	2036	35.51
Normal Deliveries – Other Place	151	9.16	307	11.63	38	3.65	121	27.19	617	10.68
Other Type of Deliveries										
Other Type of Deliveries at Home	1	0.06	21	0.80	93	8.93	0	0	115	1.99
Other Type of Deliveries at Hospital	10	0.24	35	0.42	33	2.50	0	0	78	0.863
Other Type of Deliveries – Other Place	0		0		0		0		0	

Source: Municipal Health Office

Indicators	RHU – I				RHU – II			
	M	F	Total	%	M	F	Total	%
Livebirths (LB)	827	853	1680		1302	1272	2574	
LB w/ weights 2500 grams & greater	797	694	1491	88.75	1218	1043	2261	87.83
LB w/weights less than 2500 grams	80	61	141	8.39	199	106	305	11.84
LB Not known weight	27	21	48	2.85	5	3	8	0.31
LB delivered by doctors	61	258	319	18.98	73	472	545	21.17
LB delivered by nurses	41	31	72	4.28	27	17	44	1.71
LB delivered by midwives	602	563	1165	69.34	902	887	1789	69.50
LB delivered by hilot/TBA	61	50	111	6.60	79	80	159	6.18
LB delivered by others	6	7	13	0.77	21	16	37	1.43

RHU – III				RHU – IV				TOTAL			
M	F	Total	%	M	F	Total	%	M	F	Total	%
551	502	1053		238	204	442		2918	2831	5749	
544	490	1034	98	235	201	436	98.64	2794	2428	5222	90.83
9	8	17	1.61	2	1	3	0.68	290	176	466	8.10
1	1	2	0.18	1	2	3	0.67	34	27	61	1.06
7	113	120	11.39	23	64	87	19.68	164	907	1071	18.62
26	24	50	4.75	27	24	51	11.53	121	96	217	3.77
440	844	844	80.15	141	134	275	62.21	2085	1988	4073	70.84
18	17	35	3.32	16	13	29	6.56	174	160	334	5.81
2	2	4	0.38	0	0	0	0	29	25	54	0.94

Source: Municipal Health Office

TABLE 38
Private Hospitals & Services Available in
Private Hospitals, 2014

NAME OF HOSPITALS	HEALTH FACILITIES	CATEGORY	NO. OF BEDS
1. Pag-asa Hospital	Laboratory, emergency room, Operating room, Delivery Room, & Pharmacy	Secondary	19 Bed Capacity
2. Binangonan Municipal Hospital	ER OPD, Ward, Delivery Room	Primary	17 Bed Capacity
3. Binangonan Lakeview Hospital	Laboratory, Emergency Room, Operating Room, Delivery Room, ICU and Pharmacy	Secondary	30 Bed Capacity

Source: Municipal Health Office

TABLE 39
Statistics of Death, Birth and Marriage
As per Registry Book from year 1995 - 2013

YEAR	DEATH	BIRTH	MARRIAGE
1995	556	5,840	954
1996	537	4,936	1,073
1997	548	4,860	1,210
1998	602	4,388	1,178
1999	540	3,435	1,264
2000	761	4,073	1,807
2001	819	4,086	1,783
2002	733	4,319	1,561
2003	721	4,451	1,497
2004	707	4,544	1,475
2005	747	4,528	1,356

2006	863	4,495	1,330
2007	822	4,290	1,360
2008	786	4,532	1,288
2009	918	4,530	1,253
2010	935	4,651	1,267
2011	995	4,459	1,342
2012	992	4,954	1,094
2013	1,011	4,426	1,069
TOTAL	14,593	85,797	25,161

Source: Local Civil Registrar Report

TABLE 40

LIST OF DAY CARE CENTERS IN BINANGONAN, RIZAL

BARANGAYS	BARANGAYS
1. Calumpang / Saperia	21. Libid
2. Mahabang Parang / Mambalon/ Tutulo	22. Libis
3. Mabuhay Homes	23. Tabon
4. Buhangin	24. Sitio Malitlit, Tagpos
5. Binitagan	25. Kalinawan
6. Malakaban	26. Bagong bayan
7. Limbon-Limbon	27. Bombong
8. Rayap / Banaba	28. Pipindan
9. San Carlos	29. Ithan
10. Pila-Pila	30. Kinaboogan
11. Macamot	31. Pinagdilawan
12. Kaytome Gulod	32. Ginoong Sanay
13. Bangad	33. Sapang
14. Kasile	34. Gulod
15. Pag-asa	35. Palangoy
16. Lunsad / Gupiing	36. Batingan
17. Layunan	37. Sitio Mata, Tayuman
18. Habagatan	38. Kinagatan
19. Sto. Niño, Bilibiran	39. Mambog / Tatala
20. Graceville, Pag-asa	40. Janosa

Source: MSWDO Report (2009)

2. Educational and Human Resources Development

Elementary Education is being provided by 36 public and 50 private schools based in school year 2012-2013 figures 30,864 are admitted in the public elementary schools whereas private elementary schools recorded 5,448 enrollees for a total of 36,312.

Secondary Education is being provided by 9 public and 25 private schools for school year 2012-2013 public secondary schools recorded a total of 15,777 enrollees while private secondary schools admitted 4,926 enrollees for a total of 20,703. These data however, excludes students' population who are either enrolled in public and private secondary schools outside the municipality.

Tertiary Education is being provided by 1 public and 7 private schools for school year 2012-2013. The total enrollment from these schools was recorded at 3,917. This figure will not reflect the actual participation rate as against school age population of the municipality considering that most of the college students are enrolled in schools in Metro Manila and other school in nearby municipality including that of schools in Antipolo City.

TABLE 41**Student-Teacher and Student-Classroom Ratio by Level (SY 2011-2012)**

Type/Level	No. of Enrollees			Total No. Of Teachers	Total No. Of Classrooms	Student Teacher Ratio	Student Classroom Ratio
	Male	Female	Total				
BINANGONAN							
<i>Private</i>							
Elementary	2,710	2,526	5,236	322	-	16:1	-
Secondary	2,377	2,304	4,681	256	-	18:1	-
BINANGONAN I							
<i>Public</i>							
Elementary	6,084	5,932	12,016	268	293	45:1	41:1
Secondary	2,345	2,256	4,601	98	82	47:1	56:1
BINANGONAN II							
<i>Public</i>							
Elementary	3,381	3,205	6,586	182	215	36:1	31:1
Secondary	804	774	1,578	47	42	34:1	38:1
BINANGONAN III							
<i>Public</i>							
Elementary	5,952	5,585	11,537	250	194	46:1	59:1
Secondary	4,157	4,107	8,264	204	99	41:1	83:1

Source: Department of Education (DepEd)

TABLE 42**Student-Teacher and Student-Classroom Ratio by Level (SY 2012-2013)**

Type/Level	No. of Enrollees			Total No. Of Teachers	Total No. Of Classrooms	Student Teacher Ratio	Student Classroom Ratio
	Male	Female	Total				
BINANGONAN							
<i>Private</i>							
Elementary	2,826	2,622	5,448	334	233	16:1	23:1
Secondary	2,538	2,388	4,926	202	163	24:1	30:1
BINANGONAN I							
<i>Public</i>							
Elementary	6,322	6,077	12,399	272	302	46:1	32:1
Secondary	2,299	2,252	5,551	110	88	41:1	52:1
BINANGONAN II							
<i>Public</i>							
Elementary	3,322	3,226	6,548	191	205	34:1	32:1
Secondary	770	765	1,535	41	40	33:1	38:1
BINANGONAN III							
<i>Public</i>							
Elementary	6,267	5,650	11,917	254	209	47:1	57:1
Secondary	4,348	4,343	8,691	219	118	40:1	74:1

Source: Department of Education (DepEd)

TOTAL NUMBER OF ENROLEES FOR SY 2012-2013

ELEMENTARY			SECONDARY		
Private	Public	Total	Private	Public	Total
5,448	30,864	36,312	4,926	15,777	20,703

Source: Municipal Planning & Dev't Office (MPDO)

TERTIARY			
Type	Male	Female	Total
Public	1,291	2,216	3,507
Private	185	225	410
Total	1,476	2,441	3,917

TABLE 43

Projected Classroom, Teacher Requirement in Public Schools by Level

Level	PLANNING PERIOD				
	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020

Projected Enrollment	PLANNING PERIOD														
	Bin. I	Bin. II	Bin. III	Bin. I	Bin. II	Bin. III	Bin. I	Bin. II	Bin. III	Bin. I	Bin. II	Bin. III	Bin. I	Bin. II	Bin. III
Elementary	12543	6548	12148	12688	6548	12399	12832	6548	12610	12977	6548	12841	13121	654	13072
Secondary	4759	1536	4537	4970	1537	10283	5178	1538	11098	5389	1539	11915	5597	1540	12731
Classroom															
Elementary	279	146	270	282	146	275	285	146	280	288	146	285	292	146	290
Secondary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Teacher															
Elementary	279	146	270	282	146	275	285	146	280	288	146	285	292	146	290
Secondary	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: Department of Education (DepEd)

TABLE 44

LIST OF PRE-SCHOOLS (SY 2012-2013)

School	Address
1. Jedediah Learning Center	San Carlos Binangonan Rizal
2. VFD-SDAI Learning Center	Darangan Binangonan Rizal
3. St. Raymond Nonnatos	San Juan Darangan Binangonan Rizal
4. Remi-Andrea School	Tayuman Binangonan Rizal
5. SMA Learning School	Pantok Binangonan Rizal
6. Star Stripe Learning School	Darangan Binangonan Rizal
7. Living Rock Christian School Inc.	Pag-asa Binangonan Rizal
8. D, Spring of Wisdom Learning Center	Dalig-Batingan Binangonan Rizal
9. Nijah Learning Center	Lobarbio St. Bilibiran Binangonan Rizal
10. Right Step School of Learning	Zamora Cor. Lopez jaena St. Libid Bin., Rizal
12. Palm Mary Private School	Darangan Binangonan Rizal
13. Raises Montessori Academe	Pantok/Pag-asa Binangonan Rizal
14. Palm Mary Private School.	Darangan Binangonan Rizal
15. Child's Place D.A.P School Inc.	Calumpang Binangonan Rizal
16. Blessed Savina Learning Center	Mambog Binangonan Rizal
17. RMMFWC-Jhabby Learning Center	Sitio Mabato San Vicente St Bilibiran Binangonan Rizal
18. Binangonan Catholic College	Libis Binangonan Rizal

TABLE 45

LIST OF ELEMENTARY SCHOOLS (SY 2012-2013)

District/School	Address
District I	
1. Binangonan Elem. School.	Layunan Binangonan, Rizal
2. Calumpang Elem. School.	Calumpang Binangonan, Rizal
3. Macamot Elem. School.	Macamot Binangonan, Rizal
4. Libis Elem. School.	Libis Binangonan, Rizal
5. Mah. Parang Elem. School.	Mahabang Parang Binangonan, Rizal
6. Tatala Elem. School.	Tatala Binangonan, Rizal
7. Pila-Pila Elem. School.	Pilapila Binangonan, Rizal
8. Darangan Elem. School.	Darangan Binangonan, Rizal
9. Casimiro Ynares Elem. School.	Mambog Binangonan, Rizal
10. Libid Elem. School.	Libid Binangonan, Rizal
District II	
11. Lunsad Elem. School.	Lunsad Binangonan, Rizal
12. Bangad Elem. School.	Bangad Binangonan, Rizal
13. Kinaboogan Barrio Elem. School.	Kinaboogan Binangonan, Rizal
14. Kinagatan Elem. School.	Kinagatan Binangonan, Rizal
15. Kasile Elem. School.	Kasile Binangonan, Rizal
16. Bombong Elem. School.	Bombong Binangonan, Rizal
17. Buhangin Elem. School.	Buhangin Binangonan, Rizal
18. Ithan Elem. School.	Ithan Binangonan, Rizal
19. Limbon-Limbon Elem. School.	Limbon-Limbon Binangonan, Rizal
20. Janosa Elem. School.	Janosa Binangonan, Rizal
21. Kalinawan Elem. School.	Kalinawan Binangonan, Rizal
22. Kaytome/Gulod Elem. School.	Kaytome/Gulod Binangonan, Rizal
23. Malakaban Elem. School.	Malakaban Binangonan, Rizal
24. Pinagdilawan Elem. School.	Pinagdilawan Binangonan, Rizal
25. Pipindan Elem. School.	Pipindan Binangonan, Rizal
26. Sapang Elem. School.	Sapang Binangonan, Rizal
27. Tabon Elem. School.	Tabon Binangonan, Rizal
28. Talim Elem. School.	Talim Binangonan, Rizal
29. Banaba (Rayap) Elem. School.	Rayap Binangonan, Rizal
District III	
30. Tayuman Elem. School.	Tayuman Binangonan, Rizal
31. Bilibiran Elem. School.	Bilibiran Binangonan, Rizal
32. Tagpos Elem. School.	Tagpos Binangonan, Rizal
33. Doña Susana Madrigal Elem. School.	Pantok Binangonan, Rizal
34. Don Jose Ynares Sr. Elem. School.	San Carlos Binangonan, Rizal
35. Mabuhay Homes Elem. School.	Pantok Binangonan, Rizal
36. Sitio Mata Elem. School.	Palangoy Binangonan, Rizal
Private Elementary School	
1. Right Step School of Learning	Zamora Cor. Lopez jaena St. Libid Bin., Rizal
2. Child's Place D.A.P School Inc.	453 Nat'l Road Calumpang Bin., Rizal
3. Bilibiran Christian School Inc.	Mt. Madjaas Montevilla Bilibiran Bin., Rizal
4. Palm Mary Private School.	Darangan Binangonan, Rizal
5. Little Children of Isaac	Pila-pila Binangonan Rizal
6. SMA Lerning School	103 Nat'l Road Pantok Bin., Rizal
7. SMA Lerning School	27 Rebecca St. San Carlos Bin., Rizal
8. Binangonna Catholic College	M.L. Quezon St. Libis Binangonan Rizal
9. Child Jesus of Prague School Inc.	999 Nat'l Road Calumpang Bin., Rizal

10. Tres Ninos Learning Center Macee Academy	30 Rita St. San Carlos Bin., Rizal
11. Gain Knowledge Learning Center	Blk.8 Lot1 Ph.1A Mabuhay Homes Darangan Bin.Rizal
12. Shining Light Christian Academy	Rizal Ave. Ext. Batingan Binangonan Rizal
13. Binangonan Garden of Learners	290 Sta. Ursula Subd. Batingan Bin., Rizal
14. Sanlex Divine Grace Academy	Ynares Cor Carmen St. San Carlos Bin., Rizal
15. Meek Academy	Nat'l Road Pantok Bin., Rizal
16. PBTS Academy	F. Cequeña St. Macamot, Bin., Rizal
17. PBTS Academy	Nat'l Road Bilibiran, Bin., Rizal
18. PBTS Academy	Luklukan Comp. Tagpos Binangona, Rizal
19. PBTS Academy	Ph.4A Blk. 21/2 Mabuhay Homes Darangan Binangonan, Rizal
20. Niña Maria Learning Center	Calumpang Binangonan, Rizal
21. Southwell School	Darangan Binangonan, Rizal
22. Raises Montessori Academy	Quarry Road Pantok Binangonan, Rizal
23. Raises Montessori Academy	1320 Reyes St. Man-Rey Vill. Pag-asa Bin., Rizal
24. Claremont School.	Aquarius St. First Inter Employee Vill. Palangoy Binangonan, Rizal
25. Zion Hills Christian Academy Inc.	Macamot/Pantok Binangonan, Rizal
26. Knights & Archers Montessori	Nat'l Road Brgy. Pag-asa Bin., Rizal
27. Childrens Brighter Educ.Learning	
28. Colegio de Saint Monique	Pantok Binangonan, Rizal
29. Throne of Wisdom Christian Academy	1001 Hangganan Pag-asa Bin., Rizal
30. Remi Andrea School	
31. Sunnyvale Christian School	Diesel St. Sunnyvale 3 Subd. Palangoy Bin., Rizal
32. Early Bird Learning Academy Inc.	Blk 2 Lot 11 Mabuhay Homes Pantok Bin.,Rizal
33. Maries Christian School	Mabuhay Homes Pantok Binangonan Rizal
34. Optimus Center for Development	0833 Nat'l Road Bilibiran, Bin., Rizal
35. Optimus Center for Development	135 Nat'l Road Tayuman Bin., Rizal
36. Angono Spring Academy School Inc.	Col. Guido Ext. Sitio Victoria Pag-asa Binangonan, Rizal
37. Bridge of Light Grace Christian Academy Inc.	Mla East Road Mambog Bin.,Rizal
38. Growth for Knowledge Learning Center Inc.	0287 Mla East Road Tayuman Bin., Rizal

