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**ACRONYMS**

|           |   |  |
|-----------|---|--|
| ALERT     | - | Anilao Local Emergency Response Team                                     |
| ALS       | - | Alternative Learning System  |
| ARC       | - | Agrarian Reform Communities  |
| BDRRMC    | - | Barangay Disaster Risk Reduction and Management Council                  |
| BERT      | - | Barangay Emergency Rescue Team   |
| BFAR      | - | Bureau of Fisheries and Aquatic Resource                                 |
| BFARMC    | - | Barangay Fisheries and Aquatic Resource Management Council               |
| BFP       | - | Barangay Forest Project  |
| BHS       | - | Barangay Health Center   |
| BJMP      | - | Bureau of Jail Management and Penology                                   |
| BOSS      | - | Business One Stop Shop   |
| BPLO      | - | Business Processing and Licensing Office                                 |
| CARP      | - | Comprehensive Agrarian Reform Program                                    |
| CBFM-CARP | - | Community-Based Forest Management- Comprehensive Agrarian Reform Program |
| CBFM-CARP | - | Community-Based Forest Management- Comprehensive Agrarian Reform Program |
| CBMS      | - | Community-Based Management System  |
| CCA       | - | Climate Change Adaptation  |



|       |   |  |
|-------|---|--|
| CDRA  | - | Climate and Disaster Risk Assessment               |
| CENRO | - | Community Environment and Natural Resources Office |
| CICL  | - | Child in Conflict with the Law                     |
| CPR   | - | Contraceptive Prevalence Rate                      |
| CSO   | - | Civil Society Organization                         |
| DAR   | - | Department of Agrarian Reform                      |
| DENR  | - | Department of Environment and Natural Resources    |
| DOLE  | - | Department of Labor and Employment                 |
| DPWH  | - | Department of Public Works and Highways            |
| ECC   | - | Environmental Compliance Certificate               |
| FA    | - | Farmers' Association                               |
| FAO   | - | Food and Agriculture Organization                  |
| FFL   | - | Forest and Forest Land                             |
| FIC   | - | Fully-Immunized Child                              |
| FLA   | - | Fishpond Leasehold Agreement                       |
| FLUP  | - | Forest Land Use Plan                               |
| FMR   | - | Farm to Market Road                                |
| GAD   | - | Gender and Development                             |



|        |   |  |
|--------|---|--|
| GF     | - | General Fund   |
| GIS    | - | Geographic Information System                            |
| GSP    | - | Girl Scout of the Philippines                            |
| HIV    | - | Human Immunodeficiency Virus                             |
| HLURB  | - | Housing and Land Use Regulatory Board                    |
| IRA    | - | Internal Revenue Allotment                               |
| LEIPO  | - | Local Economic and Investment Promotion Officer          |
| LGBT   | - | Lesbian Gay Bisexual and Transgender                     |
| LGU    | - | Local Government Unit                                    |
| LMB    | - | Land Management Bureau                                   |
| LTO    | - | Land Transportation Office                               |
| MATET  | - | Making Anilaonons on Top of Education and Technology     |
| MCP    | - | Maternity Care Package                                   |
| MDG    | - | Millennium Development Goals                             |
| MDRRMC | - | Municipal Disaster Risk Reduction and Management Council |
| MDRRMO | - | Municipal Disaster Risk Reduction and Management Office  |
| MDRRMP | - | Municipal Disaster Risk Reduction and Management Plan    |
| MENRO  | - | Municipal Environment and Natural Resources Office       |



|          |   |   |
|----------|---|---|
| MGB      | - | Mines and Geosciences Bureau  |
| MNCHN    | - | Maternal, Neonatal, Child Health and Nutrition                            |
| MOA      | - | Memorandum of Agreement   |
| MPA      | - | Marine Protected Area   |
| MSWDO    | - | Municipal Social Welfare and Development Office                           |
| NGCP     | - | National Grid Corporation   |
| NGO–OSCA | - | Non-Government Organization-Office of Senior Citizen’s Affair             |
| NGP      | - | National Greening Program   |
| NUP      | - | Non-Uniformed Personnel   |
| PAGASA   | - | Philippine Atmospheric, Geophysical, Astronomical Services Administration |
| PNP      | - | Philippine National Police  |
| PWD      | - | Person with Disability  |
| RHU      | - | Rural Health Unit   |
| SAFDZ    | - | Strategic Agriculture and Fisheries Development Zones                     |
| SFR      | - | Small Farm Reservoir  |
| SLP      | - | Sustainable Livelihood Program  |
| SWAT     | - | Solid Waste Action Team   |
| SWM      | - | Solid Waste Management  |



|       |   |  |
|-------|---|--|
| TESDA | - | Technical Education and Skills Development Authority |
| UDP   | - | Upland Development Project                           |
| URTI  | - | Upper Respiratory Tract Infection                    |
| VAW   | - | Violence Against Women                               |





**VOLUME III - THE SECTORAL AND SPECIAL AREA STUDIES****CHAPTER I - DEMOGRAPHY****Population Composition**

The Municipality of Anilao has a population of 28,684 based on the 2015 PSA data. Based on the data in Table DE-2, the 2010 population of 27,486 has increased to about 4% in 2015. This population is expected to increase to 38,769 by 2026. The most populated barangay is Barangay Dangula-an while the least populated is Barangay Guipis. Population growth rate is 2.173%.

**Age-Sex Structure**

The 2015 census data revealed that there are 51.70% or 14,827 males and 48.30% or 13,845 females. The sex ratio is 107 males for every 100 females. People belonging to age group 5-9 have the highest number followed by age group 10-14 and 20-24. Table DE-2 also shows that those aging 75-84 have the least number of population count.

Anilao shows a relatively young population with 9,217 children of ages 0-14 years old comprising 9,210 or 32.11% of the total population.

**School- Age Population**

The population data in Table DE-1 shows that there is 8,574 school going population representing 30.0% of the total population of which 4,661 (54.36%) are males and 3,913 or 45.64% are females. The school going population consist of 2,792 or 32.56% are pre-schoolers, 2,078 or 24.23% are elementary, 2,262 or 26.38% are secondary and 1,442 or 16.81% are in the tertiary level.

**Age Dependency Ratio**

Total dependent population is 11,086 or 38% of the total population. This consist of 9,210 (83%) young dependents aging 0-14 years and 1,821 (17%) are the old dependents aging 65 and over. The total dependency ratio is 63.04%. See details also in Table DE-1.



**Potential Labor Force**

Table DE-1 likewise show that labor force population aging 15 and over is 17,586 or 67% of the total population. This is composed of 51.49% males and 48.51% females.

Of the 19,462 in the labor force (15 years and over), 10,021 or 51.49% are males while 9,441 or 48.51% are females. Potential labor force has a sex ratio of 1.06 which means that for every 100 males there are 94 females.

Tables DE-1 and DE-2 as well as Graphs DE-1 and DE-2 shows the population composition by School- Age, Working Age, Dependent Age Group and Sex, Year 2015

**Table DE-1. Population Composition by School-Age, Working-Age, Dependent-Age Group and Sex, Year 2015**

| Age Group                        | Both Sexes    | Male          |               | Female       |               | Sex Ratio   |
|----------------------------------|---------------|---------------|---------------|--------------|---------------|-------------|
|                                  |               | No.           | %             | No.          | %             |             |
| <b>School going population</b>   | <b>8,574</b>  | <b>4,661</b>  | <b>54.36%</b> | <b>3,913</b> | <b>45.64%</b> |             |
| Pre-school (3-6)                 | 2,792         | 1,472         | 52.72%        | 1,320        | 47.28%        | 1.12        |
| Elementary (7-12)                | 2,078         | 1,079         | 51.92%        | 999          | 48.08%        | 1.08        |
| Secondary (13-18)                | 2,262         | 1,535         | 67.86%        | 727          | 32.14%        | 2.11        |
| Tertiary (19-22)                 | 1,442         | 575           | 39.88%        | 867          | 60.12%        | 0.66        |
| <b>Working Age (15-64)</b>       | <b>17,586</b> | <b>9,234</b>  | <b>52.51%</b> | <b>8,352</b> | <b>47.49%</b> | <b>1.11</b> |
| <b>Labor Force (15 and over)</b> | <b>19,462</b> | <b>10,021</b> | <b>51.49%</b> | <b>9,441</b> | <b>48.51%</b> | <b>1.06</b> |
| <b>Dependent Population</b>      | <b>11,086</b> | <b>5,593</b>  | <b>50.45%</b> | <b>5,493</b> | <b>49.55%</b> | <b>1.02</b> |
| Young (0-14)                     | 9,210         | 4,806         | 52.18%        | 4,404        | 47.82%        | 1.09        |
| Old (65-over)                    | 1,876         | 787           | 41.95%        | 1,089        | 58.05%        | 0.72        |

Source: Computed based on latest NSO/PSA data on household population by age group



Graph DE-1. Population Composition by School-Age, Working-Age, Dependent-Age Group and Sex, Year 2015

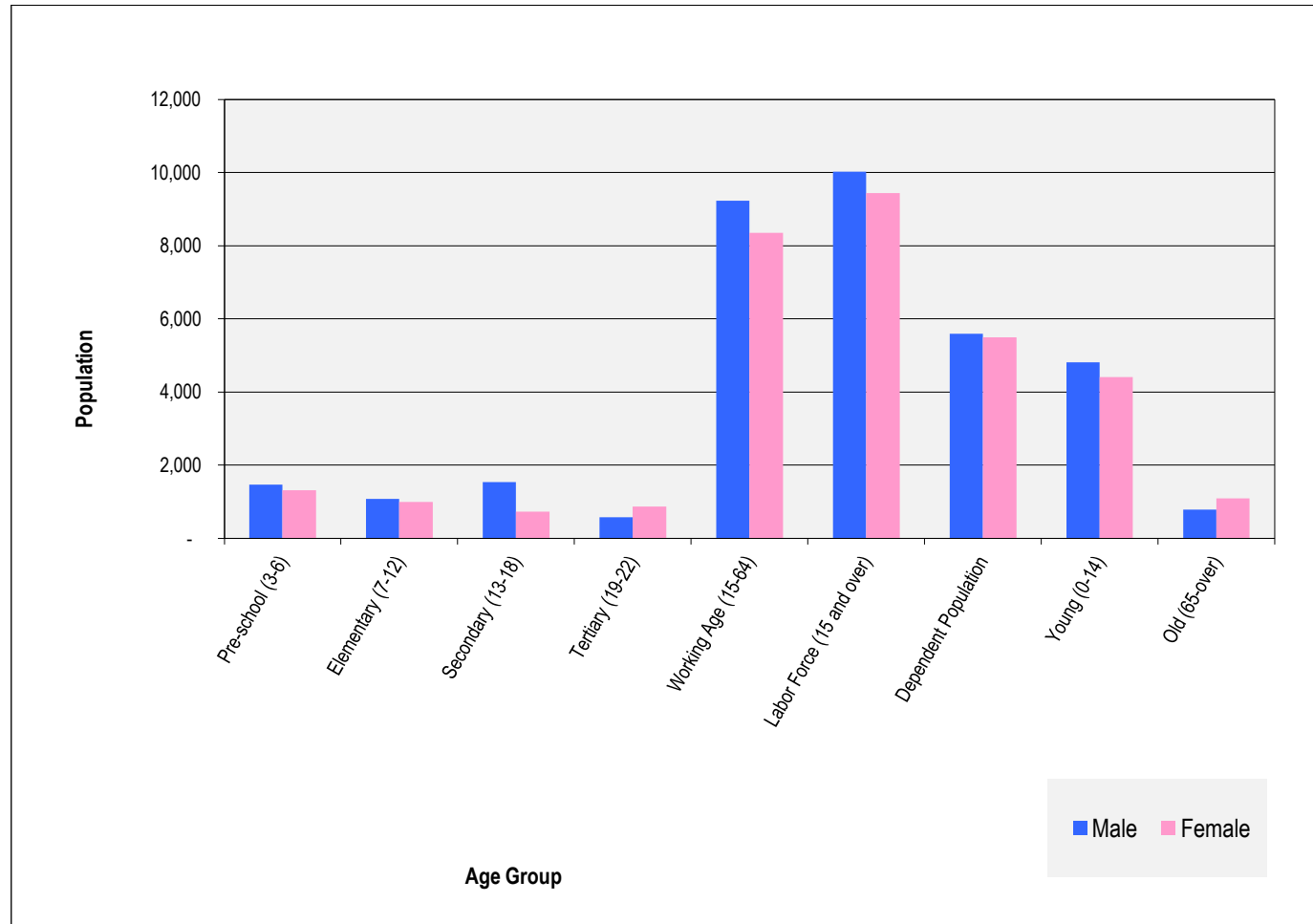


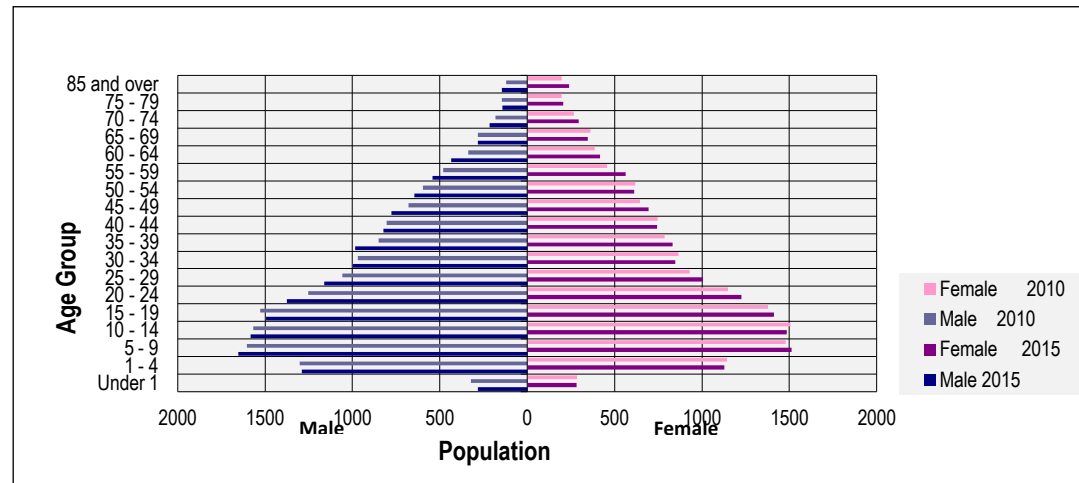
Table DE-2 Population Distribution by Age Group and Sex CY 2015 and 2010

| Age Group    | 2015          |               |               | 2010          |               |               |
|--------------|---------------|---------------|---------------|---------------|---------------|---------------|
|              | Male 2015     | Female 2015   | Total         | Male 2010     | Female 2010   | Total         |
| Under 1      | 281           | 281           | 569           | 322           | 284           | 606           |
| 1 - 4        | 1,289         | 1,127         | 2,416         | 1,303         | 1,144         | 2,447         |
| 5 - 9        | 1,653         | 1,511         | 3,164         | 1,604         | 1,480         | 3,084         |
| 10 - 14      | 1,583         | 1,485         | 3,068         | 1,568         | 1,507         | 3,075         |
| 15 - 19      | 1,494         | 1,411         | 2,905         | 1,529         | 1,378         | 2,907         |
| 20 - 24      | 1,375         | 1,226         | 2,601         | 1,252         | 1,150         | 2,402         |
| 25 - 29      | 1,162         | 1,006         | 2,168         | 1,058         | 930           | 1,988         |
| 30 - 34      | 997           | 848           | 1,845         | 968           | 866           | 1,834         |
| 35 - 39      | 986           | 832           | 1,818         | 850           | 787           | 1,637         |
| 40 - 44      | 823           | 743           | 1,566         | 804           | 746           | 1,550         |
| 45 - 49      | 776           | 693           | 1,469         | 678           | 646           | 1,324         |
| 50 - 54      | 646           | 612           | 1,258         | 598           | 619           | 1,217         |
| 55 - 59      | 541           | 563           | 1,104         | 482           | 455           | 937           |
| 60 - 64      | 434           | 418           | 852           | 338           | 386           | 724           |
| 65 - 69      | 283           | 346           | 629           | 283           | 363           | 646           |
| 70 - 74      | 215           | 296           | 511           | 183           | 266           | 449           |
| 75 - 79      | 143           | 206           | 349           | 144           | 196           | 340           |
| 85 and over  | 146           | 241           | 387           | 121           | 198           | 319           |
| <b>Total</b> | <b>14,827</b> | <b>13,845</b> | <b>28,679</b> | <b>14,085</b> | <b>13,401</b> | <b>27,486</b> |

Source: PSAMunicipal Records



Graph DE-2. Population Distribution by Age Group and Sex CY 2015 vs CY 2010



Source: Philippine Statistics Authority/Municipal Records

**Population Distribution**

**Urban and Rural Population**

The Municipality of Anilao is predominantly rural. As shown in Table DE-3, of the 28,679 total household population, urban population totals to 2,197 or 8.23% while 26,482 or 92.77 are the rural population. Among the rural barangays, Barangay Dangula-an is the largest in terms of population with 2,643 and 620 number households while Barangay Guipis is the least populous with 511 and least number of households with 123. The average household size in the municipality is 4.36. Barangay Mostro has the biggest household size of 4.72 and Barangay Sambag Culob has 3.82 household size being the lowest.



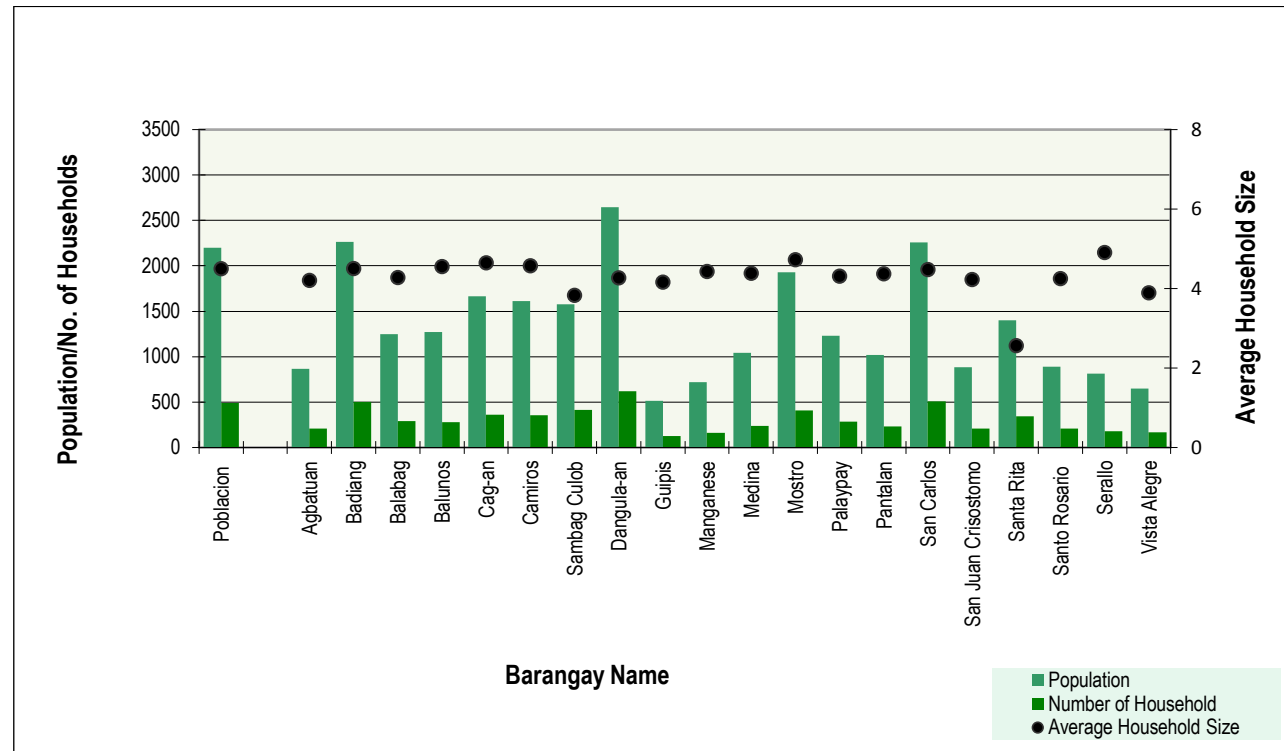
**Table DE-3. Household Population by Urban and Rural and Average Household Size, 2015**

| Barangay            | Population    | Number of Household | Average Household Size |
|---------------------|---------------|---------------------|------------------------|
| <b>Urban</b>        |               |                     |                        |
| Poblacion           | 2,197         | 489                 | 4.49                   |
| <b>Sub-Total</b>    | <b>2,197</b>  | <b>489</b>          | <b>4.49</b>            |
| <b>Rural</b>        |               |                     |                        |
| Agbatuan            | 865           | 206                 | 4.20                   |
| Badiang             | 2,262         | 503                 | 4.50                   |
| Balabag             | 1,247         | 292                 | 4.27                   |
| Balunos             | 1,273         | 280                 | 4.55                   |
| Cag-an              | 1,666         | 359                 | 4.64                   |
| Camiros             | 1,612         | 353                 | 4.57                   |
| Sambag Culob        | 1,575         | 412                 | 3.82                   |
| Dangula-an          | 2,643         | 620                 | 4.26                   |
| Guipis              | 511           | 123                 | 4.15                   |
| Manganese           | 721           | 163                 | 4.42                   |
| Medina              | 1,042         | 238                 | 4.38                   |
| Mostro              | 1,930         | 409                 | 4.72                   |
| Palaypay            | 1,227         | 285                 | 4.31                   |
| Pantalan            | 1,017         | 233                 | 4.36                   |
| San Carlos          | 2,258         | 505                 | 4.47                   |
| San Juan Crisostomo | 882           | 209                 | 4.22                   |
| Santa Rita          | 1,400         | 345                 | 2.56                   |
| Santo Rosario       | 887           | 209                 | 4.24                   |
| Serallo             | 815           | 181                 | 4.90                   |
| Vista Alegre        | 649           | 167                 | 3.89                   |
| <b>Sub-Total</b>    | <b>26,482</b> | <b>6,092</b>        | <b>4.35</b>            |
| <b>Total</b>        | <b>28,679</b> | <b>6,581</b>        | <b>4.36</b>            |

Source: Philippine Statistics Authority/Municipal Records



Graph DE-3. Household Population by Urban and Rural Barangay and Average Household Size, 2015



Source: Philippine Statistics Authority/Municipal Records

**Urbanization Level**

Urbanization level of the municipality as reflected in table DE-4 shows a decreasing trend from 8.3% in 1995 it went down to 7.7% in 2015.

In terms of population growth rate, the urban and rural population growth rate shows a decreasing and increasing trend from 1995 up to the present. However, in 2010 the rural growth rate shows a remarkable increase from 0.82% in 2007 to 6.11% in 2010 then decreases again to 0.81% in 2015. The increase in growth rate of the rural barangays in 2007 was attributed to the increase in population of Barangay Dangula- an which has a boundary issue with the adjacent barangays of Banate. See also Graph DE-4.

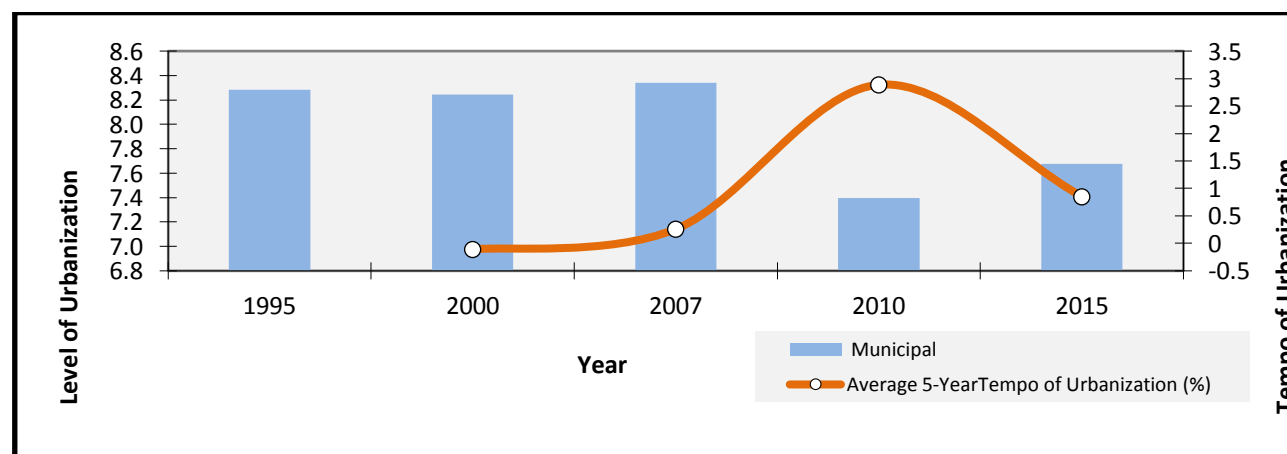


Table DE-4. Urbanization Level for the Past 20 Years, 1995-2015

| Year             | Municipal Population |        |        | Average Yearly Population Growth Rate (%) |       | Average 5-Year Tempo of Urbanization (%) | Level of Urbanization (%) |            |
|------------------|----------------------|--------|--------|---|-------|--|---------------------------|------------|
|                  | Urban                | Rural  | Total  | Urban                                     | Rural |  | Municipal                 | Provincial |
| 1995             | 1,716                | 18,995 | 20,711 | 0.00                                      | 0.00  |  | 8.3                       | 45.5       |
| 2000             | 1,828                | 20,342 | 22,170 | 1.31                                      | 1.42  | -0.11                                    | 8.2                       | 44.8       |
| 2007             | 1,957                | 21,508 | 23,465 | 1.01                                      | 0.82  | 0.26                                     | 8.3                       | 44.0       |
| 2010             | 2,033                | 25,453 | 27,486 | 1.29                                      | 6.11  | 2.89                                     | 7.4                       | 45.2       |
| 2015             | 2,202                | 26,482 | 28,684 | 1.66                                      | 0.81  | 0.85                                     | 7.7                       | 47.0       |
| next censal year | -                    | -      | -      |   |       |  |                           |            |

Source: PSA

Graph DE-4. Urbanization Level for the Past 20 Years, 1995-2015



Source: PSA





**Population Density**

As shown in Table DE-5 and Graph DE-5, the gross population density is 3 persons per hectare of the land area in Anilao. The most densely populated barangay is the Barangay Poblacion with population density of 11 and the least densely populated are barangays Balabag, Guipis and Manganese with a population density of 1.

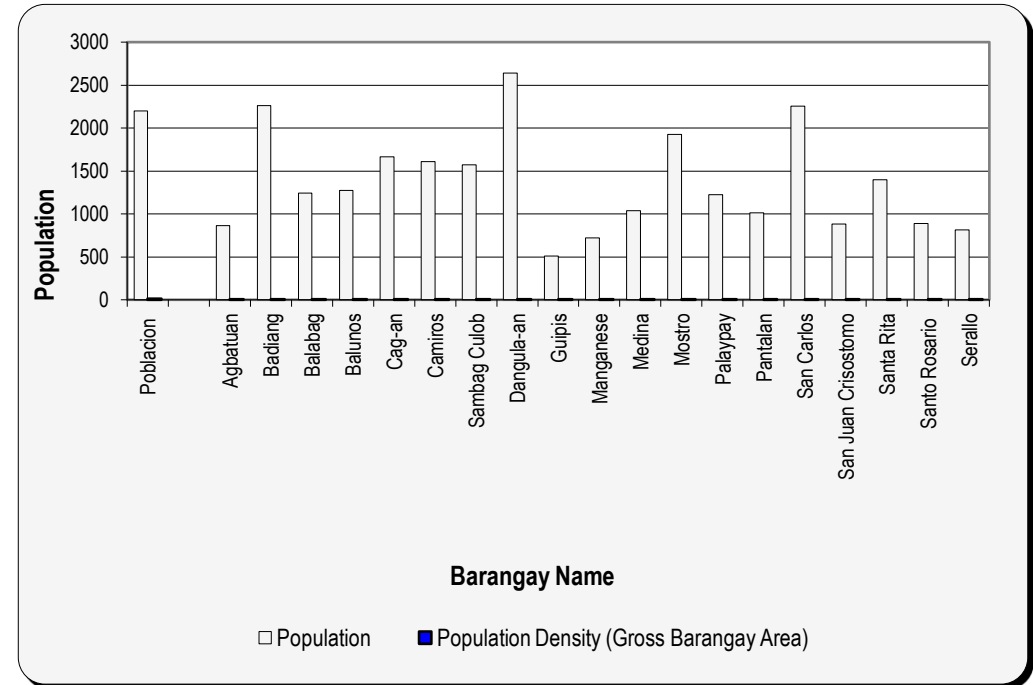
Figure DE-1. (Population Density Map) also show the range in population density. Barangays Guipis, Manganese, Balunos, Cagan, Balabag, Palaypay and Pantalan have the lowest population density that ranged from 1 to 2 persons per square kilometer, Barangays Mostro, San Carlos, Vista Alegre, Agbatuan, San Juan Crisostomo and Sambag Culob have a population density of 3 persons per square kilometer, Barangays Badiang, Serallo and Sto. Rosario have 4 to 5 persons per square kilometer, Barangays Dangulaan, Camiros and Medina have 6 to 7 persons per square kilometer while Barangays Sta. Rita and Poblacion have the highest population density of 8 to 11 persons per square kilometer.



Table DE-5. Population Density by Barangay, 2015

| Barangay            | Population    | Gross Area (ha)  | Population Density (Gross Barangay Area) |
|---------------------|---------------|------------------|--|
| <b>Urban</b>        |               |                  |  |
| Poblacion           | 2,202         | 191.86           | 11                                       |
| <b>Subtotal</b>     | <b>2,202</b>  | <b>191.86</b>    | <b>11</b>                                |
| <b>Rural</b>        |               |                  |  |
| Agbatuan            | 865           | 264.32           | 3  |
| Badiang             | 2,262         | 633.04           | 4  |
| Balabag             | 1,247         | 924.1            | 1  |
| Balunos             | 1,273         | 609.92           | 2  |
| Cag-an              | 1,666         | 1083.21          | 2  |
| Camiros             | 1,612         | 267.68           | 6  |
| Sambag Culob        | 1,575         | 590.96           | 3  |
| Dangula-an          | 2,643         | 391.58           | 7  |
| pis                 | 511           | 452.66           | 1  |
| Manganese           | 721           | 1092.38          | 1  |
| Medina              | 1,042         | 179.15           | 6  |
| Mostro              | 1,930         | 769.08           | 3  |
| Palaypay            | 1,227         | 538.60           | 2  |
| Pantalan            | 1,017         | 448.06           | 2  |
| San Carlos          | 2,258         | 682.25           | 3  |
| San Juan Crisostomo | 882           | 283.52           | 3  |
| Santa Rita          | 1,400         | 167.32           | 8  |
| Santo Rosario       | 887           | 184.50           | 5  |
| Serallo             | 815           | 169.12           | 5  |
| Vista Alegre        | 649           | 218.46           | 3  |
| <b>Subtotal</b>     | <b>26,482</b> | <b>9949.91</b>   | <b>3</b>                                 |
| <b>Total</b>        | <b>28,684</b> | <b>10,141.77</b> | <b>3</b>                                 |

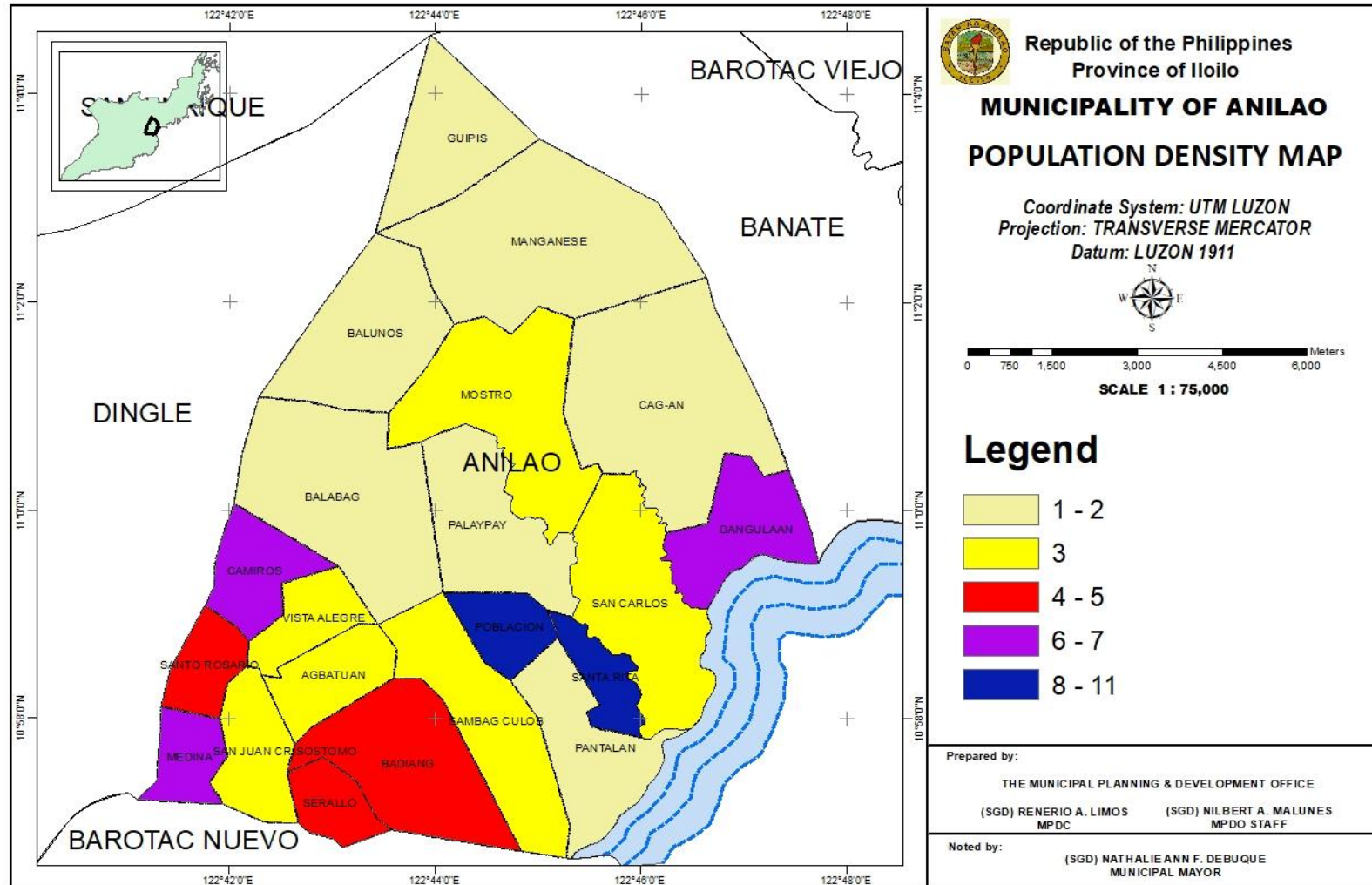
Graph DE-5. Population Density by Barangay, 2015



Source: Municipal Planning Development Office and PSA



Figure DE-1. Population Density Map



Source: MPDO



**Population Changes**

**Historical Growth of Population**

Based on the 2015 PSA data, Anilao has a total population of 28,684 and an average annual growth rate of 0.86%. This figure is higher compared to the growth rate of the Province of Iloilo which is only 1.34%. The average growth rate of the municipality was at its highest between census years 1048, 1960 up to 1980. A very significant increase in population and growth rate was in 2010. This is attributed to Barangay Dangula- which has registered an average annual growth rate of 6.11%. See Table DE-6.