TABLE 44

LIST OF SECONDARY SCHOOLS (SY 2012-2013)

School	Address
Public School	
1. Rizal Science Nat'l High School.	Batingan Binangonan Rizal
2. Vicente Madrigal Nat'l. High School	Palangoy Binangonan, Rizal
3. Pag-asa Nat'l High School	Pag-asa Binangonan, Rizal
4. Talim Point Nat'l. High School.	Rayap Binangonan, Rizal
5. Janosa Nat'l. High School.	Janosa Binangonan, Rizal
6. Don Jose Ynares Sr.Memorial Nat'l. HS	San Carlos Binangonan, Rizal
7. Margarito Duavit Memorial National High School.	Pila-pila Binangonan, Rizal
8. Mahabang Parang Nat'l. High School.	Mahabang Parang Binangonan, Rizal
9. Gurunasyon Foundation	Bilibiran Binangonan, Rizal
Private School	
1. Binangonan Catholic College	M.L. Quezon St. Libis Binangonan Rizal
2. Garden of Learners Inc.	290 Sta. Ursula Subd. Batingan Bin., Rizal
3. Claremont School of Binangonan	Aquarius St. First Inter Employee Vill. Palangoy Binangonan, Rizal
4. Zion Hills Christian Academy	Macamot/Tagpos Binangonan Rizal
5. Shining Light Christian School	Rizal Ave. Ext. Batingan Binangonan Rizal
6. Tres Niños School	30 Rita St. San Carlos Bin., Rizal
7. PBTS Academy	F. Cequeña St. Macamot, Bin., Rizal
8. PBTS Academy	Nat'l Road Bilibiran, Bin., Rizal
9. PBTS Academy	Luklukan Comp. Tagpos Binangona, Rizal
10. PBTS Academy	Ph.4A Blk. 21/2 Mabuhay Homes Darangan Binangonan, Rizal
11. Child Jesus of Prague School	Batingan Binangonan, Rizal
12. Sunnyvale Christian School	Diesel St. Sunnyvale 3 Subd. Palangoy Binangonan, Rizal
13. Southwell School Inc.	Darangan Binangonan, Rizal
14. Sanlex Divine Grace Academy	Ynares Cor Carmen St. San Carlos Bin., Rizal
15. Raises Montessori Academe	Quarry Road Pantok Binangonan, Rizal
16. Raises Montessori Academe	1320 Reyes St. Man-Rey Vill. Pag-asa Binangonan, Rizal
17. Knights & Archers Montessori	Nat'l Road Brgy. Pag-asa Bin., Rizal
18. Early Bird Learning Academy	Mabuhay Homes Pantok Binangonan Rizal
19. Optimus Center for Development	135 Nat'l Road Tayuman Bin., Rizal

TABLE 45

LIST OF TERTIARY SCHOOLS (SY 2012-2013)

SCHOOL	ADDRESS
Public School	
1. University Of Rizal System (Public)	Nat'l Road Calumpang Binangonan, Rizal
Private School	
1. ICCT Colleges Foundation Inc.	Nat'l Road Calumpang Binangonan, Rizal
2. Binangonan Catholic College	M.L. Quezon St. Libis Binangonan, Rizal
3. PBTS (Macamot)	F. Cequeña St. Macamot Binangonan, Rizal
4. St. Constantine Institute of Science & Technology	518 Nat'l Road Darangan Bin., Rizal

TABLE 46Enrollment at the URS-Binangonan by Degree/Course
SY 2015-2016, SY 2016-2017

SY 2015-2016								
	1st Semester				2nd Semester			
	I	II	III	IV	I	II	III	IV
College of Business								
Bachelor of Science in Business Administration	523	496	-	-	521	456	-	-
<i>major in:</i> Financial Management	-	-	254	221	-	-	247	220
HRD Management	-	-	104	112	-	-	96	109
Marketing Management	-	-	151	159	-	-	144	158
Bachelor of Science in Office Administration	62	-	15	14	45	-	15	13
Diploma in Computer Secretarial	84	55	-	-	74	52	-	-
<i>Sub-total</i>	669	551	524	506	640	508	502	500
College of Accountancy								
Bachelor of Science in Accountancy	233	151	87	77	218	146	88	80
College of Computer Studies								
Bachelor of Science in Information Technology	162	160	112	107	144	154	103	101
Bachelor of Science in Information System	167	103	112	94	151	93	89	91
Two-Year Computer System Technology	71	66	-	-	53	52	-	-
<i>Sub-total</i>	400	329	144	201	348	299	192	191
<i>Total by Year Level</i>	1,302	1,031	835	784	1,206	953	782	772
(Pre-Bac/Baccalaureate)	3,952				3,713			
INSTITUTE OF GRADUATE STUDIES								
Doctor in Business Administration	-	-	-	22	-	-	-	27
Master in Business Administration	-	-	-	61	-	-	-	58
Master in Management	-	-	-	28	-	-	-	20
<i>Total</i>	-	-	-	111	-	-	-	105
Grand Total	4,063				3,818			

SY 2016-2017								
	1 st Semester				2 nd Semester			
College of Business	I	II	III	IV	I	II	III	IV
Bachelor of Science in Business Administration	214	563	-	-	-	-	-	-
<i>major in:</i> Financial Management	-	-	185	249	-	-	-	-
HRD Management	-	-	134	98	-	-	-	-
Marketing Management	-	-	166	146	-	-	-	-
Bachelor of Science in Office Administration	0	39	26	15	-	-	-	-
Diploma in Computer Secretarial	37	48	-	-	-	-	-	-
<i>Sub-total</i>	251	650	511	508	-	-	-	-
College of Accountancy								
Bachelor of Science in Accountancy	0	193	100	89	-	-	-	-
College of Computer Studies								
Bachelor of Science in Information Technology	45	136	85	99	-	-	-	-
Bachelor of Science in Information System	83	164	155	105	-	-	-	-
Two-Year Computer System Technology	56	47	-	-	-	-	-	-
<i>Sub-total</i>	184	347	240	204	-	-	-	-
<i>Total by Year Level</i>	435	1,190	851	801	-	-	-	-
(Pre-Bac/Baccalaureate)								
INSTITUTE OF GRADUATE STUDIES								
Doctor in Business Administration	-	-	-	13	-	-	-	-
Master in Business Administration	-	-	-	64	-	-	-	-
Master in Management	-	-	-	28	-	-	-	-
<i>Total</i>				105	-	-	-	-
Grand Total		3,382						-

Our Municipal Government has allocated Special Education Fund intended for the following purposes:

1. Purchase of school supplies, materials, sporting supplies, instructional materials, science laboratory apparatuses/supplies.
2. Repair and maintenance of school buildings, facilities, office equipment, illumination and communication services.
3. Staff development for the teachers.
4. Sport development for the teachers. Likewise, the National Government extends its support thru Construction of Ynares Type Building.

3. Housing and Shelter

The total housing unit in Binangonan as of 2000 is 37,643 while the number of households is 38,488. The difference of 845 represents the housing needs in that base year. The average number of occupants per housing unit is 5.2. There are 36,899 units inhabited by only one household; 661 with two households, while the rest with three or more. Majority of houses are semi-concrete and concrete.

There are 73 existing housing subdivisions. Residential subdivisions are located in upland barangays of Tayuman, Tagpos, Pag-asa, Bilibiran, Darangan, Pantok as well as in Mambog, Mahabang Parang, Calumpang, Batingan and Lunsad. Subdivisions cater to the middle and lower income families except for high class Village East that offers an 18-hole golf course, tennis court, swimming pools and theme park as modern amenities.

TABLE 47

Housing Units, Occupied and Vacant, 1960, 1970, 1980, 1990, 2000

	1960	1970	1980	1990	2000
Occupied	4,998	7,841	13,557	23,656	
Vacant	91	50	297	607	
TOTAL	5,098	7,891	13,854	24,263	37,643

Source: NSO

TABLE 48

Occupied Housing Units, Households, Household Population by Type of Building, 2000

Type of Bldg. Area Class	Occ. Housing Units	Household	Household Population	RATIO HH to Occ. H Units	RATIO Population to Occ. H.U.
Single House	27,885	28,419	142,281	1.02	5.10
Duplex	3,637	3,783	17,204	1.04	4.73
Multi-unit Res.	5,723	5,887	26,015	1.03	4.55
Comm./Ind./Agr.	61	62	266	1.02	4.36
Inst. Living Qtr.	1	1	1	1.00	1.00
Other H Unit	5	5	18	1.00	3.60
Not Reported	331	331	1,854	1.00	5.60
TOTAL	37,643	38,488	187,639	1.02	4.98

TABLE 49

Occupied Housing Units by Type of Building, Number of Households in Each Housing Unit,

No. of HH	HU Occ. Res.	HU Ind.	Single Qtrs.	Duplex	Multi Comm.	Institution	Etc.	Unidentified
One HH	36,899	27,417	5,584	3,501				
Two HH	661	416	117	127				
Three HH	67	40	19	8				
Four HH	14	10	3	1				
Five HH	2	2	-	-				
Six HH	-	-	-	-				
TOTAL	37,643	27,885	5,723	3,637				

Source: NSO

TABLE 50

EXISTING HOUSING SUBDIVISIONS 2013

NAME	LOCATION	AREA/SQ. M.
1. Graceville Subs.	Pag-Asa	
2. San Clemente I & II	Pag-Asa	
3. Victoria	Pag-Asa	
4. Dalaya Properties Subd.	Pag-Asa	
5. A.P. Vocalan	Pag-Asa	
6. San Carlos Heights Subd.	Tayuman	200,000
7. Village East	Tayuman	
8. Pilar Village	Tayuman	
9. Fermin Ville Subd.	Tayuman	
10. Greenridge Subd.	Tagpos	29,999
11. Montevilla Subd.	Bilibiran	
12. Sto Niño	Bilibiran	

13. Cervo Compound	Bilibiran	
14. Meralco Subd.	Palangoy	
15. Ynares Village	Palangoy	
16. First Inter (Fie-Meralco)	Palangoy	
17. Sunny Valle II	Palangoy	
18. Sunny Valle III	Palangoy	
19. Fatima Village	Palangoy	
20. Sunny Valle I	Pantok	
21. Sunny Valle IV	Pantok	29,580
22. Mabuhay Homes 2000	Pantok	
23. Rizal Cement	Pantok	38,887
24. Saint Monique Vallais	Pantok	16,294
25. Wood Crest Realty	Pantok	
26. St. Michaels Homes Phase 1,2,3 & 4	Pantok	73,885
27. Rotary Ville	Darangan	
28. Cervo Compound	Darangan	
29. Sysna Village	Calumpang	
30. Concrete Aggregates Corp.	Tatala	
31. Montevideo Subd.	Mambog	4,492
32. Crystal East Valley	Mambog	35,522
33. West Pointee Subd.	Mahabang Parang	
34. San Juan Heights Subd.	Mahabang Parang	
35. Sta. Ursula Subd.	Batingan	
36. Antazo Village	Batingan	
37. Mirasolle Subd.	Batingan	
38. Saudi Village	Lunsad	
39. Agua Monte	Tagpos	32,392
40. Monte Ciara	Tatala	
41. Metropolis East Subd.	Pag-Asa	
42. Sitio Sapa Settlers	Pag-Asa	
43. Fermville II (Phase I & II)	Kalawaan	21,886
44. St. Peters Comp.	Pag-Asa	31,007
45. Paseo De Blanco	Pag-Asa	48,186
46. Axisville Homeowners Ass. Inc.	Tagpos	16,250
47. St. Anthony Tagpos Homeowners Ass. Inc	Tagpos	5,437
48. Mountain Ville Estate Subd.	Tatala	37,708
49. Landville Subd.	Mahabang Parang	38,580
50. Eastridge Golf Villas	Palangoy	78,461
51. Blueridge Subd.	Tagpos	32,938
52. Una Animo Foundation Subd.	Tayuman	20,246
53. Villa Crisanta Homeowners	Palangoy	7,999
54. New Towers Dev't Corp. (1&2)	Palangoy	15,285
55. VII-A Subd.	Tayuman	7,530
56. Smv Compound	Pag-Asa	7,163
57. Brastoneville Ib Subd.	Mahabang Parang	39,213
58. Vocalan Compound	Pag-Asa	11,601
59. Google 3 Compound	Tayuman	5,024
60. Sunshine Fiesta Subdivision	Tatala	299,736
61. Sunrise Compound	Pag-asa	11,601
62. Pag-asa Homes	Pag-asa	10,398
63. Montana Hills-Grand Monaco	Calumpang	5,187
64. La Esperanza-Grand Monaco	Tayuman	9,601
65. Casa Royale-Grand Monaco	Libis	14,210

66. Camella	Tayuman	26,209
67. Sunrise Heights Subdivision	Mahabang Parang	30,327
68. Axeia Development Corp.	Calumpang	177,951
69. Amaia Land Corp.	Tatala	184,154.85
70. Grand Monaco	Macamot	41,169
71. Sunnyvale Residences	Pantok	4,597
72. Westernvill Sapphire	Tagpos	4,914
73. Bria Homes Inc.	Tayuman	36,762

Source: Municipal MPDC

4. Protective Services

The Binangonan Police station fielded police personnel on the Strategic and Crime Prone areas:

- COMPAC 1- Brgy Tayuman- (4 PNP Personnel)
- COMPAC 2- Brgy Pantok (St. Monique Subd.) (2 PNP Personnel)
- COMPAC 3- Brgy Batingan (4 PNP Personnel)
- COMPAC 4- Brgy Libid "Market Area" (4 PNP Personnel)
- Brgy Pantok (cor Manila East Rd)- (1 PNP Personnel-Day Shift)
- PCP 1- Brgy Gulod Talim Island (5 PNP Personnel)

Two (2) PNP Personnel with Motorcycle conducting Bank and Pawnshop Inspection

TABLE 51

SUMMARY OF PNP PERSONNEL

RANK	NUMBER
PSUPT	1
PCINSP	0
PSINSP	0
PINSP	2
SPO4	1
SPO3	5
SPO2	0
SPO1	5
PO3	3
PO2	4
PO1	29
TOTAL	49

STATION BEST PRACTICE

This station maintained the Patrol Logbook signed by Barangay Officials & Security Guards of Vital Installation/Banks and other establishments for every shift of PNP Personnel to assure the 24/7 patrolling within their specific area of responsibility.

ON GOING ANTI-CRIME PROGRAMS

- Conduct Drugs Information Drive in support with Local Government Units.
- Intensified campaign on "NO PLATE NO TRAVEL" policy.
- Intensified campaign against wanted persons and most wanted criminals.
- Continuous conduct of checkpoint/chokepoint taking emphasis on all entry/exit points to adjoining municipality.
- Strengthen campaign against illegal drugs and loose firearms.
- Strict implementation of 24/7 police visibility on crime prone areas.
- Conduct educational seminar to Barangay Tanods as police force multipliers.

- Intensified campaign against illegal fishing.
- No helmet no travel policy.