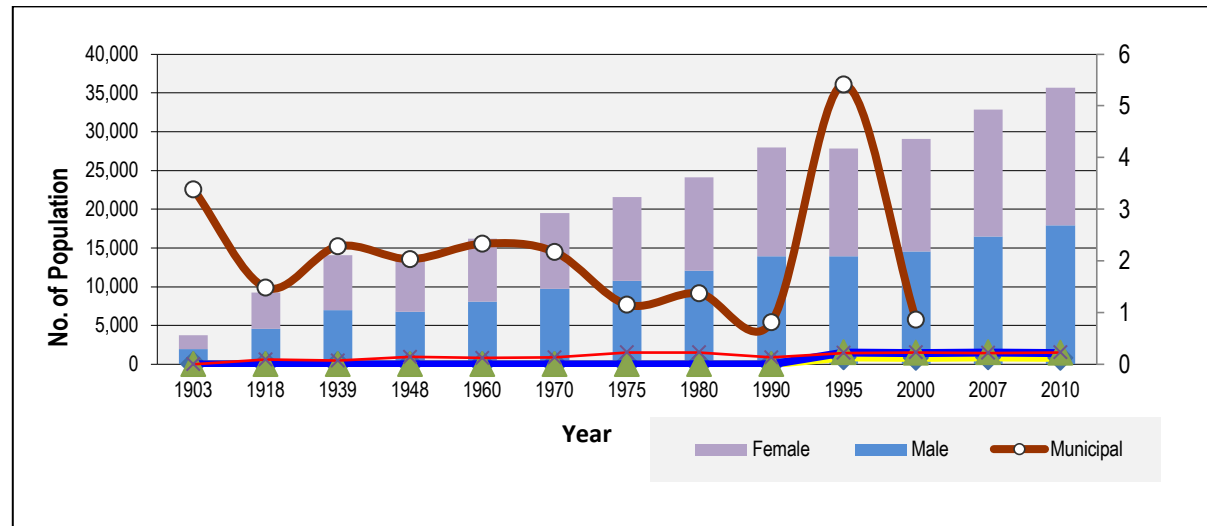
**Table DE-6. Historical Growth of Population, 1903-2015**

| Year | Municipal  |         |        |                   |         |         | Annual Growth Rate (%) |
|------|------------|---------|--------|-------------------|---------|---------|------------------------|
|      | Population |         |        | Increase/Decrease |         |         |                        |
|      | Male       | Female  | Total  | Male              | Female  | Total   | Municipal              |
| 1903 | 567        | 390     | 1,911  |                   |         |         | 3.38                   |
| 1948 | No data    | No data | 8,516  | No data           | No data | +6,605  | 1.48                   |
| 1960 | No data    | No data | 10,153 | No data           | No data | +1,637  | 1.77                   |
| 1970 | No data    | No data | 12,722 | No data           | No data | +2,559  | 2.28                   |
| 1975 | No data    | No data | 14,067 | No data           | No data | +1,345  | 2.03                   |
| 1980 | No data    | No data | 15,782 | No data           | No data | + 1,715 | 2.33                   |
| 1990 | No data    | No data | 19,560 | No data           | No data | +3,778  | 2.17                   |
| 1995 | 10,581     | 11,130  | 20,711 | No data           | No data | +1,151  | 1.15                   |
| 2000 | 11,211     | 10,945  | 22,170 | +630              | -185    | +1,459  | 1.37                   |
| 2007 | No data    | No data | 23,465 | No data           | No data | +1,295  | 0.81                   |
| 2010 | No data    | No data | 27,486 | No data           | No data | +4,021  | 2.17                   |
| 2015 | 14,827     | 13,852  | 28,684 | No data           | No data | +1,198  | 0.86                   |

Source: PSA



Graph DE-6. Historical Growth of Population



Source: MPDO/PSA

**Crude Birth Rate and Crude Death Rate**

Based on Table DE -7, data from the Municipal Health Office shows that the municipality has a crude birth rate of 13.76 as of 2015. This is slightly higher compared to data starting 2012 to 2014. However, the data also showed a higher rate at 14.11 in 2011. Crude birth rate refers to the number of livebirths per 1000 population. Compared to previous years, the 2015 figure is slightly higher over the past four years.

Same table shows that the crude death rate in 2011 is 3.87 and it increased to 4.00 in 2012 and 2013 but decreased to 2.00 in 2015. This maybe attributed to the decreasing trend in the number of deaths in infant mortality rate and young child mortality rate for the last five years. Crude death rate refers to the number of deaths per 1000 population. The data showed a decreasing trend in the number of deaths over the last two years (see Graph DE-7).

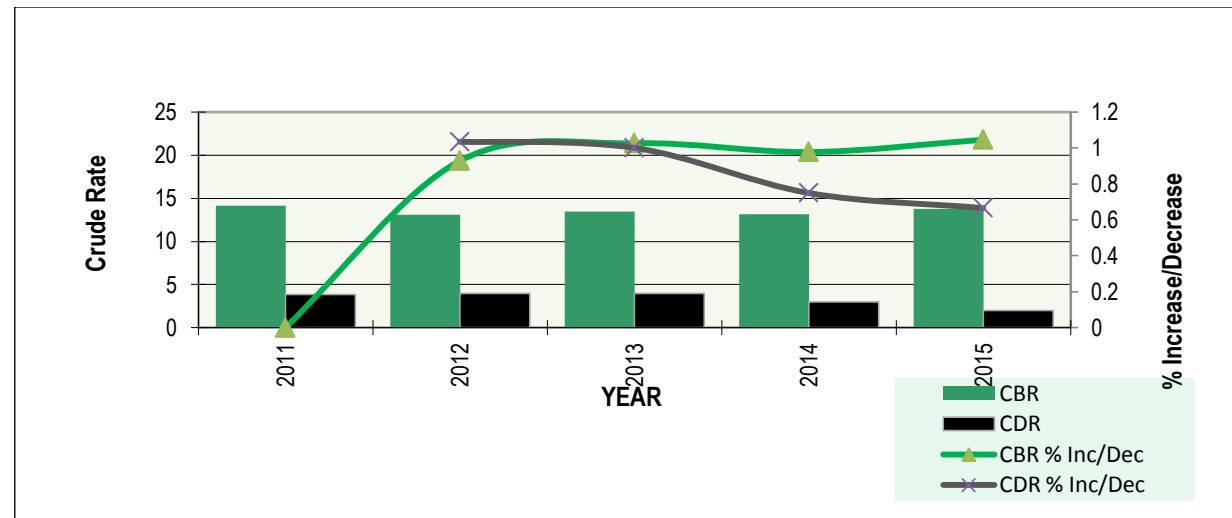


Table DE-7. Crude Birth Rate (CBR) and Crude Death Rate (CDR) for the Past Five Years/  
Planning Period (2011- 2015)

| Period | CBR   | % Increase/Decrease from Previous Year | CDR  | % Increase/ Decrease from Previous Year |
|--------|-------|--|------|---|
| 2011   | 14.11 | 0                                      | 3.87 |   |
| 2012   | 13.1  | 0.93                                   | 4.00 | 1.03                                    |
| 2013   | 13.45 | 1.03                                   | 4.00 | 1.00                                    |
| 2014   | 13.15 | 0.98                                   | 3.00 | 0.75                                    |
| 2015   | 13.76 | 1.05                                   | 2.00 | 0.67                                    |

Source: MHO

Graph DE-7. Crude Birth Rate (CBR) and Crude Death Rate (CDR) for the Past Five years, 2011-2015



Source: MHO



Other Population Characteristics

Literacy Rate

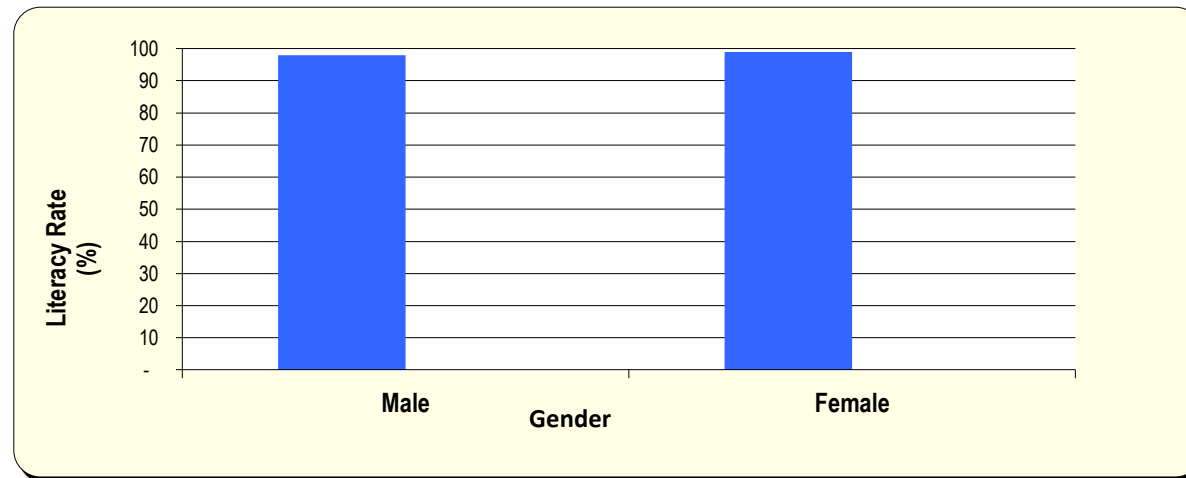
As reflected in table DE-8 and Graph DE-8, the Municipality of Anilao has a literacy rate of 99% based on the total 11,604 population 10 years and over. Of these, 11,406 are males while 10,796 are females.

Table DE- 8. Literacy Rate of Population 10 years and Over by Sex, 2015

| Indicator                          | Municipal     |        |               |        |               |        |
|------------------------------------|---------------|--------|---------------|--------|---------------|--------|
|                                    | Male          |        | Female        |        | Both Sex      |        |
|                                    | No.           | Rate % | No.           | Rate % | No.           | Rate % |
| Literate                           | 11,406        | 98     | 10,796        | 99     | 22,202        | 99     |
| Illiterate                         | 198           | 2      | 130           | 1      | 328           | 1      |
| <b>Total (Population &gt;10yr)</b> | <b>11,604</b> |        | <b>10,926</b> |        | <b>22,530</b> |        |

Source: PSA

Graph DE- 8. Literacy Rate of Population 10 Years and Over By Sex, 2015



Source: PSA



**Highest Educational Attainment**

Based on the Table DE-9, out of the 25,699 population for both sexes 5 years and over in 2015, the following are highest grade/year completed; No Grade Completed (697), Pre-school (683) Special Education (10) Elementary Level (6,276), Elementary Graduate (3,016) High School Undergraduate (3,773), High School Graduate (5,675), Post-Secondary (1,079) College Undergraduate (2,321), Academic Degree Holder (2,135) and Post Baccalaureate (26).

**Table DE-9. Household Population 5 Years Old and Over by Highest Educational Attainment, Year 2015**

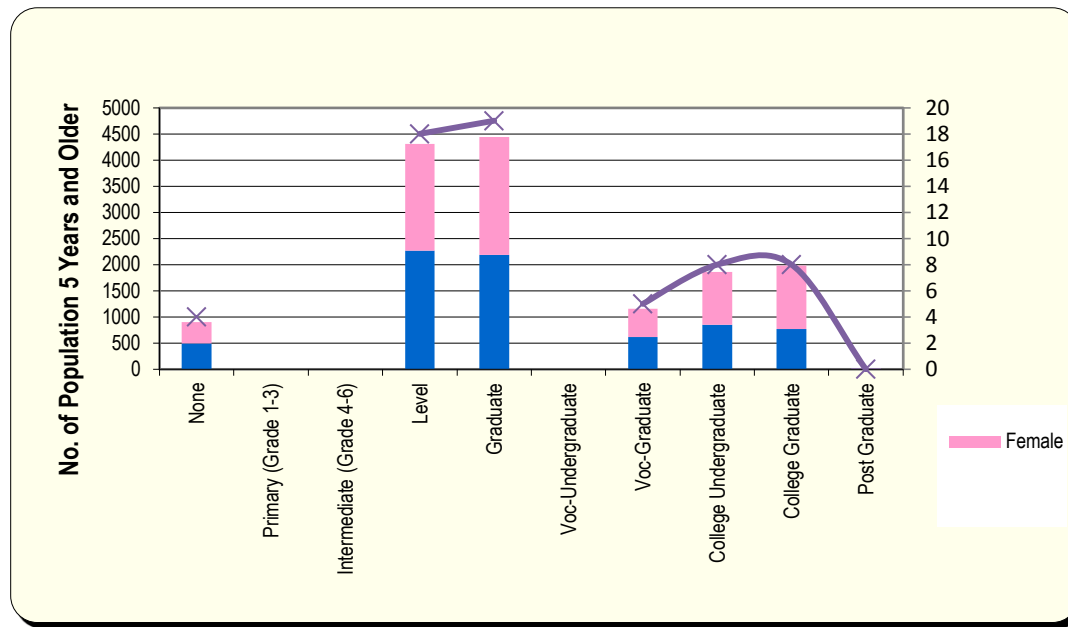
| Highest Grade/ Year Completed | Municipal    |      |              |       |              |       |
|-------------------------------|--------------|------|--------------|-------|--------------|-------|
|                               | Male         |      | Female       |       | Both Sexes   |       |
|                               | No.          | %    | No.          | %     | No.          | %     |
| No Grade Completed            | 384          | 2.9  | 313          | 2.52  | 697          | 2.71  |
| Pre-school                    | 371          | 2.8  | 312          | 2.51  | 683          | 2.66  |
| Special Education             | 6            | 0.0  | 4            | 0.03  | 10           | 0.04  |
| Elementary Level              | 3505         | 26.4 | 2771         | 22.27 | 6276         | 24.42 |
| Elementary Graduate           | 1558         | 11.8 | 1458         | 11.72 | 3016         | 11.74 |
| High School Undergraduate     | 2024         | 15.3 | 1749         | 14.06 | 3773         | 14.68 |
| High School Graduate          | 2843         | 21.4 | 2832         | 22.76 | 5675         | 22.08 |
| Post-Secondary                | 555          | 4.2  | 524          | 4.21  | 1079         | 4.20  |
| College Undergraduate         | 1115         | 8.4  | 1206         | 9.69  | 2321         | 9.03  |
| Academic Degree Holder        | 886          | 6.7  | 1249         | 10.04 | 2135         | 8.31  |
| Post Baccalaureate            | 7            | 0.1  | 19           | 0.15  | 26           | 0.10  |
| Not Stated                    | 4            | 0.0  | 4            | 0.03  | 8            | 0.03  |
| <b>TOTAL</b>                  | <b>13258</b> |      | <b>12441</b> |       | <b>25699</b> |       |

Source: PSA





Graph DE-9. Population 5 Years Old and Over by Highest Educational Attainment Year 2015



Source: PSA

**Labor Force Population by Sex and Employment Status**

As shown in Table DE-10 and Graph DE-10, out of 18,398 population 15 years and over, 8,004 or 43.50% are employed. Of these, 5,563 or 59.70% are males and 2,441 or 26.90% are females. Compared to the provincial data, the employment rate of Anilao is lower than that of the province. This data was taken from the Household Survey on Population conducted by the Commission on Population in 2011.

However, the data from the Western Visayas Labor Force Survey in 2011 showed a labor force participation rate of 65.7 per cent with an employment rate of 93.6 percent, 6.4 percent unemployment rate and 22.3 percent underemployment rate for the whole Region 6.

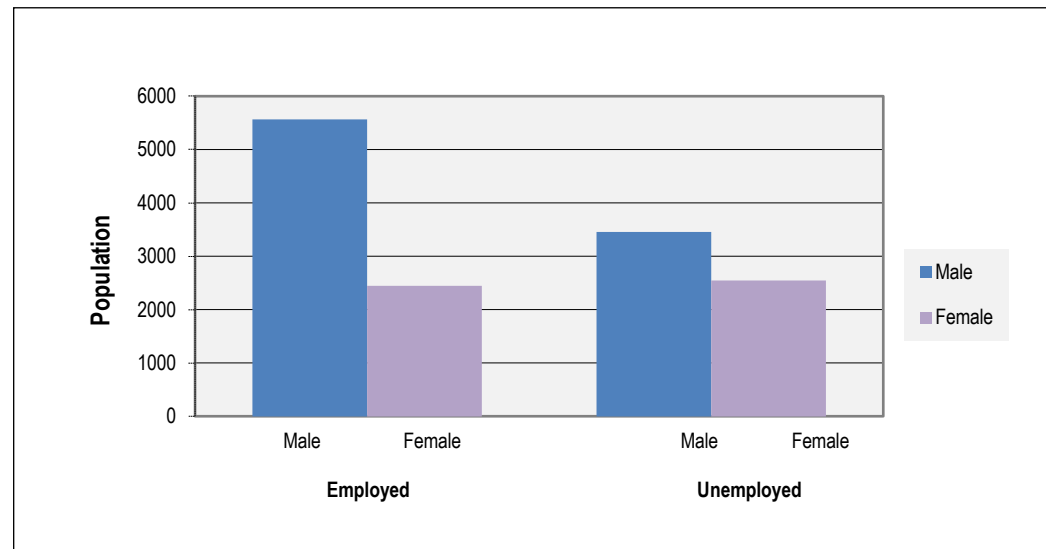


**Table DE-10. Labor Force Population by Sex and Employment, 2011**

| Sex        | Municipal                   |          |       |            |       | Provincial                 |          |      |            |      | *Not in Labor Force |
|------------|-----------------------------|----------|-------|------------|-------|----------------------------|----------|------|------------|------|---------------------|
|            | Population 15 Yrs. and Over | Employed | %     | Unemployed | %     | Population 15 Yrs and Over | Employed | %    | Unemployed | %    |                     |
| Male       | 9312                        | 5563     | 59.70 | 3456       | 37.10 | 643,169                    | 382,947  | 59.5 | 149,416    | 23.2 | 293/1108            |
| Female     | 9086                        | 2441     | 26.90 | 2541       | 28.00 | 639,945                    | 198,912  | 31.1 | 124,828    | 19.5 | 4104/316            |
| Both Sexes | 18398                       | 8004     | 43.50 | 5997       | 32.60 | 1,283,114                  | 581,859  | 45.3 | 274,244    | 21.4 |                     |

Source: PPO

**Graph DE-10. Labor Force Population by Sex and Employment Status, 2011**



Source: PPO



**Religious Affiliation**

In the absence of data from the PSA, the data from the Iloilo Provincial Population Office Household Survey in 2011 was used to identify the various religious affiliations in the municipality. The data shows that majority of the Anilaonons (95,79%) are Roman Catholic, 1.52% are Baptist, 1.48% are Iglesia ni Kristo, 0.43% are Jehovah’s Witness, 0.42% were identified as others to include Atheist among others, the remaining 0.37% are Aglipay, Born Again, Seventh Day Adventist and Protestants.

**Table DE-11. Population by Religious Affiliation, 2011**

| Religious Affiliation  | CY 2011 No. of Population | % to Total Population |
|------------------------|---------------------------|-----------------------|
| Roman Catholic         | 26,009                    | 95.79%                |
| Baptist                | 412                       | 1.52%                 |
| Iglesia ni Kristo      | 401                       | 1.48%                 |
| Jehovah’s Witness      | 116                       | 0.43%                 |
| Others (Atheist, etc.) | 113                       | 0.42%                 |
| Aglipay                | 32                        | 0.12%                 |
| Born Again             | 27                        | 0.10%                 |
| Seventh Day Adventist  | 25                        | 0.09%                 |
| Protestant             | 17                        | 0.06%                 |
| <b>Total</b>           | <b>27,152</b>             | <b>100.00%</b>        |

Source: Provincial Population Office Household Survey 2011

Table DE-12 also shows that majority of the religious establishments in the Municipality of Anilao are Roman Catholic. The same table shows that only the Roman Catholic Chapel located in Barangay Badiang was identified with high level of susceptibility to flood due to its proximity near the creek. Sta. Rita de Casia, the Roman Catholic Church in Poblacion and the rest of the religious establishments have low susceptibility to different hazards.

These establishments are not used as evacuation centers but served as the venue for information dissemination regarding dangers of incoming disasters.



**Table DE-12. Inventory of Religious Establishments, 2015**

| Barangay            | Name of Religious Establishment | Type of Religion      | Area (sq m) | Hazard Susceptibility (H/M/L) |    |    | Used as Evacuation Center (Y/N) |
|---------------------|---------------------------------|-----------------------|-------------|-------------------------------|----|----|---------------------------------|
|                     |                                 |                       |             | FI                            | Ln | Su |                                 |
| Poblacion           | Sta. Rita de Cascia             | Roman Catholic        | 1750        |                               | L  |    | N                               |
|                     |                                 | Baptist               | 180         |                               | L  |    | N                               |
|                     |                                 | Saksi ni Jehova       | 450         |                               | L  |    | N                               |
| San Carlos          |                                 | Iglesia ni Kristo     | 2000        | L                             |    |    | N                               |
|                     | Barangay Chapel                 | Roman Catholic        | 64          |                               | L  |    | N                               |
|                     |                                 | Seventh Day Adventist | 150         | L                             |    |    | N                               |
| Badiang             |                                 | Baptist               | 110         |                               | L  |    | N                               |
|                     | Barangay Chapel                 | Roman Catholic        | 230         | H                             |    |    | N                               |
| Agbatuan            |                                 | Iglesia ni Kristo     | 160         | L                             |    |    | N                               |
|                     | Barangay Chapel                 | Roman Catholic        | 64          | L                             |    |    | N                               |
| Balabag             | Barangay Chapel                 | Roman Catholic        | 64          |                               | M  |    | N                               |
| Balunos             | Barangay Chapel                 | Roman Catholic        | 64          |                               | M  |    | N                               |
| Cag-an              | Barangay Chapel                 | Roman Catholic        | 64          | M                             |    |    | N                               |
| Camiros             | Barangay Chapel                 | Baptist               | 110         |                               | L  |    | N                               |
|                     |                                 | Roman Catholic        | 64          |                               | L  |    | N                               |
| Sambag Culob        | Barangay Chapel                 | Roman Catholic        | 64          | L                             |    |    | N                               |
| Dangula-an          | Barangay Chapel                 | Roman Catholic        | 64          |                               | L  |    | N                               |
| Guipis              | Barangay Chapel                 | Roman Catholic        | 64          |                               | L  |    | N                               |
| Manganese           | Barangay Chapel                 | Roman Catholic        | 64          |                               | L  |    | N                               |
| Medina              | Barangay Chapel                 | Roman Catholic        | 64          |                               | M  |    | N                               |
|                     |                                 | Roman Catholic        | 64          | M                             |    |    | N                               |
|                     |                                 | Baptist               | 120         | M                             |    |    | N                               |
| Mostro              |                                 | Seventh Day Adventist | 64          | L                             |    |    | N                               |
|                     |                                 | Roman Catholic        | 64          | M                             |    |    | N                               |
| Palaypay            | Barangay Chapel                 | Roman Catholic        | 64          | M                             |    |    | N                               |
| Pantalan            | Barangay Chapel                 | Roman Catholic        | 64          | M                             | L  | M  | N                               |
| San Juan Crisostomo | Barangay Chapel                 | Roman Catholic        | 64          |                               |    |    | N                               |
| Santa Rita          | Barangay Chapel                 | Roman Catholic        | 64          | M                             | L  |    | N                               |
| Santo Rosario       | Barangay Chapel                 | Roman Catholic        | 64          |                               |    |    | N                               |
| Serallo             | Barangay Chapel                 | Roman Catholic        | 64          | M                             |    |    | N                               |
| Vista Alegre        | Barangay Chapel                 | Roman Catholic        | 64          | M                             |    |    | N                               |

Source: MPDO

Legend: FI – Flooding Ln – Landslide Su – Storm Surge

Susceptibility Level: L - Low M – Moderate H - High



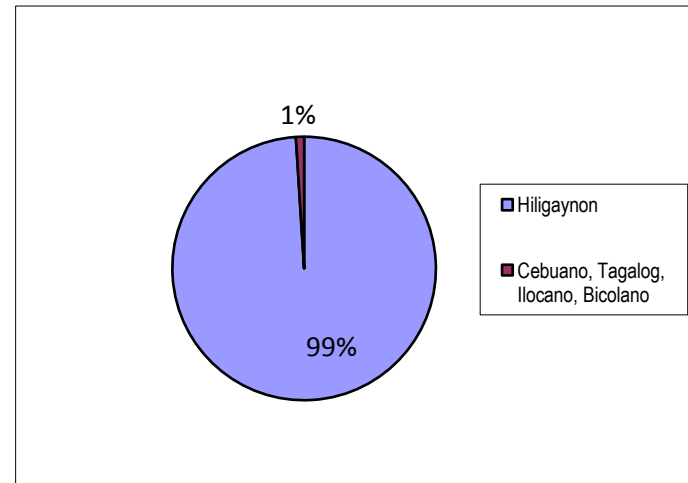
**Mother Tongue**

In the absence of data from PSA, the most recent data from the Iloilo Provincial Population Household Survey 2011 was used. The data as shown in Table DE-13 shows that 99% of the households in Anilao speak Hiligaynon while the remaining 1% speaks either Cebuano, Tagalog, Ilocano or Bicolano.

**Table DE- 13. Household Population by Mother Tongue, 2011**

| Mother Tongue                       | Number of Household | % to Total Households |
|-------------------------------------|---------------------|-----------------------|
| Hiligaynon                          | 6,515               | 99                    |
| Cebuano, Tagalog, Ilocano, Bicolano | 66                  | 1                     |
| <b>Total</b>                        | <b>6,581</b>        | <b>100</b>            |

**Graph DE-13. Mother Tongue Distribution among Households**



Source: PPO, Household Survey 2011



**Population Projection and Estimates**

**Projected Population by Barangay**

With an average annual growth rate of 2.173% (2000-2010), the projected population of the municipality will be 38,769 by 2026. The most populated barangay is Barangay Dangula-an and will have a projected population of 4,845 and the least populated is Barangay Guipis with a population of 759 by 2026. Table DE-14 and Graphs DE-14, 14-A and 14B show the projected population for the ten-year planning period.

**Doubling Time**

The 2010 Census of Population and Housing placed the population at 27,486 and a growth rate of 2.17 in the period 2000-2010 (see Table DE-14). This has a doubling time of 32 years, which means that it will take 32 years for the municipality to double its population.

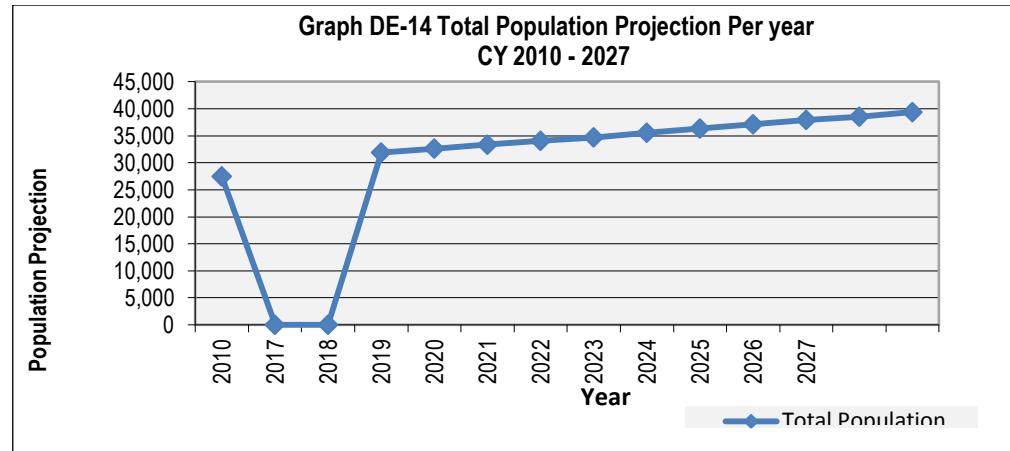


Table DE-14. Population Projection by Barangay, 2017-2027

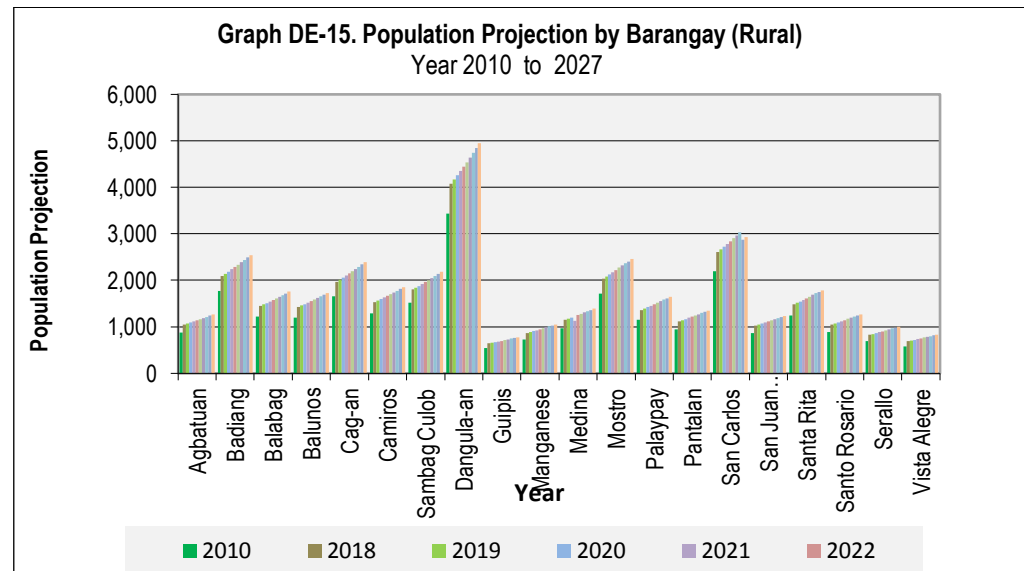
| BARANGAY           | Base Population |               | r              | Participation Rate (PR) | Population    |               |               |               |               |               |               |               |               |               |               |
|--------------------|-----------------|---------------|----------------|-------------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                    | 2000            | 2010          |                |                         | 2017          | 2018          | 2019          | 2020          | 2021          | 2022          | 2023          | 2024          | 2025          | 2026          | 2027          |
| <b>TOTAL</b>       | <b>22,170</b>   | <b>27,486</b> |                | <b>1.00</b>             | <b>31,950</b> | <b>32,644</b> | <b>33,353</b> | <b>34,078</b> | <b>34,818</b> | <b>35,575</b> | <b>36,348</b> | <b>37,138</b> | <b>37,945</b> | <b>38,769</b> | <b>39,612</b> |
| Urban              |                 |               |                |                         |               |               |               |               |               |               |               |               |               |               |               |
| Poblacion          | 1,828           | 2,033         | 0.02173        | 0.07                    | 2,363         | 2,414         | 2,467         | 2,521         | 2,575         | 2,631         | 2,688         | 2,747         | 2,807         | 2,868         | 2,930         |
| <b>Sub-Total</b>   | <b>1,828</b>    | <b>2,033</b>  |                | <b>0.07</b>             | <b>2,363</b>  | <b>2,414</b>  | <b>2,467</b>  | <b>2,521</b>  | <b>2,575</b>  | <b>2,631</b>  | <b>2,688</b>  | <b>2,747</b>  | <b>2,807</b>  | <b>2,868</b>  | <b>2,930</b>  |
| Rural              |                 |               |                |                         |               |               |               |               |               |               |               |               |               |               |               |
| Agbatuan           | 577             | 877           | 0.02173        | 0.03                    | 1,019         | 1,042         | 1,064         | 1,087         | 1,111         | 1,135         | 1,160         | 1,185         | 1,211         | 1,237         | 1,264         |
| Badiang            | 1,448           | 1,765         | 0.02173        | 0.06                    | 2,052         | 2,096         | 2,142         | 2,188         | 2,236         | 2,284         | 2,334         | 2,385         | 2,437         | 2,490         | 2,544         |
| Balabag            | 1,024           | 1,218         | 0.02173        | 0.04                    | 1,416         | 1,447         | 1,478         | 1,510         | 1,543         | 1,576         | 1,611         | 1,646         | 1,681         | 1,718         | 1,755         |
| Balunos            | 1,107           | 1,199         | 0.02173        | 0.04                    | 1,394         | 1,424         | 1,455         | 1,487         | 1,519         | 1,552         | 1,586         | 1,620         | 1,655         | 1,691         | 1,728         |
| Cag-an             | 1,484           | 1,659         | 0.02173        | 0.06                    | 1,928         | 1,970         | 2,013         | 2,057         | 2,102         | 2,147         | 2,194         | 2,242         | 2,290         | 2,340         | 2,391         |
| Camiros            | 1,195           | 1,285         | 0.02173        | 0.05                    | 1,494         | 1,526         | 1,559         | 1,593         | 1,628         | 1,663         | 1,699         | 1,736         | 1,774         | 1,812         | 1,852         |
| Sambag Culob       | 1,212           | 1,515         | 0.02173        | 0.06                    | 1,761         | 1,799         | 1,838         | 1,878         | 1,919         | 1,961         | 2,003         | 2,047         | 2,091         | 2,137         | 2,183         |
| Dangula-an         | 1,412           | 3,435         | 0.02173        | 0.12                    | 3,993         | 4,080         | 4,168         | 4,259         | 4,351         | 4,446         | 4,543         | 4,641         | 4,742         | 4,845         | 4,950         |
| Guipis             | 517             | 538           | 0.02173        | 0.02                    | 625           | 639           | 653           | 667           | 682           | 696           | 711           | 727           | 743           | 759           | 775           |
| Manganese          | 748             | 730           | 0.02173        | 0.03                    | 849           | 867           | 886           | 905           | 925           | 945           | 965           | 986           | 1,008         | 1,030         | 1,052         |
| Medina             | 736             | 967           | 0.02173        | 0.04                    | 1,124         | 1,148         | 1,173         | 1,199         | 1,225         | 1,252         | 1,279         | 1,307         | 1,335         | 1,364         | 1,394         |
| Mostro             | 1,368           | 1,717         | 0.02173        | 0.06                    | 1,996         | 2,039         | 2,084         | 2,129         | 2,175         | 2,222         | 2,271         | 2,320         | 2,370         | 2,422         | 2,474         |
| Palaypay           | 1,107           | 1,146         | 0.02173        | 0.04                    | 1,332         | 1,361         | 1,391         | 1,421         | 1,452         | 1,483         | 1,515         | 1,548         | 1,582         | 1,616         | 1,652         |
| Pantalan           | 199             | 940           | 0.02173        | 0.03                    | 1,093         | 1,116         | 1,141         | 1,165         | 1,191         | 1,217         | 1,243         | 1,270         | 1,298         | 1,326         | 1,355         |
| San Carlos         | 1,772           | 2,033         | 0.02173        | 0.08                    | 2,551         | 2,607         | 2,467         | 2,521         | 2,575         | 2,631         | 2,688         | 2,747         | 2,807         | 2,868         | 2,930         |
| Sn Juan Crisostomo | 782             | 861           | 0.02173        | 0.03                    | 1,001         | 1,023         | 1,045         | 1,067         | 1,091         | 1,114         | 1,139         | 1,163         | 1,189         | 1,214         | 1,241         |
| Santa Rita         | 1,098           | 1,247         | 0.02173        | 0.05                    | 1,450         | 1,481         | 1,513         | 1,546         | 1,580         | 1,614         | 1,649         | 1,685         | 1,722         | 1,759         | 1,797         |
| Santo Rosario      | 820             | 884           | 0.02173        | 0.03                    | 1,028         | 1,050         | 1,073         | 1,096         | 1,120         | 1,144         | 1,169         | 1,194         | 1,220         | 1,247         | 1,274         |
| Serallo            | 538             | 696           | 0.02173        | 0.03                    | 809           | 827           | 845           | 863           | 882           | 901           | 920           | 940           | 961           | 982           | 1,003         |
| Vista Alegre       | 538             | 579           | 0.02173        | 0.02                    | 673           | 688           | 703           | 718           | 733           | 749           | 766           | 782           | 799           | 817           | 834           |
| <b>Sub-Total</b>   | <b>20,342</b>   | <b>25,291</b> | <b>0.02173</b> | <b>0.92</b>             | <b>28,588</b> | <b>30,230</b> | <b>30,689</b> | <b>31,357</b> | <b>32,037</b> | <b>32,734</b> | <b>33,445</b> | <b>34,172</b> | <b>34,915</b> | <b>35,673</b> | <b>36,449</b> |

Source: MPDO





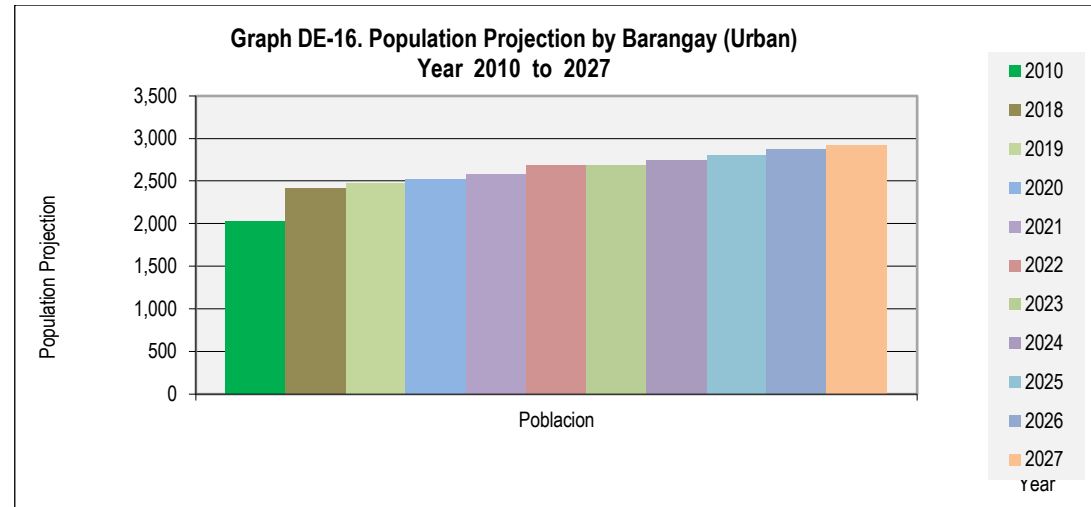
Source: MPDO



Source: MPDO







**Projected Number of Households**

The projected household population is based on the 2015 PSA data in the absence of the 2010 household population by barangay. The total number of households of 6,581 in 2015 is projected to reach 9,283 by 2026. Table DE-15 shows the projected number of households by barangay for year 2017 to 2027. See Table DE-15.



Table DE-15. Projected Number of Household by Barangay, 2017-2027

| Household           | 2015         | r       | Participation rate | 2017        | 2018        | 2019        | 2020        | 2021        | 2022        | 2023        | 2024        | 2025        | 2026        |
|---------------------|--------------|---------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Agbatuan            | 206          | 0.02173 | 0.007              | 239         | 245         | 250         | 255         | 261         | 267         | 272         | 278         | 284         | 291         |
| Badiang             | 503          | 0.02173 | 0.018              | 585         | 597         | 610         | 624         | 637         | 651         | 665         | 680         | 694         | 709         |
| Balabag             | 292          | 0.02173 | 0.011              | 339         | 347         | 354         | 362         | 370         | 378         | 386         | 395         | 403         | 412         |
| Balunos             | 280          | 0.02173 | 0.010              | 325         | 333         | 340         | 347         | 355         | 362         | 370         | 378         | 387         | 395         |
| Cag-an              | 359          | 0.02173 | 0.013              | 417         | 426         | 436         | 445         | 455         | 465         | 475         | 485         | 496         | 506         |
| Camiros             | 353          | 0.02173 | 0.013              | 410         | 419         | 428         | 438         | 447         | 457         | 467         | 477         | 487         | 498         |
| Sambag Culob        | 412          | 0.02173 | 0.015              | 479         | 489         | 500         | 511         | 522         | 533         | 545         | 557         | 569         | 581         |
| Dangula-an          | 620          | 0.02173 | 0.023              | 721         | 736         | 752         | 769         | 785         | 802         | 820         | 838         | 856         | 875         |
| Guipis              | 123          | 0.02173 | 0.004              | 143         | 146         | 149         | 152         | 156         | 159         | 163         | 166         | 170         | 173         |
| Manganese           | 163          | 0.02173 | 0.006              | 189         | 194         | 198         | 202         | 206         | 211         | 216         | 220         | 225         | 230         |
| Medina              | 238          | 0.02173 | 0.009              | 277         | 283         | 289         | 295         | 301         | 308         | 315         | 322         | 329         | 336         |
| Mostro              | 409          | 0.02173 | 0.015              | 475         | 486         | 496         | 507         | 518         | 529         | 541         | 553         | 565         | 577         |
| Palaypay            | 285          | 0.02173 | 0.010              | 331         | 338         | 346         | 353         | 361         | 369         | 377         | 385         | 393         | 402         |
| Pantalan            | 233          | 0.02173 | 0.008              | 271         | 277         | 283         | 289         | 295         | 302         | 308         | 315         | 322         | 329         |
| Poblacion           | 489          | 0.02173 | 0.018              | 568         | 581         | 593         | 606         | 619         | 633         | 647         | 661         | 675         | 690         |
| San Carlos          | 505          | 0.02173 | 0.018              | 587         | 600         | 613         | 626         | 640         | 654         | 668         | 682         | 697         | 712         |
| San Juan Crisostomo | 209          | 0.02173 | 0.008              | 243         | 248         | 254         | 259         | 265         | 271         | 276         | 282         | 289         | 295         |
| Santa Rita          | 345          | 0.02173 | 0.013              | 401         | 410         | 419         | 428         | 437         | 447         | 456         | 466         | 476         | 487         |
| Santo Rosario       | 209          | 0.02173 | 0.008              | 243         | 248         | 254         | 259         | 265         | 271         | 276         | 282         | 289         | 295         |
| Serallo             | 181          | 0.02173 | 0.007              | 210         | 215         | 220         | 224         | 229         | 234         | 239         | 245         | 250         | 255         |
| Vista Alegre        | 167          | 0.02173 | 0.006              | 194         | 198         | 203         | 207         | 212         | 216         | 221         | 226         | 231         | 236         |
| <b>TOTAL</b>        | <b>6,581</b> |         |                    | <b>7650</b> | <b>7816</b> | <b>7986</b> | <b>8159</b> | <b>8337</b> | <b>8518</b> | <b>8703</b> | <b>8891</b> | <b>9085</b> | <b>9283</b> |

Source: PSA/MPDO

**Hazard Susceptibility and Risk to Population**

Based on the data from the Mines and Geosciences Bureau (MGB), there are three hazards in the Municipality of Anilao. These are flood, landslide and storm surge. Table DE-16 show the inventory of hazard in the Municipality.



Table DE-16. Hazards in the Municipality

| BARANGAY            | Flood |   |   |    | Landslide |   |   | Stormsurge |   |   |
|---------------------|-------|---|---|----|-----------|---|---|------------|---|---|
|                     | L     | M | H | VH | L         | M | H | L          | M | H |
| AGBATUAN            | √     | √ | √ |    | √         | √ | √ |            |   |   |
| BADIANG             | √     | √ | √ | √  | √         | √ |   | √          | √ | √ |
| BALABAG             | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| BALUNOS             | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| CAG-AN              | √     | √ | √ | √  | √         | √ |   |            |   |   |
| CAMIROS             | √     | √ | √ |    | √         | √ | √ |            |   |   |
| DANGULAAN           | √     | √ | √ | √  | √         | √ |   | √          | √ | √ |
| GUIPIS              |       | √ | √ | √  | √         | √ | √ |            |   |   |
| MANGANESE           | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| MEDINA              | √     | √ | √ | √  | √         | √ |   |            |   |   |
| MOSTRO              | √     | √ | √ | √  | √         | √ |   |            |   |   |
| PALAYPAY            | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| PANTALAN            | √     | √ | √ | √  | √         |   |   | √          | √ | √ |
| POBLACION           | √     | √ | √ | √  | √         | √ |   |            |   |   |
| SAMBAG CULOB        | √     | √ | √ | √  | √         | √ | √ | √          | √ | √ |
| SAN CARLOS          | √     | √ | √ | √  | √         | √ |   | √          | √ | √ |
| SAN JUAN CRISOSTOMO | √     | √ | √ |    | √         |   |   |            |   |   |
| SANTA RITA          | √     | √ | √ | √  | √         |   |   | √          | √ | √ |
| SANTO ROSARIO       | √     | √ | √ |    | √         |   |   |            |   |   |
| SERALLO             | √     | √ | √ | √  |           |   |   | √          | √ |   |
| VISTA ALEGRE        |       |   |   |    | √         | √ | √ |            |   |   |

Source: MGB, MPDO

The exposure database provides baseline information pertaining to the population at risk. Population exposure database indicates the spatial location and the number of potentially affected persons. It also indicates the characteristics of local inhabitants that are severely affected by hazards or impacts of climate change.

**Flood**

The Risk Analysis Data (see Climate and Disaster Risk Assessment (CDRA) Report shows that 137 households with 2,689 population have high to very high susceptibility but with their adaptive capacity, risk to flood is moderate. These are distributed in the 21 barangays representing about 43% of the total population (CBMS 2017). Of these affected population, 45 households are informal settlers, 17% are young and old dependents and 67% households are living below the poverty threshold which aggravates the vulnerability of these population making them at moderate risk to flood (see Figure DE-4. The exposure map shows 14 barangays that has very high susceptibility to flood (Figure DE-2).



The remaining 1,720 households have low risk to flooding as shown in the CDRA Report.

**Landslide**

Barangays with high susceptibility to landslide as show in Figure DE-3 are Barangays Balabag, Camiros, Guipis and Vista Alegre. However, based on the results of CDRA, there are 29 households with 128 population with high susceptibility level but found to have moderate risks to landslide). Of the affected population, 8 households are informal settlers, 467 are young and old dependents and 16 families are living below poverty threshold (see CDRA Report). About 870 households with a population of 3,828 has moderate susceptibility with low to moderate risk. The rest of the population have low susceptibility and low risk to landslide.

**Storm Surge**

Four (4) barangays located in the coastal areas namely, Pantalan, San Carlos, Dangula-an and Sta. Rita have high susceptibility to storm surge as shown in Figure DE-4. CDRA Report shows that there are 219 households with 964 population (10.0% of the total coastal population) who are highly susceptible with moderate risk to storm surge. The affected population constitute 16% (159 persons) young and old dependents, 4 households are informal settlers and 14% (141 households) have dwelling units made from light materials making them moderately susceptible to storm surge. The rest of the coastal population have low risk to storm surge.



Figure DE-2. Population Exposure Map

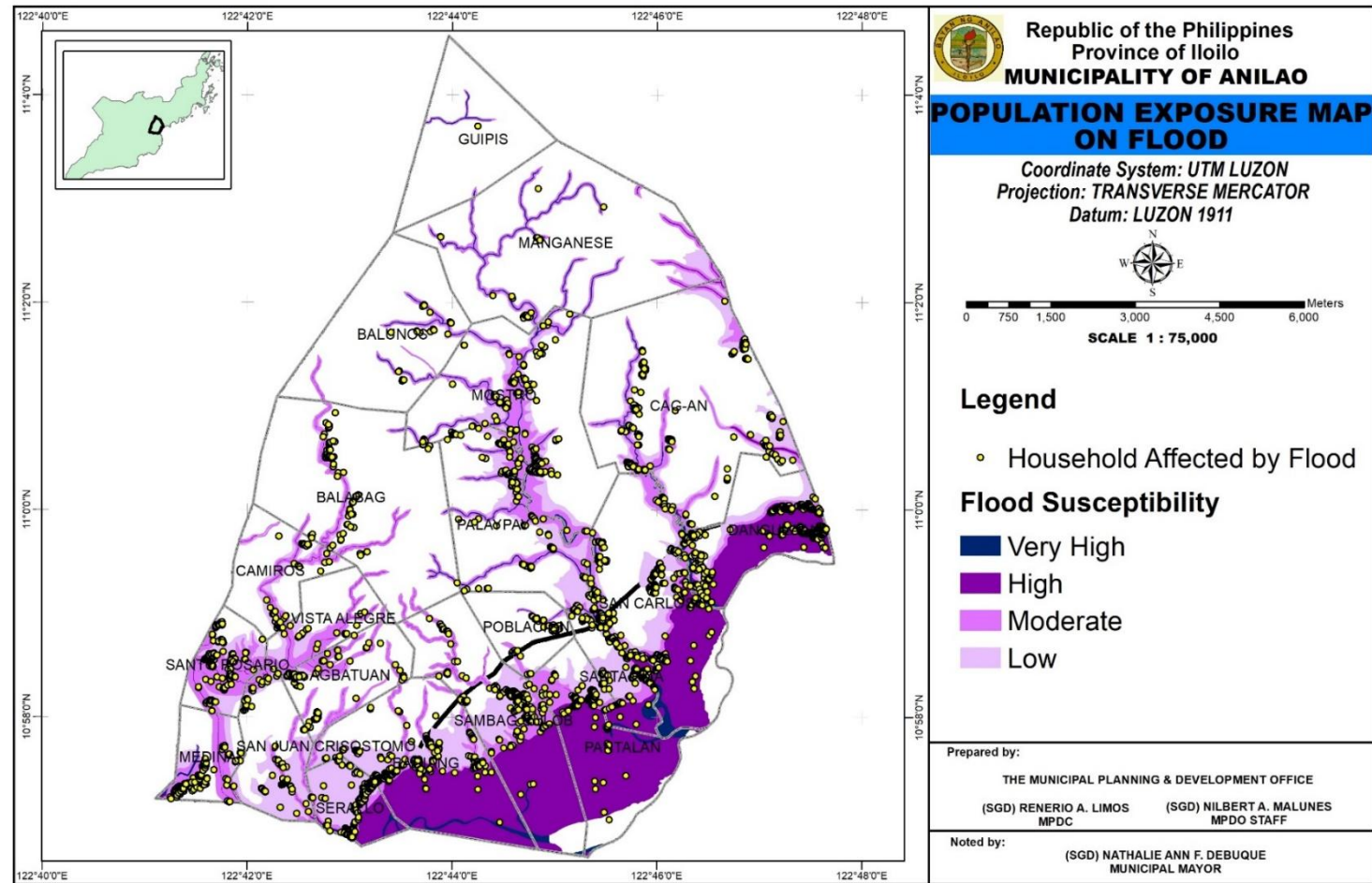


Figure DE-3 Population Exposure Map on Landslide

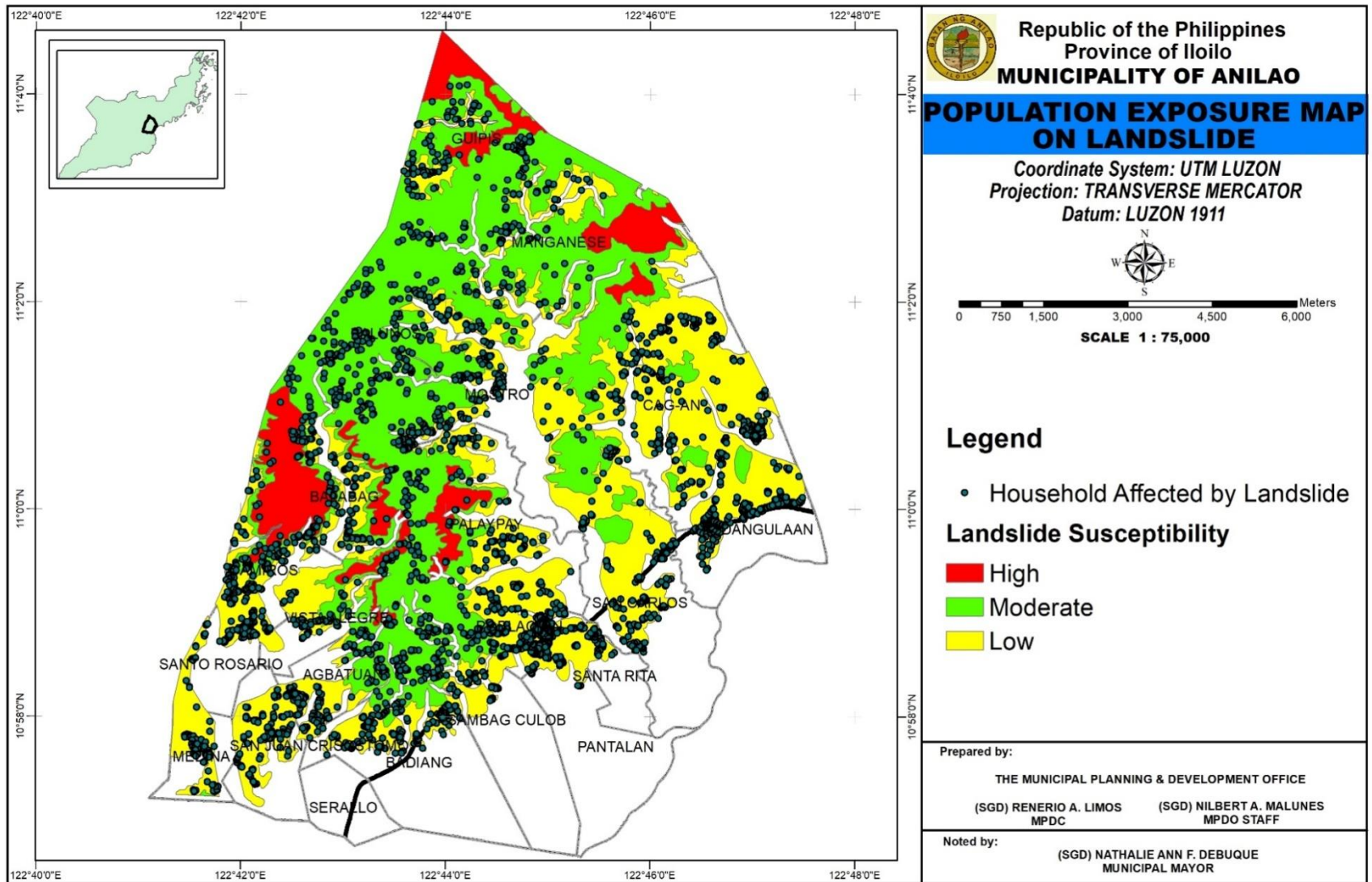




Figure DE-4. Population Risk Map on Flood

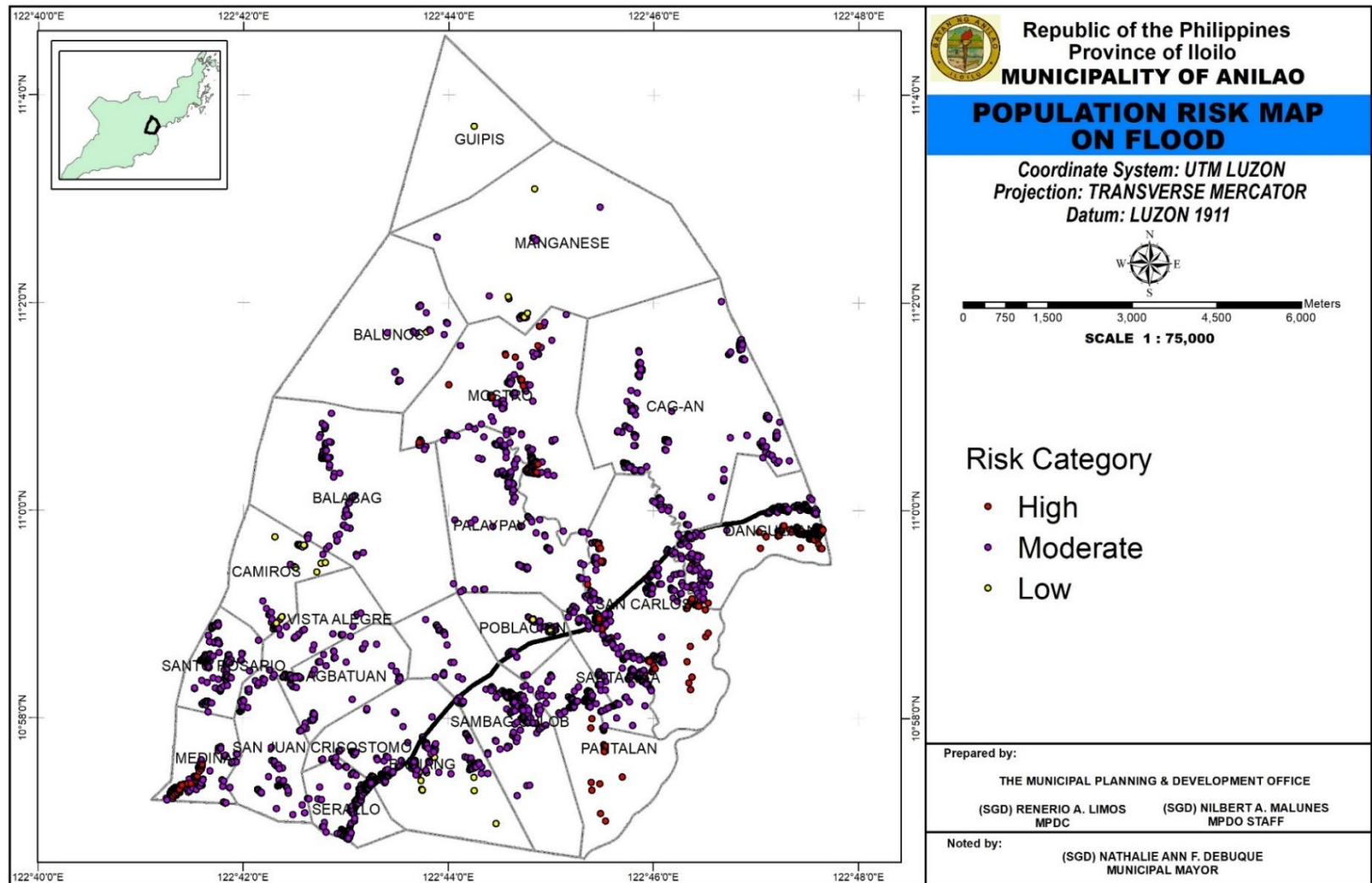
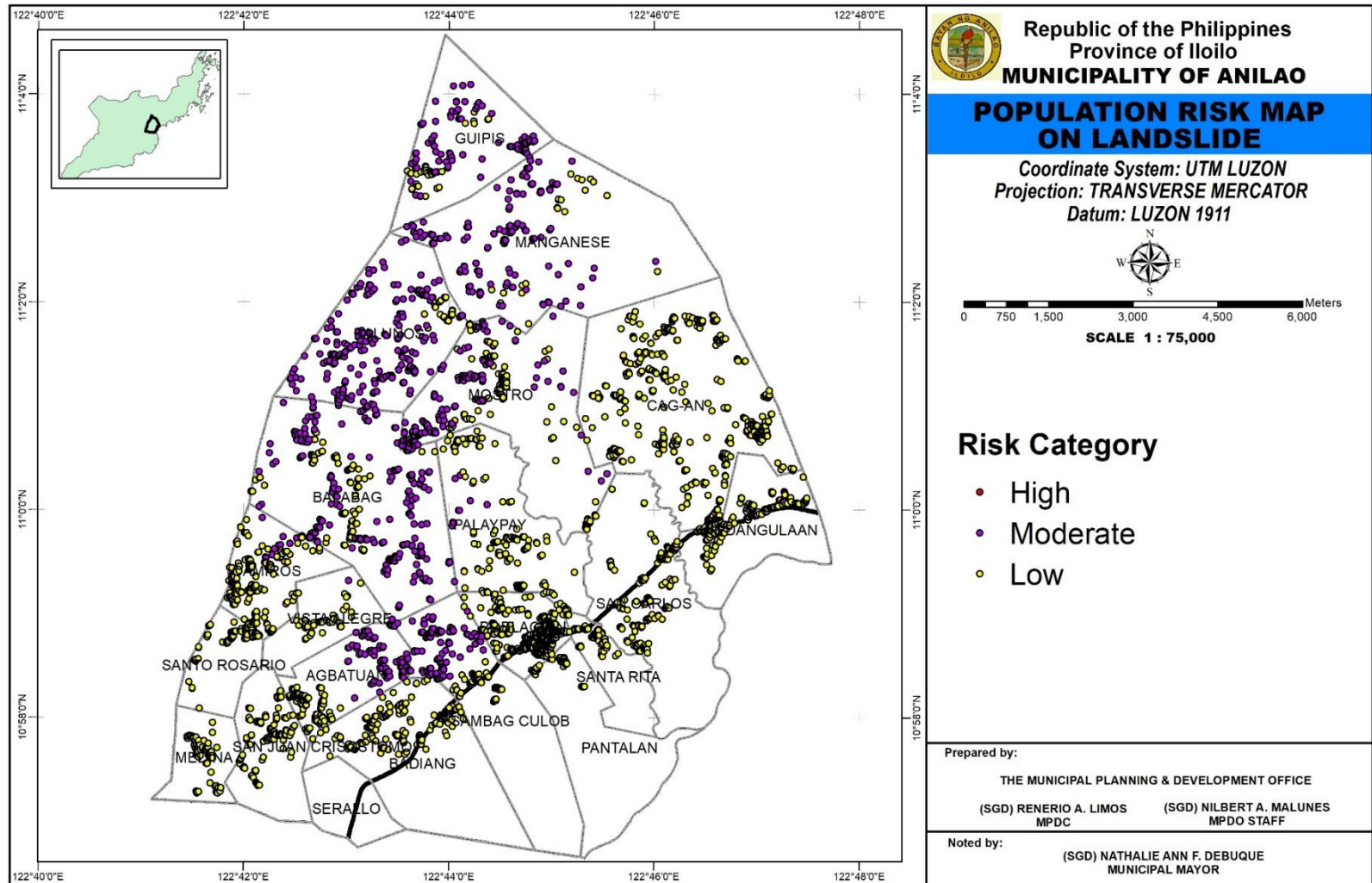


Figure DE-5. Population Risk Map on Landslide





CHAPTER II - PHYSICAL RESOURCES/ENVIRONMENT

Geophysical Characteristics

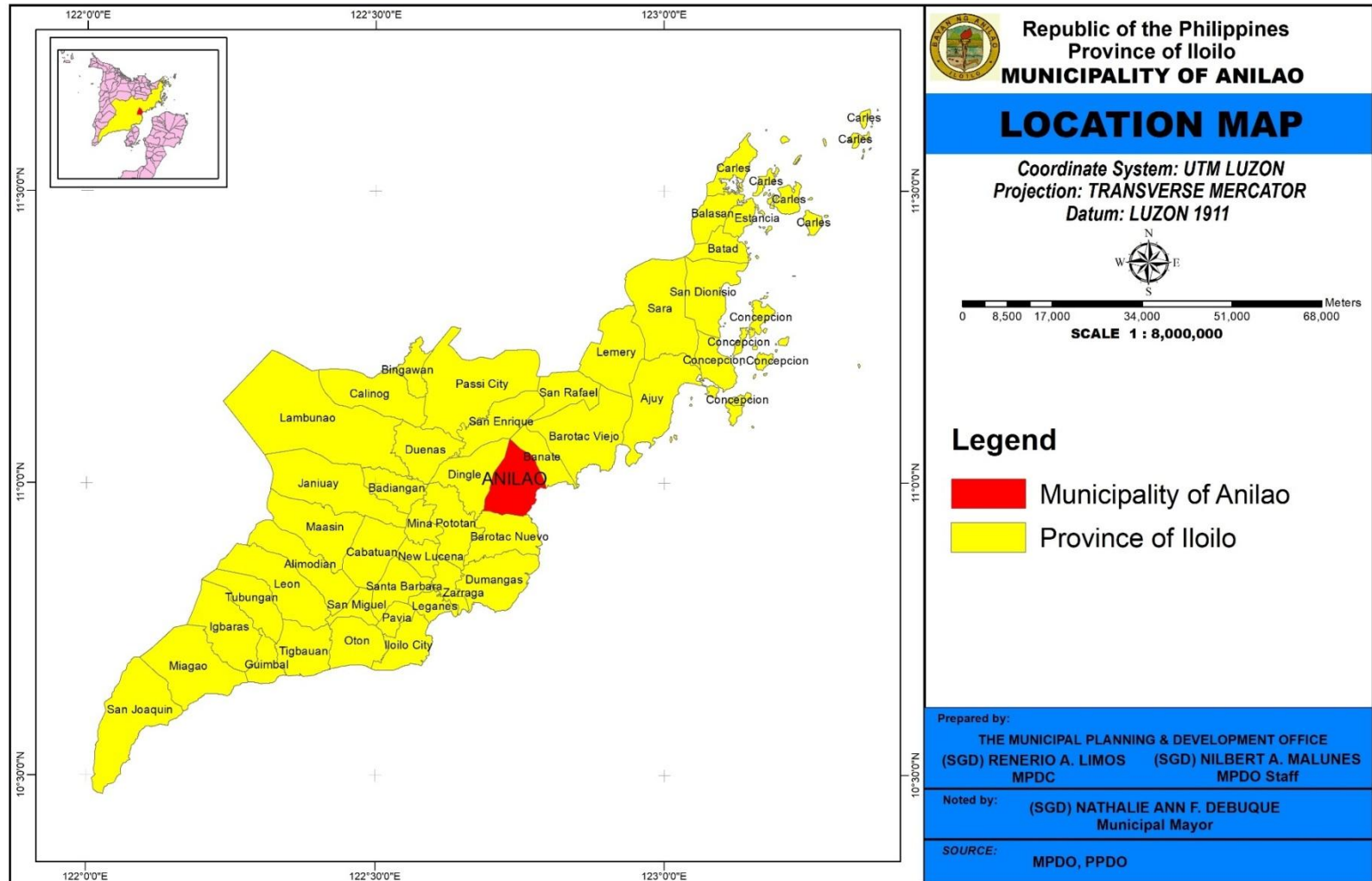
Geographic Location and Land Area

The Municipality of Anilao lies between geographical coordinates of 10° 56' 39.2166" and 11° 4' 34.503" North latitude and 122° 41' 6.4068" and 122° 47' 43.4544" East longitude and located 40 kilometers north east of Iloilo City. It has a total land area of 10,141.7704 hectares based on the latest Land Management Bureau records. At a bird's eye view, the town is shaped like an isosceles triangle.

The northern tip is bordered by the Municipality of San Enrique. The western section is lined by mountain ranges, the highest of which stands like a sentinel of the town. The eastern part opens towards the sea on the strait of Guimaras. The southern portion is bounded by the Municipality of Barotac Nuevo with the Tinorian River running midway. Figure PE-1 shows the location of the municipality.



Figure PE-1. Location Map of Anilao



**Political Subdivision and Land Area per Barangay**

The Municipality of Anilao is composed of 21 barangays of which one is considered urban which is Barangay Poblacion and seven (7) of those barangays are situated along the coastal area while the rest of barangays are located westward. Five (5) barangays are located in the mountainous part and the rest are slightly rolling. Table PE-1 below shows the lists of barangays and their area while Figure PE-2, shows the location of each barangay.