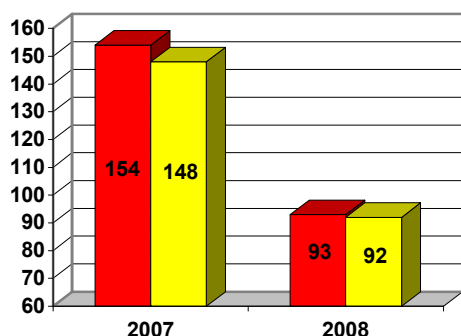
TABLE 52

COMPARATIVE CRIME STATISTICS: JANUARY - DECEMBER 2007 vs 2008

CLASSIFICATION	JAN-DEC 2007	JAN-DEC 2008	i) VARIANCE
CRIME VOLUME	154	93	-63 (Decrease)
INDEX CRIMES	76	49	-27 (Decrease)
CRIME VS PERSON	33	23	-10 (Decrease)
MURDER	9	6	
HOMICIDE	7	3	-4 (Decrease)
PHYSICAL INJURY			
RAPE	2	1	
CRIME VS PROPERTY	43	26	-17 (Decrease)
ROBBERY	21	13	-8 (Decrease)
THEFT	20	12	-8 (Decrease)
TOTAL CRIME SOLVED	148	92	-56 (Decrease)
INDEX CRIMES SOLVED	71	48	-23 (Decrease)
INDEX CRIME CSE	94%	97%	3% (Increase)
NON-INDEX CRIME SOLVED	78	44	-34 (Decrease)
NON-INDEX CRIME CSE	100%	100%	0
CRIME SOLUTION EFFICIENCY	97%	99.6%	2.6% (Increase)
AVE. MONTHLY CRIME RATE	5.09	3.43	-1.66 (Decrease)

Figure 2: COMPARATIVE CRIME STATISTICS:

Crime Volume:

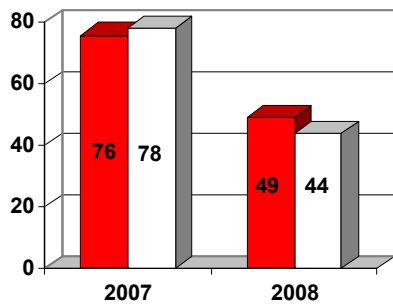


Legend: ■ Crime Vol ■ Crime Solved

Index Crime for the period, a total of **49** cases was recorded compared to **76** cases for the same period last year. Non-index reached to **44** cases for CY 2008 and **78** cases for CY 2007.



Index and Non-Index Crime:



Index Crime: 27 or 36%
 Non-index Crime: 33 or 44%

Legend: ■ - index - non-index

Figure 3: Percentage of Index Crime:

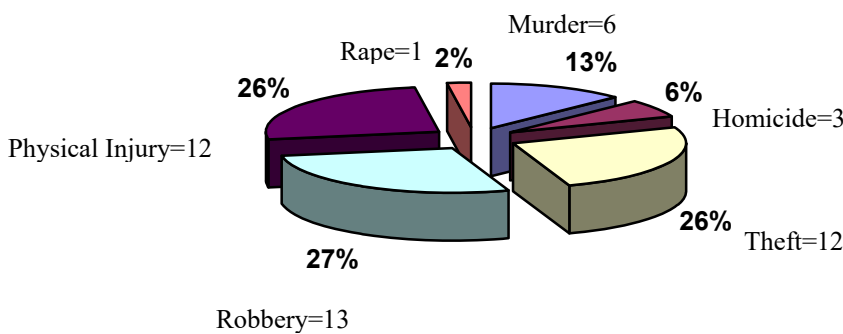


Figure 4: Crime Volume per Barangay:

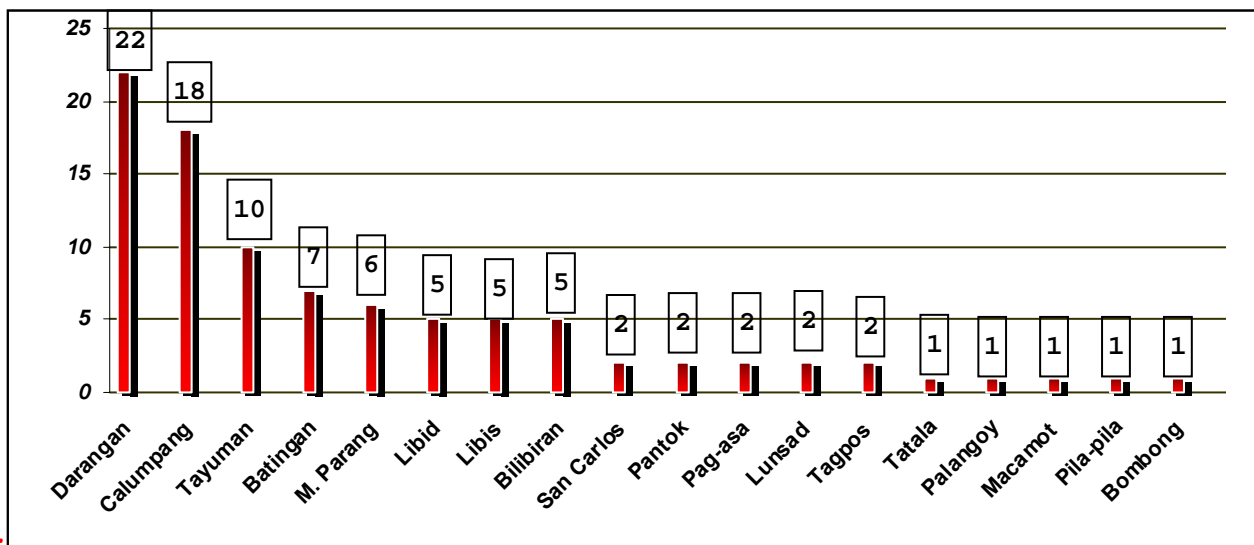
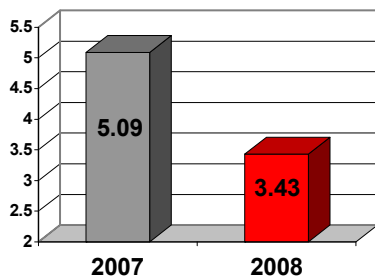


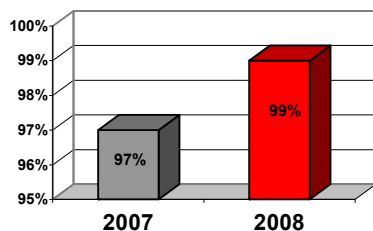
Figure 5: Average Monthly Crime Rate.



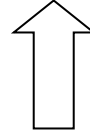
Average Monthly Crime Rate (AMCR) for the period is 3.43 as compared to 5.09 of the same period last year.

↓
1.66 or 33%

Crime Solution Efficiency:



Out of 93 crime incidents during the period, 92 were solved registering an overall crime solution efficiency of 99% as compared to the 154 crime incidents reported in the same period 2007, 148 were solved with CSE of 97%.



2 or 2%

PEACE AND ORDER

ASSESSMENT & CONCLUSION

Crime against property (Robbery) continuous to pose as the most serious threat to the safety and security of the public especially in highly urbanized barangays of our municipality.

The general Peace and Order situation in Binangonan, Rizal within the review period has remained manageable as depicted by reduce crime incidents. Support to the local PNP and active citizen involvement in crime prevention and control is wanting.

PROBLEMS AND RECOMMENDATIONS

- Additional PNP personnel to beef up operational capability of the station.
- Need to have new patrol vehicle.
- Radio communication.
- Additional gasoline support.

5. Sports and Recreation

Basketball is the most popular sport in the municipality. Practically all barangays have basketball courts where both the youth and adults can play the game during their free time and during sports tournament.

Basketball courts also served as venue for social, religious and even political meetings. Social interactions are usually done in basketball courts due to the availability of wider space and presence of facilities such as illumination and concrete pavement.

The state shall promote Physical Education and encourage sports programs, league competitions, and amateur sports, including training for international competitions, to foster self discipline, teamwork and excellence for the development of healthy and alert citizenry

TABLE 53

Sports and Recreation

Recreation/Sports Facilities	Location
Eastridge Golf Course	Tayuman
Gymnasium (Multi-purpose Hall	Calumpang
Tennis Court	BRCC Batingan/ Calumpang
Bowling Alley	BRCC Batingan
Badminton Court	BRCC Batingan
Basketball Court	BRCC Batingan
Swimming Pool	BRCC Batingan

TABLE 54

Barangays with Basketball Court (Covered)

1. Janosa	8. Tayuman	15. Ithan	22. Mambog
2. Lunsad	9. Kaytome	16. Darangan	23. Batingan
3. Pila – Pila	10. Palangoy	17. Ma. Parang	24. Limbon - Limbon
4. Libis	11. Kinagatan	18. Pipindan	25. Buhangin
5. Layunan	12. Kinaboogan	19. Tatala	26. San Carlos
6. Bilibiran	13. Kalinawan	20. Libid	27. Macamot
7. Pag – Asa	14. Rayap	21. Gulod	28. Calumpang

Source: Municipal Sport Office

6. Social Welfare

The following are the Social Welfare Programs and Services of the municipality that will enhance the development of the physiological as well as the psychological well-being of specific sectors of the community.

Self-Employment Assistance – Designed to uplift the economic conditions of target qualified individuals and/or families, the Self-Employment Assistance (SEA) program provides seed capital to individual and group livelihood enterprises on a zero-interest repayment scheme. Ideally, an organized group, with each member representing a family, is targeted for assistance. Under this scheme, it will not be just member who will benefit from the process but the member’s family as well since the latter will be involved in the productive endeavor of the enterprise pursued. Likewise, the targeting of an organized group served other purposes, among others of which are promoting group cooperation and mutual support system and at the same time developing a sense of accountability to the group in fulfilling commitments and responsibilities, particularly with the group’s commitment to the repayment scheme. In exceptional cases, individual self-employment assistance is provided but only a limited extent. The primary source of funding for SEA is the Department of Social Welfare and Development (DSWD), the national agency that is the main proponent of the program.

Family and Community Welfare – The broad goal of the Family and Community Welfare program is to assist the socially disadvantaged families and communities to develop the capability in defining needs and formulating solutions. Within this program are eight (8) program and services components listed below with their corresponding objectives.

2.a. *Parent Effectiveness Service (PES)* – expand the knowledge and skills of parents and others involved in child-caring and early childhood development, health care, behavior management, parental relations and parenting rights and duties.

2.b. *Marriage Counseling Service* – provide counseling on preparing for conjugal and family life, handling marital adjustment problems and differences, enrichment marital relationships and deciding about legal separation.

2.c. *Responsible Parenthood Service* – provide counseling on the values of child spacing and planned family size as well as the psychosocial barriers to the practice of child spacing and family planning.

2.d. *Family Case Work* – provide counseling and service assistance on coping with changed or added roles including solo parenting, usually arising from crisis situations and resulting family dysfunctions.

2.e. *Social Preparation for People's Participation* – Assist the community to experience the process of consciousness/awareness of problem situation analysis, formulation of goals and action plans and monitoring and evaluation in collective terms.

2.f. *Community Volunteer Resource Development* – Initiate, develop and sustain people's voluntary preparation in responding to community needs and problems through knowledge-based and systematic service delivery system.

2.g. *Social Welfare Structure Development* – Organize, strengthen or reactivate community welfare groups that will initiate community action and provide leadership on adopting resources to address prevailing community social problems in an organized and systematic manner.

2.h. *Special Services for Solo Parents*- designed to provide assistance to single parents (either male or female) who are entitled to social welfare services, among other services, to strengthen their capabilities to sustain a family despite being alone. This is in compliance with the provisions of Republic Act No. 8972, otherwise known as the Solo Parents' Act of 2000.

Women's Welfare Services – For the welfare concerns of women, the broad goal of the program is to promote the welfare giving special attention to the prevention or eradication of the exploitation of women in any form such as illegal recruitment and the promotion of skills for employment and self-actualization. Five specific programs and service comprise the program, listed below with their corresponding objectives.

3.a. *Women in Especially Difficult Circumstances WEDC*- provide concrete actions to the emerging needs of women to flee high risk, violent and / or hazardous situation, freedom from all forms of violence, exploitation, achieve gender equality and improve their psychosocial functioning and prepare them for their eventual return to their families and social mainstream.

3.b. *Counseling* – provide opportunities for men and women to resolve their own problems in relationships by identifying the strengths and weakness towards a more effective social functioning.

3.c. *Productivity Skills and Livelihood Development* – provide opportunities for men and women to acquire gainful occupation/livelihood through practical skills development and basic business management skills, provision of capital assistance for group projects under self-employment assistance, job referral under open employment including counseling and sheltered workshop.

3.d. *Self-Enhancement skills Development* – provide opportunities for the improvement of women/persons, including the enhancement of their self-image through the discovery and understanding of their potential and capacities leading change/acquisition of appropriate values and attitudes about themselves, their families and the larger community and environment.

3.e. *Community Participation Skills Development* – mobilize women for them to be able to relate and interact with others in the community over common interests and concerns affecting women's welfare and resulting in community-level actions in relation to them.

Child and Youth Welfare Services – Care for, protect and rehabilitate children and youth aged 0 to 13 years who are neglected, out of school, on the street or delinquent. This is the general goal of the welfare services for the child and youth implemented by the office. As programmed, five (5) lines of services with their respective specific objectives are listed below.

4.a. *Day Care Service* – provide supplemental parental care to 3-6 year old children who may be potentially neglected, abused, exploited or abandoned during part of the day when parents cannot attend to their children.

4.b. *Children in Need of Special Protection*- protect and rehabilitate children who are abused and exploited.

4.c. *Community-Based Program for Delinquent Youth and Children in Conflict with the Law* – provide intervention and opportunities to prevent delinquent youth from entering the juvenile system and direct their activities to more gainful and productive ones to enable them to acquire socially-acceptable behavior..

4.d. *Supplemental Feeding* – provide supplemental food assistance to moderately and severely (non-medical) cases of underweight pre-school children as an immediate and direct intervention to improve their nutritional status and prevent any permanent physical and mental retardation.

4.e. *Educational Assistance* – provision of material and financial assistance to the poor but deserving students whose immediate resources and forms of support networks are incapable of fully meeting their needs for tuition, uniforms, books and school supplies.

Emergency Assistance Program – The program for Emergency Assistance is concerned with providing relief, mitigation, restoration and rehabilitation services to victims of natural calamities and social disorganization as well as prepare people and communities to cope with disasters and prevent loss of life and properties. Six (6) lines of services are present for this program concern.

5.a. *Emergency Shelter Assistance* – provide limited financial and material assistance to help families construct/repair their houses that may have been partially or totally destroyed by natural or man-made disasters.

5.b. *Balik-Probinsya* – provide limited financial and material assistance to support the planned and purposive return to the place of origin of disaster victims, distressed and displaced individuals and families where opportunities to improve their well-being are available.

5.c. *Crisis Intervention and Assistance to Individuals in Crisis Situations* – provide short-term case work and counseling that aim to provide immediate emotional, psychological and/or financial assistance to relieve manifested anxiety or tension experienced by the victim as a result of a disaster or crisis and requiring burial, medical, food, transportation and/or other short-term assistance.

5.d. *Disaster Management and Capability-Building* – develop and enhance individual, family and community capability for quick and orderly response to disaster to prevent loss of lives and properties and to minimize the sufferings and speed-up recovery and rehabilitation.

5.e. *Food for Work* – provide of food as a replacement for the temporary loss of income of displaced/distressed victims in exchange for the services they render in undertaking or participating in restorative and rehabilitative activities as well as in mitigation and preparedness activities that will increase their capacity to cope with hazards.

5.f. *Disaster Relief Services* – provide timely and appropriate assistance to help alleviate the conditions/situations of distressed/displaced individuals or families and those who are victims of disaster and are in need of food, clothing, temporary shelter and other emergency requirements.