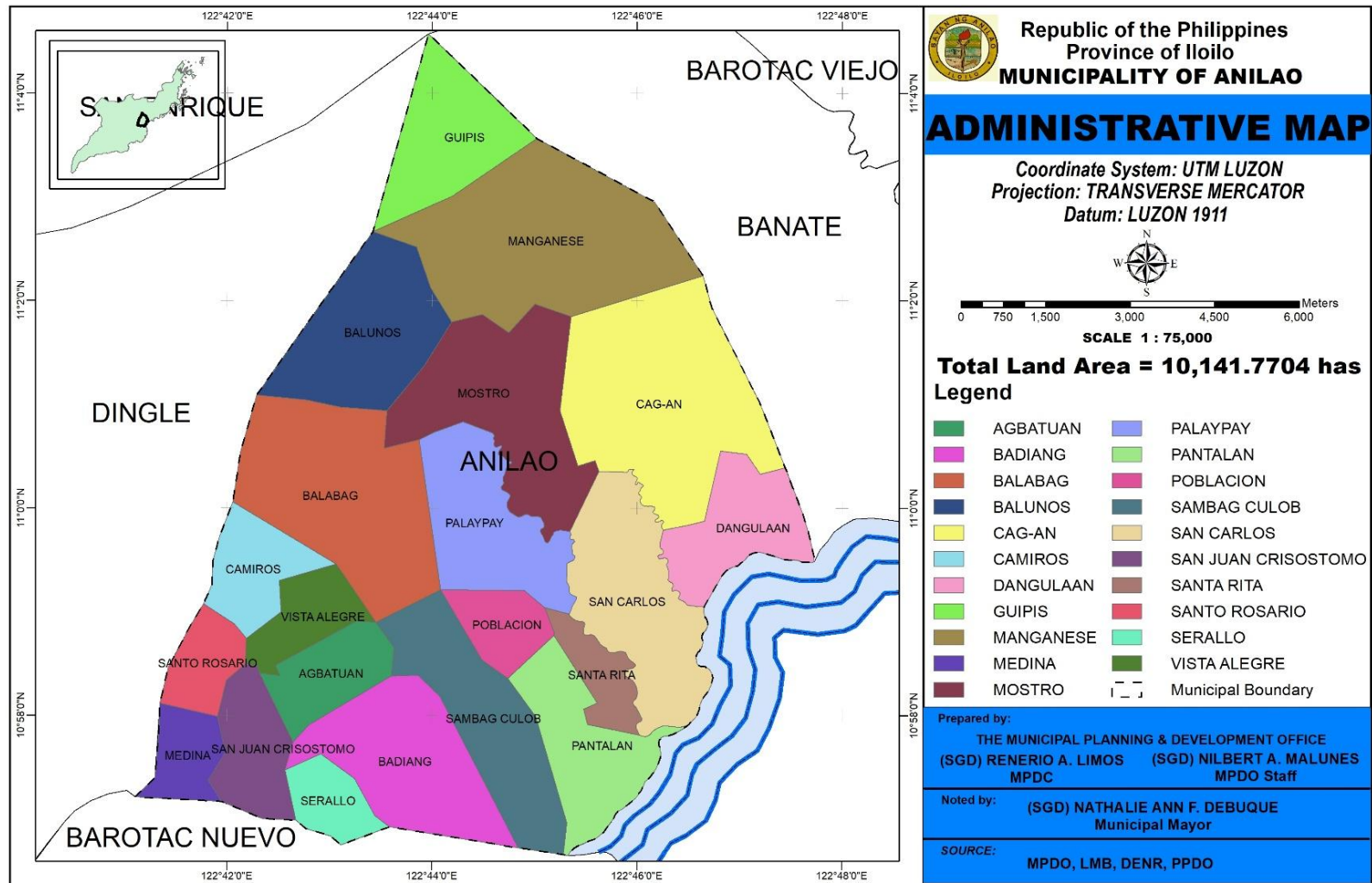
**Table PE-1. Political Subdivision and Land Area**

| <b>BARANGAY</b>     | <b>LAND AREA (has.)</b> | <b>% TO TOTAL AREA</b> |
|---------------------|-------------------------|------------------------|
| AGBATUAN            | 264.32                  | 2.61                   |
| BADIANG             | 633.04                  | 6.24                   |
| BALABAG             | 924.1                   | 9.11                   |
| BALUNOS             | 609.92                  | 6.01                   |
| CAG-AN              | 1083.21                 | 10.68                  |
| CAMIROS             | 267.68                  | 2.64                   |
| DANGULAAN           | 391.58                  | 3.86                   |
| GUIPIS              | 452.66                  | 4.46                   |
| MANGANESE           | 1092.38                 | 10.77                  |
| MEDINA              | 179.15                  | 1.77                   |
| MOSTRO              | 769.08                  | 7.58                   |
| PALAYPAY            | 538.6                   | 5.31                   |
| PANTALAN            | 448.06                  | 4.42                   |
| POBLACION           | 191.86                  | 1.89                   |
| SAMBAG CULOB        | 590.95                  | 5.83                   |
| SAN CARLOS          | 682.26                  | 6.73                   |
| SAN JUAN CRISOSTOMO | 283.52                  | 2.8                    |
| SERALLO             | 160.86                  | 1.67                   |
| STA. RITA           | 232.15                  | 1.65                   |
| STO. ROSARIO        | 127.93                  | 1.82                   |
| VISTA ALEGRE        | 218.46                  | 2.15                   |
| <b>TOTAL</b>        | <b>10,141.77</b>        | <b>100</b>             |

Source: LMB



Figure PE-2. Administrative Map

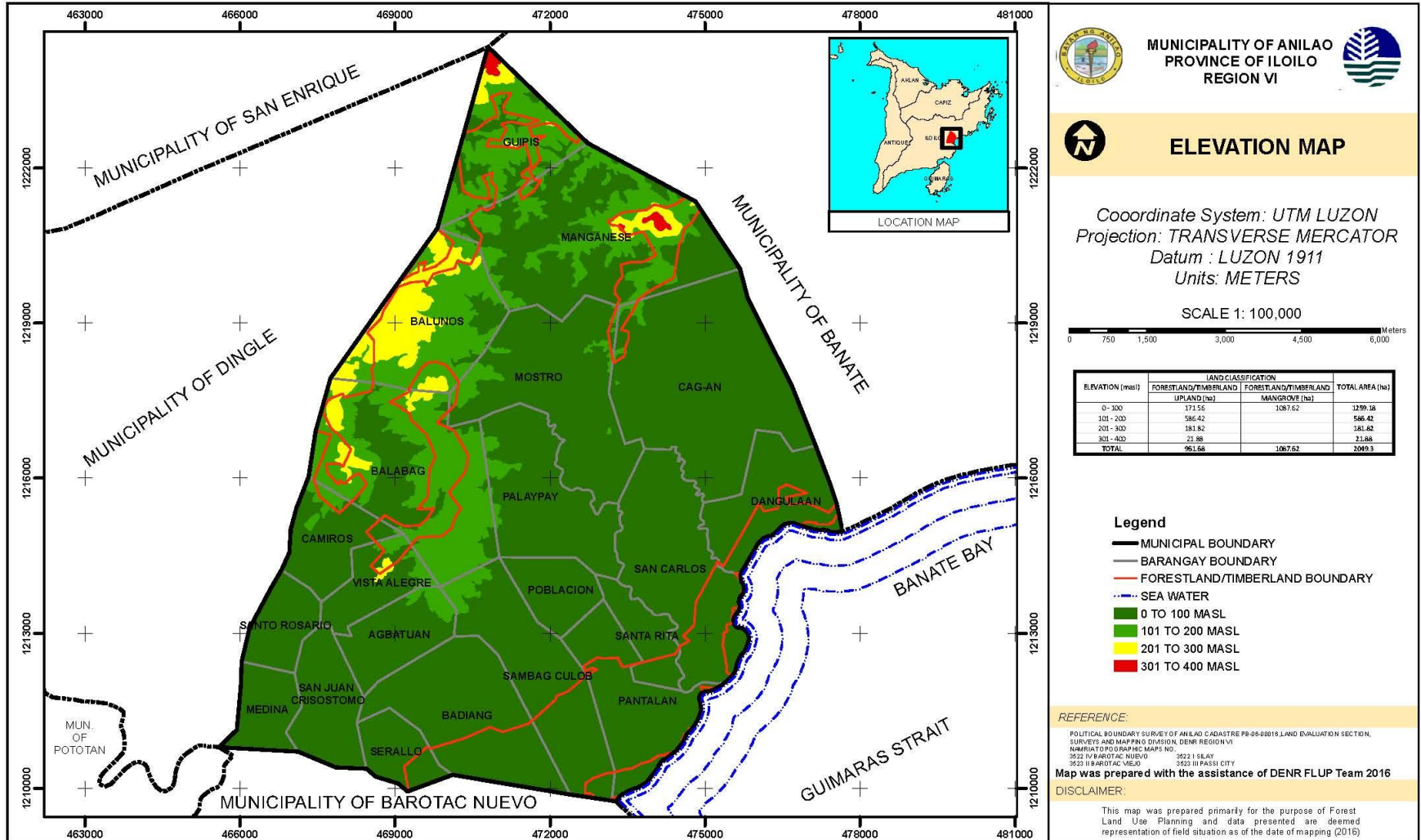


**Topography and Slope**

The highest elevation of the Municipality ranges for 301-400 meters above sea level (FLUP, Anilao). Mt. Patungpahon is the municipality’s highest mountain and the lowest at 0-100 meters above sea level is found in some parts of Barangays Dangula-an, San Carlos, Sta. Rita, Sambag Culob, Badiang and Serallo.



Figure PE-3. Elevation Map



Source: FLUP





Anilao is within the slope category of 0-50% and up. It is categorized into level to nearly level (0-3%) found in the small portions of Barangay Cag-an, Medina, San Juan Crisostomo and Sto. Rosario and a large portion of Pantalan and Sta. Rita; gently sloping to undulating (3-8%) found in the large portions of Barangay Cag-an and Camiros; undulating to rolling (8-18%) found in portions of Cag-an, San Carlos and Mostro; rolling to moderately steep (18-30%) found in small portions of Guipis, Palaypay and Balabag and a large portion of Manganese, steep (30-50%) found in Cag-an, Manganese, Guipis, Balabag, Palaypay, Mostro and a large portion in Balunos and very steep (50% and above) found in small portions of Camiros, Vista Alegre, Agbatuan, Palaypay, Cag-an, Guipis and large portions of Mostro, Balabag and Manganese.

Table PE-2 shows the six (6) slope categories which was also reflected in the slope map (Figure PE-3). The most dominant slope is 3-8% (gently sloping to undulating) covering an area of 3,141.911 hectares. This constitutes 30.8% of the total land area. Table below shows different slope categories found in the municipality.

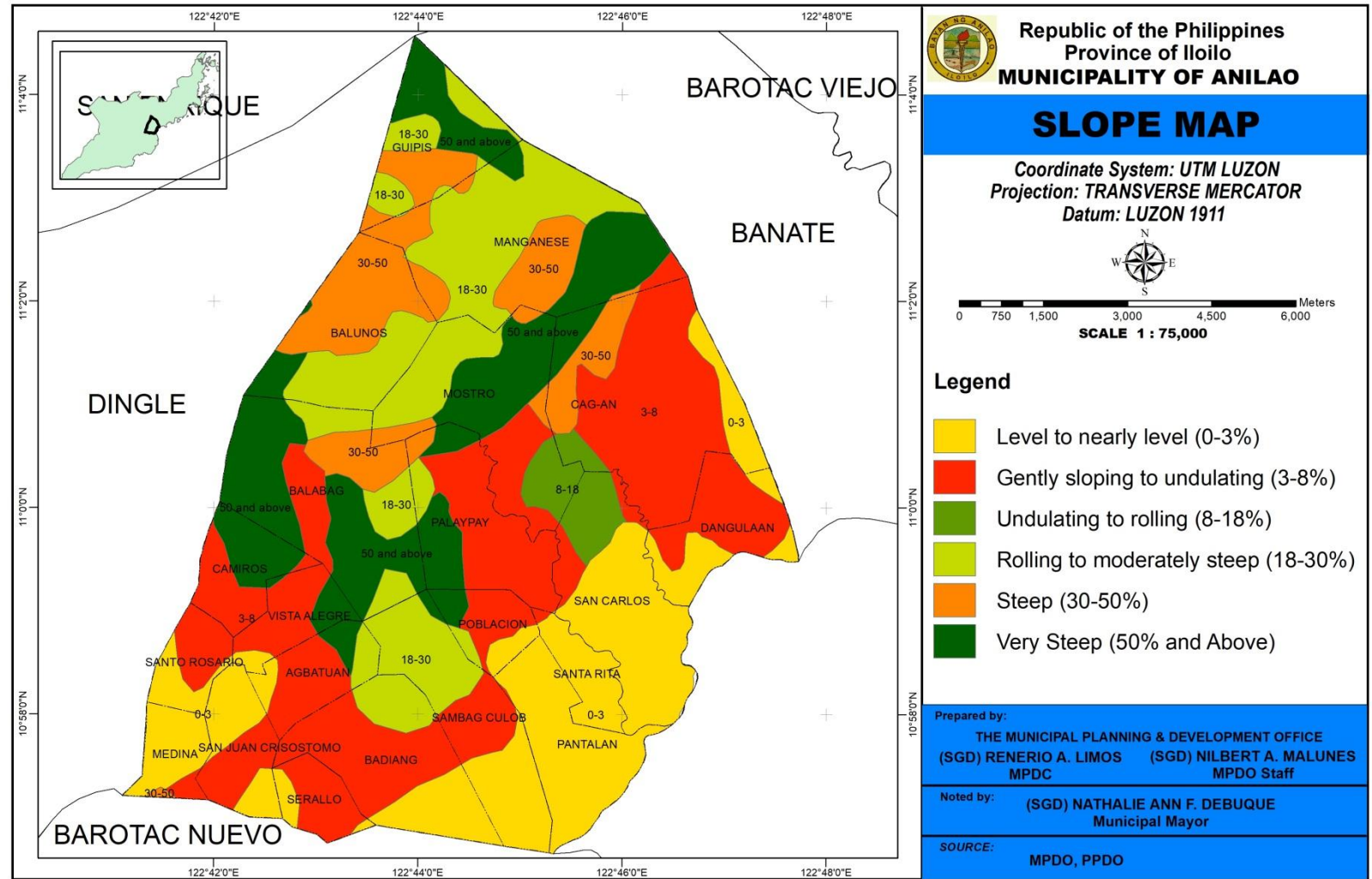
**Table PE-2. Slope Categories and Area**

| Slope Category | Description                  | Area (hectares)  | % to Total Land Area |
|----------------|------------------------------|------------------|----------------------|
| 0-3%           | Level to nearly level        | 2,258.75         | 22.27                |
| 3-8%           | Gently sloping to undulating | 3,121.91         | 30.78                |
| 8-18%          | Undulating to rolling        | 255.47           | 2.52                 |
| 18-30%         | Rolling to moderately steep  | 1,754.57         | 17.30                |
| 30-50%         | Steep                        | 1,050.80         | 10.36                |
| 50% and above  | Very steep                   | 1,700.27         | 16.77                |
| <b>Total</b>   |                              | <b>10,141.77</b> | <b>100</b>           |

Source: MPDO, FLUP



Figure PE-4. Slope Map





**Soil**

Table PE-3 shows that there are five (5) types of soil found in the Municipality of Anilao. These are the Alimodian Clay Loam covering 6,938.57 hectares or 68.42% of the total land area. This is followed by Sta. Rita Clay Loam consisting of 1,786.20 hectares or 17.61%, 1,294.65 hectares or 12.77% for hydrosol, 116.00 hectares of Faraon Clay .14% and 6.35 hectares (0.06%) of Umingan Clay. The fifth soil type (Umingan Clay) is a new classification due to the increase in area of the municipality as per result of latest cadastral survey as shown in Figure PE-3. Soil Map below.

Alimodian clay loam with the largest area can be found in barangays of Guipis, Balunos, Manganese, Balabag, Camiros, Sto. Rosario, Cag-an, Mostro, Camiros and partly in some barangays like Dangula-an, Palaypay, Poblacion, Sambag Culob, Agbatuan, Badiang, San Carlos and San Juan Crisostomo.

Sta. Rita Clay Loam with the second largest area generally covers barangays Agbatuan, Badiang, Serallo, San Carlos and Dangula-an. Barangays Sta. Rita, Poblacion, Palaypay, Sambag Culob, Vista Alegre and San Juan Crisostomo have a bit of parcel of this soil type.

Faraon Clay covers almost half of Barangay Medina and parcel of San Juan Crisostomo while Umingan Clay is found at Barangay Sto. Rosario at a very small parcel of 6.5 hectares along the boundary of Anilao and Dingle.

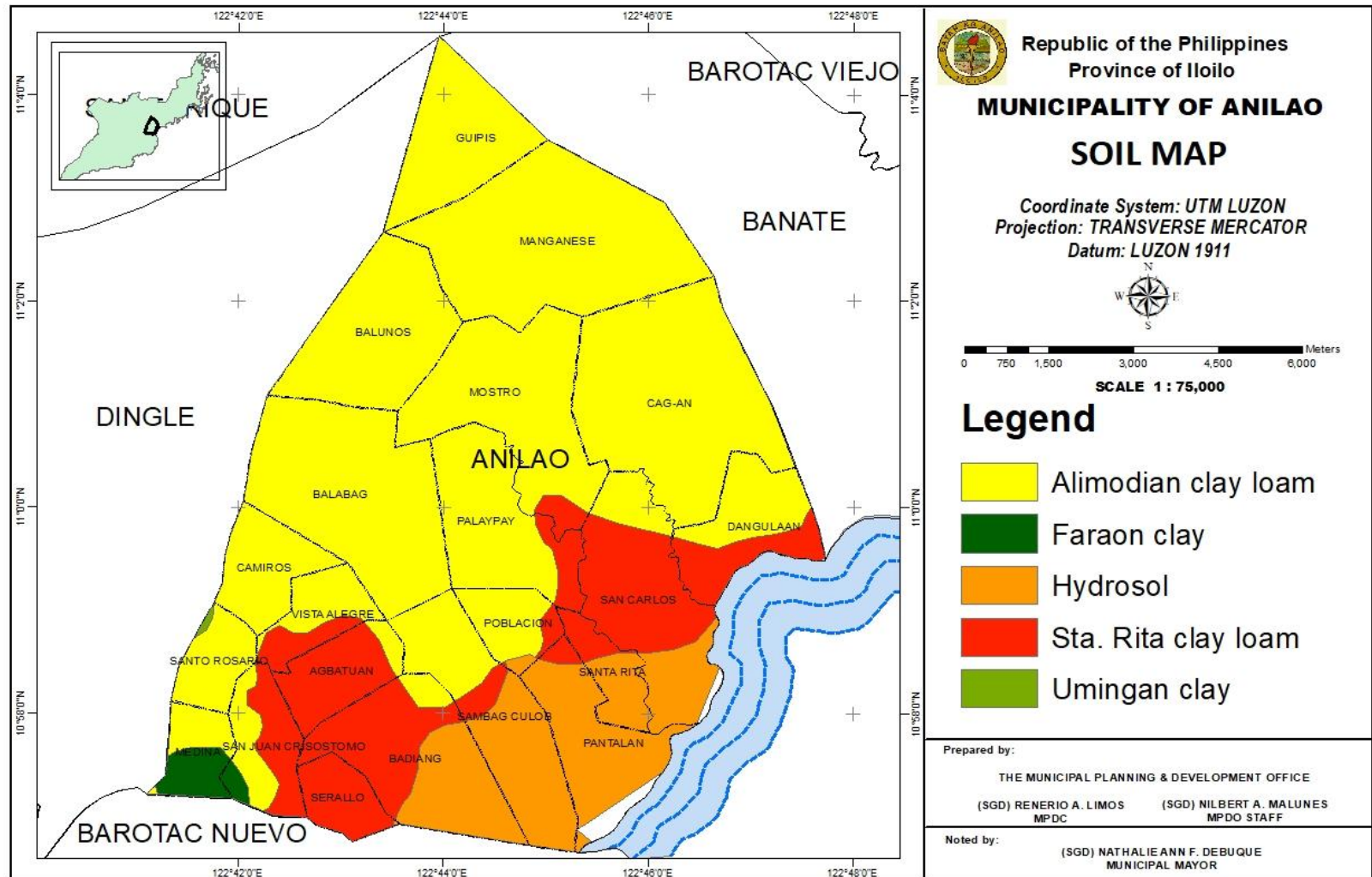
**Table PE-3. Soil Classification and Area**

| Soil Type              | Area (Hectares)  | % to Total Land Area |
|------------------------|------------------|----------------------|
| 1. Alimodian Clay Loam | 6,938.57         | 68.42                |
| 2. Umingan Clay        | 6.35             | 0.06                 |
| 3. Sta. Rita Clay Loam | 1,786.20         | 17.61                |
| 4. Hydrosol            | 1,294.65         | 12.77                |
| 5. Faraon Clay         | 116.00           | 1.14                 |
| <b>Total</b>           | <b>10,141.77</b> | <b>100</b>           |

Source: FLUP, Anilao



Figure PE-5. Soil Map



Source: MPDO

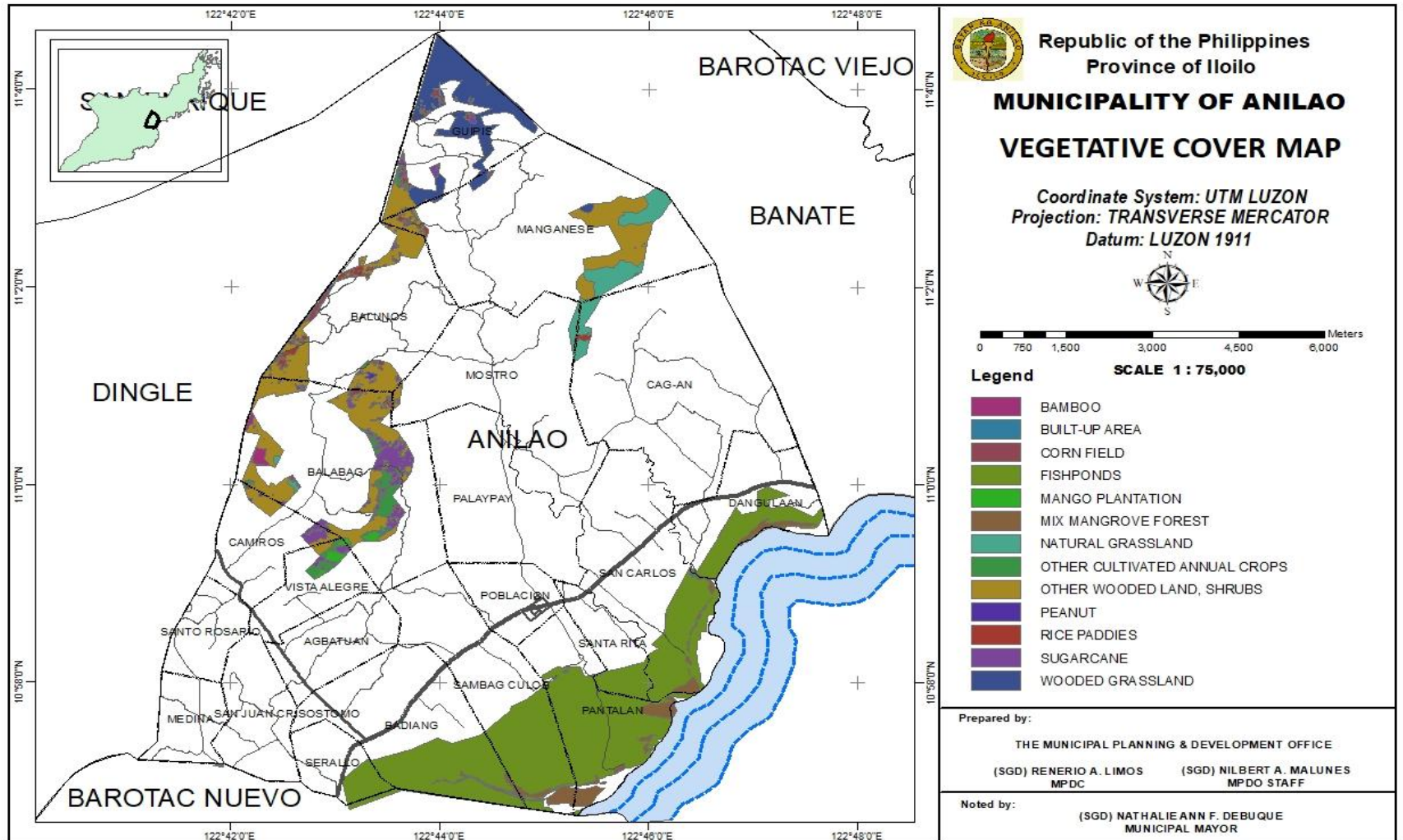


**Vegetative Cover**

Based on the FLUP, recent available data on vegetative is found only in the Forest and Forest Land in the Municipality of Anilao. As reflected in the FLUP, vegetation were annual crops, perennial crops, shrubs, brush lands, waded grasslands, grasslands, Built-up area, mangrove forest, fishpond and sea water has a total of 2,049 hectares, the largest portion of which is occupied by fishponds covering 48.02%, followed by shrubs/brush land occupying 26.98% and annual crops covering 15.44% of the total area. Others have a vegetative cover below 5%.



Figure PE-6. Vegetative Cover Map



Source: FLUP, Anilao



## Hydrogeological Features

### Geology

Anilao is a town endowed with almost 75% hills and mountains. Based on the data from the DENR-CENRO, there are three types of mineral deposits in the municipality (see Figure PE-5). These are igneous rocks that include basalt, sedimentary rocks like limestone and recent referring to Holocene. Barangays Cag-an and Dangula-an that make up District III of the municipality benefited from the work prospects brought about by mining and quarrying. Data from the Forest Land Use Plan (FLUP) shown in Figure PE-5 indicate the location of the various mineral deposits found in the municipality.

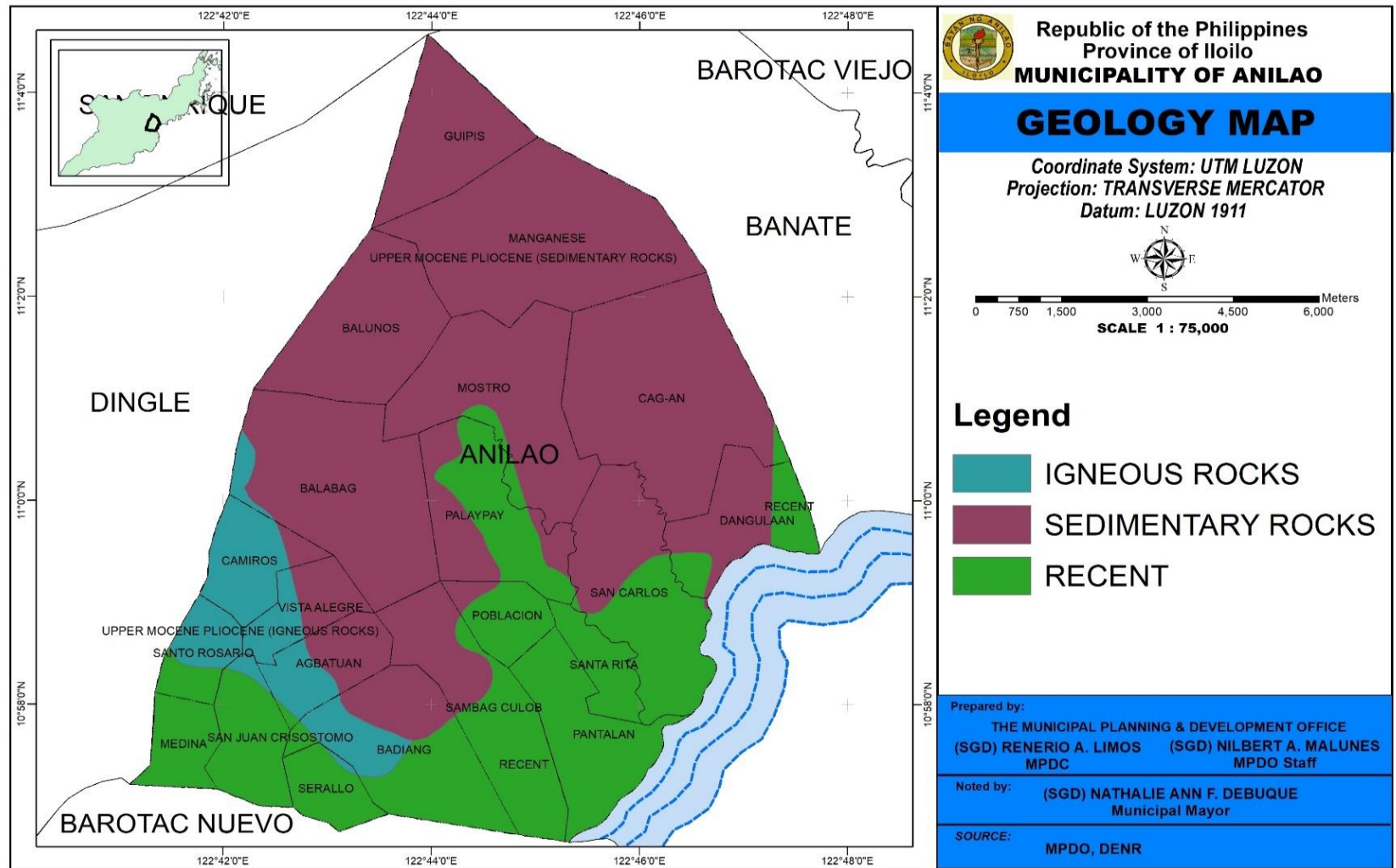
The small portion of plain lands on the southern tip of Anilao is rich in basalt, a mineral mainly used for construction of high-rise buildings. Basalt rock is a dark, fine-grained, usually extrusive igneous rock that is more basic than andesite, consisting chiefly of plagioclase feldspars and pyroxene: often found in vast sheets, it is the most common extrusive igneous rock ([www.collins dictionary](http://www.collinsdictionary.com)). Proof of its presence is the operation of a private company operating and processing of this resource (basalt) into aggregates in Barangay Cag-an, however, no detailed data on the extent of the area and volume of production is available as of this writing.

The municipality is traversed by several bodies of water such as Anilao River, regarded as the largest, Dangulaan River and Tinorian River as the smallest. One of the rich sources of ground water is situated in Barangay Mostro which is another potential source of water for Anilao Water District in the future.





Figure PE-7. Geology Map



**Sub-Water Sheds**

There are five (5) Sub-watersheds delineated and identified in the Municipality of Anilao. These are Anilao River Sub-watershed, Dangula-an River Sub-watersheds, Tinorian River Sub-watershed, Bagongbong Creek Sub-Watersheds and Alacaygan Sub-Watersheds.

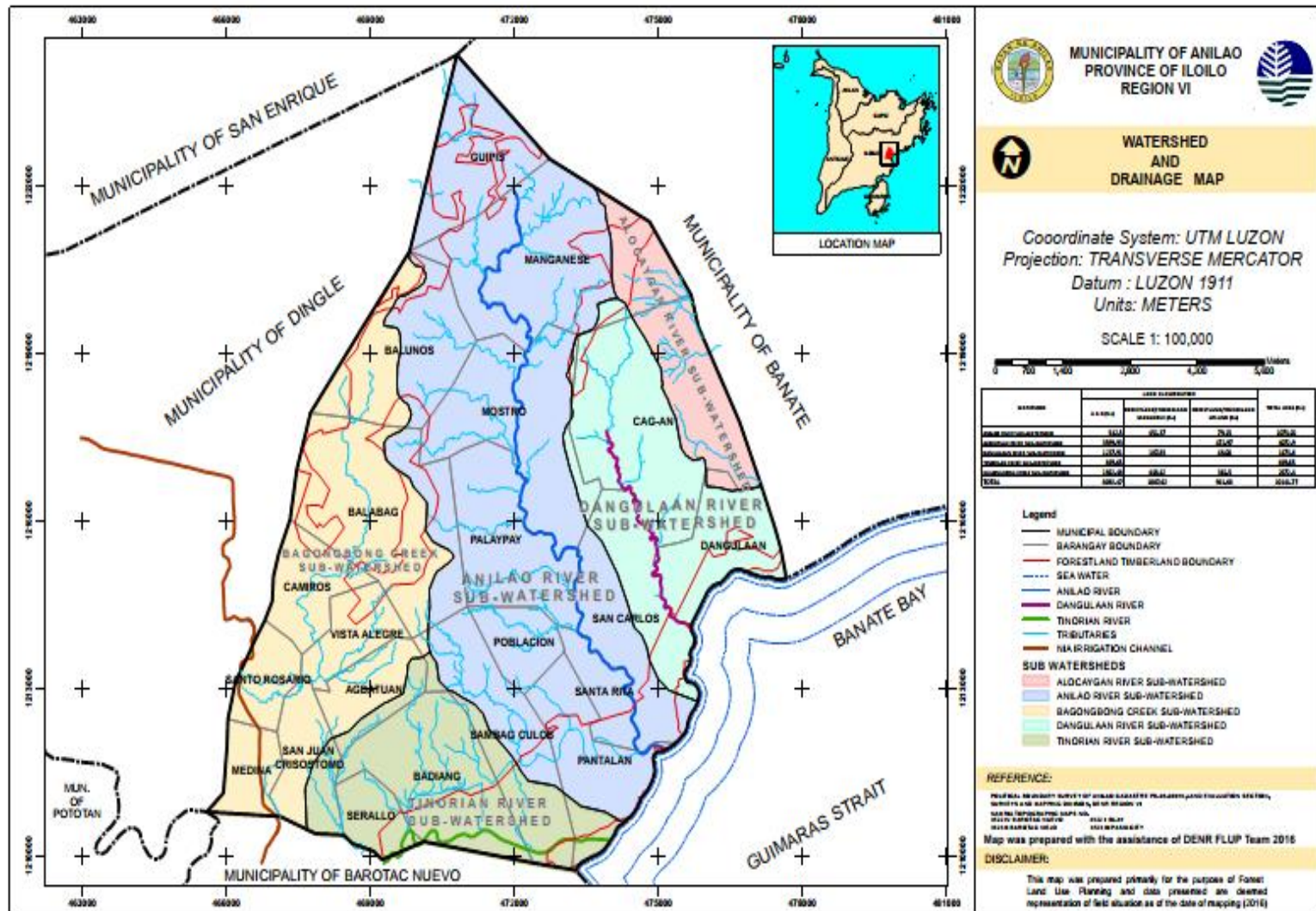
Anilao River Sub-watersheds is the largest with an area of 4,524.75 hectares traversing from Barangay Guipis, Manganese, Mostro, Palaypay, Poblacion, San Carlos, Sta. Rita. Tinorian River is one of the smallest water way of 298.02 hectares. These bodies of water serve as natural drainage during heavy downpours. Figure PE-6 shows the location of the sub-watershed areas in the municipality.