Program for Disabled Persons and Elderly – Five (5) broad services and programs cover the concerns of the disabled and elderly sector in the municipality. The broad goal is to provide services on disability prevention, rehabilitation and equalization of opportunities for the physically, mentally and socially disabled persons in order to enhance their capabilities to attain more meaningful, productive and satisfying way of life and ultimately become self-reliant and contributing members of the society.

6.a. *Information Dissemination on Disability Prevention* – raise the level of consciousness of individuals and families at risk regarding the causes and effects of disabling conditions and encourage the practice of disability prevention.

6.b. *Assistance for Physical Restoration* – help the disabled persons and elderly to attain maximum improvement in their physical residual capacity through the use of technical aids to facilitate their integration to the family and to the community.

6.c. *Self and Social Enhancement Service* – assist the disabled persons and elderly to develop self-acceptance and positive self-image, provide opportunities for socialization, membership in organizations, creative expressions and active participation in family and community affairs.

6.d. *After-Care and Follow-up Services* – continue the rehabilitation process provided to disabled persons discharged from institutions or rehabilitation centers to assist them during their period of adjustment from full-time care to independent functioning within the family and community settings.

6.e. *Special Services for the Elderly* – assist the elderly to avail of opportunities that will enable them to contribute to community development.

Day Care Service – Provision of supplemental care by a Day Care Worker or a Child Care Worker/Taker to a child below 6 years old during part of the day when parents cannot attend to his needs. It makes use of different types or form of child care arrangement in providing supplemental parental care such as: child minding center, day-care center, family day care and supervised neighborhood play. Under this different set-up, a child is engaged in varied early childhood care and development activities like playing, arts and crafts, news sharing and storytelling, songs and poems which offer opportunities for creative experiences, mental stimulation, cognitive skills development, physical development and value information.

CHAPTER VII

GENERAL ECONOMIC CHARACTERISTICS

1. Agriculture

The municipality of Binangonan has a total land area of 2,472.4 hectares of agricultural lands. This area represents around 49% of the municipalities total land area. Out of this area, riceland occupies the largest portion with 522.45 hectares or 15% of the total agricultural lands.

Other agricultural crops being grown in the municipality includes vegetables, root crops/tubers and fruit trees. Bamboos and coconut trees are the main industrial crops. They are both found in the Mainland and Talim Island. Coconut trunks and bamboo poles are utilize either as construction materials, sala set, beds and stools. It is also use by local fisherfolks in their fishcages and fishpens.

Livestock and poultry also occupy agricultural land of the municipality and are found within the vicinity of barangay Macamot, Tatala, Pantok, Mambog and Limbon-Limbon. Agricultural lands devoted for livestock and poultry has a total area of 291.450 hectares representing 1.07% of the agricultural area.

One significant concern of the sector is the conversion of agricultural lands to urban uses, which in the long run has resulted to decreased agricultural production.

TABLE 55

LAND AREA UTILIZATION PER CROP (2011-2012)

CROP/COMMODITY	AREA IN HECTARES	% OF COVERAGE
Riceland	295.05	-
Green Corn	20	-
Fruit Trees	300	-
Vegetables	100	-
Root Crops/Tubers	30	-
Bamboos		-
Backyard (Livestock)	30	-
Commercial Swine & Poultry Farm	29	-
Shade/Forest Trees	415	-
Permanent Meadows & Pasture	855	-
Marginal/Uncultivated Lands	200	-
Others	39	-
TOTAL	2,313.05	

Source: Municipal Agriculture Office

TABLE 56

LAND USE DISTRIBUTION (2011-2012)

A. PROGRAMMED	AREAS/HAS	PRODUCTION (M.T.)
1. Rice	46.5	137.15
Irrigated (Wet)	145.3	601
Irrigated (Dry Season)	103.25	312.365
Rainfed	295.05	1050.515
Sub-total		
NOTE: production affected by rat, infestation and drought (dry season) & habagat (wet season)		
2. High Value Commercial Crops		
Vegetables		

Green & Leafy	5.0	30.0
Fruit	20.0	72.0
Root	30.0	540.0
Legumes	5.0	18.0
Green Corn	20.0	120.0
Fruit Trees		
Mango	56.0	560.0
Banana	30.0	180.0
Atis	8.0	
Jackfruit	5.0	45.0
Santol (Bangkok)	10.0	90.0
Calamansi	10.0	90.0
Guyabano	5.0	45.0
Papaya	5.0	90.0
Other Fruit Trees	50.0	450.0
Sub Total	259.0	
B. UNPROGRAMED		
1. Rainfed & Irrigated Rice	118.7	-
a. Mainland	89.025	-
b. Island	29.675	-
2. Permanent Crops		
Mango & Other Fruits trees	121.0	1089.0
3. Green Corn	20.0	80.0
4. Vegetables		
Leafy	5.0	30.0
Fruit	20.0	72.0
Root	30.0	540.0
5. Industrial Crops		
Bamboo		-
Coconut		-
6. Commercial Swine & Poultry Farms (including Backyard Duck Raising)	25.0	2,351.5
7. Permanent Meadows and Pasture	450	-
8. Marginal/Uncultivated Lands	200	-
Others	593	-
Sub Total	1,582.7	-
Grand Total	2,136.75	

Source: Municipal Agriculture Office

TABLE 57
Area, Production and Number of Farmers
and Farms Converted into Subdivision by Barangay (2011-2012)

BARANGAYS	FARM AREA CONVERTED	PRODUCTION (M.T)	NUMBER OF FARMERS
1. Tayuman	400.0	900.0	58
2. Pag-asa	2.5	40.0	10
3. Tagpos	30.0	105.0	27
4. Bilibiran	30.0	1.05	25
5. Darangan	100	180	42
6. Mambog	10.0	35	13
7. Macamot	2.0	-	-

8. Tatala	6.0	-	-
9. Lunsad	25.0	87.5	19
10. Pilapila	2.0	7.50	5
11. Limbon-limbon	-	-	-
12. Ithan	-	-	-
13. Pantok	5.0	20.0	22
14. Mah.Parang	3.0	10.5	5
TOTAL	615.50 has	1386.55	226

a) Status of Irrigation Development

There are 16 privately owned irrigation pumps covering 139.75 hectares in Bilibiran, Tagpos, Kaytome, Gulod, Janosa, Calumpang, Pantok, Palangoy, Lunsad, and Pilapila with about 180 farmer-beneficiaries. The four communal irrigation pumps, covering 51.5 hectares in Darangan and Pag-asa, have about 76 farmer-beneficiaries.

b) Livestocks and Poultry Production

Commercial and backyard swine and poultry contribute to the supply of meat in the municipality. Likewise, duck raising is also a popular source not only of eggs for balut and salted eggs but also of meat. Cattle and goats are also sources of meat while carabaos are used in farming and other uses. These products were delivered to nearby markets (Binangonan and Angono) but most of it were delivered directly to sari-sari stores and restaurant within the municipality.

TABLE 58

LAND USE/AREA DEVOTED FOR LIVESTOCK & POULTRY (2011-2012)

	Population Commercial	Backyard	Total Population	Total Slaughtered	Total Production (M.T.)	Total Consumption (M.T.)
Meat						
Pork	12,027	1,350	13,377	24,313	2,066.6	2,066.6
Beef	-	350	350	255	178.5	178.5
Carabeef	-	325	325	-	-	-
Chevon (goat)	-	1,570	1,570	776	11.64	11.64
Poultry Meat	73,000	3,250	76,250	76,250	91.5	91.5
Culls	-	-	-	-	-	-
Broilers	73,000	3,250	76,250	76,250	91.5	91.5
Eggs Layers						
Eggs	-	-	-	-	-	-
Ducks	5,550	1,775	7,325	2,566	3.3358	3.3358
Culled	-	-	-	-	-	-
Eggs	-	-	-	-	-	-

Source: Municipal Agriculture Office

TABLE 59

COMMERCIAL SWINE AND POULTRY FARMS (2011-2012)

a. Farm	Location (BARANGAY)	Production Population
Swine		
John & John	Pantok	1,100
John & John	Macamot	5,200
Benedicto Santiago	Macamot	3,700
Mel Farms	San Carlos	350
Racherene Piggery	Macamot	325
E.R. Arrellano	Pantok	475

Saynes Piggery	Macamot	237
M. Cequena Piggery	Macamot	140
GC Farms	San Carlos	500
TOTAL		12,027
Poultry		
M. Cequena Poultry	Macamot	5,000
Esguerra Poultry	Macamot	8,000
Ernesto Castillo	Macamot	21,000
Nicel Farm	Macamot	20,000
GC Farm (Gil Campana)	Macamot	19,000
TOTAL		73,000

Source: Municipal Agriculture Office

c) Slaughterhouse

The only abattoir (slaughterhouse) is a government-owned, classified as “A” locally registered meat establishment. It is located in Duavit St. Sitio Gupiing, Lunsad, Binangonan, Rizal with an area of approximately seven hundred square meter (700 sq. m.)

The slaughterhouse can handle more than one hundred heads of hogs. To date it has an average of 45-50 hogs slaughtered in ordinary days, 75-80 hogs on Saturday and 100 hogs slaughtered on Sundays.

There are plans to relocate and build a new Slaughterhouse “AA” wherein we can support not only the requirement needed by the municipality as well as the nearby municipalities.

d) Agricultural Support Facilities

Hereunder is a table indicating the types and location, areas and number of farmers served by the agricultural support facilities.

TABLE 60
AGRICULTURAL SUPPORT FACILITIES

Facility	Number		Area Has.	No. of Farmers Served	Location
	Prvt.	Gov't.			
Irrigation Pumps	20	13	166.0	173	Darangan, Palangoy, Macamot, Tatala, Pila-pila, Lunsad, Calumpang, Tagpos
STW	1	1	10.5	12	Lunsad, Tagpos (w/o motor)

Thresher	11	3	-	-	Mambog, Calumpang, BNFF Inc. (w/o motor)
Hand Tractor	21	11	95	110	Tatala, Darangan, Mambog, Macamot, Mah. Parang
Four Wheel Drive Hand Tractor	1	-	-	-	Balatik, Tatala (non-operational)
Cono/Rice Mill	4	1	-	-	Mambog, Batingan, Calumpang, BNFF Inc.
Sprayer/ Knapsack	31	50	23 Brgys.		18 mainland & 5 island Brgys.
Dryer	-	-	-	-	-
Warehouse	1	-	-	-	Mahabang Parang
SFR	6	20	-	-	Mambog, M. Parang, Macamot, Tatala
Deep Well Irrigation System	-	1	5.0	10	Balatik, Tatala
Brass Cutter	9	11		9 FAS	Bilibiran, M. Parang, Tatala, Macamot,
Power Sprayer	-	5	-	-	BMFF Inc.
Greenhouse	-	1	100 sqm	2	Balatik, Tatala
Portable Water Pump	-	1	-	-	Sitio Halang, Macamot
Mutli-Tiller	-	1	-	-	Mun. Nursery, Macamot

Source: Municipal Agriculture Office

e) Tenurial Status of Farmers

Out of the 1,130.75 hectares of farmland allotted for planting temporary crops, 188.526 hectares or 16.67%, under leasehold contract between 256 land owners and 245 farmer-beneficiaries, are registered with the DAR. The unregistered ones, are either cultivated by landowners, left idle or converted into other uses.

TABLE 61
LIST OF DAR REGISTERED LEASEHOLD CONTRACTS

BARANGAY	No. of Land Owners	No. of Farmers	No. of Lots	AREA (HA.)
PILA PILA	35	35	51	25.2935
TATALA	19	22	24	21.5197
LUNSAD	29	21	32	9.9704
CALUMPANG	48	51	62	32.6565
ITHAN	2	2	2	3.9422
KAYTOME	5	5	5	1.9177
MAMBOG	1	1	1	.5
MACAMOT	18	14	18	11.8985

BATINGAN	6	6	8	3.2967
BILIBIRAN	3	3	6	1.9324
M. PARANG	34	37	43	21.3593
TAYUMAN	3	3	5	4.34
PAG-ASA	10	15	17	11.9002
TAGPOS	6	5	6	6.0095
DARANGAN	37	38	47	31.9894
TOTAL	256	245	327	188.5260

Source: Department of Agrarian Reform

f) Status of Agrarian Reform Program

As of 1994, 14,5413 hectares, composed of 36 lots, have been distributed to 28 farmer-beneficiaries mostly in Mahabang Parang, Malakaban and Kinaboogan

On the other hand, 203.5362 hectares of land holdings, located in Tayuman, Bilibiran, Darangan and Tagpos, are with order for exemption/conversion.

TABLE 62
Distributed Lands by Program

Program	Location	No. of Beneficiaries	Area (ha.)	No. of Lots
E.O.407/408	M. Parang	26	12.654	34
	Kinaboogan	1	0.5726	1
	Malakaban	1	1.3033	1
TOTAL		28	14.5413	36

Source: MARO

TABLE 63
Landholding with order for Exemption/ Conversion

Barangay	No. of Lots	Area
Tayuman	14	137.1493
Darangan	3	41.2756
Bilibiran	1	6.6871
Tagpos	2	18.4242
TOTAL	20	203.5362

Source: MARO

Fishery Sub-Sector

Fishing families in 33 coastal barangays Fishfolks' depend on traditional fishing methods and fish farming affected by the condition of the Laguna Lake. During the months from March to May, when fish catch is minimal, fisherfolks, particularly in Island barangays, resort to firewood and charcoal production as alternative livelihood. Fishermen with motorized banca use their vessels for transportation during off-fishing season.

TABLE 64
DATA ON FISHERY SECTOR (2011-2012)

No. of coastal barangays	33
Coastal Population	198,600

No. of fishing families	4,370
No. of fishermen	6,800
Part time	1,960
Full time	4,840
No. of fishing bancas	1,417
Motorized	767
Non.Mot.	650

Annual Production		
	Fish	12,328.5 MT
	Snails	3,993.5 MT

Agriculture Projects	
No. of Cages	494
Area	282,458 has.
No. of fishpens	77
Area	2,834 has
No. of fishponds	7
Area	3.6 has

Source: Municipal Agriculture Office

2. Industry & Commerce

The municipality's economic landscape has dramatically changed in the last five years. The former agricultural town has now shifted to blue and white collar employment as the means of livelihood. Sixty percent (60%) of the total work force are employed in consumer and service-oriented businesses, manufacturing firms, construction companies, cottage industries like furniture making and bamboo stick, (for barbecue and banana cue) are common livelihood means in Talim Island .

The shift to employment-based economy was brought about by numerous migrants who have settled in the municipality because of its proximity to their work places and the availability of housing subdivisions. Also, because of the rise of many commercial opportunities for the residents.

There are 3,860 registered business establishments in Binangonan as of mid June 2010. Of the various industries and businesses that operate in the municipality, a substantial majority consists of sari-sari stores, public market stalls, backyard industries, and a host of other livelihood activities that constitute the underground economy.

Huge businesses that opened their branches here, competing with hometown groceries and retail stores have stirred up the trading sector. The business climate has attracted many investors so that there is a need to redirect the entry of other firms, particularly in the crowded areas, to protect local entrepreneurs and spread the benefits of development.

TABLE 65
CATEGORY OF BUSINESS FROM 2009-2013

Category	2009	2010	2011	2012	2013
Amusement	129	115	99	134	236
Aparment	286	287	295	303	301

Association	5	6	11	11	11
Bar	22	23	21	25	26
Betting Station	0	1	2	1	2
Contractor's TAX					
Cooperative	28	30	33	31	27
Dealer	102	106	129	140	156
Developer	15	17	20	18	14
Eatery	200	201	212	204	156
Exempted					
Exporter	5	5	6	6	5
Financial Institution	65	62	68	66	69
Fishpen	49	46	40	37	36
Golf	1	1	1	1	1
Hospitals/Clinic	11	15	13	11	7
Importer	5	10	12	11	12
Lessor	72	71	74	78	88
Manufacturing/Producer	165	183	180	186	178
Resorts	15	14	17	19	19
Retailer	2512	2726	2887	2821	2843
Schools	33	37	43	45	41
Services	606	700	765	723	671
Telecommunications	4	12	13	13	2
Trucking	5	8	8	7	10
Wholesaler	6	10	8	3	6
TOTAL	4341	4686	4957	4894	4917

TABLE 66
LIST OF BANKS

NAME OF BANK	LOCATION (BARANGAY)
1. Bank of the Philippine Islands	Pantok
2. Binangonan Rural Bank, Inc.	Layunan
3. China Banking Corporation	Tagpos
4. Metropolitan Bank & Trust Co.	Darangan
5. Metropolitan Bank & Trust Co.	Palangoy
6. MVSM Bank (A Rural Bank Since 1953) Inc.	Libis
7. PNB Savings Bank	Libis
8. Producers Savings Bank Corporation	Layunan
9. RCBC Savings Bank, Inc.	Libid
10. RCBC Savings Bank, Inc.	Calumpang
11. RCBC Savings Bank, Inc.	Pantok
12. Rizal Bank INC A Microfinance Oriented Rural Bank	Darangan
13. Rizal Bank INC A Microfinance Oriented Rural Bank	Batingan
14. Rural Bank of Angono, Inc. Bilibiran Branch	Bilibiran
15. The Land Bank of the Philippines	Calumpang

Source: Permit and License

TABLE 67
LIST OF PAWNSHOPS

NAME OF PAWNSHOP	LOCATION (BARANGAY)
1. Amparito Llamas Lhuillier Financial Services	Pantok
2. Henry Lhuillier Pawnshop Inc.	Pag-asa
3. CVM Pawnshop & Money Changer Corp.	Calumpang
4. CVM Pawnshop & Money Changer Corp.	Pantok
5. Globalized Pawnshop and Jewelry Co. Inc. (Tambunting Pawnshop Inc.)	Pag-asa
6. HRV Villarica Pawnshop Co. Inc.	Libid
7. Interphil Pawnbrokers Incorporated	Palangoy
8. Jomi Brothers Jewelry and Pawnshop Inc. (Tambunting)	Tayuman
9. Michel J. Lhuillier Financial Services Pawnshop Inc.	Libid
10. M.D. Legaspi Pawnshop	Libis
11. Ortigas Pawnshop	Libid
12. Cebuana Lhuillier Pawnshop	Pantok
13. Cebuana Lhuillier Pawnshop	Pag-asa
14. Pawnstar link Pawnshop Inc.	Libis
15. Raquel Pawnshop Inc.	Layunan
15. Santolan Pawnshop Inc.	Layunan
16. Santolan Pawnshop Inc.	Libid
17. Watermark Quality Pawnshop Inc.	Pantok
18. Binangonan Cell Pawnshop	Darangan
19. Henry Lhuillier Pawnshop Inc.	Pag-asa
20. Mama's Pawnshop	Libid
21. P.D. Ynares Pawnshop	Libid
22. R.P. Ang-Angco Pawnshop	Libis
23. Sanga Bilis Pawnshop Inc.	Libis
24. Villarica Pawnshop	Pag-asa
25. Ynares Pawnshop & Jewelry	Libis

Source: Permit and License

TABLE 68
TOP TEN BUSINESS ESTABLISHMENT

TRADE NAME	TYPE OF BUSINESS	LOCATION
1. Eastbay Resorts Inc.	Amusement	Palangoy
2. Grandspan Dev't. Corp	Contractor Services	Tagpos
3. Mercury Drug Corporation	Drug Retailing & Gen. Mdse	Pag-asa
4. Jollibee Foods Corp.	Food Services	Libis
5. Island Supermarket Inc.	Store Retailer	Darangan
6. Eastville Realy Corp.	Developer	Tatala
3. Mercury Drug Corporation	Drug Retailing & Gen. Mdse	Libis
8. Mega Paint & Coating Corp.	Manufacturing	Batingan
9. Eastridge Golf Club Inc.	Amusement	Bilibiran
10. Primeeast Properties Inc.		Tayuman

3. Industry

The major manufacturing firms are Grandspan Corporation, steel fabrication; and Island gas, LPG manufacturer started operations in the municipality.

TABLE 69
NAME OF INDUSTRY/COMPANY

NAME OF INDUSTRY/COMPANY	AREA	PRODUCTS
1. Grandspan Corp.	350,000 SQ.M.	Steel Fabrication
2. Island Gas	3,053 SQ.M.	LPG Manufacturer
3. Mega Paint & Coating Corp.	1,525 SQ.M.	Paint Manufacturer

Source: Permit and License

4. Tourism

There are 27 resorts within the municipality. Lake Villa Resort, located in barangay Tayuman, is the most popular the serene ambiance fits nicely into the need to escape the hustle, pollution and noise of the big city. It boasts of facilities such as swimming pool, restaurant and air-conditioned cottages.

Several areas with tourism potentials are located in Talim Island which, in itself, is a tourist attraction. There are untapped hot springs in barangays Ginoong Sanay, Tabon and Binitagan as well as three beautiful islets on the eastern tip of the Island. One of them has an area of 27 hectares which can be developed as an ideal site for convention centers, angling, boating and cycling.

Talim Island can function also as a stop over area for foreign and domestic tourists coming from the neighboring municipalities in Laguna, Rizal, Batangas and Cavite. Because of the Island's proximity to Jala-jala, Pililia, Calamba, Los Banos, Victoria and Pagsanjan, people can travel to and from these places by water craft. Tourists can even boat ride from the Island to Metro Manila or to the mainland.

TABLE 70
LIST/LOCATION OF EXISTING RESORTS

Toursit Spots Resorts	LOCATION	FACILITIES
1. 1489 Cableway Resorts	Calumpang	Swimming Pools; picnic grounds, cottages,
2. Hardin Sa Bukid Resort	Pag-asa	-do-
3. AB-RC Resort	Tagpos	-do-
4. Gardenville I Pools & Services	Tayuman	-do-
5. Villa Cequeña Mountain Resort	Macamot	-do-
6. Villa De Castro Resorts	Palangoy	-do-
7. Gellapple Tyne Resort	M. Parang	-do-
8. Eastbay Resorts Inc.	Palangoy	-do-
9. F.R Estuar & Associates/Dev't & Mgt Co.	Tagpos	-do-
10. Café Aurora Resort	Darangan	-do-
11. Marlew Holding Inc.	Tayuman	-do-
12. Pumarada Resort	M. Parang	-do-

13. Lake Villa Resorts & Restaurant	Tayuman	-do-
14. Tamarind Resorts and SPA	Palangoy	-do-
15. Sta. Ana Mini Resort	Pilapila	-do-
16. Smooth Escape Resort	Pantok	-do-
17. Villa Adelaida Resort & Restaurant	Calumpang	-do-
18. Ella Ville Resort	Calumpang	-do-
19. WPU-Swimming Pool	San Carlos	-do-
21. KC Resort	San Carlos	-do-
22. Lake Island Resort	Tayuman	-do-
23. Veranda Garden Resorts	Pantok	-do-
24. Binangonan Recreation & Conference Center (BRCC)	Batingan	-do-
25. Arabit Honorio Resort	Mambog	-do-
26. Villa Alejandra Resorts & Events Center	Mambog	-do-
27. Al-Mars Lake Villa Resort	Tayuman	-do-

Source: Permit and License

Talim Island has the following Natural Attractions:

1. Three Islets located in the southernmost tip, one of which has an area of 27 hectares.
2. Untapped Hot Springs in Ginoong Sanay, Tabon and Binitagan.
3. Susong Dalaga, a mountain which is shaped like a virgin's breast and is ideal for mountain climbers and nature trippers.

TABLE 71

Other Places with Tourism Potential are:

1. The Kalbaryo in Libid	At the hill's summit stand an ancient, life size cross commemorate the death of Jesus Christ in the Calvary
2. Sta Ursula Parish	Two century old church located at the Poblacion
3. Simbang Bato	Located in San Carlos Heights, Tayuman
4. Binangonan Petroglyphs	An ancient wall carvings estimated 3,000 year old and can be found in Matandang Yungib Sitio Pinagpala, Tayuman
5. Puente Del Diablo	This Islet has a cave and teens with hard, black stones. The stones are said to be part of unfinished bridge built By the devil to win the heart of a beautiful maiden
6. Eastridge Golf Club	An 18 hole- class golf course, one of the biggest and Most modern in the country
7. Vicente Manansala Shrine	Place where the work of late National Artist Vicente

	Manansala can be found.
8. Binangonan Recreation & Conference Center	Located at Manila East Road, Batingan

Source: Permit and License

CHAPTER VIII

INFRASTRUCTURE & UTILITIES SYSTEM

1. Road Network

The mainland barangays have adequate road network. There are concrete and asphalted pavements connecting each barangay to the provincial and national roads, with the exemption of Bgys. Kalinawan, Pipindan and majority of barangay Ithan which can only be reached by boat. On the other hand, six of the seventeen barangays in Talim Island have concrete roads connecting each other, from Bgy. Bangad to Bgy. Buhangin, Bgy. Janosa, Bgy. Kaytome, Bgy. Gulod up to Bgy. Sapang, the rest despite having concrete roads and pathways within each barangays, are merely connected by foot trails. There are no roads or bridges which connect Talim Island to the Mainland. These places can only be reached by water transportation.

The main thorough fares in most of the mainland barangays especially those in the upland bgy., are generally narrow except those in the subdivision. This situation is also the same in the poblacion areas which results in traffic congestion.

TABLE 72
SUMMARY OF ROAD NETWORK INVENTORY

Class	Concrete Kms.	Asphalt kms.	Earth/Gravel kms.	Total kms.
National	11.695	-	-	11.695
Provincial	1.89	2.99	-	4.83
Municipal	20.27	-	5.959	26.229
Barangay	89.77	-	6.69	96.464
TOTAL	123.625	2.99	12.649	139.018

Source : Municipal Engineering Office

The municipality which lies about 24 kilometers south east of the provincial capitol is about 45 minutes drive through Manila East Road and Ortigas Avenue. Another alternative route, is the Manggahan Floodway which connect Pasig City to the Municipalities of Cainta and Taytay. Manggahan Floodway Extension which will connect the Municipality of Angono, is now under construction, and an extension from Angono to Binangonan is now under study and it is included in the Provincial Physical Framework Plan. These alternative route when completed will reduce the travel time going to Manila by at least 35% and is expected to reduce the heavy traffic at Ortigas Avenue and other major thoroughfares.

2. Transportation

Almost all barangays in the mainland except, the barangay of Ithan, Kalinawan and Pipindan have concrete or asphalted roads which make them accessible to all kind of public utility vehicles. Jeepneys, buses and Fx taxis pass through the major thoroughfares, and is available 24 hours a day transporting passengers to other towns of Rizal and Manila and vice versa. Tricycles which dominate the means of transportation going deeper into each barangays, are also available 24 hours a day, especially in the poblacion where the center of the commercial business and fishport is located. This is also the means of transportation through the land in four barangays in Talim Island which has complete road connecting each other, namely: Bgy. Bangad, Buhangin, Janosa and Kaytome.

Presently, the transport terminal at the back of Public Market and within the vicinity of Binangonan Fishport is in operation. It is complete with necessary amenities to accommodate all public utility vehicles. It helps ease the poblacion of area traffic. The use of the side of the street in poblacion area as terminals are now eliminated.

3. Bridges

There are 61 bridges in the municipality, 60.66% of which are concrete while the remaining 39.34% are made of timber and steel. Nineteen of these bridges are located in the mainland while the rest are in Talim Island. Bilibiran, Darangan and San Juan bridges connect Binangonan to the northern municipalities of the Province and Metro Manila while Lasi Bridge in Libis, and Layunan Bridge connect the municipality to the eastern towns of the province and to the provinces of Laguna and Quezon. Gupiing bridge in Lunsad

connects the poblacion area to southernmost barangays of the municipality namely: Barangay Pilapila, Limbon-Limbon and Ithan.

TABLE 73

Inventory of Bridges by Barangay & Construction Materials

NO. OF BRIDGES				
Barangay	Concrete	Timber	Total	Condition
Libis	3	1 S. T.	4	Passable
Darangan	3	2	5	- do -
Layunan	1		1	- do -
Macamot	4		4	- do -
Lunsad		1 S. T.	1	- do -
Pantok	2		2	- do -
Bilibiran	1		1	- do -
Pilapila	1		1	- do -
Sub-Total	15	4	19	
Kalinawan	1	3	4	Passable
Kinagatan	1	3	4	- do -
Kinaboogan	5		5	- do -
Bangad	2	3	5	- do -
Buhangin	2		2	- do -
Janosa	2		2	- do -
Gulod	1		1	- do -
Malakaban	1		1	- do -
Binitagan		2	2	- do -
Tabon		5	5	- do -
Rayap	2		2	- do -
Bombong	4	2	6	- do -
Pipindan		1	1	- do -
Sapang		1	1	- do -
Kasile	1		1	- do -
Sub- Total	22	20	38	
TOTAL	37	24	58	

Source: Municipal Engineering Office

Almost all of the bridges located at the mainland as shown on the table is made up of concrete materials, and need only little maintenance which include the removal silk under the bridges, to maintain its depth and make a good flow of water especially during the rainy season. On the other hand, 47.62% of the bridges located at Talim Island is made up of timber and is already 10 years old or more and needs to be replaced by a concrete bridges to upgrade its situation.

New bridges are needed to connect adjacent bgys. in Talim and build inter-connecting roads which will connect the northernmost and southernmost part of Talim Island, to the existing road connecting six of its barangays. This is also the same situation in the mainland where new roads are built to connect, not only adjacent barangys but the municipality itself to other towns of the province.

4. Fishing Ports and Wharves

Of the 37 wharves and ports in the municipality, 35 are classified as barangay ports which were used as subsidiary terminal for passengers and fishing vessels in going to and from different barangays and municipalities of Laguna, Rizal and even Metro Manila. The

ports of Darangan, Pilapila, Lunsad, Calumpang and Ithan were also used as fishing ports. These ports are suitable for small and medium scale operation.

During rainy season, most of these wharves are partially or totally submerged in water and the only remedy in this situation is to rehabilitate these ports especially those which are located in Talim Island. The only means of transportation in going to other places is through water transportation.

The main port which is located in Barangay Libis, and Libid are generally small for fishing boats, passenger boats and cargo vessels and unloading area for fishpen operation. To improve the situation of the said ports, the municipality is currently developing this port into a bigger port with the help of the Department of Transportation and Communication. It is now suitable for large scale operations and serve as the main port where fishpen operators can unload their harvests.

TABLE 74
Number and Classification of Ports by Barangay

Barangay	No.	Class	Barangay	No.	Class
Libis	1	Mun.	Libid	1	Mun.
Calumpang	1	Brgy.	Lunsad	1	Brgy.
Darangan	1	Brgy.	Pilapila	1	Brgy.
Ithan	1	Brgy.	Kalinawan	2	Brgy.
Pipindan	2	Brgy.	Kasile	1	Brgy.
Bombong	1	Brgy.	Kinagatan	1	Brgy.
Kinaboogan	2	Brgy.	Bangad	1	Brgy.
Buhangin	1	Brgy.	Janosa	2	Brgy.
Kaytome	1	Brgy.	Gulod	2	Brgy.
Sapang	2	Brgy.	Malacaban	1	Brgy.
Pinagdilawan	2	Brgy.	G.Sanay	1	Brgy.
Binitagan	1	Brgy.	Tabon	2	Brgy.
Habagatan	3	Brgy.	Rayap	2	Brgy.

5. Water Supply

The municipality has 19 communal water system servicing 17 barangays as of 2004. Six are run by the municipal government under the Binangonan Water Works. The rest are operated and maintained by cooperatives and barangay officials. The remaining barangays are dependent on artesian wells and jetmatic pumps, numbering about 496, serving 4,061 households. Apart from these facilities, many houses, commercial and industrial establishments have their own artesian wells and water system. This indicates that the municipality has high composite surface and ground water potential. Generally, these sources are believed sufficient to answer the needs of the populace. The trick is to tap these sources, prevent abuse and misuse, and protect the watershed from further denudation.