Tinori-an River traverses from Barangay Tinori-an, Barotac Nuevo passing Barangays Serallo and Badiang down to Barangay Sambag Culob and discharges to Banate Bay. On the other hand, Bagongbong Creek Sub-watershed traverses from Barangays Balunos, Balabag, Camiros, Vista Alegre, San Juan Crisostomo and Sto. Rosario. Dangulaan Sub-watershed passes from Barangay Cag-an to Dangula-an and discharges to Banate Bay. Anilao River traverses from Barangays Guipis, Managenes, Mostro, Palaypay, Poblacion, San Carlos, Sta. Rita to Pantalan down to Banate Bay. Dangula-an River traverses upstream from Cag-an, passing part of San Carlos, Dangula-an and discharges to Banate Bay. Alacaygan Sub-watershed passes from Cag-an to Alacaygan to Banate Bay.

Observed choke points are situated at Tinori-an Bridge adjacent to Barangay Serallo, in Sta. Rita Bridge and Dangulaan Bridge.



PE-8. Watershed and Drainage Map



Source: DENR, FLUP





**Climatological Conditions**

**Climate**

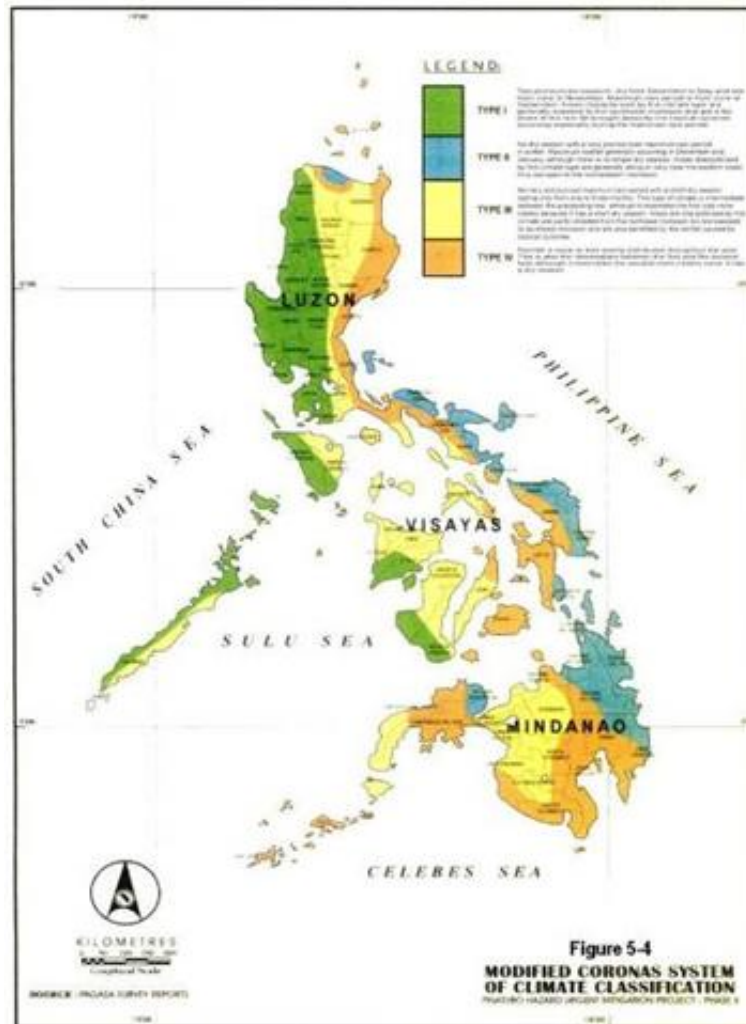
The Municipality of Anilao belongs to Type 3 Climate characterized by no very pronounced maximum rain period with a dry season lasting only from one to three months either during the period from December to February or from March to May. This type resembles types 1 since it has a short dry season (PAG-ASA). Figure PE-5 shows the climate of Panay Island and Iloilo to include the Municipality of Anilao.

**Rainfall and Temperature**

The average rainfall for 2016 based on PAG-ASA data shown below is 158.67 mm. Compared to data of 2015 it is higher by 29.79 mm and slightly higher in 2014. Rainfall is usually heavier during the months of July up to December. Based on the three (3) consecutive years (2014-2016) data, the month of September 2016 has the highest average rainfall ever registered with 418.8 mm. Lowest rainfall recorded in 2016 was during the month of April with 0.8 mm.



Figure PE- 9. Climate Map of the Philippines



Source: PAG-ASA



Average temperature for three (3) consecutive years (2014-2016) as shown in Table PE-4 and Graph PE-1 below indicates an increasing trend from 28.78°C in 2014 and increased to 31.38°C in 2015 to 32.42 °C in 2016. An average increase in temperature was much higher in 2015 which is 2.6°C compared to the average increase in temperature in 2016 which is 1.04°C.

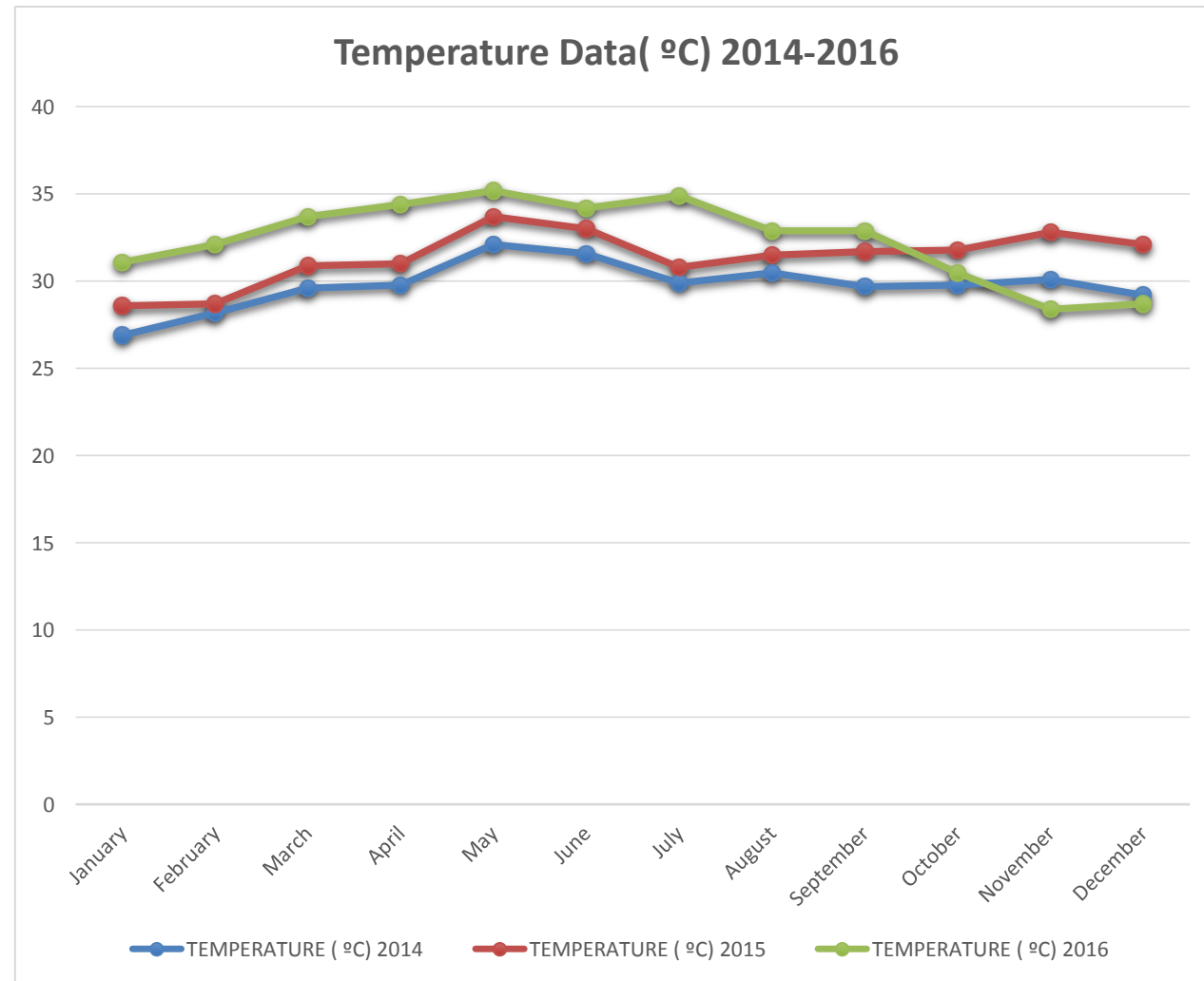
Table PE-4. Rainfall and Temperature Data, Year 2014-2016

| MONTH          | RAINFALL DATA (mm) |               |               | TEMPERATURE ( °C) |              |              |
|----------------|--------------------|---------------|---------------|-------------------|--------------|--------------|
|                | 2014               | 2015          | 2016          | 2014              | 2015         | 2016         |
| January        | 154.2              | 57.4          | 14.6          | 26.9              | 28.6         | 31.1         |
| February       | 11.2               | 39.6          | 64.6          | 28.2              | 28.7         | 32.1         |
| March          | 79.6               | 24.2          | 2.2           | 29.6              | 30.9         | 33.7         |
| April          | 104                | 10.8          | 0.8           | 29.8              | 31.0         | 34.4         |
| May            | 66.2               | 33.0          | 155.6         | 32.1              | 33.7         | 35.2         |
| June           | 59.4               | 142.8         | 120.8         | 31.6              | 33.0         | 34.2         |
| July           | 408.2              | 333.4         | 133.8         | 29.9              | 30.8         | 34.9         |
| August         | 183.4              | 341.4         | 336.1         | 30.5              | 31.5         | 32.9         |
| September      | 205.8              | 264.8         | 418.8         | 29.7              | 31.7         | 32.9         |
| October        | 336.8              | 128.8         | 245.2         | 29.8              | 31.8         | 30.5         |
| November       | 59.4               | 77.0          | 230.2         | 30.1              | 32.8         | 28.4         |
| December       | 174.0              | 92.4          | 182.2         | 29.2              | 32.1         | 28.7         |
| <b>Total</b>   | <b>1842.2</b>      | <b>1546.6</b> | <b>1904.1</b> | <b>357.4</b>      | <b>376.6</b> | <b>389</b>   |
| <b>Average</b> | <b>153.51</b>      | <b>128.88</b> | <b>158.67</b> | <b>29.78</b>      | <b>31.38</b> | <b>32.42</b> |

Source: PAG-ASA



Graph-1. Showing Rainfall and Temperature Data 2014-2016



Source: PAG-ASA



**Geo- Hazard Susceptibility and Risks**

Determining the hazards in a locality calls for collective and sensitive multi-sectoral discussion among all sectors of the Municipality. Based from the data from the Mines and geosciences Bureau of the DENR, the Municipality of Anilao is susceptible to three hazards namely: flood, landslide and storm surge.

The level of susceptibility of a locality to any given hazard can be aggravated by the condition of the elements present within that locality. The unstable or temporary condition of each element will determine the level of risk (see CDRA Report). Table PE-5 below shows the susceptibility level of the 21 barangays to the three types of hazards.

**Table PE-5. Inventory of Hazards in the Municipality**

| BARANGAY            | FLOOD |   |   |    | LANDSLIDE |   |   | STORM SURGE |   |   |
|---------------------|-------|---|---|----|-----------|---|---|-------------|---|---|
|                     | L     | M | H | VH | L         | M | H | L           | M | H |
| AGBATUAN            | √     | √ | √ |    | √         | √ | √ |             |   |   |
| BADIANG             | √     | √ | √ | √  | √         | √ |   | √           | √ | √ |
| BALABAG             | √     | √ | √ | √  | √         | √ | √ |             |   |   |
| BALUNOS             | √     | √ | √ | √  | √         | √ | √ |             |   |   |
| CAG-AN              | √     | √ | √ | √  | √         | √ |   |             |   |   |
| CAMIROS             | √     | √ | √ |    | √         | √ | √ |             |   |   |
| DANGULAAN           | √     | √ | √ | √  | √         | √ |   | √           | √ | √ |
| GUIPIS              |       | √ | √ | √  | √         | √ | √ |             |   |   |
| MANGANESE           | √     | √ | √ | √  | √         | √ | √ |             |   |   |
| MEDINA              | √     | √ | √ | √  | √         | √ |   |             |   |   |
| MOSTRO              | √     | √ | √ | √  | √         | √ |   |             |   |   |
| PALAYPAY            | √     | √ | √ | √  | √         | √ | √ |             |   |   |
| PANTALAN            | √     | √ | √ | √  | √         |   |   | √           | √ | √ |
| POBLACION           | √     | √ | √ | √  | √         | √ |   |             |   |   |
| SAMBAG CULOB        | √     | √ | √ | √  | √         | √ | √ | √           | √ | √ |
| SAN CARLOS          | √     | √ | √ | √  | √         | √ |   | √           | √ | √ |
| SAN JUAN CRISOSTOMO | √     | √ | √ |    | √         |   |   |             |   |   |
| SANTA RITA          | √     | √ | √ | √  | √         |   |   | √           | √ | √ |
| SANTO ROSARIO       | √     | √ | √ |    | √         |   |   |             |   |   |
| SERALLO             | √     | √ | √ | √  |           |   |   | √           | √ |   |
| VISTA ALEGRE        | √     | √ | √ |    | √         | √ | √ |             |   |   |

Source: MGB, MPDO

Legend: Hazards: L-Low M-Moderate H-High VH-Very High



### Flood

Most flooding in the Municipality of Anilao occurs on floodplain areas. These are natural water storage areas containing rivers or creeks that flow continuously or intermittently. The easy access to water and the rich diversity of the flood plains have always attracted human settlements and with the increasing human intervention in the upstream catchment, the downstream consequences and risks increases. Flood prone areas and areas near rivers and creeks are located in Barangays Pantalan, Sta. Rita, Dangula-an, San Carlos, Badiang, Serallo, Balunos, Guipis, Cag-an, Medina, Sto. Rosario, Palaypay, Poblacion, Agbatuan, Manganese and Sambag Culob.

Sixteen (16) barangays namely Badiang, Balabag, Balunos, Cag-an, Dangulaan, Guipis, Manganese, Medina, Mostro, Palaypay, Pantalan, Poblacion, Sambag Culob, San Carlos, Sta. Rita and Vista Alegre have portions with high to very high susceptibility to flooding. These areas are either situated along the coastal areas or has the presence of bodies of waters within their boundaries (see *CDRA Report*). Generally, all barangays are susceptible to moderate flooding (see *Figure PE-8*).

### Landslide

Nine (9) barangays namely Agbatuan, Balabag, Balunos, Guipis, Manganese, Palaypay, Sambag Culob, San Juan and Vista Alegre which are situated along rivers and near creeks have areas with high susceptibility to land slide as shown in Figure PE-9. Likewise, these barangays, as shown in Table PE-2, have areas with steep to very steep slopes ( $>35^{\circ}$ ) and non-cohesive soil condition posing for landslides.

### Storm Surge

Storm surge is likely to occur in six coastal barangays namely: Badiang, Sambag Culob, Pantalan, Sta. Rita, San Carlos and Dangula-an as shown in the Storm Surge Map (Figure PE-10). These barangays are situated along the coast that may increase in water level during typhoons as a consequence of storm surges.



Figure PE-10. Flood Susceptibility Map

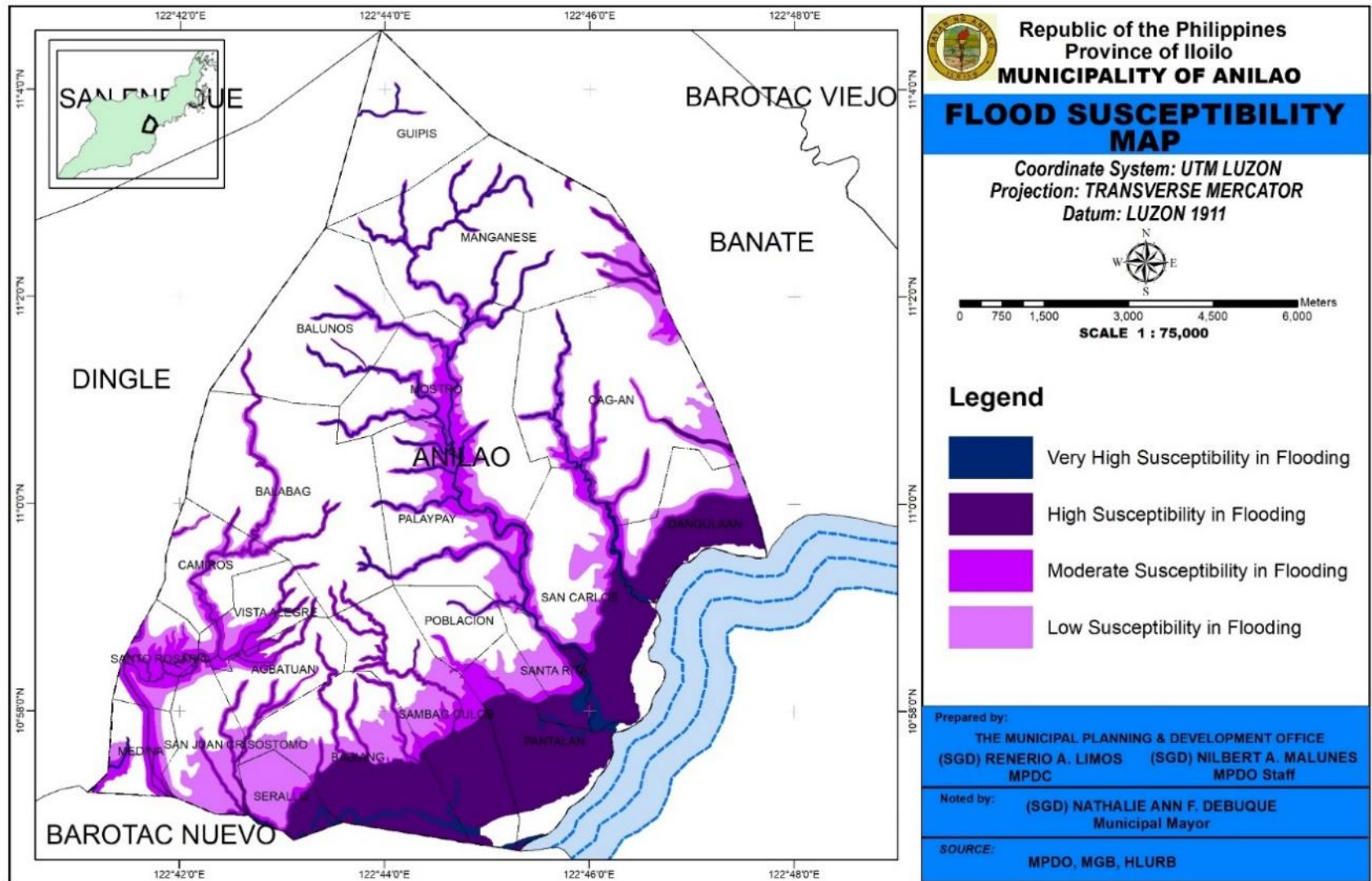




Figure PE-11.Landslide Susceptibility Map

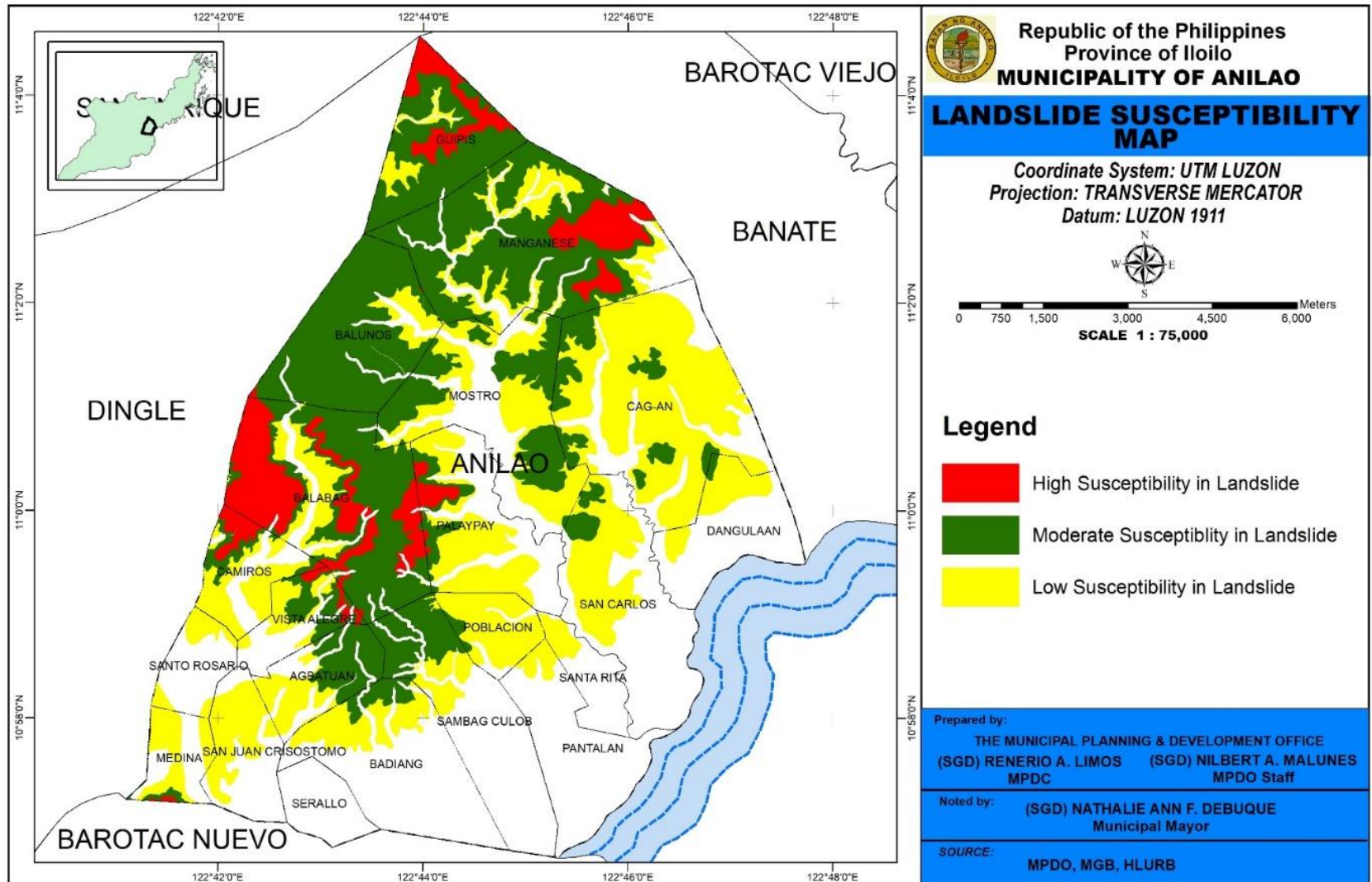
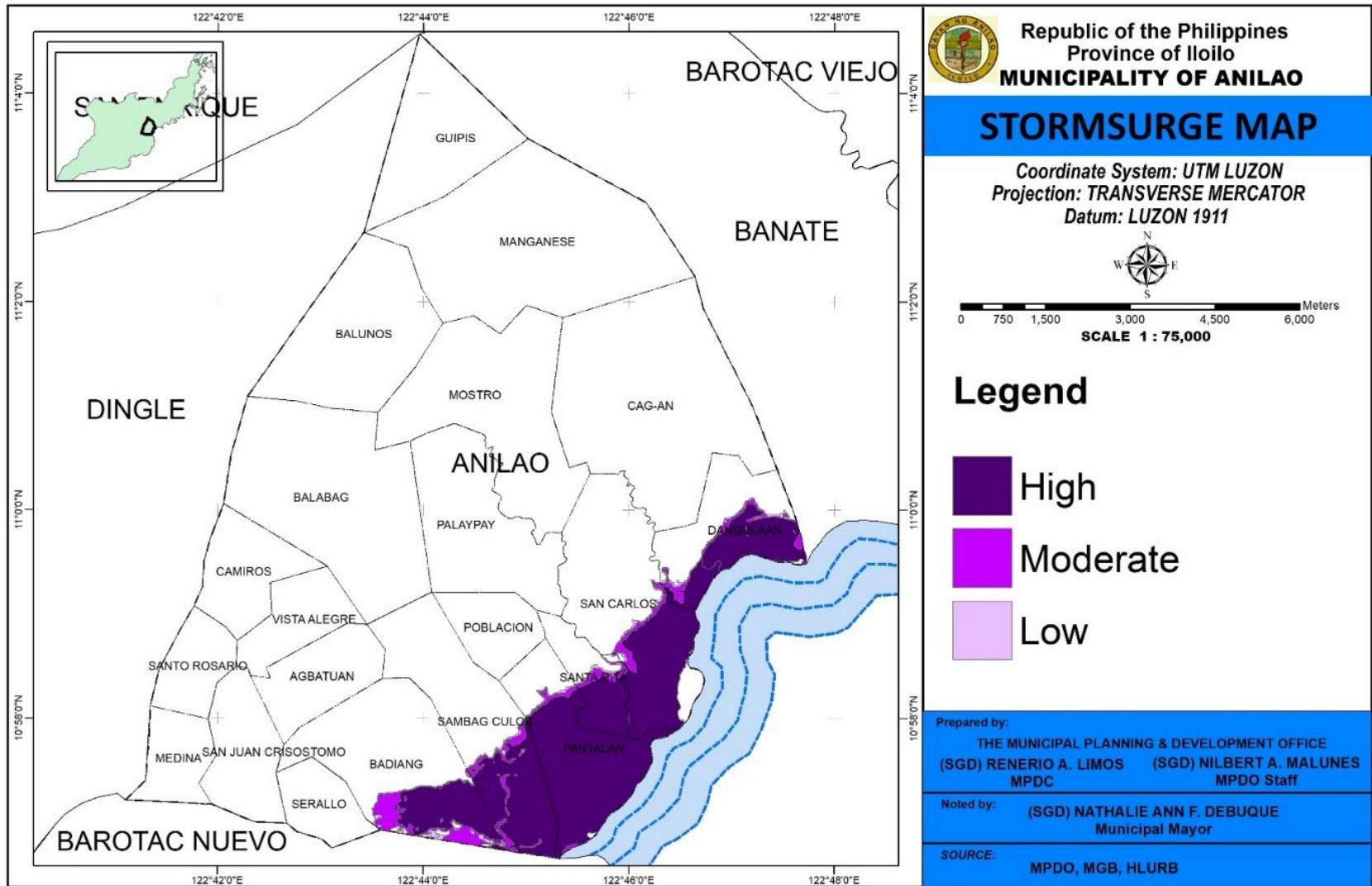




Figure PE-12.Stormsurge Susceptibility Map



## Conservation Areas and Other Special Interest Area

### Coastal Habitats

#### Mangroves

All species of mangroves and beach forests such as Bakawan (*Rhizophora apiculata*, *Rhizophora mucronata*, *Rhizophora stylosa*), Pagatpat (*Sonneratia Alba*), Bungalon (*Avicennia alba*, *Avicennia marina*, *Avicennia officinalis*, *Avicennia mucronata*), saging-saging (*Aegiceras corniculatum*), Gapas gapas (*Campostemon philippinensis*) and Tungog (*Ceriops decandra*) were considered for conservation.

There are seven (7) coastal barangays in the Forest and Forest Land (FFL) area of the municipality with a total area of 218.0 hectares mangrove cover. Naturally grown mangroves land initially settled in Barangay Badiang, Serallo, Sambag Culob, Pantalan, Sta Rita, San Carlos, Dangula-an and Pantalan.

Mangrove reforestation projects were also implemented along river banks of Barangays Pantalan, Sta. Rita, Dangula-an and Serallo. National Greening Project (NGP) was implemented in Barangays of Pantalan and Dangula-an. Tree planting projects were in coordination with Girl Scout of the Philippines (GSP) Anilao Chapter, Local Government of Anilao as well as with provincial and national agencies.

#### Fish Sanctuaries/Marine Protected Areas

The Municipality of Anilao has established a Marine Protected Area (MPA) consisting of 32.0 hectares sea grass beds and 4.0 hectares coral transplantation project. The 32.0 hectares sea grass area is a part of Anilao Marine Sanctuary situated about three kilometres from the shoreline of Dangula-an and San Carlos. Species of *Enhalus Acroides* and *Enhalus sp.* are species of sea grasses found in this area.

The 4.0 hectare coral transplantation project (Anilao Coral Garden) was declared as marine sanctuary where 20 species of hard and soft corals are grown in concrete artificial reef modules. The project was introduced by the students from the Philippine Science High School in 2005 and was later adopted by the local government up to the present. This area is being monitored and maintained by the LGU Bantay Dagat Task Force and the fisherfolk's organizations.

The coral species were *Acropora*, *Montipora*, *Favites*, *Turbinaria*, *Pocillopora*, *Pavona*, *Merulina*, *Galaxea*, *Porites*, *Seriatopora*, *Stylophora*, *Hydnophora*, *Euphyllia*, *Echinopora*, *Fungia*, *Herpolitha*, *Goniopora*, *Favia*, *Lithophyllon* and *Goniastrea*.



### Grasslands and Shrubs/Brush land

A total of 624.66 hectares of grasslands and shrubs/brush land is located in the Forest and Forest Land area of the municipality.

### Heritage/Physical Site

Proposed as a heritage site in the municipality is an old stone chimney (local term "*Simborio*") still stands in its original site at Taruc, Barangay Poblacion. It is a testament to Anilaonons' industrial heritage.

Before the existence of the modern sugar centrals in Iloilo, there was the Muscovado mills located at Sitio Taruc, Barangay Poblacion Anilao, Iloilo. It was not uncommon to see the "simborio" or smokestack of the old Muscovado (brown) sugar mill found in large sugar plantations in the town 67 years ago. In the farms surrounding Anilao, from a distance there is a grey stone structure which stood alone and imposing in the middle of unending fields of green. The "simborio" were part of a century-old technology of milling sugar, and were actually the smokestack or chimney part of the Muscovado mill. In the old days, one sugarcane plantation in Anilao had its own Muscovado mill. It must have been cost-effective if not energy-efficient since the owner had really large sugarcane plantation in the town where sugarcane is abundant. The Taruc's of Anilao built this structure in the year 1951 and use this primitive type because it is less effectively run. At this present time however, this antique structure is not very visible anymore, in the town and her modern generation. Perhaps it was been destroyed by modernization and what is left is structure standing proud of its rich and admirable past. The efforts of the Local Government Unit pave way to encourage the new generation to preserve and protect this important emblem in the evolution of the rich economy of Anilao way back.



**CHAPTER III - ECOSYSTEM ANALYSIS**

**FOREST ECOSYSTEM**

The Local Government Unit of Anilao values the forest and forestland, for this is the last area in which it can preserve its existence and value especially the remaining natural forest and mangroves. Its natural landscape can be develop for nature-based tourism, its potential contribution to lessen the impact of climate change and the benefits it can provide to local people through agro-forestry development.

Human activities such as kaingin system, deforestation and illegal logging and expansion of fishpond and agricultural land contribute to the problems in forest and forestland. These impose a great challenge to the community and everyone is aware that loss of biodiversity also destroys the watersheds and natural forest. Kaingin system is practiced to provide wider area for plantation and charcoal-making which is the alternative livelihood of the upland dwellers. Sometimes it can also be the cause of grassfire during dry season. Large part of FFL area was converted into agricultural land and the beneficiaries of the government on land tenurial status tend to do conversions to survive.

**Existing Forest Land Uses and Classification**

Anilao has a total land area of 10,141.77 hectares consisting of 8,092.47 hectares of alienable and disposal land and 2,049.3 hectares of Forest and Forest Land (FFL) area. Based on the data from the Forest Land Use Plan (FLUP), it could be noted that a substantial portion is dominated by fishpond representing 48.02%. In upland areas, 665.03 hectares is open access while mangrove areas are 1,087.62 hectares including the foreshore areas and fishpond areas. Table EC-1 shows that the total 2,049.30 hectares of Forest and Forest Land area, 1,087.62 hectares are timberland mangrove and 961.68 hectares of upland area.