TABLE 75
List of Communal Water Systems, 2004

Location	Class	Capacity Gallon/min.	Barangay Served
----------	-------	-------------------------	-----------------

Calumpang (#2)	- do -	175	Calumpang
Batingan (#3)	- do -	200	Batingan
Libis (#4)	- do -	175	Libis
Tayuman	Coop.	50	Tayuman
Bilibiran	Coop.		Bilibiran
Darangan	- do -		Darangan
Palangoy	- do -		Pantok-Palangoy
Gulod	Brgy.		Gulod
Habagatan	Brgy.		Habagatan
M. Parang	Brgy.		M. Parang
Tatala	Brgy.		Tatala
Mambog	Brgy.		Mambog
Batingan	Coop.		Batingan
Batingan	Brgy.		Batingan
Pila-Pila	Coop.		Pila-Pila
Rayap	Coop.		Rayap
Calumpang (cableway)	Coop.		Calumpang
Layunan	Brgy.		Layunan
Pag-asa	Coop.		Pag-asa

Source: Binangonan Water Work

6. Power Supply

All barangays and sitios in the municipality are within the MERALCO franchised area. As indicated in table 76, residential sector has been the major power consumer with a total of 53,452 megawatts consumption in 2001. The industrial and commercial establishments followed with 12,556 and 6,516 megawatts consumption for the same period.

TABLE 76
Number of Costumers and Megawatt Hour Sales
Year End 1992 up to 2001

Year	Sales	Residential		Commercial		Industrial		Others		Total	
		No.	Sales	No.	Sales	No.	Sales	No.	Sales	No.	Sales
1992	Bin.	17,402	21,28	1,214	4,031	43	51,829	17	14	18,676	77,556
1995	Bin.	28,039	39,377.1	2,331	8,028.46	75	44,495.67	22	503.26	30,377.13	92,404.51
1996	Bin.	30,168	45,181.4	2,607	10,845.27	81	47,827.00	24	520.40	32,880.00	104,374.13
1997	Bin.	31,214	37,205.6	6	7,569.82	8	35,929.86	8	397.76	31,250.00	81,103.09
1998	Bin.	28,901	47,76	1,755	12,830	52	20,935	18	533	30,726.00	82,059.00
1999	Bin.	30,972	45,49	1,830	9,839	57	5,326	21	548	32,880.00	61,210.00
2000	Bin.	31,432	48,97	1,949	11,191	53	5,229	24	627	33,458.00	66,026.00
2001	Bin.	32,750	53,45	2,096	12,556	47	6,516	24	720	34,917.00	73,243.00

Source: MERALCO

TABLE 77Households Served and Unserved
by Electricity, Year 2012

Households	No. of Connections	Percentage (%)
Served	47,823	85.60%
Unserved	No data	-

TABLE 78Number of Connections by Type of Users
and Average Consumption (Kwh/Mo.), Year 2012

Type of Connections	Number of Connections	Average Consumption (KWH/mo.)
Domestic	44,701	127
Industrial	26	7,972
Commercial	3,068	580
Streetlights	28	2,478
TOTAL	47,823	11,157

Connection User	Projected Power Requirements				
	Y1	Y2	Y3	Y4	Y5
Domestic	71,481,952	74,819,363	78,312,594	81,968,921	85,795,957
Industrial	2,708,213	2,948,837	3,210,841	3,496,125	3,806,756
Commercial	22,203,069	23,090,257	24,012,895	24,972,339	25,970,244
Streetlights	855,388	878,842	902,940	927,698	953,135
TOTAL	97,248,622	101,737,299	106,439,270	111,365,083	116,526,092

HOUSEHOLD SERVED AND UN-SERVED BY WATER, 2014

Households	No. of Connections	Percentage (%)
Served	18,510	58.34%
Unserved	13,219	41.66%

Number of Connections by Type of Users and
Average Consumption (Cubic Meter)

Type of Connections	Number of Connections	Average Consumption per Connection (cu.m.)
Domestic & Semi-Business	18,190	22 cu.m./connection
Industrial	7	174 cu.m./connection
Commercial	313	69 cu.m./connection
TOTAL	18,510	22.82 cu.m./connection

Binangonan Connections as of Decemeber 2014

BARANGAY	NO. OF WSC
Pag-asa	1,271
Tayuman	993
San Carlos	991
Tagpos	1,147
Bilibiran	762

Palangoy	714
Pantok	1,969
Darangan	2,827
Macamot	675
Calumpang	1,671
Layunan	451
Libid	1,350
Libis	289
Batingan	1,703
Mahabang Parang	402
Tatala	295
Mambog	511
Pilapila	489
TOTAL	18,510

7. Telecommunications Facilities

The municipality has a telegraph office maintained by the National Telecommunication Commission, a postal office, and a Direct Distance Dialling complete with overseas connections serviced by the PLDT. About 2,400 new lines are being installed as of December 1995 with full operations scheduled middle of 1996.

Telephones, however, are available only in the mainland leaving the island barangays with communications via two-way radios given by the municipal government to barangay officials.

The existing number of telephones installed is par below present demand. Hereunder is the demand forecast for telephones up to year 2010:

TABLE 79

Demand Forecast for Telecommunication Facilities, DOTC Master Plan
(Number of Telephone Lines Required in Specific Years)

Municipality	Year 1994	Year 1998	Year 2004	Year 2010
Binangonan	4,870	6,927	12,699	23,091

c) PLDT

Number of Telephone line required in specific year
= 25,000 – 18,000

Number of new lines installed every year
1998 – 6,000 1999 – 5,200 2000 – 5,000

Number of lines in actual for the year

1997 – 1998 December 1997 as of July 15, 1998 = 3,432

TABLE 80

TELECOMUNICATION

Company	No. Of Telephone	No. Of New Line	No. Of Lines In
---------	------------------	-----------------	-----------------

	Lines Required	Installed Every Year	Actual Each Year
PLDT	18,000	6,000	3,432

Source: Telecom. Companies

TABLE 81

Number of Telephone Lines Required in Specific Years

Municipality	Year 1994	Year 1998	Year 2004	Year 2010
Binangonan	4,870	6,927	12,699	23,091

Source: Municipal Engineering Office

8. Sewerage System

In more urbanized and congested barangays, waste waters from households are disposed into private septic tanks or through open and underground drainage system connected to creeks or in the case of those within the shore lines of Laguna de Bay. It flows directly into the lake. The same waste disposal system is used in industrial, agro-industrial and commercial establishments. This system causes pollution to adjacent creek and rivers and possess a danger to residents near this creek especially during the rainy season where flashfloods occur. The primary causes of pollution on these tributaries are the piggeries and farms which has no adequate equipment to treat their waste. These farms make only an ordinary septic tank which served as the leaching and digestive chambers of the waste before it is discharged to the sewerline or creeks.

In view of the of the above mentioned problem, the municipality through the Sangguniang Bayan passes Ordinance No. 98-065 dated September 23,1998 adopting the comprehensive land use map as guidelines for development within the municipality. This map will identify the location or zone wherein a certain kind of establishment can be built or transferred. This will be a great help to the municipality to provide or develop necessary equipment or system or to take effect adequate provision and environmental protection to safeguard the areas within the vicinity of this zone from pollution and other physical ill effects.

And less populated barangays and subdivision waste water from household usually seep through the ground and never flow into the Laguna de Bay.

9. Flood Control and Drainage

Flooding occurs during heavy rains in Barangays Pag-Asa, Tayuman and Calumpang and in the low lying areas of Barangays Layunan, Batingan, Darangan and Macamot. This is also the same situation along the shoreline of Laguna Lake, where flood waters from Metro Manila especially those coming from Marikina City is diverted through Manggahan Floodway before discharging them to Manila Bay.

Flashflood also occurs in almost places along the creeks and rivers. This is because crowded housing spaces, clogging of drainage system and siltation of natural drainages due to massive land development of subdivision. The construction of CHB-lined canal and underground drainages in some areas has helped to drain easily flood water into the lake. However, a wholistic approach to drainage system must be planned. A program for the rip-rapping of river wall and dredging of major natural drainages like Bilibiran, Darangan and

Lasi River has been undertaken by the municipal government with the cooperation of Land Developers by lending their heavy equipment to the municipality.

CHAPTER IX

LOCAL DEVELOPMENT ADMINISTRATION

1. Existing Organizational Structure

The organizational structure of the municipality is patterned along typical LGU models for a first class community. The functions of each department are also typical of the line department prescribed under the local government code.

The municipal government is composed of the following main departments: (1) Planning and Development, (2) Administration, (3) Treasury, (4) Assessors, (5) Health, (6) Budget, (7) Accounting, (8) Engineering (9) Human Resource Management (10) Local Civil Registry (11) General Services (12) Public Information Office (13) Permit & License Office (14) Legal Services Office (15) Municipal Social Welfare & Dev't. Office (16) Agriculture Office (17) In addition, it has the following section offices namely Solid Waste Management Office,

PESO Office, Land Tax Section, Population Development Section and Veterinary Office. Public enterprises consist of Public Market, Municipal Wharf, Cemetery and Gymnasium and Sports Development, Slaughterhouse, Binangonan Hospital and Transport Terminal. As of 2013, the municipality has 229 regular, 149 casual and 373 Job Order employees.

The elected Mayor Cecilio M. Ynares, heads the executive office. The Sangguniang Bayan, the legislative office, consists of a presiding officer, Vice-Mayor Engr. Reynaldo Dela Cuesta and eight elected councilmen as regular members. They are Councilors Hon. Reynaldo S. Punelas, Hon. Isidro M. Pacis Jr., Hon. Ruben M. Magdalena, Hon. Felix A. Apostadero, Hon. Maria Rona P. Roldan, Hon. Rodel C. Cerrero, Hon. Miguel P. Manuson while newly elected Councilor is Hon. Nicanor C. Del Mundo.

The Sangguniang Bayan is further strengthened by representatives of Sangguniang Kabataan and the Association of Barangay Captains. The staff of the Municipal council is headed by the Presiding officer with the rank of Vice Mayor.

At the barangay level, there are 40 elected barangay captains supported by eight elected councilmen.

(See Attached Organizational Chart)

2. Fiscal Performance

2.1 Income

The increase in the gross income over the last six years was dramatic. From 266,798,418.96 in 2008; it is shot up to 352,883,227.79 in 2012. This was largely the result of favorable investment climate, effective tax collection campaign of the local administration and the active participation of the people in community building.

Figure 6: The major sources of revenue of the municipality

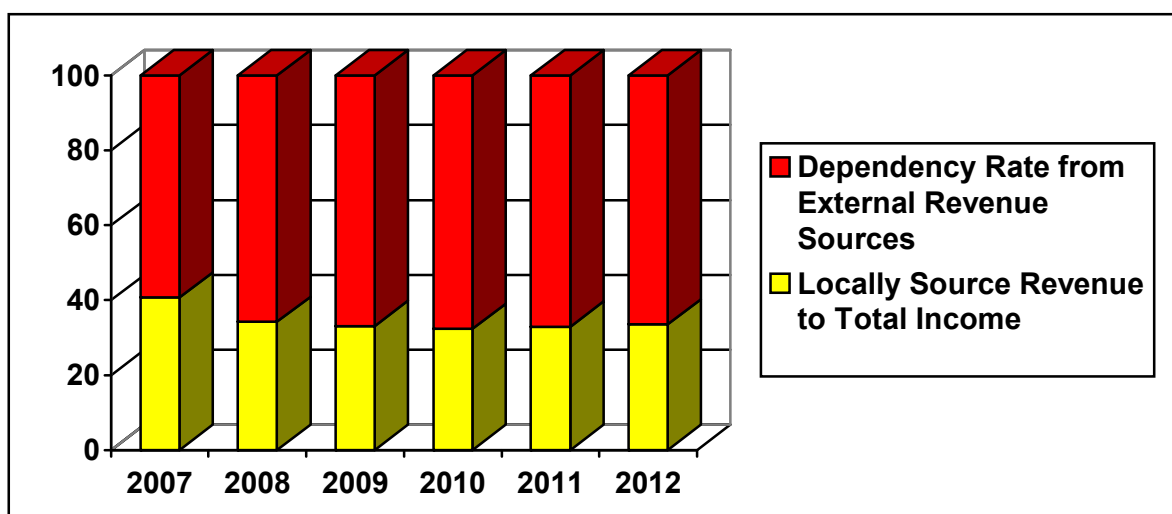


TABLE 82

MUNICIPAL INCOME 2008-2012

	2008	2009
Locally Source Revenue	91,273,762.63	99,039,455.13
IRA	175,524,656.33	200,374,088.00
Total Income	266,798,418.96	299,413,543.13

	2010	2011	2012
	101,464,406.27	112,934,911.72	129,072,269.79
	212,064,581.00	229,914,615.00	223,810,958.00
	313,528,987.27	342,849,526.72	352,883,227.79

Source: Municipal Budget Office

TABLE 83
MAJOR SOURCES OF REVENUE 2008-2009

	2008	2009
Local Taxes	70,583,617.35	57,892,957.83
Permits & License	11,545,478.71	13,474,188.99
Service Income	11,075,440.25	11,358,216.34
Business Income	14,671,008.69	14,740,756.45
Other Income	1,751,851.40	1,674,354.27
IRA	175,524,656.33	200,374,088.00

Source: Municipal Budget Office

2.1 Expenditures

The Local government of Binangonan, in pursuit of the development of the municipality has to respond to the requirements of social, economic and physical change for the general welfare of the municipality's population. Table 65 would show the expenditures of the local government from 2008-2009.

TABLE 84
MUNICIPAL EXPENSES 2008-2009

	2008	2009
Personal Services	82,414,821.05	85,016,732.74
Maintenance/Other Operating Expenses	114,287,341.09	120,134,186.33
Financial Expenses	5,992,826.60	4,106,158.11

Source: Municipal Budget Office

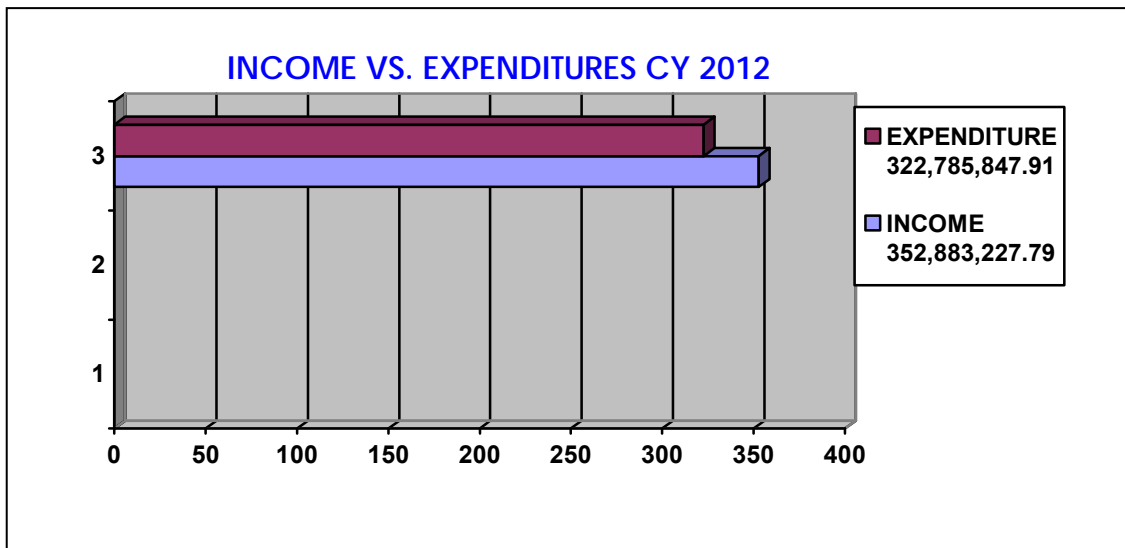
TABLE 85
MUNICIPAL EXPENDITURES 2008-2012

ITEMS	2008	2009	2010	2011	2012
General Public Service	102,159,921.60	100,949,116.54	146,058,600.96	130,409,663.35	146,836,880.09
Social Services	28,990,602.62	37,211,480.07	24,315,620.13	32,569,908.33	37,508,757.96
Economic Services	27,687,426.34	27,341,665.79	20,510,911.09	31,166,448.19	42,267,509.13
Capital Outlays	35,996,903.96	97,670,296.31	47,976,684.00	72,544,143.31	56,780,178.23

20% Dev't Fund	12,800.000	15,457,811.69	25,734,180.49	18,502,443.18	10,982,334.50
SPA-Lump Sum Approp.	32,000.000	-	10,943,665.78	4,894,469.01	24,168,940.00
SPA-Calamity Fund	11,030.000	14,420.045	192,530.00	142,950.00	204,288.00
5% LDRRMF					2,036,960.
TOTAL	250,664,854.52	293,050,415.40	275,732,192.45	290,230,025.37	322,785,847.91

Source: Municipal Budget Office

Figure 7:



MILLION

SOCIO ECONOMIC PROFILE (Part II)

PROPOSED REGIONAL DEVELOPMENT FRAMEWORK

In the northeastern part of the lake, the ridges of the hills dividing the municipalities of Binangonan and Cardona, Rizal present a natural topographical boundary to mark the limit for high density urban development and industrialization. The ridges dividing the two municipalities should likewise be projected up north to the hills and mountains of the towns of Teresa, Antipolo, San Mateo and Rodriguez (Montalban) in Rizal Province.