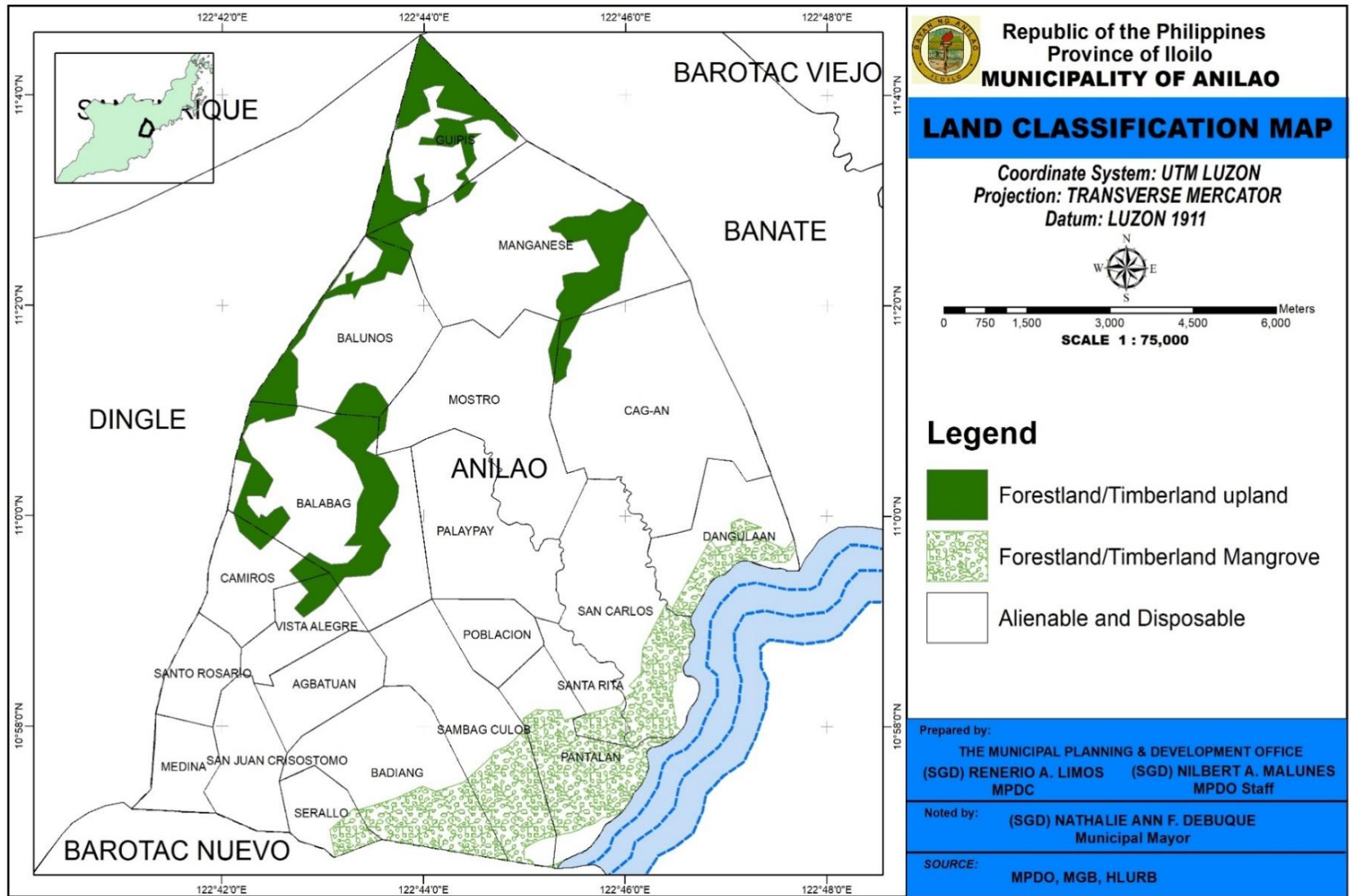
**Table EC-1. Land Classification Map of Anilao**

| LAND CLASSIFICATION               | AREA (ha) |
|-----------------------------------|-----------|
| Forest Land /Timber Land/Mangrove | 1,087.62  |
| Forest Land Timber Land/Upland    | 961.68    |
| TOTAL                             | 2,049.3   |

Source: FLUP



Figure -1. Land Classification Map



**Table EC-2. Production and Protection Areas of Forest Lands**

| ALLOCATION        | LAND CLASSIFICATION |               |                 |                 |
|-------------------|---------------------|---------------|-----------------|-----------------|
|                   | A&D (ha)            | FL (ha)       | Mangrove (ha)   | Total Area (ha) |
| Production Forest | 0                   | 605.15        | 3.03            | 608.18          |
| Protection Forest | 39.13               | 356.53        | 1,084.59        | 1,480.25        |
| <b>TOTAL</b>      | <b>39.13</b>        | <b>961.68</b> | <b>1,087.59</b> | <b>2,088.43</b> |

Source: FLUP

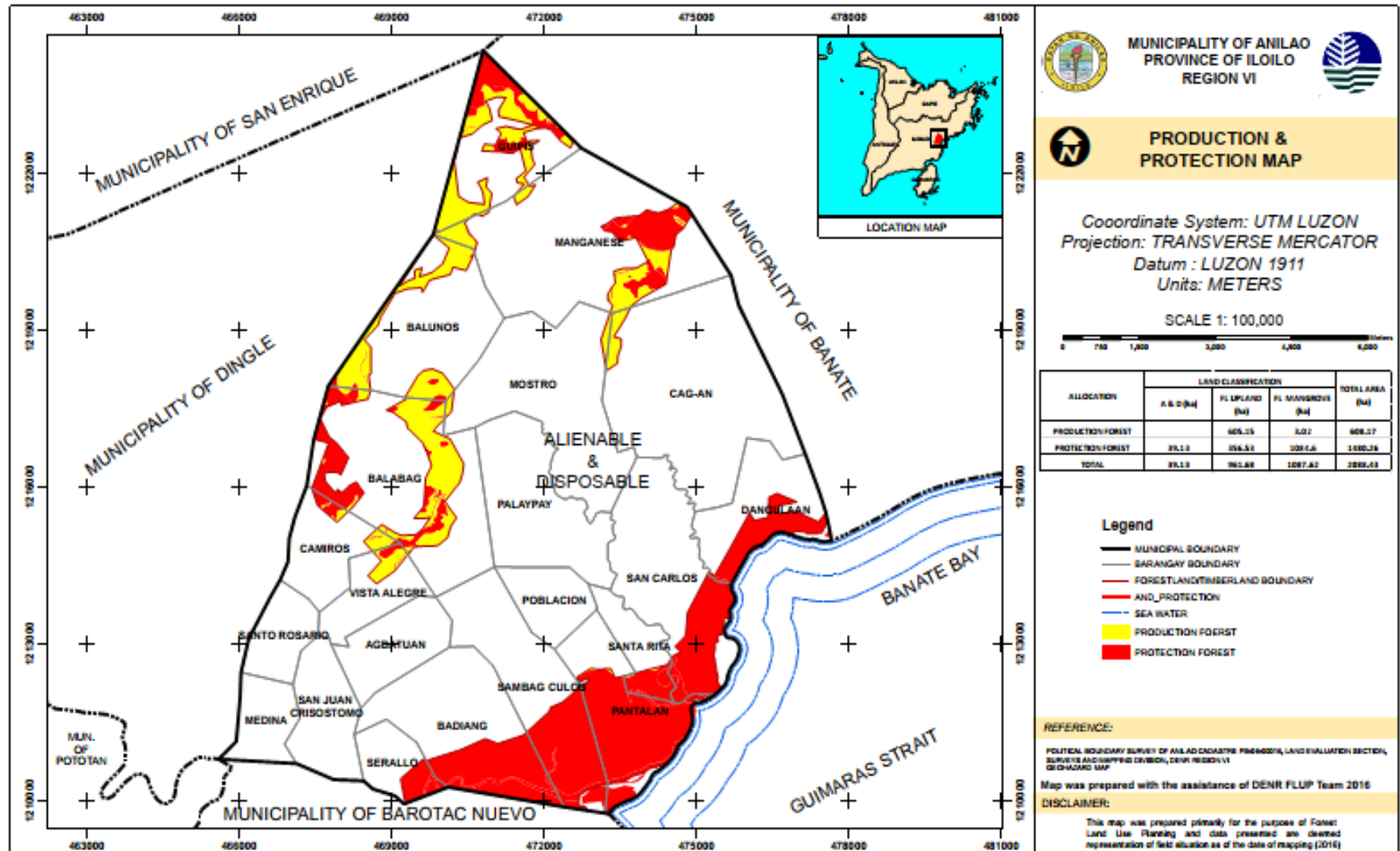
Total forest area is further divided into 608.18 hectares production area and 1,480.25 hectares protection forest. Production forest is a part of FFL areas where agricultural, forestry and livestock production is allowed with a total area of 608.18 hectares. This area includes 605.15 hectares of FFL Upland and 3.03 hectares mangroves.

Protection forest is an FFL without production activities allowed within the area, only tree planting and reforestation has a total area 1,480.25. Protection forest included 356.53 hectares of upland forest, 1087.59 hectares of Mangrove and 39.13 hectares of Alienable and Disposable lands. Please note that the total mangrove areas includes all brackish water fishponds and the 39.13 of which is a titled land.





Figure EC-2. Production and Protection Forest Map



Source: FLUP



**Table EC-3. Recent Vegetative Cover of FFL Area in Anilao**

| VEGETATIVE COVER  | LAND CLASSIFICATION |                  | TOTAL AREA (ha) |
|-------------------|---------------------|------------------|-----------------|
|                   | FL UPLAND (ha)      | FL MANGROVE (ha) |                 |
| ANNUAL CROPS      | 312.63              | 3.94             | <b>316.57</b>   |
| PERENNIAL CROPS   | 16.47               |                  | <b>16.47</b>    |
| SHRUBS/BRUSHLANDS | 553.00              |                  | <b>553.00</b>   |
| WOODED GRASSLAND  | 3.62                |                  | <b>3.62</b>     |
| GRASSLAND         | 71.66               |                  | <b>71.66</b>    |
| BUILT-UP AREA     | 4.30                | 2.11             | <b>6.41</b>     |
| MANGROVE FOREST   |                     | 57.39            | <b>57.39</b>    |
| FISHPOND          |                     | 984.17           | <b>984.17</b>   |
| SEA WATER         |                     | 40.01            | <b>40.01</b>    |
| <b>TOTAL</b>      | <b>961.68</b>       | <b>1087.62</b>   | <b>2049.30</b>  |

Source: FLUP

Table EC-3 shows the recent vegetative cover of the FFL area in Anilao in both upland and mangrove lands.

Built up area of 6.41 hectares consists of 4.30 hectares forest land upland and 2.11 hectares of mangrove areas. These areas existed prior to conduct of survey for FLUP formulation.

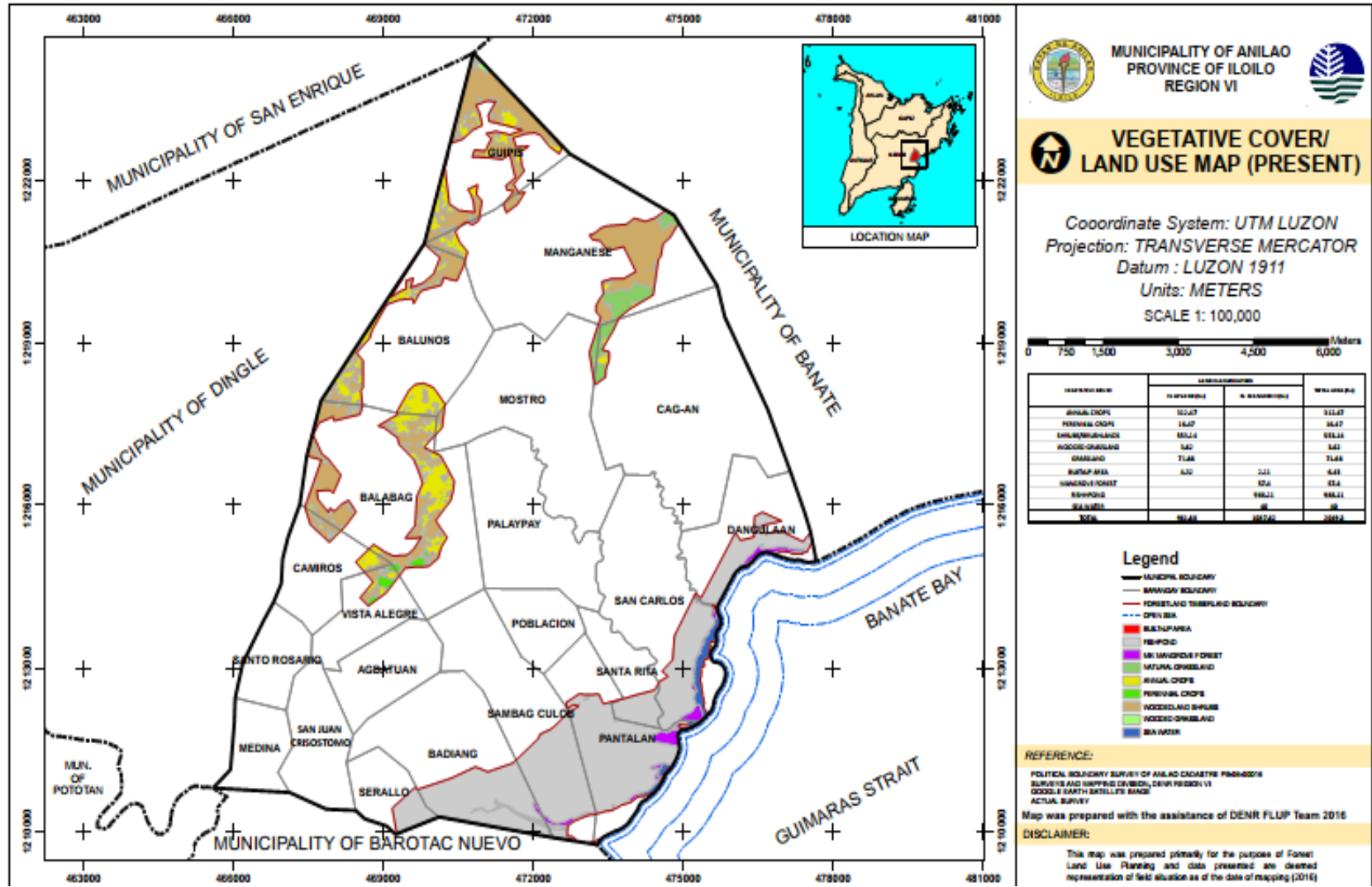
Sea water is included in the table as a result of receding mangrove and land area due to fishpond development and erosion and wave action. This area is located in Sitio Baringan, Barangay San Carlos, Anilao,Iloilo.

Data shown in Table EC-2 and EC-3 only shows the FFL areas only and not the total 10,141.77 hectares of the municipality.





Figure EC-3. Vegetative Cover Map



Source: FLUP



### Mangrove Forest

The mangrove areas are part of the forest area of Anilao. Seven (7) barangays has recent vegetative cover of 57.39 hectares (CENRO, Btac. Nvo.), the remains from the previous vast mangrove cover now converted into brackish water fishponds. However, based on the FLUP as a result of the mapping conducted by DENR, the total area considered as mangrove lands is 1,087.62 hectares. This includes the vegetative and non-vegetative areas. Naturally grown mangrove land initially settled in Barangays of Badiang, Serallo, Sambag Culob, Pantalan, Sta. Rita, San Carlos, Dangula-an while National Greening Project (NGP) and other reforestation areas were implemented in Barangays of Pantalan, San Carlos and Dangulaan. These are initiatives supported by the JICA, the Girl Scout of the Philippines (GSP) Anilao Chapter, the BFARMC, local fisherfolks organizations, Local Government of Anilao as well as provincial and national agencies.

### Grasslands and Shrubs/Brushlands

There is a total of 624.66 hectares of grasslands and shrubs/brush lands within the FFL areas. These areas are potential for agroforestry and pasturelands. Shrubs/brush lands occupy 553.0 hectares of FFL area which are planted with forest and fruit trees. Grasslands occupy 71.66 hectares mostly cogonal areas usually used as pasture or grazing area for livestock and source of roofing material for houses.

### Biodiversity Resources

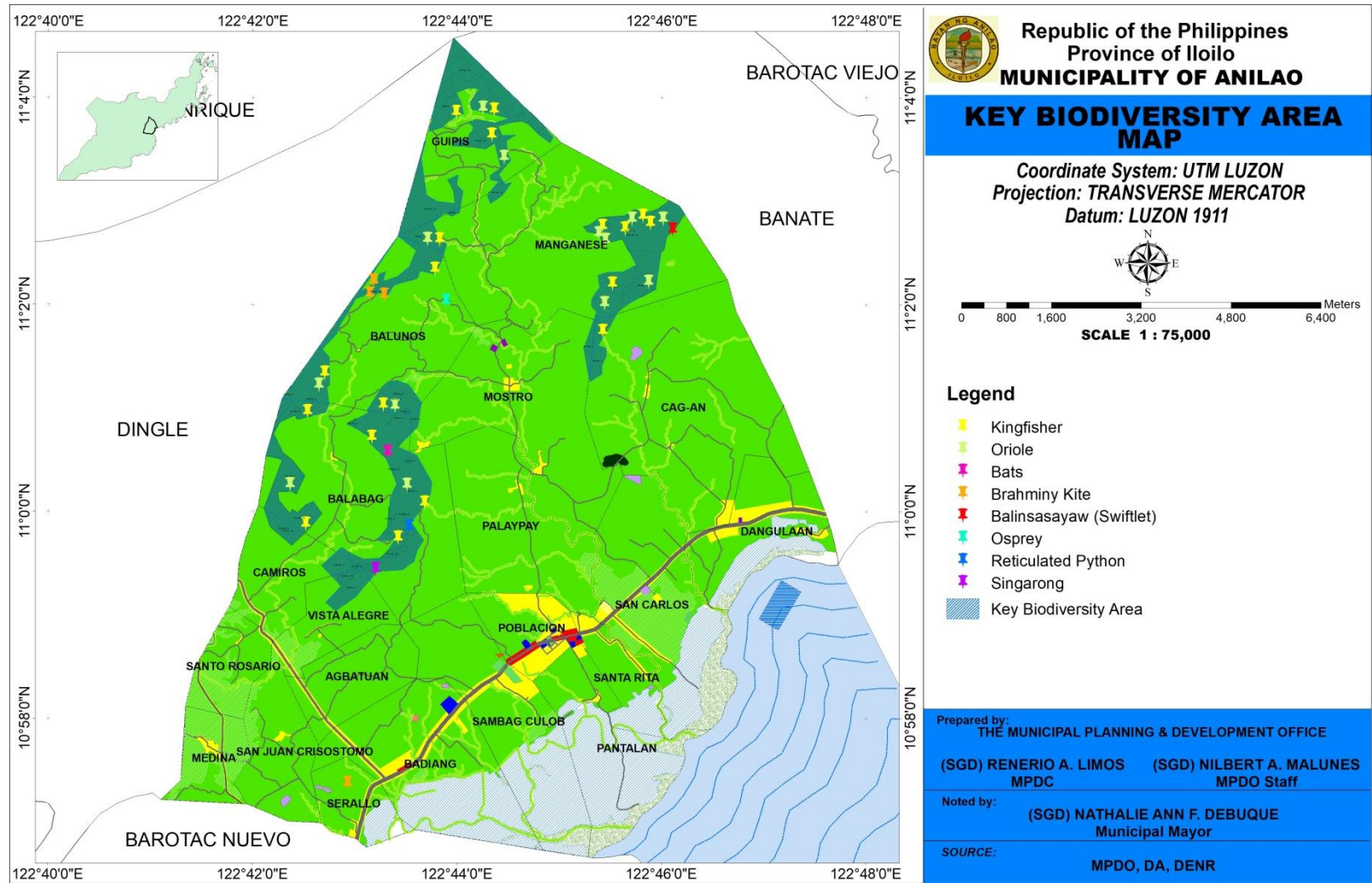
Anilao as a small municipality is endowed with diverse endemic species of flora and fauna. Different species of animals are still found in some areas. There were Balinsasayaw, Kingfisher, Oriole, Osprey, Brahminy kite, and different species of water birds in FFL areas. Some species of cats like singarong and reticulated python are also present. Wild orchids, fungi, ferns and indigenous species of trees are some of fauna in the forest and forest land area.

Common species of mangroves and beach forests found in coastal areas such as Bakawan (*Rhizophora apiculata*, *Rhizophora mucronata*, *Rhizophora stylosa*), Pagatpat (*Sonneratia Alba*), Bungalon (*Avicennia alba*, *Avicennia marina*, *Avicennia officinalis*, *Avicennia rumphiana*), Lipata (*Exoecaria agallocha*), Dungon (*Heritiera littoralis*), Saging-saging (*Aegiceras corniculatum*), Tungog (*Ceriops decandra*), Tabao or culasi (*Lumnitzera racemosa*), Nipa (*Nypa fruticans*), Bantigi (*Pemphis acidula*), Tabigi (*Xylocarpus granatum*). *Gapas-gapas* or *Camposteno philippinensis sp.* an endangered species in the whole world, is also found in coastal areas of Barangays Dangula-an and San Carlos.

*Enhalus sp.* and *Enhalus acroides* are the seagrasses identified in the Anilao Seagrass Reserve also at Barangay Dangula-an, Anilao, Iloilo.



Figure EC-4. Key Biodiversity Area Map



**Nature-Based Tourism Assets**

**Natural landscapes**

- ✓ Mount Patugpahon, the highest peak (approximately 350m above sea level) in Anilao, found at Brgy. Manganese;
- ✓ Mount Hamugnaw, dubbed as the cold mountain of Anilao, at Manganese, a stone plateau atop this majestic mountain showing all parts of Anilao’s coastline and agricultural fields;
- ✓ Mt. Manykiya at Brgy. Balunos, a place believed to be a haven of myths and folklore;
- ✓ Sta. Ana Cave at Palaypay, Anilao;
- ✓ Canada Cave found in Balunos, Anilao;
- ✓ Medina Cave at Brgy. Medina, Anilao

**Falls**

- ✓ Darangkalan Falls, Brgy. Balunos, - “the bottom of the waterfall is varnished clear and a haven of nymphs and fairies”;
- ✓ Boyboyan Falls, Palaypay – is the tallest falls in the municipality and has 7 small falls;
- ✓ Agtambo Falls, Balunos – the waterfall is a gateway for those who wanted to experience a river-trek from Balunos to Mostro.

**Mangrove cover** – A total of 218 hectares (MPDO data) existing in the coastal areas of Anilao. This data includes those at river banks underdeveloped fishponds, foreshores and estuaries. A two 2 hectare mangrove area thriving with different species of century old mangrove trees at Brgy. San Carlos, Anilao are potential attractions and can be developed for eco-tourism activities.

**Baringan Beach** – The Baringan Beach at Sitio Ilawod, San Carlos gives the tourists the experience of swimming in a crystal clear water and allow tourists to engage in recreational activities such as shell gathering and eating freshly harvested shells (tahong, punaw, litob, sisi and talaba).

**Mineral Resources**

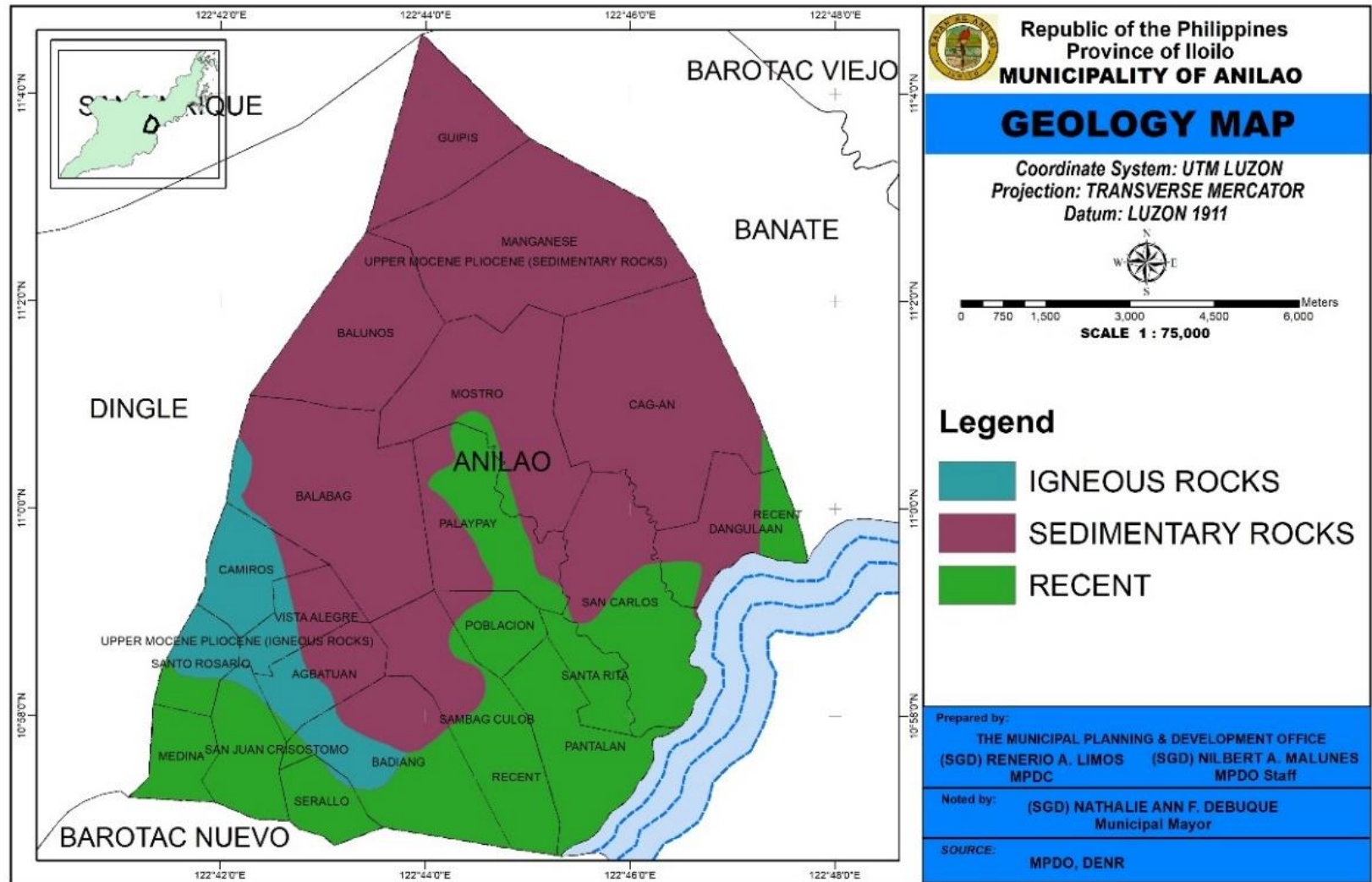
Geographically located in the northern part of the Province of Iloilo, Anilao is one of the towns endowed with such number of hills and mountains stretching the total length of the municipality from south to north. With approximately seventy-five (75) percent of its area considered hilly and mountainous, the area seems unproductive and not susceptible to development. However, the hills and mountains have their own rewards. Exploration of the private mining firm found a large volume of manganese in one of the barangays of Manganese, Guipis, Balunos and Mostro. Traces of other minerals such as coal have also been noted.

Basalt deposits are rich in Brgy. Cag-an and Mostro where a quarry for basalt is situated, while Brgy. Balabag was found to be rich in limestone.





Figure EC-5. Geology Map



## COASTAL ECOSYSTEM

### Profile and Analysis of the Existing Situation

Anilao is a ridge to reef ecosystem with approximately 8.5 kilometers of coastline (BBRMCI data, 2010) and a total marine territorial area (municipal waters) estimated at 2,084.0 hectares (based on GIS data). The municipal water is a shallow water area that ranges from not less than 5 meters to more than 15 meters depth. It has a distance of more or less 6.5 kilometers measuring from foreshore to the middle part of the Banate Bay equidistant with the Municipality of E.B. Magalona in Negros Occidental. It is included in the Visayan Sea area which is the most diverse marine ecosystem in the Philippines. The municipality is a member of the Banate Bay Resource Management Council, Inc.(BBRMCI) An alliance of four Local government units pooling together their resources acting together for the protection and construction of coastal resources in Banate Bay, these municipalities are Banate, Anilao, Barotac Nuevo and Barotac Viejo. A council office is located in Banate when the day to day affairs of the council is carried over by technical unit composed of personnel detailed by each member LGU. Through this alliance programs and projects were channeled to each LGU through the BBRMC Board of Trustees.

The coastal ecosystem of the municipality encompasses the whole of the coastal waters within its territorial boundaries bordered by the seven coastal barangays (see Figure EC-6). This was zonified into different zones as provided in its approved Fisheries Municipal Ordinance No. 2004 (see Zoning Map, Figure EC-7).

The coastal ecosystem of Anilao is rich with diverse marine and fishery products due to the presence of mangroves, fishponds, sea grass beds and some corals planted in the Coral Garden, (see Figure EC-8).

There is a total of 2,162 registered fisherfolks, of which 975 are males and 1,187 are females that derived their livelihood from the waters of Anilao. The presence of varied species of shells, mollusks, sea weeds, pelagic fishes, mussels and crustaceans supports the livelihood of these fisherfolks. These fisherfolks employs mostly passive fishing gears like gill nets, cast nets, seines, hook and line, crab lift nets, crab pots and fish corral in capturing fish and other fishery products. Most of these fisherfolks fish within the shallow water fishing area zone of the municipal waters of Anilao.

Figure EC-6 shows the different uses in the coastal ecosystem. Part of the mangroves areas, the tidal flats and brackishwater fishponds are also included in the coastal ecosystem



Figure EC-6. Water Use Map

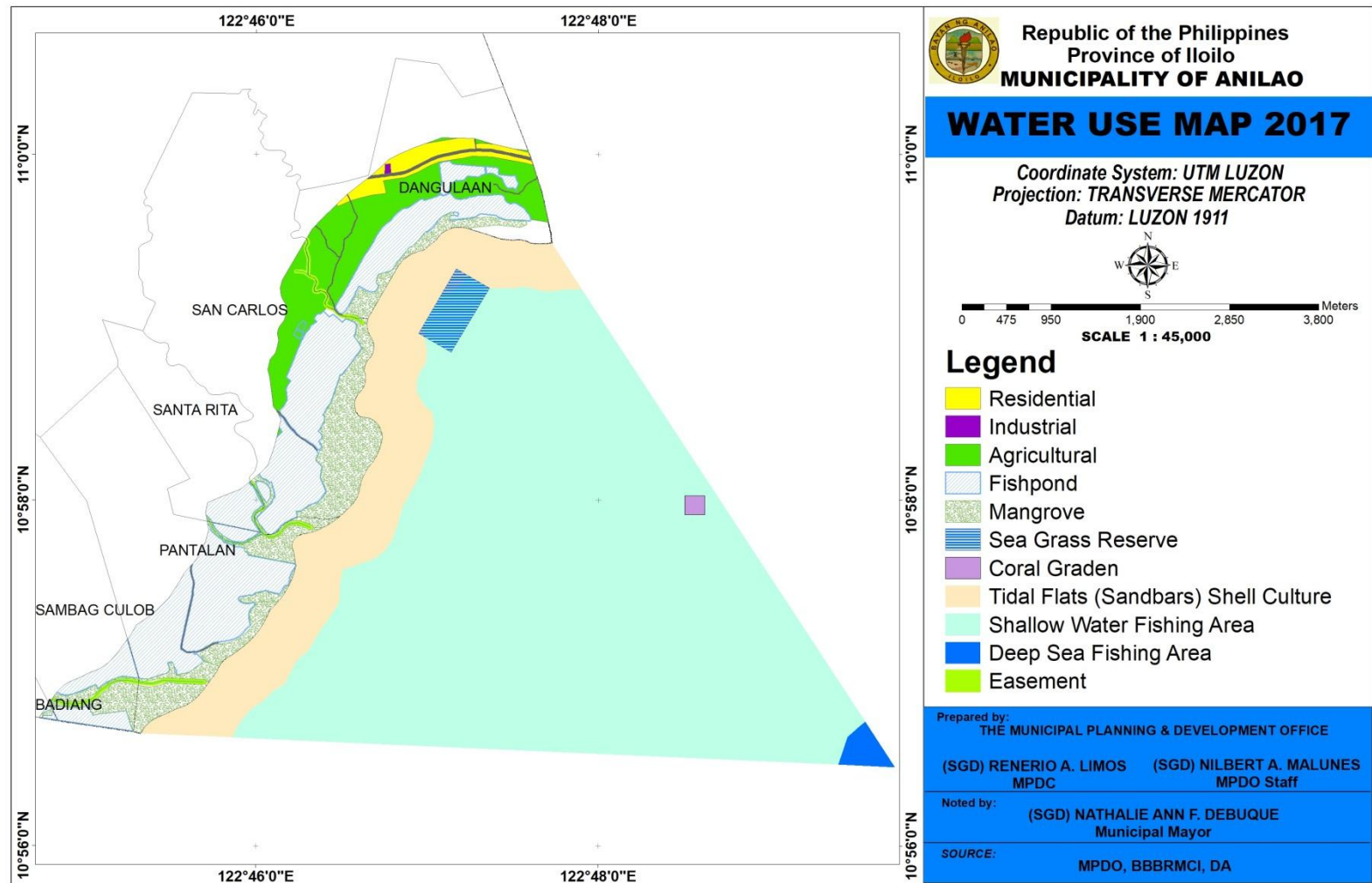
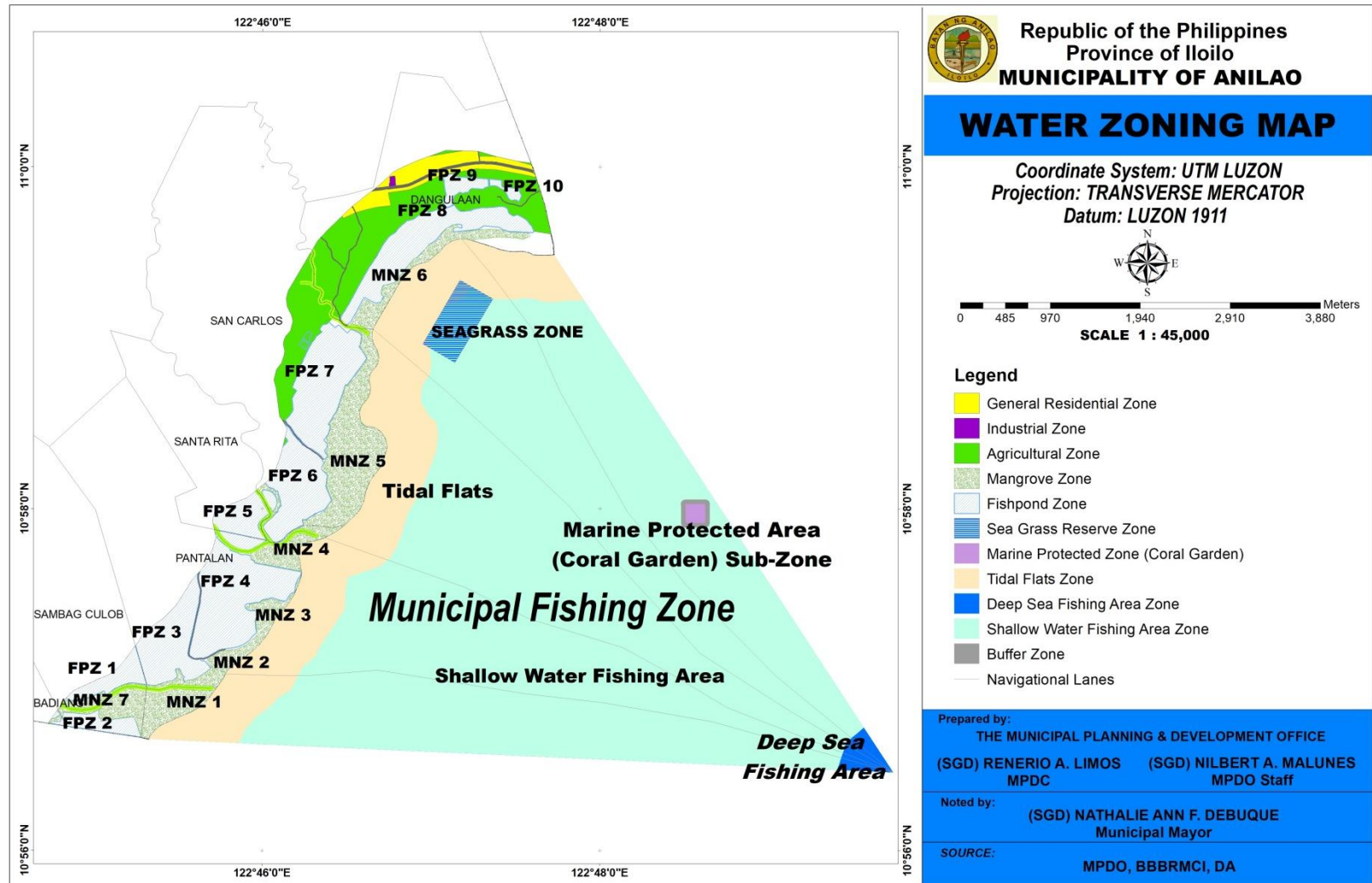


Figure EC-7. Water Zoning Map





### The Coastal Zone Classification

As provided in the Municipal Fisheries Ordinance No. 2001-09, the municipal waters of Anilao for purposes of planning and management is classified into six (6) zones (see Figure EC-7) namely: (1) Zone I – Freshwater Tributaries and Brackishwater Fishponds; (2) Zone II – Mangrove Areas; (3) Zone III – Tidal Flats; (4) Zone IV – Shallow Water Fishing Areas; (5) Zone V – Deep Sea Fishing Areas and (6) Zone VI – Fishery Refuges, Reserves and Sanctuaries. Below are the description of each of the coastal zones: Brackishwater Fishponds

- (1) Zone I – Freshwater Tributaries and Brackishwater Fishponds – refers to all river systems including its tributaries and brackishwater fishponds, developed and undeveloped. Provided, that not more than 10 percent of the surface area of the rivers of the municipality may be devoted to aquaculture and mariculture purposes. All coastal barangays are included in this zone with a total of 1,108.00 hectares of brackishwater fishponds, developed or underdeveloped used for milkfish production. Anilao River and Dangula-an River feeds freshwater that mixes with salt water making the area suitable for oyster and green mussel culture
- (2) Zone II - Mangrove Areas – refers to areas measuring the distance of not less than fifty (50) meters from the peripheral dike of fishponds going seaward or any purposes of any foreshore land area or riverbank without proper license or permit from the municipality. A total of 218.7252 hectares (GIS data) is the existing mangrove areas of the municipality. Tree planting activities is being conducted to enhance the area so as to increase protection from hazard like storm surge and destruction of fishponds. Local government of Anilao Local community and National Agriculture are working together to increase its member.
- (3) Zone III - Tidal Flats - refers to foreshore areas exposed to lowest low tide where seashells abound and intended for shell fish gathering or gleaning. In this area, shell gathering and leisure activities happen.
- (4) Zone IV - Shallow Water Fishing Areas – refers to areas with a water depth of 0.5 meters to 10 meters during lowest low tide. This area is reserved for shallow water fish corrals, fish shelters, stationary lift nets, crab pots, cast nets, push nets and for the culture of green mussel and oyster. Municipal fishing which includes all passive fishing gears as provided in the Municipal Fisheries Ordinance is allowed in this zone.
- (5) Zone V - Deep Water Fishing Areas – refers to areas with water depth of more than 10 meters during low tide open to fishing using using allowed passive gears with motorized bancas. This zone includes the deep sea fishing area where the operation of stationary lift nets, modified fish corral and other gears using motorized fishing boats but are three gross tons and below.
- (6) Zone VI - Fishery Reserves, Refuges and Sanctuaries – refers declared as marine protected areas such as marine sanctuaries, fish refuges or fish sanctuaries. This zone includes the Anilao Marine Sanctuary as the Marine Protected Area (MPA). There are two (2) ecosystems included in the MPA, one is the Sea Grass Reserve Area with an area of 32.0 hectares and the Anilao Coral Garden which is 4.0 hectares.