The Central Bay and parts of West Bay from Binangonan and around Talim Island shall be designated for aquaculture since these areas are more protected from winds and observed to exhibit higher primary productivity due to seawater intrusion. The western side of the West Bay shall be kept open and restricted from aquaculture in order to allow for more rigid water quality monitoring as well as to enable

rehabilitation work in the area. In-depth studies on the effects of salinity and industrial pollution must be undertaken in this area.

a. Water Quality Monitoring Programs

The proximity of Laguna de Bay to Manila makes the basin conducive to rapid development and susceptible to urban and industrial pollution. The lake's use as a waste sink for the whole basin threatens its other uses, such as fishery, irrigation, industrial and most importantly domestic water supply. In order to detect/assess the continuous degradation of the lake water quality monitoring program for Laguna de Bay has been on-going since the 70's with the following objectives:

- To systematically collect water quality data needed to assess accurately the suitability of the lake for all its present and intended beneficial uses.
- To evaluate the impact of the development activities on the lake's water quality trends that will serve as important tools for environmental planning, legislation and management.

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Municipality of Binangonan*

To attain the above objectives, the following programs are being implemented.

- Laguna de Bay Sampling and Monitoring
- Laguna de Bay Primary Productivity Studies
- Tributary rivers Water Quality Monitoring Program
- Fish Diseases Monitoring Program
- Sampling and Monitoring of Other Lakes in the Region
- LLDA Laboratory Upgrading Project

In support of the above programs, it is essential that the current LLDA laboratory Facilities be upgraded. Top-of-the-line analytical equipment need to be acquired to improve efficiency and ensure reliability. In view thereof, a laboratory upgrading program is also proposed.

b. Pollution Control Program

An effective Pollution Control Program must be carried out to prevent the discharge of pollutants and improve the quality of the environment particularly in the Laguna de Bay Region. To assess the performance of the program, the various waste generated and those eventually reaching the lake should be characterized to be able to determine the pollution load in the lake on a regular basis. Decrease in the pollution due to an effective control program is a good indicator for improvement of water quality.

To achieve the objective, the following are needed:

i. Industrial Waste Management

- Waste Minimization Project within the Laguna de Bay Region

- A Project for the upgrading of the Self monitoring System for Industries
- Pilot Common Wastewater Treatment Facilities Project
- Air Quality Management Project
- Study for the Introduction of Economic Incentives and Disincentives to Promote
- Water Pollution Prevention and Abatement in the Laguna de Bay Region
- Pollution Control and Rehabilitation of Laguna de Bay through Biotechnology and Ecotechnology
- Wastewater Treatment Plant Operators Training
- Industrial Pollution Source Database Project

ii. Agricultural Waste Management

A program for the minimization of agricultural waste has been included as a component of the Agricultural Development Program under this Master Plan. This is because of the underlying effect of the problem on environmental integrity which is ultimately manifested in the declining productivity of the lake, pollution in irrigation systems and other agricultural resource base.

iii. Domestic Waste Management

The lack of sewerage facilities is the main cause of mismanagement of domestic wastewater in the Region. The re-assessment of the Regional/River Interceptor Studies are strongly recommended for possible infrastructure development in the very near future.

iv. Solid Waste Management

Solid waste disposal is one of the most visible environment problems that plagues the Region. It is recommended that a study to create or define the entity that will manage solid waste at the regional level. Included proposals are the Rehabilitation of the Disposal Sites and the potential use of solid waste for power generation.

v. Toxic and Hazardous Waste Management

Toxic and Hazardous Wastes (THW) cause adverse effects not only on the environment but also to human health. Although lesser in quantity, they are difficult to handle and require special equipment/gadgets and modern technology to dispose. In the proposal, it includes the creation of a comprehensive database for THW detected in the Region and the design of the necessary facilities for its management.

c. Water Resources Management Program

i. Framework for the Formulation of a Water Resources Utilization Policy.

The development and utilization of the Laguna de Bay water resources has created problems and issues which threaten not only the sustainability of these activities but also the life of the lake itself. The conflicting economic uses of the lake effect both the quality and quantity of the resources available. It is for these reasons that a Water Resources Utilization Policy need to be formulated in order to ensure the equitable access and efficient utilization

of the resources; and in order to reduce or resolve potential social conflicts arising from competing uses.

ii. Study on the Laguna de Bay as Potential Domestic Water Supply Source.

The worsening water shortage that plague the Metropolitan Manila Area and its suburbs necessities tapping the Laguna de Bay as the next source of raw water for domestic consumption. This study will also look into the modeling of saltwater intrusion as an essential factor both for domestic water supply and fisheries.

iii. Groundwater Management Project

Groundwater is an important resource for the people of Laguna de Bay Region. It is a common source of water supply, but its reliability to sustain increasing demand has not been established. Also, there is an increasing evidence of groundwater contamination thus, it is necessary to conduct a study to determine the contamination and a rational ground water management system.

a) Regional Land Use Planning Project

A workable and environmentally sound land-use scheme shall be evolved in this intended to strike a balance between land supply and demand in the Region to achieve optimum land utilization.

- Exact location of deforested and heavily eroded areas requiring immediate attention
- Development and land acquisition along the lakeshore which are closely linked to lake management and protection
- Detailed land use of municipalities vital to population forecasts, location of large infrastructure projects like spillway, interceptors, etc.
- Proposed areas for development

b) Laguna de Bay Shorelands Management Project

This Project shall address the issues and concerns on the use and occupancy of the lake shorelands. Specifically, it shall focus on the formulation of policies, rules and regulations towards management and protection of the same.

a) Fishery Regulation

Fishery production in Laguna de Bay has decreased drastically. There are Several arguments to explain this phenomenon such as pollution and siltation. However, among the major reasons are overfishing and illegal fishing activities. These activities not only cause depletion of fish resources by catching even the fingerlings but also destruction of natural fish habitants. Fishery regulation shall include the following projects.

i. Rationalization of the Fishpen Industry

The proliferation of fishpens in Laguna de Bay brought about ecological and special problems. At present, there is a growing concern among fishpen operators and small fishfolks on the low fish production. This alarming decline in production is somehow attributed to the decrease on availability of natural feeds in the lake. This may also be due to over fishing and conflict of use among snail gatherers, illegal fishers and fishpen operators.

- Action Plan for the Demolition on Illegal Fishpens to address the problems on illegal aquastructures in the Laguna de Bay, the LLDA has come up with OPLAN LINIS LAWA likewise known as the Action Plan for the Demolition of Illegal Fishpens.
- Reformulation of the Zoning and Management Plan (ZOMAP)

The ZOMAP which was prepared to reassess and redirect the policies and regulation of the LLDA on development and utilization of fishery resources in the lake remains unimplemented. The technical base of the ZOMAP need to be reconsidered. Primary productivity as basis of fish production need to be reassessed. The conversion factor from primary production seems to be unrealistic.

The carrying capacity for lake aquaculture needs to be reconsidered in order to determine the recommended area for fishpen culture. Likewise, various environmental features need to be considered in formulating the ZOMAP, these include: bathymetry and geological features of the lake bottom; wind velocity and directions vis-a-vis fishpen belts; lake water circulation in relation to nutrient dynamics; pollution loading from tributary rivers; social acceptability from lakeshore communities and the fisherfolks sector; and others.

ii. Community Mobilization Project for Law Enforcement on Illegal Fishing (Bantay Lawa Project)

The overall responsibility in the implementation of fishery rules and regulations in Laguna de Bay still largely remains with BFAR. While this is so, the public expects LLDA to be directly responsible in enforcing anti-illegal fishing and piracy operations. Thus, there is an ongoing confusion regarding law enforcement as far as Laguna de Bay is concerned. Therefore as part of this Master Plan LLDA formulated a proposed Executive Order to further strengthen the power, functions and coordinative authority of LLDA stating the inclusion of the exclusive jurisdiction over fisheries in Laguna de Bay Region in its mandates.

iii. Training/Seminar on Deputation, Conservation and Protection

To ensure effective public participation it is essential to equip the people and make them aware of their important role in the community particularly on environmental protection. The fisherfolks around the lake are not an exemption to this. Lack of such awareness may further result in total degradation of the lake region and the continuous destruction of fishery resources in Laguna de Bay. It is therefore necessary that proper training be given to accredited groups of fisherfolks on the essentials of environmental conservation and protection.

b) Fishery Management

For a region greatly dependent on its fishery resources for good and work for its people, the management of such fishery resources is a matter of great concern. The following components will be given priority to ensure an efficient and effective management of fishery resources.

- i. Establishment of a Fisheries and Limnological Research Monitoring Center
- ii. Resources Assessment/Inventory of Aquatic Fauna
- iii. Research on the Propagation of Indigenous Fish Species
- iv. Establishment of Additional Fish Sanctuaries

c) Aquaculture Development Program

For the past years, aquaculture development in Laguna de Bay focused only a fishpen and fishcage culture specifically on milkfish, carp and tilapia species. There is really a great need to develop the fishery industry, thus, the proposed program encourage the introduction of new technologies such as presented below:

- i. Freshwater Pearl Culture
- ii. Freshwater Aquarium Production
- iii. Polyculture of Macrobrachium sp. and Tilapia sp

d) Development of Post Harvest Technologies

One of the constraints to future fishery development is the lack of post-harvest technologies for ensuring rational management and maintain or improve the quality of the fish produce. The qualities of the fish greatly affect its price, and therefore, it must be preserved to ensure best returns on investment. In order to achieve this, the following activities should be given priority:

- i. Survey of market needs of the fishery sector
- ii. Rehabilitation of selected existing ports
- iii. Seminar/workshop/training on the proper handling and processing of fish
- iv. Improvement of fish transport systems

e) Institution Building and Support Services

- i. Fisherfolk Cooperative Formation

Formation of more fisherfolk cooperative will enhance community development through its collective efforts. Organized fisherfolk groups will have the opportunity and the proper training to acquire built-in mechanisms for capital formation. It will also enable government institutions as well as other funding institutions (private and foreign) to offer services to the clients more effectively. This project will be integrated with the Community Development Program.

- ii. Credit and Funding Facilities

The proposed development plan particularly on fisheries should be implemented by increasing government budget allocation for credit in order to meet the vast demand of small fisherfolk groups and cooperatives.

The LLDA on its part should strengthen its financial capability and allocate subsidy to finance projects of fisherfolks and farmers.

Consequently, its Livelihood Development Program which was deferred temporarily should be reviewed. In the meantime, LLDA will initiate efforts to link-up with existing credit facilities of other government agencies implementing livelihood assistance/funding projects.

iii. Marketing Assistance

To avoid problems on wastage and over production, marketing information should be extended to producers for them to be aware to market their harvest. At present, the Bureau of Agricultural Statistics has an on-going marketing information services program in other regions. This should be enhanced and adopted by LLDA in order to have adequate information on the current operation among producers and cooperatives in the region.

THE MUNICIPAL DEVELOPMENT PLAN

1. Development Framework

The Municipality of Binangonan possesses the opportunities and potentials, both internal and external, to fully enhance its current economic horizon for the benefit of the town and its people.

The town's current economic structure will shift to a mixing of agriculture and industry, commercial and tourism. This development approach is expected to decentralize the functions of the municipality's major urban centre, the poblacion, to other areas within the municipality. The development of the rest of the town shall be pursued based on population growth trend, physical characteristics, intra and inter relationships and its potential impact to the town's overall development.

This Comprehensive Land Use Plan took into account the development thrusts of the Province of Rizal, town of Binangonan, and the RIZALQUE proposed development framework plan.

2. General Issues

It is hoped that this Land Use Plan will address issues and concerns that the municipality is faced with. These include:

- Employment and human resource development
- Geographical constraint for infrastructure development
- Environmental effects brought by increased industrial activities
- Land use allocation
- Population growth and settlements' development
- Investment promotion and private-public sectors cooperation
- Support linkages
- Trade and tourism
- Social issues such as public health and community services.

3. Development Challenge

The basic challenge for the Municipality of Binangonan is to harness to full potential its human and physical resources where it has a generally comparative advantage.

These challenges include:

- Enhancing the productive capacity of its agriculture and fishery sectors along with processing and the development of non commodity lines
- Shifting employment opportunities to small and medium industries and the service sectors
- Widen or expand service sectors especially in the less served areas
- Ensure reliability of power supply
- Encourage the expansion and advancement of transportation and communication facilities
- Developing human resource skills to support manpower requirements of industry and the service sector
- Full accessibility to basic health, educational, housing, recreational services and facilities
- Fully empowered and productive citizenry predominantly belonging to the middle class
- Fully maintained biological resources and balances eco-system functions.

4. General Development Strategy

This Comprehensive Land Use Plan is derived from the analysis of the town's current development, potentials, and opportunities. Further considered is the aim to dispersed and develop other areas of the town to allow equal access by the local population to economic opportunities.

The municipality of Binangonan shall adopt the strategy of “agro-industrial development, tourism and the enhancement of its commerce and trade”. Further, urban consolidation shall be encouraged to prevent intrusion into the town’s forest and protected lands.

- The town proper or Poblacion shall retain its role as the lead centre for commerce, trade and government or institutional activities
- Recreation and tourism shall be enhanced to optimize the coastal or waterfront areas
- Irrigated ricelands shall be conserved
- Reforestation program shall be firmly enforced in the town’s remaining forestlands. Forest areas shall be conserved especially the remaining forest within Talim Island.
- Provision of basic support and infrastructure facilities for the development of the productive sector and depresses/logging areas
- Upgrading and enhancing people’s skill, capacity and productivity
- Adoption of Spatial Development Strategy – Wherein the key growth area will be deliberately developed based on their comparative advantages in production and natural resources endowments. Thus, in the long run will strengthen the economic linkages between and among the municipalities.
- Comprehensive Development of Settlement Areas – To contribute to the population redistribution and decongestion of Metro Manila and other densely populated towns.

The CLUP shall maintain and promote multi-sectoral linkages such as agriculture, industry, infrastructure, environment, social services and institutional development.

5. Development Goal

The general development goal of this Land Use Plan is to achieve growth of the town of Binangonan and its people through self-sustaining and environmentally sound development.