### The Marine Protected Areas

There are two (2) declared Marine Protected Areas (MPA) in this municipal water namely, Anilao Seagrass Reserve and Anilao Coral garden as shown in Figure EC-8). These MPAs are protected from any fishing activity through Municipal Ordinance No. 2012-03, "An Ordinance Declaring some portions of Brgy. Dangulaan, Anilao, Iloilo as marine Sanctuaries.

The seagrass reserve has a total of 32.0 hectares area home to seagrass, brown mussels, blue crabs, and other fish juveniles. *Enhalus sp* and *Enhalus acoroides* are the seagrasses identified in the area that covers most of the reserve while other species are found in spots. In the buffer zone, 20 meters surrounding the marine protected area (MPA), fishing activities is limited to passive fishing gears like beach seine, push nets, gill nets, fish shelter, fish traps and hook and line fishing, shell gathering and other shallow water fishing activities. While in the core zone, no fishing is allowed.

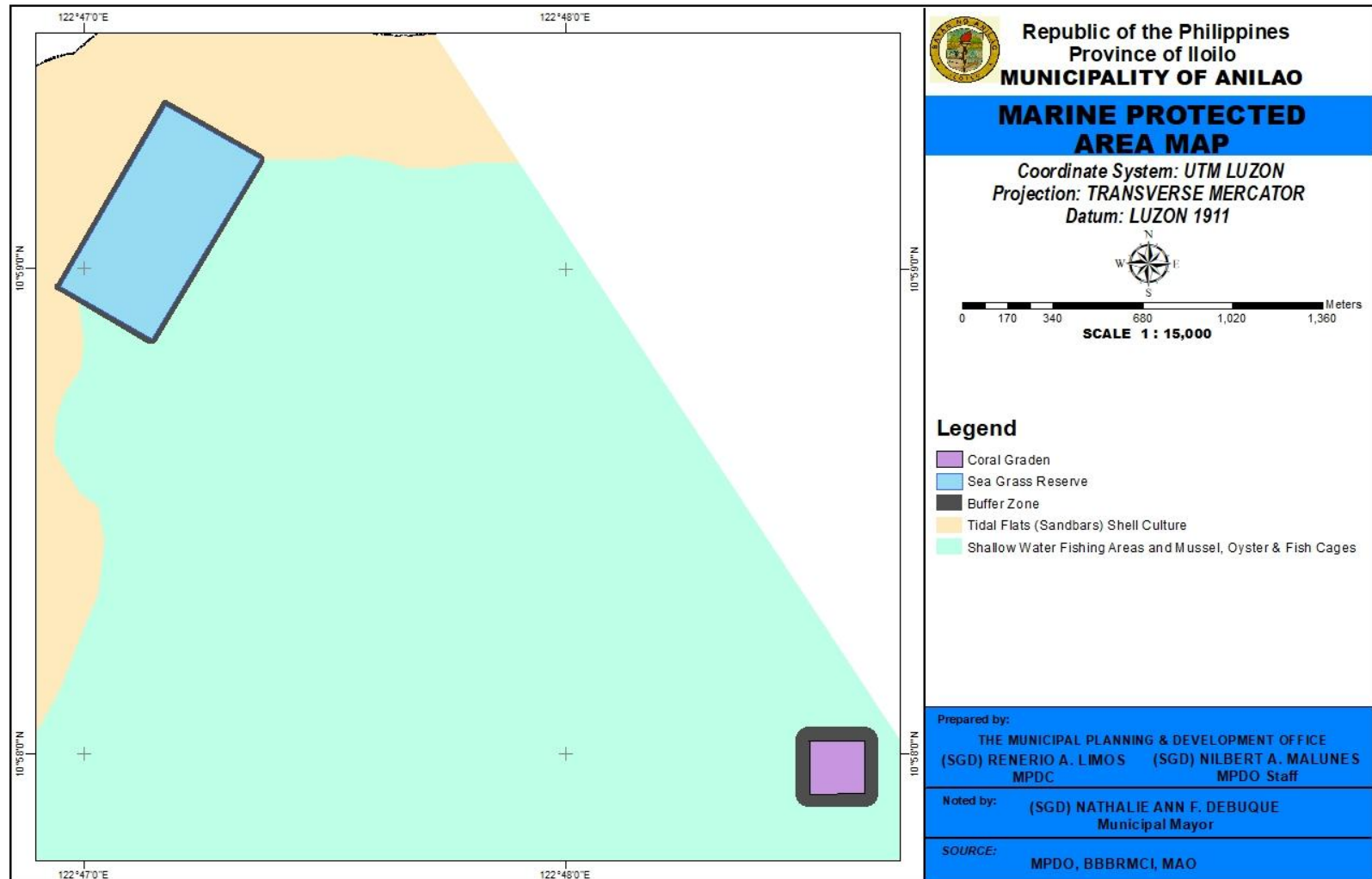
The Anilao Coral Garden was established last 2009 in a 4.0 hectare coral transplantation area with a depth of 9 meters about three (3.0) kilometers off the coast of the municipal waters. The area has a 50 meters buffer zone surrounding the MPA. In this area, only hook and line fishing is allowed. This project was materialized through the support of then Mayor Ma. Teresa F. Debuque in coordination with the Philippine Science High School-Western Visayas. An experimental project which grow into a successful shelter for fishes. The project is built-up of 485 units of concrete artificial reefs planted with coral fragments and found to grow successfully over the years.

From almost none when the project started, there are already 29 resident fish species in Anilao Coral Garden Marine Reserve. As of 2016, these fish species are estimated to contribute a total biomass of around 65 kilograms to the marine reserve. This fish recruitment improves with time as the growing corals provide more biological and structural complexity to the area. The current fish community in the marine reserve exhibit a form of seasonality such that species will come and go at times but some species are already adapted and taken permanent residency in the artificial reef complex inside the project site.

As the area turned into a developing ecosystem, various genera of corals are already starting to grow and colonize the area. A particular transplant has already spawned in the area and newly settled spats are already starting to colonize available concrete surfaces. This is a clear indication that this transplant is already adapted to its new environment. While the transplanted corals grow, resident fish species were also recruited in the area with the increased structural and biological complexity of the new habitat.



Figure EC-8. Marine Protected Area Map



An underwater assessment was conducted in 2011 by BBRMCI and showed the following species of fish composition:

| ACG Fish Recruitment Data     |                                    |                       |                       |                 |
|-------------------------------|------------------------------------|-----------------------|-----------------------|-----------------|
| Dec 01 2011; 10:22 – 11:35 AM |                                    |                       |                       |                 |
| Depth: 5.3 Meters             |                                    |                       |                       |                 |
| Water Temp: 31 °C             |                                    |                       |                       |                 |
| Biomass formula:              |                                    | W = a .L <sup>b</sup> |                       |                 |
| FAMILY                        | SPECIES                            | COUNT                 | SIZE (cm)             | Wt (g)          |
| HAEMULIDAE                    | Plectorhinchus flavomaculatus      | 142                   | 23                    | 33883.41        |
| EPHIPPIDAE                    | Platax teira                       | 26                    | 18                    | 5995.12         |
| CENTROPOMIDAE                 | Psammoperca waigiensis             | 45                    | 18                    | 4046.68         |
| CARANGIDAE                    | Selaroides leptolepis              | 60                    | 12                    | 2290.30         |
| SPHYRAENIDAE                  | Sphyraena flavicauda               | 30                    | 24                    | 2186.35         |
| MONACANTHIDAE                 | Monacanthus chinensis              | 30                    | 11                    | 746.42          |
| APOGONIDAE                    | Apogon sealei                      | 435                   | 3.5                   | 423.66          |
| NEMIPTERIDAE                  | Scolopsis vosmeri                  | 12                    | 11                    | 309.86          |
| NEMIPTERIDAE                  | Scolopsis bimaculatus              | 2                     | 12                    | 73.10           |
| SCORPAENIDAE                  | Scorpaenodes guamensis             | 1                     | 12                    | 28.74           |
| POMACENTRIDAE                 | Pomacentrus coelestis              | 3                     | 2                     | 0.69            |
| CARANGIDAE                    | Atule mate                         | 26                    | 27                    | 10235.16        |
| TETRAODONTIDAE                | Diodon hystrix                     | 1                     | 26                    | 592.87          |
| LUTJANIDAE                    | Lutjanus carponotatus              | 2                     | 23                    | 733.28          |
| SERRANIDAE                    | Cephalopholis boenak               | 5                     | 16                    | 319.21          |
| NEMIPTERIDAE                  | Scolopsis monogramma               | 8                     | 15                    | 423.31          |
| SIGANIDAE                     | Siganus fuscescens                 | 2                     | 14                    | 91.28           |
| NEMIPTERIDAE                  | Pentapodus bifasciatus             | 15                    | 13                    | 421.25          |
| CHAETODONTIDAE                | Chelmon rostratus                  | 2                     | 13                    | 90.79           |
| OSTRACIIDAE                   | Ostracion cubicus                  | 1                     | 13                    | 82.53           |
| SCORPAENIDAE                  | Pterois volitans                   | 1                     | 13                    | 47.46           |
| NEMIPTERIDAE                  | Scolopsis ciliatus                 | 4                     | 12                    | 121.70          |
| CHAETODONTIDAE                | Parachaetodon ocellatus (juvenile) | 8                     | 10                    | 214.45          |
| POMACENTRIDAE                 | Abudefduf septemfasciatus          | 2                     | 9                     | 32.67           |
| POMACENTRIDAE                 | Pomacentrus brachialis             | 10                    | 6                     | 24.93           |
| TETRAODONTIDAE                | Canthigaster janthinoptera         | 2                     | 4.5                   | 6.26            |
| APOGONIDAE                    | Rhabdamia gracilis                 | 24                    | 4                     | 32.80           |
| APOGONIDAE                    | Apogon kiensis                     | 12                    | 4                     | 16.40           |
| POMACENTRIDAE                 | Chromis ternatensis                | 1200                  | 3.5                   | 1925.14         |
| total count                   |                                    | <b>2111</b>           |                       | <b>65395.80</b> |
| total number of species       |                                    | <b>29</b>             |                       |                 |
| Chromis ternatensis           | <b>1200</b>                        |                       | most abundant species |                 |



|                                    |   |    |  |          |
|------------------------------------|---|----|--|----------|
| Atule mate                         |   | 27 | largest species (cm)                                     |          |
| Plectorhinchus flavomaculatus      |   |    | sp. With biggest biomass (g)                             | 33883.41 |
| Parachaetodon ocellatus (juvenile) | 8 | 10 | Butterflyfish (bigger number indicates healthier corals) |          |
| Chelmon rostratus                  | 2 | 13 | Butterflyfish (bigger number indicates healthier corals) |          |

Source: BBRMCI

**Mangroves**

Along the coastline, different species of mangroves and beach forests such as Bakawan (*Rhizophora apiculata*, *Rhizophora mucronata*, *Rhizophora stylosa*), Pagatpat (*Sonneratia Alba*), Bungalon (*Avicennia alba*, *Avicennia marina*, *Avicennia officialis*, *Avicennia rumphiana*), Lipata (*Exoecaria agallocha*), Dungon (*Heritiera littoralis*), Saging-saging (*Aegiceras corniculatum*), Tungog (*Ceriops decandra*), Tabao or culasi (*Lumnitzera racemosa*), Nipa (*Nypa fruticans*), Bantigi (*Pemphis acidula*), Tabigi (*Xylocarpus granatum*) and Gapas-gapas (*Campostemun philippinensis*.) Data on the status of mangroves in selected sampling sites is shown in Table EC-4 as an output during the Mangrove Assessment conducted by DENR Region VI in Anilao in 2008 and 2009.

Based on the Forest Land use Plan of the municipality, a total of 57.39 hectares of contiguous mangrove area is found in three barangays namely; Pantalan, Dangulaan and San Carlos. However, GIS data showed a total of 218.7252 hectares which now includes patches of mangroves lining within rivers and creeks and along abandoned fishponds areas within the seven coastal barangays. Naturally grown mangrove land initially settled in Barangays of Badiang, Serallo, Sambag Culob, Pantalan, Sta. Rita, San Carlos, Dangula-an while National Greening Project (NGP) was implemented in Barangays of Pantalan and Dangulaan. Tree planting projects are in coordination with Girl Scout of the Philippines (GSP) Anilao Chapter, Local Government of Anilao as well as provincial and national agencies.

**Table EC-4. Summary of Height Class Distribution of Plants in Pantalan, Anilao measures in 2008 and 2009**

| Height Class | Measurements in 2008 |        | Measurements in 2009 |        |
|--------------|----------------------|--------|----------------------|--------|
| 0.00-1.00    | 0                    | 0.00%  | 4                    | 6.45%  |
| 1.01-2.00    | 0                    | 0.00%  | 9                    | 14.52% |
| 2.01-3.00    | 10                   | 15.38% | 11                   | 17.74% |
| 3.01-4.00    | 11                   | 16.92% | 10                   | 16.13% |
| 4.01-5.00    | 8                    | 16.92% | 5                    | 8.06%  |
| 5.01-6.00    | 13                   | 12.31% | 3                    | 4.84%  |
| 6.01-7.00    | 11                   | 20.00% | 3                    | 4.84%  |
| 7.01-8.00    | 11                   | 16.92% | 11                   | 17.74% |
| 8.01-9.00    | 1                    | 1.54%  | 1                    | 1.61%  |
| 9.01-10.00   |                      | 0.00%  | 2                    | 3.23%  |
| 10.01-11.00  |                      | 0.00%  | 1                    | 1.61%  |
| 11.01-12.00  |                      |        | 1                    | 1.61%  |
| 12.01-13.00  |                      |        | 1                    | 1.61%  |

Source: BBRMCI



Table EC-1. Shows the results of the sampling data conducted in January 2009 with a baseline data in February 2008 by the representatives of DENR and BBRMCI. The results of the sampling showed that the height class distribution of trees measured in Pantalan, Anilao as shown in Table RC 1 has regressed as noted by the sampling team and was gathered from testimonies of informants on site which includes the rampant cutting of mangroves, the destruction caused by typhoon Frank in the middle of June 2008 that may have contributed in part to the reduction of height, land reclamation which is typical among established mangrove forests have also contributed to the reduction of the height of trunks and crown of bungalow were being attacked by insects locally known as “ ulod-ulod” or “iras” causing leaf defoliation and consequently affecting the crown height as well as the total height of the affected plants.

**Table EC-5. Data on the Number of Individuals, Density, relative density, frequency, relative frequency and importance value of mangroves species in Barangay Pantalan, Anilao**

| Species      | Quantity  | Area (sq.m.) | Frequency    | Relative Frequency | Density      | Relative Density | Importance Value |
|--------------|-----------|--------------|--------------|--------------------|--------------|------------------|------------------|
| Bungalow     | 35        | 75           | 0.500        | 50.00              | 0.467        | 66.038           | 58.019           |
| Buta-buta    | 18        |              | 0.500        | 50.00              | 0.240        | 33.962           | 41.981           |
| <b>Total</b> | <b>53</b> | <b>75</b>    | <b>1.000</b> | <b>100.00</b>      | <b>0.707</b> | <b>100.00</b>    | <b>100.00</b>    |

Source: BBRMCI

Since Anilao is a coastal community, the rehabilitation of decreasing mangrove forest has been placed as a priority program of the local government. As an offshoot of the vegetative cover assessment, the municipality identified 218.7252 hectares of mangrove vegetation located at Barangay Dangula-an, San Carlos, Pantalan, portions along river banks and creeks of Badiang, Serallo and Sta. Rita for protection. Dense mangrove areas are found in Barangay San Carlos and Dangulaan.

At present, most of these mangrove areas are planted through the National Greening Project (NGP) of the Department of the Environment and Natural Resources (DENR), the Department of Agriculture, the Bureau of Fisheries and Aquatic Resources (BFAR) with the participation of Peoples Organizations and LGU and schools. The coastal community were tapped and mobilized in the coastal enhancement initiative thru mangrove rehabilitation program.

Patrolling and surveillance of the coastal waters through “Bantay Dagat Program” is conducted to control the illegal activities that may cause the loss of natural resources and biodiversity. A strong collaboration among the stakeholders is being pursued by the municipality through



Series of capacity-building activities. The Bantay Dagat should be conducted to equip them with the knowledge of handling the various scenarios on the ground. Fishpond operators will be coordinated for the protection of existing mangroves and plantation.

People in the coastal area are striving and dependent on small scale fishing activities such as shellfish gathering, fish capture using shallow water fish coral, push nets, gill nets, hook and line, crab pots, oyster and mussel culture and crab fattening.

### **Risk and Hazards in the Ecosystems**

The coastal areas of the municipality are susceptible to hazards and risk from landslide, floods and storm surge. Results of Climate and Disaster Risk Assessment were used as basis in determining the exposure and risk of the fishpond areas while exposure maps shows detailed level of exposure to storm surge (Figure EC-12). Figure EC-10-11 shows the level of exposure of the coastal areas to flood and landslide.

Generally, the coastal areas of Anilao has high susceptibility to flood, while those near rivers and streams has very high susceptibility. These areas also shows very low exposure to landslide as shown in Figure EC-11. However, exposure map (Figure EC-12) shows that six (6) out of the seven (7) coastal barangay has very high to moderate exposure to storm surge.

Relocation is the best way for coastal communities that are highly susceptible to sea-level rise, floods and storm surge. Adaptation of these communities is needed by implementing measures such as creation of mangrove plantation which has proven to lessen the effect of storm surge. Strict implementation of no build zones in marine salvage zones also lower the number of households that are in affected areas. It is also suggested that households should build houses in more stable ground, with strong materials and resilient building designs. But, oftentimes it is met with strong resistance for it is too expensive and for other reasons.

Portions of both production and protection forest areas located in Barangay Camiros, Balabag, Vista Alegre, Mostro, Balunos, Manganese and Cagan have low to moderate exposure to flood. While coastal forests located in the six (6) barangays namely San Carlos, Pantalan, Badiang, Danguaan, Sta. Rita and Sambag Culob have high susceptibility to flood.

Forest areas located in Barangay Balabag, Vista Alegre, Manganese and Guipis have high susceptibility to landslide. The rest of the forested areas have moderate to low susceptibility as shown in Figure EC-10-12.





Figure EC-9. Ecosystem Exposure to Flooding

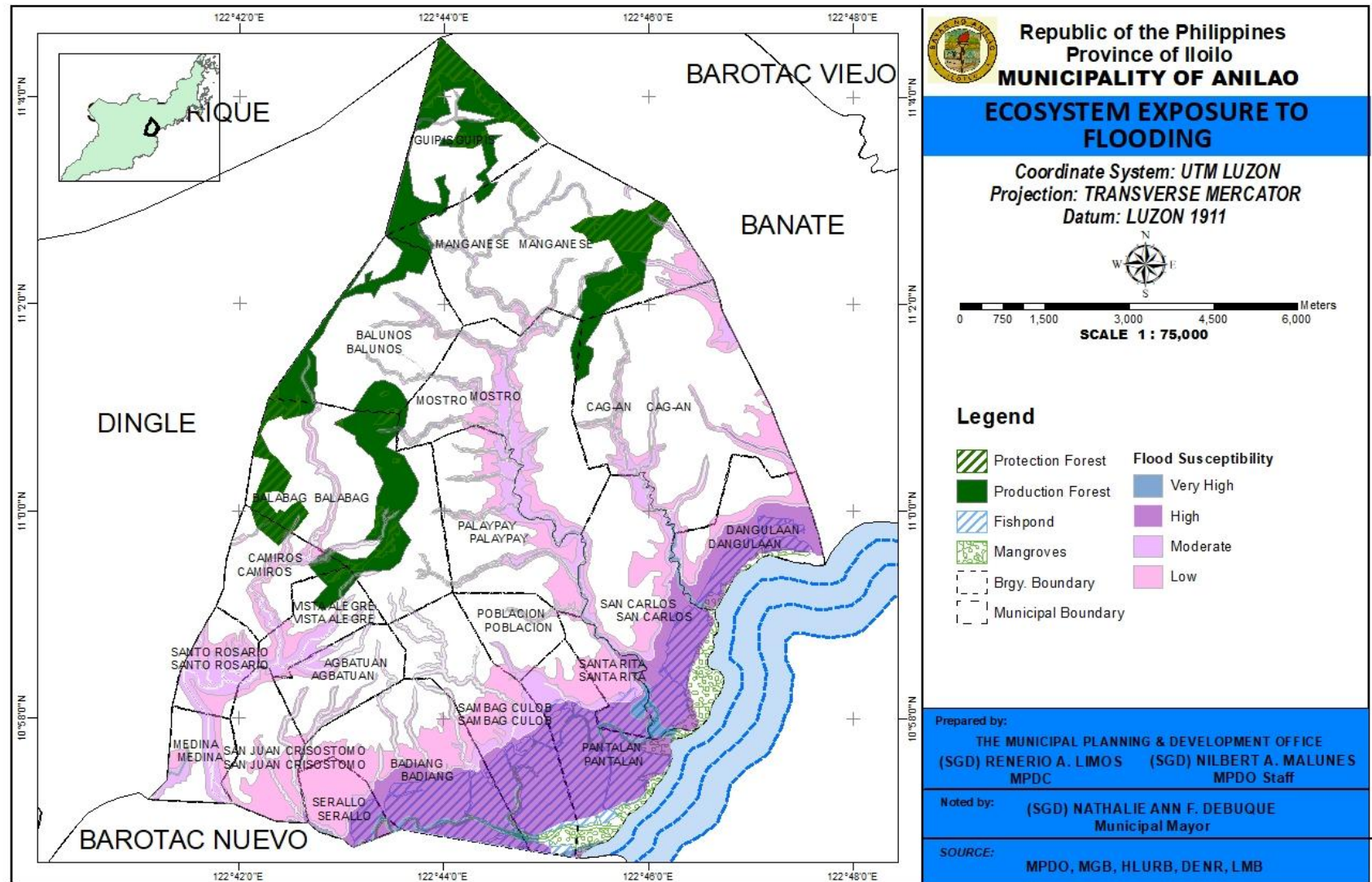


Figure EC-10. Ecosystem Exposure to Landslide

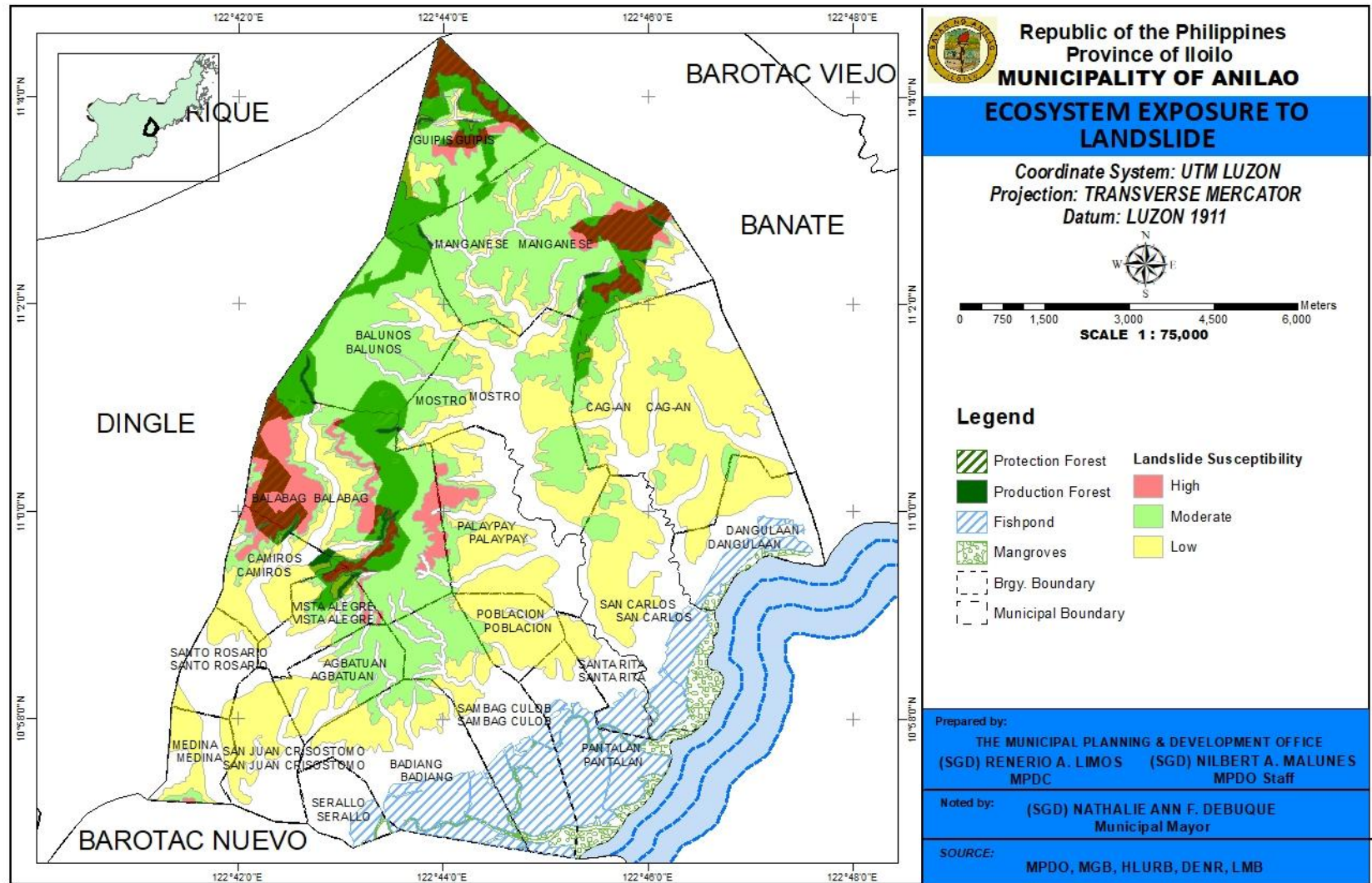
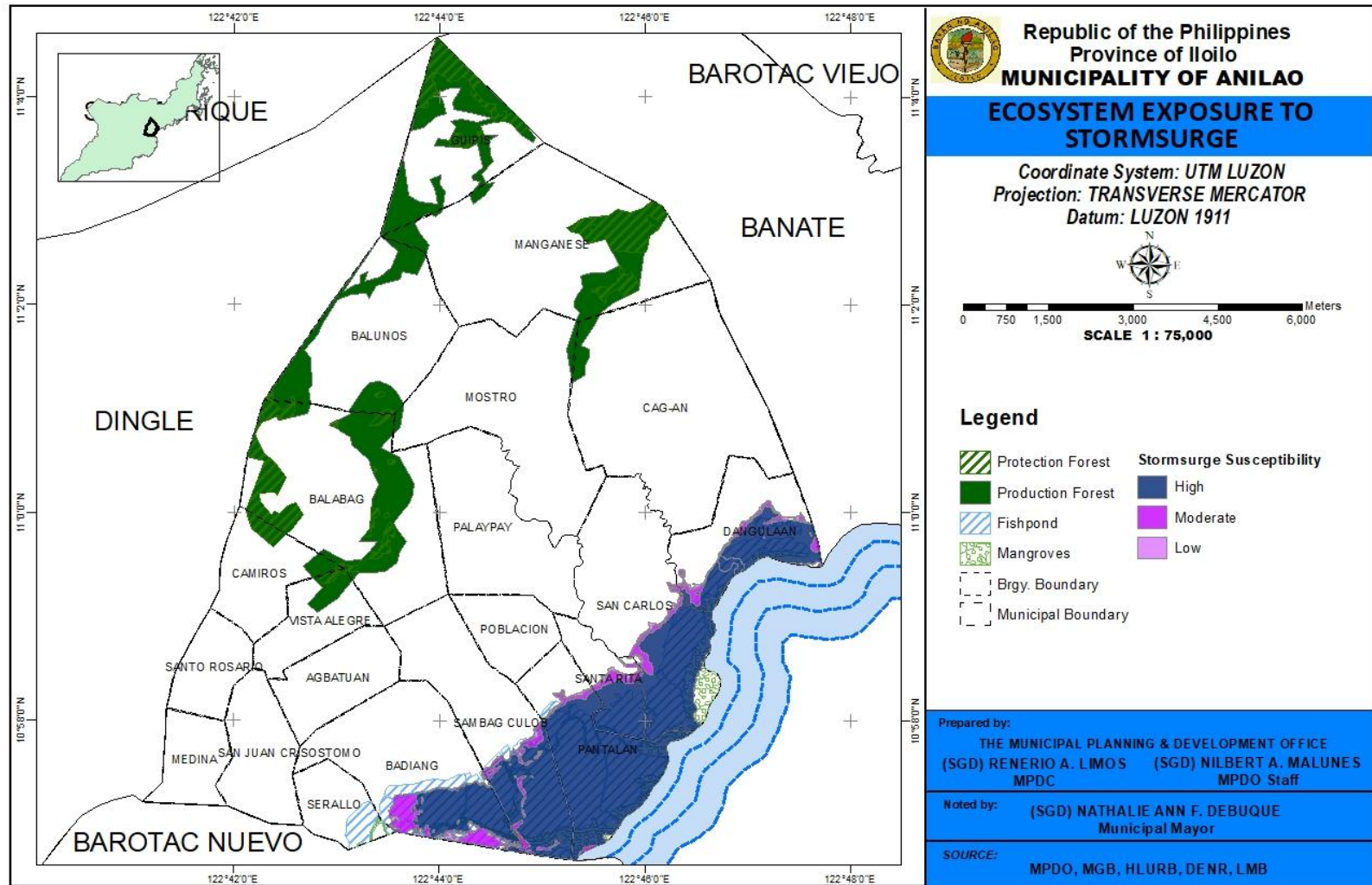