Specially, this CLUP aims to achieve the following:

- Conservation of existing forests and the reforestation of denuded forest lands
- Regreening of the municipality through tree planting. Trees shall line up major roads especially in urban centres, residential subdivisions and in agri-industrial and industrial areas.

Idle and vacant lands, with the participation of its owners, shall also be planted with trees.

- Direct the growth of settlement in lands suitable for settlements’ development. Further, settlements’ development in sloping and mountainous areas shall be regulated and controlled.
- Control and regulate industrial and commercial development
- Ensure continuing link between the mainland with Talim Island

- Observe and enforce existing national laws, rules and regulations on environmental protection, land development, building construction, resource exploitation and utilization and local governance.
- People sustainable economic growth and productivity anchored on environmentally sound economic development.

6. General Policies

Policies enumerated thereunder are meant to provide basic guidelines for the local government which shall apply universally to all zones identified in this Comprehensive Land Use Plan. These policies may appear to set broad parameters, however, they shall provide the essential framework for the municipality's development framework.

Specific action plans shall be presented in the various component plans of this CLUP. Thus:

- Natural resources such as the ground and surface waters, lands in steeply sloping areas, public easements, natural attractions, forest areas, and historical shall preserved
- Physical developments in identified protected agricultural lands shall be in accordance with existing regulations of the Department of Agriculture and the Development of Agrarian Reform
- Agricultural development shall adopt proper soil conservation methods
- All developments shall be adequately serviced by roads and other infrastructure services
- Commercial development shall provide buffer or spaces for parking and storage. Further, this type of development shall not result to restricting and controlling entrance and exist to major thoroughfares or roads
- Noise levels and air emissions, especially for activities within a generally residential area, shall conform with the standards set by the Environmental Management Bureau
- Settlement or residential developments shall be located in areas where impacts especially on the natural environment are lower
- Waste from industrial and commercial establishments shall be disposed properly so as not to create nuisance and hazard to the community
- Development in Talim Island shall not cause the obstruction of scenic views
- Historical and archeological sites of significant importance shall be clearly delineated and if possible to the public. Any proposed development that will impact on these sites, shall secure clearance from appropriate agencies, prior to actual development
- Buffer or open spaces shall be provided between conflicting uses to abate the impact/s of a more intensive use unto a minor or inferior activity
- Intensive uses allowed, with specific conditions, to be established in a generally residential area shall at all times respect and observe the privacy of adjoining properties and buildings

7. The Land Use Plan

This Land Use Plan shall provide the physical dimension to the municipality's Development Plans and Programs. Thus, when interpreted into a Zoning Ordinance, this plan shall become a concrete basis and a mechanism to guide the local government in the pursuit of development.

7.1 *General Land Use Plan*

7.1.1 **Tourism Zones**

The Island, located within the heart of Laguna de Bay shall be promoted as tourists' destination area. Ferry boats plying the Laguna de Bay can make the island an ideal stop-over point before proceeding to their points of destination.

The local government shall endeavor to promote the island for the development of tourist oriented projects like cabins, vacation houses, recreational and sports centres, retreat venue, restaurants and conference centers.

Talim Island has the following attractions to entice visitors:

- The three islets located in the southern tip of the island with an aggregate land areas of 27 hectares
- Hotsprings in Ginoong Sanay, Tabon and Binitagan
- Susong Dalaga, a mountain shaped like maiden's breast which is ideal for mountain climbing and trekking.

With the development of interconnecting barangay roads, the island will become an ideal site for cycling and motorcross. Further, the construction of the proposed one thousand steps to Susong Dalaga will likewise pose as a challenge to climbers.

The existing tourism areas in the municipality like Lake Island, Almars and Garden Ville are found in Barangay Tayuman; whereas Estuar is located in Barangay Tagpos; and Lake View is found in Barangay Pag-asa.

Other potential tourism areas are the following:

- Kalbaryo in Libid- A life size Cross stands at the summit of the hill. The cross commemorates the death of Jesus Christ in Calvary.
- Fuente Del Diablo at Pilapila-This islet has a cave that teems with hard black stones. A local legend says that these stones are part of an unfinished bridge built by the devil to win the heart of a beautiful maiden.
- Eastridge Golf Club-This is an 18 hole golf course. It is considered as one of the biggest and most modern in the country.
- The Vicente Manansala Shrine-The shrine houses the works of the late National Artist Vicente Manansala.
- Two century old Church of Sta. Ursula Parish, located within the Poblacion; and Simbahang Bato in San Carlos Heights, Barangay Tayuman

The local government unit shall endeavor to promote the Binangonan Petroglyphs located in Sitio Pinagpala, Barangay Tayuman. These petroglyphs earned the attention and concerned of the some sectors because of its significance to the country's history. Given the growing awareness among the country's population and the program of the national government in the preservation and conservation of natural, historical and archeological sites, the Binangonan petroglyphs is now bestowed with the attention it rightfully deserve.

7.1.2 Residential Area

It is projected that by the year 2010, the population of the municipality is expected to reach more than 300,000 with around 60,000 households. Given an average land area of 150 square meter per household, the land requirement for residential use is placed at 900 hectares. Other than the growth of the residential area of the Poblacion, the centers of barangays are likewise expected to grow and expand.

In this regard about 1,500 hectares of land in Barangays Pag-asa, Tayuman, Tagpos, Bilibiran , Palangoy, Pantok, Darangan, Calumpang, Batingan, portion of Mambog and Mahabang Parang has been reclassified. The areas reclassified for residential use is expected to accommodate the municipality's natural increase in population, the homeless members of the marginalized sector of the community, as well as the population moving into Binangonan in view of its economic activities.

Other than the designated residential areas in the enumerated barangays above, the residential areas of the different barangays of the municipality are also expected to grow based on the natural increase in population.

Further, the expansion of residential areas in the municipality shall take in consideration the following :

- General physical characteristics of potential areas for residential use.
- Highly productive agricultural lands, and lands within forest areas shall be discouraged.
- The local government, before allowing residential development within sloping lands, and areas prone to natural hazards such as slides and flooding, shall require an environmental study on the impact of such development giving considerable weight on geo-technical information as a significant basis in granting development decisions.
- Roads within residential subdivisions shall be developed in such manner that they will connect with existing road/s to ensure an effective circulation network.

7.1.3 Light Industrial Area

There are two (2) areas designated for light industrial use within the municipality of Binangonan. The first site is located within Barangay Tayuman. This area was originally subjected to quarrying operations thus changing its original sloping physical characteristics. At present this area is generally even. At the moment there are already existing industrial firms within the vicinity. Its potential for industrial development is heightened by the construction/establishment of the proposed Binangonan-Antipolo Road.

The second area for light industrial use is located within Barangay Mahabang Parang along Manila East Road. The visible trend of development is already manufacturing and processing activities as manifested by the presence of several manufacturing firms within the area.

The combined land area of these two light industrial areas is 250 hectares.

Activities within these light industrial areas shall make necessary the observance of the following:

- Delivery trucks or vans shall not use the streets for parking. Parking shall be provided within the compound of each manufacturing or industrial firm.
- Storage of highly combustible or flammable materials shall be allowed within the premises of each firm or industry only upon securing permit or clearance from the municipal fire department.
- Firms or industries shall have their own waste collection and disposal facility. The industries or firms shall in no instance dispose their liquid wastes into the rivers, creeks or water bodies of the municipality.
- Noise, smoke and vibrations shall not cause any nuisance to the adjacent properties

7.1.4 Agricultural Areas

The agricultural areas of the municipality will generally be planted to rice, corn and vegetables. These lands are distributed in Barangays Macamot, Tatala along the municipal boundary of Morong, portion of Pila-Pila and Ithan, and along the coastal area of Barangay Kaytome in Talim Island. Whereas, agricultural lands identified under the Strategic Agricultural and Fishery Development Zone are located within Barangays Pantok, Macamot, Pila-Pila and Ithan.

The municipality shall endeavor to preserve its remaining productive agricultural lands by:

Discourage the growth of urban uses towards agricultural lands.

Provide basic agriculture support facilities such as farm to market roads and irrigation facilities to encourage and assure farmers of the local government's support for the agriculture sector.

Strictly enforce the requirements and processes in agricultural land reclassification to urban uses.

The aggregate total of agricultural lands under this CLUP is placed at 522.45 hectares.

7.1.5 Agro-Industrial Areas

Portions of Barangays Macamot and Tatala are designated as agro-industrial areas for the Municipality of Binangonan. Agro-industrial activities shall include the establishment of piggery and poultry farms, operations of feedmill and ricemills, and other essential component of an agriculture related processing activities.

Taking cognizance of the fact the activities within the agro-industrial area are classified pollutive and hazardous, the local government shall ensure that industries therein shall observe the following basic requirements:

- Noise, smoke and vibrations shall cause any nuisance to the adjacent properties.
- Firms shall have their own waste collection and disposal facility. The firms shall in no instance dispose their liquid wastes into the rivers, creeks or water bodies of the municipality.
- Delivery trucks or vans shall not use the streets for parking. Parking shall be provided within the compound of each firm.

- New firms intending to locate within the area shall secure an Environmental Compliance Certificate from the Environmental Management Bureau prior to securing a Business Permit from the local government unit.
- Buffer shall be provided to mitigate impact of an activity to a less intense use. Said buffer shall not be left open but planted with trees or construction of a wall following the specifications as determined by the Municipal Building Official and the Municipal Zoning Official/Administrator.

The agro-industrial area of the municipality has a total land area of 291.450 hectares.

7.1.6 Agro-Forest

Areas with moderately sloping to slightly rolling and from hilly to steep lands are designated for agro-forest uses. These areas are ideal for fruit bearing trees, annual crops, and other forest tree species such as mahogany and ipil-ipil. The agro-forest areas are located within Barangays Pantok, Kalawaan, Pila-Pila, Lunsad, Mahabang Parang, Ithan, Limbon-Limbon and Pipindan. Talim Island shall also be a agro-forest area.

The agro-forest area shall be a “controlled use” area where development shall be compatible with the physical condition and general character of the area. Development within agro-forest areas shall observe the following basic conditions:

- Physical infrastructure development shall consider the physical character of the area in the preparation of any development plan.
- Sustainable utilization of natural resources.
- Environmental protection.

The agro-forest land use of the municipality is placed at 2,718.57 hectares.

7.1.7 Heavy Industrial Area

The present location of the Rizal Cement Company in Barangay Calumpang and Gandspan Development Corporation in Barangay Tagpos are the heavy industrial areas of the municipality.

Due to the proximity of these industrial areas to residential uses and its “highly pollutive and highly hazardous” industrial classification, the following shall be observed by the concerned industrial firms and all future heavy industries who are going to locate in Binangonan:

- Expansion in terms of operations and land area shall be subject to the approval of the local government unit and the Environmental Management Bureau.
- Installation of gadgets or equipment to mitigate emissions.
- Vehicles used for the transport of raw materials or finished products to and from the industrial plants should not in any way obstruct the flow of traffic.
- Public roads should not at any instance be used as parking area for these vehicles.
- Transport of raw materials or finished products to and from Binangonan should not cause any nuisance to the general public in form of dusts or airborne particulate.
- Firms shall have their own waste collection and disposal facility. The firms shall in no instance dispose their liquid wastes into the rivers, creeks or water bodies of the municipality.

- A buffer, as determined appropriate by the Municipal Environment Officer and Municipal Zoning Administrator/Official, shall be provided by the heavy industry, if and when the industry directly abuts a less intensive use.
- The operation of the heavy industry shall, in general, ensure that the host community where the industry is located, will not be adversely affected by its operations.

The heavy industrial area of the municipality has combined total of 75 hectares.

7.1.8 Commercial Area

Generally, the commercial areas of the municipality are located in the centers of population and along major roads. Numerous roads within the municipality have exhibited a commercial trend in development thus are being recommended for commercial use under this plan. This is, however, subject to control and regulations, to avert future problems especially for commercial areas along the national road.

The commercial areas outside of the Poblacion are classified as neighborhood commercial. Activities in these areas are limited in terms of capitalization, variety of goods offered, number of employed manpower and area occupied.

Commercial development shall observe the following basic guidelines:

- Establishments shall provide parking areas for their patrons. On street parking, especially along the national road, shall at no instance be allowed.
- Establishments shall respect and observe the road setbacks as mandated by the Department of Public Works and Highways.
- Height of structures shall not obstruct the view of the Laguna Lake and other scenic spots of the municipality.
- Commercial establishments shall have their own waste collection and disposal facility. These establishments shall in no instance dispose their liquid and solid wastes into the rivers, creeks or water bodies of the municipality.
- Business signs or advertising ads shall be installed in a manner that will not cause hazard to motorist.
- Support utilities shall be ensured and provided by the establishments such as water, power, etc.

The commercial area of the municipality outside of the Poblacion has a total land area of 404.46 hectares. The commercial area along the national road shall be 100 meters on both sides of the road commencing from the edge of the right of way.

7.1.9 Government Center/Institutional Areas

The present location of the Municipal Hall, Justice hall, office of the DPWH, TESDA Building, Rizal State College Campus, and proposed Register of Deeds Building and the proposed Casimiro A. Ynares Sr. Medical Center. This land use has a total area of 3 hectares.

7.1.10 Special Use

The following land uses are classified under Special Use under the municipality's Comprehensive Land Use Plan. These uses shall have their respective development and detailed plans to be prepared by the local government unit. These uses include the following:

- Municipal Cemetery
- Municipal Dumpsite
- Reclamation Area

The total land area of areas classified under Special Use is 306 hectares

TABLE 86
General Land Use, 2001-2010
Municipality of Binangonan

Land Use/s	Area (Has.)	Percent to Total
Tourism	803.53	11
Residential	1,500	21
Light Industrial	250	3
Agriculture SAFDZ	522.45	7
Agro-Industrial	291.45	4
Agro-Forest	2,718.57	37
Heavy Industrial	75	1
Commercial	800	11
Government Center	3	1
Special Use	306	4
TOTAL	7,270	100

TABLE 87
POBLACION

	Area	Residential	Commercial	Institutional	Parks & Open Spaces
1. Libis	234.8285	82.19	140.90	4.70	7.04
2. Libid	253.0	50.60	177.10	12.65	12.65
3. Lunsad	253.0	126.50	25.30	25.30	75.90
4. Batingan	109.7120	87.77	10.97	5.49	5.49
5. Calumpang	159.1299	127.30	15.91	7.96	7.96
6. Layunan	253.604	202.88	25.36	12.68	12.68
TOTAL	1,263.28	677.24	395.54	68.78	121.72

TABLE 88
Urban Land Use, 2001-2010, Municipality of Binangonan Poblacion

Land Use/s	Area (Has.)	Percent to Total
Residential	677.24	54
Commercial	395.54	31
Institutional	68.78	5
Parks and Open Spaces	121.72	10
Total	1,263.28	100

TABLE 89
LAND USE OF BINANGONAN 2001-2010

LAND USE	AREA (HAS.)	PERCENT TO TOTAL
RESIDENTIAL	2,228.88	30.65
COMMERCIAL	418.80	5.76
CEMETERY	17.15	0.24
PRODUCTION FOREST	2,544.96	35

INSTITUTIONAL	2.674	0.04
AGRO INDUSTRIAL	216	0.3
S A F D Z	255.2	3.5
MINERAL	64.12	0.88
DUMPSITE	3.67	0.05
HEAVY INDUSTRIAL	59.7	0.82
AGRICULTURAL LAND	979.36	13.47
INDUSTRIAL LIGHT	255.4	3.51
TOURISM	224.1	3.08
TOTAL	7,270 HAS.	100.00%
RECLAMATION	825.7	

Total Agricultural Land = Agro Industrial +SAFDZ + Agricultural Land
= 1,450.56 HAS.

POBLACION

TABLE 90

Urban Land Use, 2001-2010

Municipality of Binangonan

Land Use /s	Area (Has.)	Percent to Total
Residential	677.24	54
Commercial	395.54	31
Institutional	68.78	5
Parks and open spaces	121.72	10
TOTAL	1,263.28	100