Figure EC-11. Ecosystem Exposure to Stormsurge



**Ecosystem Sector Analysis Matrix**

| <b>Coastal / Marine Ecosystem</b>                                    |  |   |
|--|--|---|
| <b>Technical Findings/<br/>observations/<br/>Issues and concerns</b> | <b>Effects, impacts,<br/>implications</b>  | <b>Policy options/interventions</b>   |
| Illegal expansion of fishponds                                       | <ul style="list-style-type: none"> <li>- Constricted rivers that causes obstruction of water ways</li> <li>- Flooding</li> </ul> | <ul style="list-style-type: none"> <li>- Strict monitoring of the FLA areas</li> <li>- - inter-agency collaboration to identify areas with illegal expansion</li> <li>- Imposition of penalties</li> <li>- Review of the ordinance</li> </ul>   |
| Kaingin system in upland areas                                       | Landslides and soil erosion  | <ul style="list-style-type: none"> <li>- Implementation of the FLUP</li> <li>- Strict enforcement</li> <li>- Creation/Activation of Forest Wardens</li> </ul>   |
| Susceptibility to flood of low-lying areas                           | Flooding and high risk to disasters  | <ul style="list-style-type: none"> <li>- Imposition of no built zone</li> </ul>   |
| Used of MPAs for ecotourism  | Habitat damage and degradation   | The fees that can be charged from the users of municipal waters include access fees, license fees and registration fees for fishers and vessels, safety inspection fees, marketing fees, fishery management fees, accommodation fees, entrance fees, and permits for establishments in the coastal zone and Marine Protected Areas (MPAs) used as tourism sites, and pollution charges. |
| Mariculture and Aquaculture developments                             | Water quality degradation  |   |
| Illegal Dumping of wastes and wastewaters                            | Unstable coastal integrity and sedimentation   |   |
| Unregulated small scale mining/quarrying                             |  |   |
| Declining fisheries production                                       | Threatens food security  | Open and closed season, property rights (either territorial use rights or access rights regulations) <ul style="list-style-type: none"> <li>- Implementation of Fishery Laws on illegal fishing, Strengthening of Bantay Dagat and Fishery Task Force,</li> <li>- Implementation of FAO 163 or Closed season for sardines</li> </ul>  |
|  |  | Establishment and Implementation of Environment sustainable Livelihood projects like oyster, aquasilviculture, and mussel culture.  |



|  |  |   |
|--|--|---|
| Slow project implementation and lack of IECs                     | Ignorance of fishery laws and failure of programs  | Strengthen BFARMC, MFARMC and conduct of monthly meetings and IECs<br>- Intensify IECs activities to all stakeholders   |
| Conflicting municipal water boundaries                           | Conflicting management thrusts   | Enhancement of Alliance with neighboring municipality and Baywide /seawide programs.<br>- Strengthening of Bantay Dagat Program   |
| Need for an inter-LGU Alliance in implementation                 | Division of resources and revenues   | Revenue and cost sharing involves an agreement between parties on percentage of sharing and the use of the funds. Revenue and cost sharing can be done between the municipal and barangay LGUs, among municipal LGUs (e.g., alliances) or between the LGU and law enforcers.  |
| Large extent of coastal areas of LGU (covering several barangays | Difficulty in implementation of ordinances and collection of revenues due to demand for more manpower and wide area of policing coverage | LGU-barangay revenue and cost sharing. An agreement can be made between the LGU and barangays to divide the revenue from user fees and/or fines and penalties. The two parties must agree upon the percentage of shares. Coastal barangays can also set up a CRM Barangay Fund where CRM revenues shall accrue fines and penalties. The two parties must agree upon the percentage of shares. Coastal barangays can also set up a CRM Barangay Fund where CRM revenues shall accrue |
| Mangrove areas in a titled area                                  | Mangrove deforestation or degradation  | Section 16 (8) of Presidential Decree (PD) 705 (Revised Forestry Code) “mangrove or swamplands atleast twenty (20) meters wide, along shorelines facing oceans, lakes, and other bodies of water, and strips of land at least twenty (20) meters wide facing lakes” are needed for forest purposes and may not be classified as alienable and disposable land.  |
| Declining Mangrove Area/band                                     | Habitat degradation and fishpond areas destruction   | Reclamation of Mangrove Area through establishment of 40 meters easement from the seashore, construction of sea walls/wave breakers and Extensive Mangrove planting.  |
| Existence of private fishponds                                   | Unregulated aquaculture  | According to Section 57 of RA 8550, private fishponds like fish hatcheries and fish breeding facilities must be registered with LGUs. The LGU in consultation with the Department of Agriculture shall prescribe minimum standards for such facilities.   |



|  |   |   |
|--|---|---|
| Seagrass bed degradation due to harvesting/extraction    | Habitat degradation                                   | The municipal government can regulate or prohibit the harvesting of seagrasses within its territorial jurisdiction through the issuance of appropriate ordinances. Though there is no provision in the Fisheries Code that prohibits the harvesting of seagrasses, Section 92 of RA 8550 penalizes any person who fish using gear methods that destroy coral reefs, seagrass beds, and other fishery marine life habitat. |
| Used of destructive fishing gears                        |   |   |
| Endangered species monitored in the area of Anilao       |   | Preservation of endangered species and surrendering to proper authorities (LGU/DENR) for documentation and marking.   |
| Coral extraction and trade                               | Habitat degradation                                   | The law bans the exploitation and exportation of corals and prohibits any person or corporation from gathering, possessing, selling or exporting ordinary, precious and semi-precious corals, whether raw or in processed form, except for scientific or research purposes (Section 91 of the Philippine Fisheries Code). The implementing rules are provided in FAO 202 series of 2000.                                  |
| Coastal/ Marine  | Agricultural zone is directly above the mangrove area | Agricultural wastes would pollute mangrove ares and coastal waters  |
|  | Reduction of fish catch                               | Destruction of Coastal Ecosystems   |
| Structures or settlements in high or critical risk areas | Damage to properties and life                         | Relocation in safer location with provision of access to their workplace or maybe provision of alternative livelihood.  |



Forest Ecosystem Analysis Matrix

| Ecosystem               | Technical Findings/Observation   | Implications (Effects)   | Policy Options/Interventions   |  |
|-------------------------|--|--|--|--|
| Forest/Upland/Mountains | Forest degradation   | imbalance ecosystem, flooding, landslide, erosion, global warming  | Strict enforcement of forestry laws provision of livelihood support            |  |
|                         |  | Shortage of water supply   | Reforestation program  |  |
|                         | Overlapping tenurial issues  | disputes and conflicts among beneficiaries   | coordination among concerned agencies  |  |
|                         | Rampant "kaingin system"   | Denuded forest Increased exposure to hazards   | Strict implementation of "No kaingin system" policy<br>Planting trees advocacy |  |
|                         | Occurrence of Forest and grass fire  | Denuded forest due to charcoal and timber production   | Strict Implementation of Anti-burning laws.                                    |  |
|                         | Illegal logging  | Increased exposure to hazards  | Enforce laws on illegal logging<br>Planting trees advocacy                     |  |
|                         | IP's in watershed area   |  | Extinction of animal endangered species  | Provide livelihood program and relocation site |
|                         |  |  | Destruction of Biodiversity  |  |
|                         | Laxity in the implementation of forest protective policies   | Flooding, landslides, erosions, siltation  | Strict policy implementation   |  |
|                         | Non awareness of the people of the adverse effects of destroyed forest   | Irresponsible cutting of trees   | Motivation Values orientation education  |  |
| Forest Degradation      | <ul style="list-style-type: none"> <li>- Rising temperature</li> <li>- Soil erosions</li> <li>- River Siltation</li> </ul> | <ul style="list-style-type: none"> <li>- Impose law in environmental protection</li> <li>- Implement no cutting policy</li> <li>- Implement proper land use as classified by the DENR</li> </ul> |  |  |





|   |                                       |  |   |
|---|---------------------------------------|--|---|
|   |                                       | - Forest Denudation<br>- Forest fires                            | -Reforestation/ Promote tree growing program<br>Formulation & Implementation of FLUP<br>Strengthening of Bantay-Gubat<br>- Establishment of MENRO<br>- IECs |
| Agriculture and Fisheries                           | Low crop production                   | -slow down of economic growth                                    | - Construction/ Provision of Irrigation facilities  |
|   | Incidence of Pest and Diseases        | - Food Shortage /Poverty   | - Practice of Integrated Pest Management  |
|   |                                       |  | - Provide subsidy   |
|   |                                       |  | - Conduct climate field school  |
|   |                                       |  | - Promote multiple cropping and crop rotation   |
|   |                                       |  | -Promote organic farming  |
|   |                                       | Low Farm Gate Price during harvest, low income of farmers        | - Adequate Post-harvest Facilities, Capacity Building Trainings for farmers, Public Private Partnerships (PPP), Outsourcing/financing, Input Subsidy.       |
|   | Poor road condition                   | High transportation cost   | - Construction of Farm to market roads  |
|   |                                       | Low quality of Products  |   |
|   | High cost of farm inputs              | High expenditure ,   | - Provide subsidy in the farm inputs of the farmers   |
| Low farm income                                     |                                       | - Tap wholesale buyers for a possible high prize to the products |   |
|   |                                       | - Promote organic farming  |   |
| Malpractice of Agri Farming                         | Crop Production shortage Soil erosion | -Application of diversified farming/ Organic Farming             |   |
| Decreasing supply of fish and other marine products | Shortage of marine products           | -Impose policy/law/ordinance on fish catching during off season  |   |
|   | - Low income for the fisherfolks      | -Regulate fishing vessel activities                              |   |
|   |                                       | - Implement RA 10654   |   |



|                                    |  |  |   |
|------------------------------------|--|--|---|
|                                    |  |  | <ul style="list-style-type: none"> <li>- Revision/Amendments of Municipal Fishing Ordinance</li> <li>- Provide livelihood programs</li> </ul> |
| Mines/Mineral                      | Existence of mining and quarry   | Contamination of water   | strict implementation of mining laws LGUs should be involved with the issuance of permits   |
|                                    |  | mudslides  | Mining law/zoning ordinance should be strictly implemented  |
|                                    |  | landslides   |   |
|                                    |  | accidents  |   |
| Biodiversity                       | Extinction of plants/flowers varieties and endangered animal species   | Ecological Imbalance   | Strict implementation of forest protection laws/ordinance. "No hunting/collecting policy"for endangered animal and plants species             |
| Urban                              | Noncompliance with the easement requirements                           | increased exposure to hazards                                      | Enforce policy for "No build Zone" Implementation of proper land use Mainstreaming of CCA and DDR to Local Plans                              |
|                                    | Inconsistent with the use of other zone                                | not maximize usage of land   |   |
|                                    | Absence of urban greening in public recreational areas                 | climate and disaster risk  |   |
|                                    | Poor implementation of solid waste management plan                     | Prevalence of diseases Contamination of water source Air pollution | Proper Implementation of RA 9003  |
| Freshwater-surface and groundwater | Depletion of groundwater sources -salt-water intrusion water pollution | water shortage   | - Promotion/establishment of rainwater harvesting facilities  |
|                                    |  | - water contamination/not safe for consumption                     | -Reforestation  |
|                                    |  |  | - watershed conservation & management   |
|                                    |  |  | - IEC on water conservation   |



|                                    |  |   |  |
|------------------------------------|--|---|--|
| Freshwater-surface and groundwater | Scarcity of Water Supply                       | Poor Health & Sanitation, High Cost of Potable Water                        | Establishment/Construction of Dikes, Declogging/Dredging, clearing of rivers & waterways, Establishment of Community Based water system (Salin Tubig), urban Greening (Vegetation) |
| Freshwater-surface and groundwater | Salt water intrusion                           | low agricultural productivity   | Utilization of rainwater harvesting as alternative   |
| Urban                              | Improper Waste Mangement                       | Poor Health & Sanitation, Increased allocation of budget on health services | Strict Imposition of Laws on SWM, Formulation of SWMP, IEC's   |
| Urban                              | Informal settlers                              | urban congestion No tenurial security Urban blight                          | zoning and building regulation Socialized housing facilities   |
|                                    | Improper Waste Mangement                       | Pollution, health problems  | conduct intensified IEC campaign. Provide sufficient manpower and support facility   |
| Mines/Minerals                     | Destruction of Natural Resources               | Lanslides, Erosion, Flooding, siltation, Health Hazard.                     | Strict Implementation of Mining Laws.  |
| Biodiversity                       | Loss of Biodiversity                           | Ecological Imbalance  | Strict Implemenattion of environmental laws  |
| Climate Change/DRR                 | Reduction of Coastal Buffer Zone/Mangrove Area | Vulnerability to Storm Surge and /or Coastal Flooding                       | Relocation, strict Implementation of Mining Laws.  |



## CHAPTER IV – SOCIAL SECTOR

### HEALTH SUB-SECTOR

#### Profile and Analysis of Existing Situation

The Anilao Rural Health Unit (RHU) which represents the health sector is located in Barangay Poblacion, Anilao, Iloilo. It has been in existence since the early 70's. It is open to the public five days a week – Monday to Friday at 8:00 in the morning to 5:00 o'clock in the afternoon with "No Noon Break". It is manned by one doctor, one nurse, one Medical Technologist, 2 midwives and one Sanitary Inspector. The center is accredited in all four packages of Phil Health namely:

- ✓ Primary Care Package 1 (PCB1)
- ✓ Maternity Care Package (MCP)
- ✓ TB DOTS Package
- ✓ Newborn Screening

The RHU is composed of five catchment health facilities namely:

- ✓ Main Health Center – caters to all barangays but has its own catchment barangays namely Barangays Poblacion, Sambag Culob, Pantalan, Palaypay and Sta. Rita. It is the seat of the health sector where the doctor, dentist, nurse, medical technologist and the sanitary inspector are based.
- ✓ Badiang Barangay Health Station (BHS) – caters to barangays of Agbatuan, Badiang, Serallo, San Juan, and Medina
- ✓ Camiros Barangay Health Station (BHS) – caters to barangays of Camiros, Balabag, Sto. Rosario and Vista Alegre
- ✓ Dangula-an Barangay Health Station (BHS) – caters to barangays of Dangula-an, Cag-an and San Carlos
- ✓ Mostro Barangay Health Station (BHS) – caters to barangays of Mostro, Guipis, Balunos and Manganese



Figure HS-1. Health Facilities Map

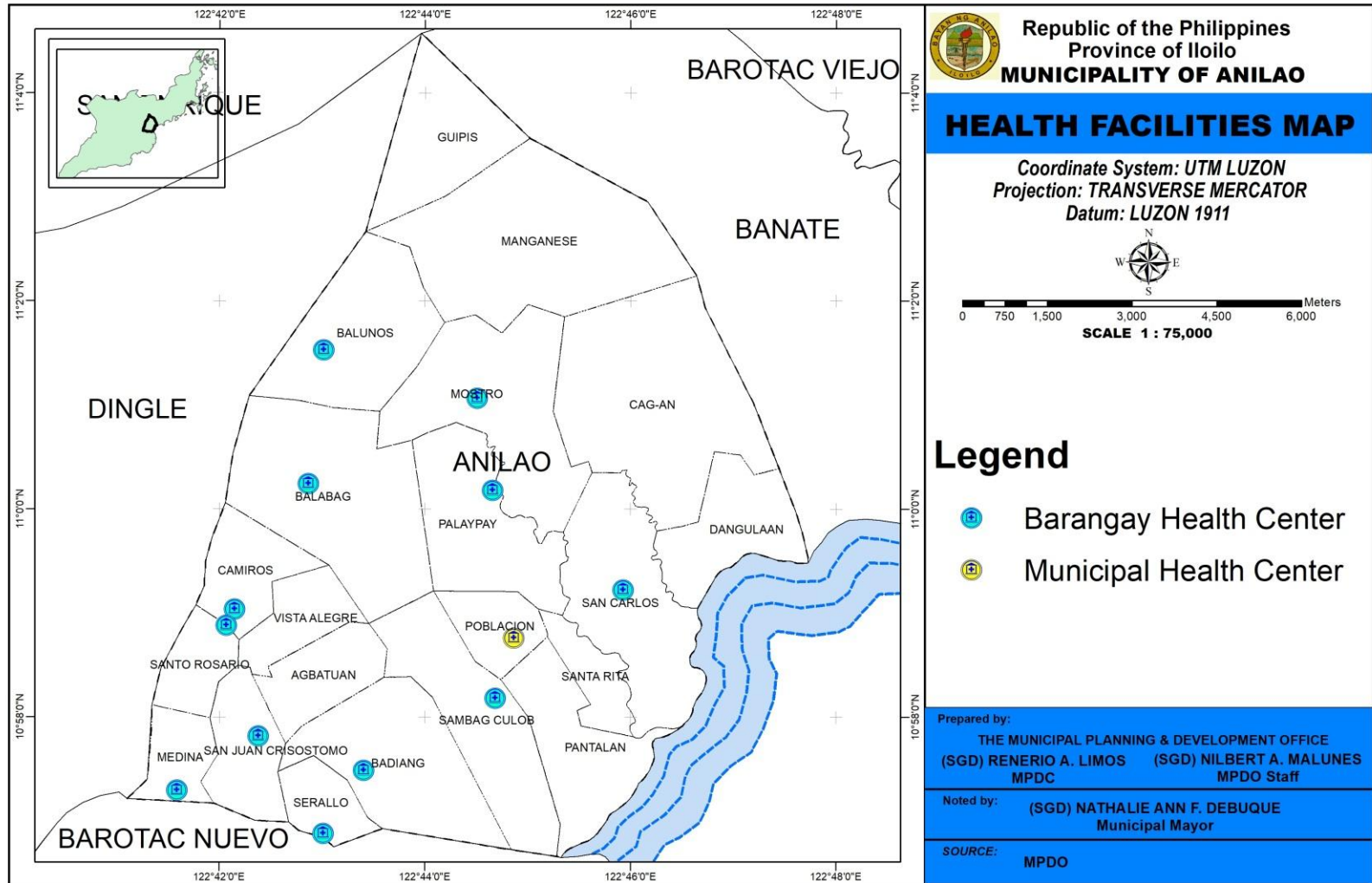


Table HS-1. General Health Situation for the Past Five Years

| Health Indicator                 | Municipal   |      |            |     |            |   |            |     |             |    |
|----------------------------------|-------------|------|------------|-----|------------|---|------------|-----|-------------|----|
|                                  | 2012        |      | 2013       |     | 2014       |   | 2015       |     | 2016        |    |
|                                  | No.         | %    | No.        | %   | No.        | % | No.        | %   | No.         | %  |
| <b>Fertility</b>                 |             |      |            |     |            |   |            |     |             |    |
| Crude Birth Rates (CBR)          | 23/1000pop  |      | 24/1000pop |     | 20/1000pop |   | 18/1000pop |     | 11/1000pop  |    |
| Total Fertility Rate (TFR)       |             |      |            |     |            |   |            |     |             |    |
| <b>Morbidity</b>                 |             |      |            |     |            |   |            |     |             |    |
| General Medical                  | 2738        | 10.5 | 1735       | 6.6 | 2144       | 7 | 2105       | 6.8 | 4835        | 15 |
| Consultative Rate                | 105/1000pop |      | 66/1000pop |     | 71/1000pop |   | 69/1000pop |     | 154/1000pop |    |
| Hospitalization Rate             |             |      |            |     |            |   |            |     |             |    |
| <b>Mortality</b>                 |             |      |            |     |            |   |            |     |             |    |
| Crude Death Rate (CDR)           | 4/1000pop   |      | 4/1000pop  |     | 3/1000pop  |   | 2/1000pop  |     | 2/1000pop   |    |
| Proportioned Mortality Rate(PMR) |             |      |            |     |            |   |            |     |             |    |
| Infant Mortality Rate(IMR)       | 0           |      | 3/1000LB   |     | 4/1000LB   |   | 1/1000LB   |     | 2/1000LB    |    |
| Young Child Mortality Rate(YCMR) | 0           |      | 13/1000LB  |     | 13/1000LB  |   | 2/1000LB   |     | 2/1000LB    |    |
| Neonatal Mortality Rate          | 0           |      | 5/1000LB   |     | 2/1000/LB  |   | 2/1000LB   |     | 5/1000LB    |    |
| Maternal Mortality Rate (MMR)    | 0           | 0    | 0          | 0   | 0          | 0 | 0          | 0   | 0           |    |

Source: Municipal Health Office

As seen in Table HS-1, there is a decrease in the Crude Birth Rate from year 2012 to 2016 from 23 to 11 in 1000 population. There is an increase in the general medical condition and consultative rate in 2016 due to the deployment of UHCI physician by the Department of Health. There is a decrease in Crude Death Rate from 4 to 2 in 2016. Infant Mortality Rate ranges from 1-4. Young Child Mortality Rate decreased from 13 to 2 in 2016. Neonatal mortality Rate ranges from 2-5.



Table HS-2. Medical Health Facilities and Personnel, Year, 2017

| Name of Health Facility         | Brgy.     | Ownership | Capacity (No. of Beds) | No. of Personnel |        |          |                     |        |       | Physical Condition | Hazard Susceptibility (H/M/L) |    |    |
|---------------------------------|-----------|-----------|------------------------|------------------|--------|----------|---------------------|--------|-------|--------------------|-------------------------------|----|----|
|                                 |           |           |                        | Doctors          | Nurses | Midwives | Sanitary Inspectors | Others | Total |                    | FI                            | Ln | Su |
| <u>RHU/Birthing Facilities</u>  |           |           |                        |                  |        |          |                     |        |       |                    |                               |    |    |
| a. Anilao RHU                   | Poblacion | Public    | 5                      | 1                | 2      | 9        | 1                   | 1      | 14    | O                  | L                             | L  |    |
| b. Birthing Facility            | Poblacion | Public    | 3                      | 1                | 2      | 9        | 1                   | 1      | 14    | O                  | L                             | L  |    |
| <u>Barangay Health Stations</u> |           |           |                        |                  |        |          |                     |        |       |                    |                               |    |    |
| Camiros                         |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  |    |
| Badiang                         |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | H                             | L  | M  |
| Dangula-an                      |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  | M  |
| Mostro                          |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  |    |
| Balabag                         |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | M  |    |
| Cag-an                          |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  |    |
| Medina                          |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | M  |    |
| Balunos                         |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | M  |    |
| Guipis                          |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | H  |    |
| Manganese                       |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | M  |    |
| Pantalan                        |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | H                             | L  | H  |
| Sambag Culob                    |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  | M  |
| San Carlos                      |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  | M  |
| Santo Rosario                   |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  |    |
| San Juan Crisostomo             |           | Public    | 1                      |                  |        | 1        |                     |        |       | NR                 | L                             | L  |    |
| Serallo                         |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | L                             | L  | M  |
| Vista Alegre                    |           | Public    | 1                      |                  |        | 1        |                     |        |       | O                  | M                             | L  |    |

Source: Municipal Health Office

Legend: O – Operational, NR – Needs Repair, H – High, M-Moderate, L – Low, FI – Flood, Ln – Landslide Su-Storm Surge

The health facilities as seen above are mostly newly constructed or renovated. Only 4 BHS need repair/renovation and one needs to be relocated.





### Health Services/ Programs

The Anilao Rural Health Unit as well as the Barangay Health Stations offers the following health services/programs:

1. Consultation
2. MNCHN Services: Newborn screening, Immunization, Antenatal, Natal and Post Natal Care, Family Planning and Nutrition
3. TB-DOTS
4. Communicable Diseases Prevention and Control
5. Non- Communicable Diseases Prevention and Control: Cardiovascular disease/hypertension, Diabetes Mellitus, Renal disease, Primary Eye care,
6. Reproductive Health Care
7. Laboratory Services
8. Sanitation Services
9. Dental Services
10. Minor Surgical/Wound Care

There are also three private clinics in the municipality, two in Poblacion and one in Sta. Rita.

A separate TB DOTS Clinic was constructed in 2014 outside of the RHU to cater patients with cough of two weeks or more duration. This is to separate patients who probably have tuberculosis thus avoid infecting other patients or clients. The clinic is manned by the TB-DOTS Management Team composed of a doctor, a Medical Technologist, two TB-DOTS Nurse managers and a sanitation inspector.

The Birthing Center is a certified BEmONC facility. Presently however, birthing at the center is on “On Call” basis only because of want of midwives who can go on duty for 24 hours.



**Health Manpower**

The Anilao Rural Health Unit has the following manpower:

The present manpower of the RHU is far from ideal except in the case of the midwives which ratio is 1:3,908 population. The ideal ratio for a Doctor, Nurse, Medical Technologist and Dentist to population is 1: 20,000. Presently, the ratio is 1:31,269. With this, the Anilao RHU shall need the following manpower for the next 10 years in order that the present manpower shall not be overloaded and thus prevent “burn out” health workers.

The midwives to population ratio appears to be ideal for now, but if the birthing clinic is to open 24/6 with Sundays “On Call”, there is a need to double the number since 3-4 midwives are needed to go on duty at the birthing center and that at least the midwives shall go on 24 hours duty once or twice a week only. The midwives have other program to attend to and not only to cater to deliveries.

**Table HS-3. Health Statistics**

| Vital Indices              | 2013          | 2014          | 2015         |
|----------------------------|---------------|---------------|--------------|
| Crude Birth Rate           | 24/1,000 pop. | 20/1,000 pop. | 18/1,000 pop |
| Crude Death Rate           | 4/1,000 pop   | 3/1,000 pop.  | 2/1,000 pop  |
| Maternal Mortality Rate    | 0             | 0             | 0            |
| Neonatal Mortality Rate    | 5/1,000 LB    | 2/1,000 LB    | 2/1,000 LB   |
| Infant Mortality Rate      | 3/1,000 LB    | 8/1,000 LB    | 4/1,000 LB   |
| Young Child Mortality Rate | 13/1,000 LB   | 13/1,000 LB   | 2/1,000 LB   |

Source: Municipal Health Office

As seen in the Table HS-3, the crude birth rates and the crude death rates were decreasing in the past three years. Maternal mortality rates remained at zero percent while the child health indices decreased in 2015. It is worth mentioning the massive decrease in the young child mortality rate. This shows that most of the children had reached 4 years of age without them dying. This is probably due to the many interventions provided to the children, like deworming, vitamin supplementations and early referrals by the community health members of sick children to the health center. Improvement in the nutritional status of children might have also played a big role.



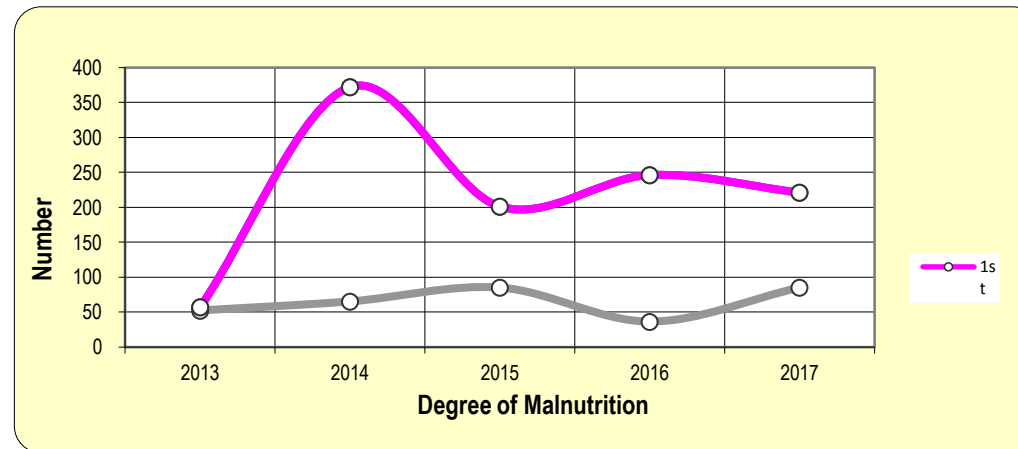
Nutrition Status

Table HS-4. Malnourished Children for the Past Five Years

| Degree of Malnutrition                    | Municipal |      |            |      |            |      |            |      |            |      |
|---|-----------|------|------------|------|------------|------|------------|------|------------|------|
|   | 2013      |      | 2014       |      | 2015       |      | 2016       |      | 2017       |      |
|   | No.       | %    | No.        | %    | No.        | %    | No.        | %    | No.        | %    |
| 1st                                       |           |      |            |      |            |      |            |      |            |      |
| 2nd BN(below normal)                      | 5         | 6.90 | 307        | 7.30 | 210        | 4.50 | 136        | 2.80 | 116        | 3.20 |
| 3rd BNVL(below normal very low)           | 52        | 1.10 | 65         | 1.50 | 85         | 1.80 | 36         | 0.80 | 85         | 1.60 |
| <b>TOTAL</b>                              | <b>54</b> |      | <b>372</b> |      | <b>295</b> |      | <b>172</b> |      | <b>201</b> |      |
| <b>Total No. of Children (0-15 years)</b> |           |      |            |      |            |      |            |      |            |      |

Source: Municipal Health Office

Graph HS-1. Malnourished Children for the Past Five Years



Source: Municipal Health Office



The nutritional status as shown in the Table HS-4 has been improving since 2012 with a remarkable decrease in the prevalence of undernourished children in 2015. However, is noteworthy that the prevalence of overweight is increasing and this is not good since overweight it is also a form of malnutrition and it is also associated with many problems.

**Table HS-5. Ten Leading Causes of Morbidity for the Past Five Years**

| Causes                          | No. of Deaths |              |              |
|---------------------------------|---------------|--------------|--------------|
|                                 | 2013          | 2014         | 2015         |
| 1. URTI                         | 591           | 1001         | 593          |
| 2. Wounds, All types            | 438           | 397          | 481          |
| 3. UTI                          | 123           | 140          | 180          |
| 4. Bronchitis                   | 67            | 93           | 134          |
| 5. Animal Bites                 | 66            | 82           | 131          |
| 6. Pulmonary Tuberculosis (PTB) | 62            | 79           | 99           |
| 7. Anemia                       | 51            | 54           | 93           |
| 8. Skin Diseases                | 38            | 52           | 92           |
| 9. Hypertension                 | 26            | 37           | 71           |
| 10. Diarrhea                    | 24            | 34           | 40           |
| <b>TOTAL</b>                    | <b>1,486</b>  | <b>1,969</b> | <b>1,914</b> |

Source: Municipal Health Office

As seen in Table HS-5, URTI remains to be the top leading cause of morbidity and that the leading causes of morbidity are practically the same especially with that in 2014 and 2015. It is noteworthy to mention that wounds of all types are number 2 leading cause of morbidity since 2011. It is also noteworthy to mention that diarrhea was no longer in the leading causes in 2014 and 2015 probably because of our interventions with regards to ensuring the safety of the water sources and the provision of toilet bowls to households without toilet facility. PTB is seen to be declining in its ranking and hopefully shall no longer be a public health concern in the future.



It is also worth mentioning that the municipality has had no outbreaks of diseases especially that of Dengue. In fact, during outbreaks of said disease in the Province of Iloilo, the municipality is among the top municipalities with the lowest number of cases.

However, it is also worth mentioning the alarming increase in HIV-AIDS cases in the municipality, with previously no case to 3 cases at present.

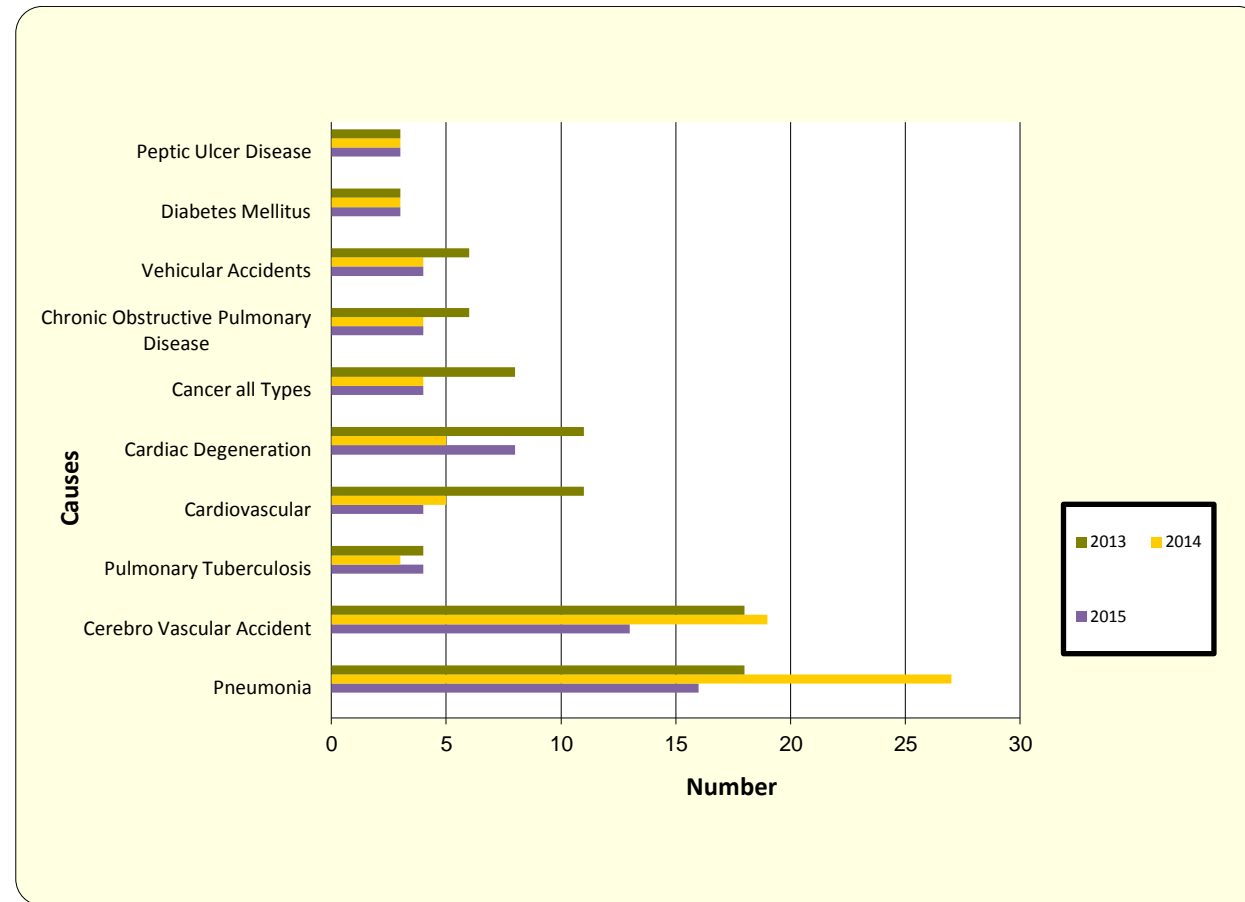
**Table HS-6. Ten Leading Causes of Mortality for the Past Three Years**

| Causes                                | Municipal |           |           |
|---------------------------------------|-----------|-----------|-----------|
|                                       | 2013      | 2014      | 2015      |
|                                       | Total     | Total     | Total     |
| Pneumonia                             | 18        | 27        | 16        |
| Cerebro Vascular Accident             | 18        | 19        | 13        |
| Pulmonary Tuberculosis                | 4         | 3         | 4         |
| Cardiovascular                        | 11        | 5         | 4         |
| Cardiac Degeneration                  | 11        | 5         | 8         |
| Cancer all Types                      | 8         | 4         | 4         |
| Chronic Obstructive Pulmonary Disease | 6         | 4         | 4         |
| Vehicular Accidents                   | 6         | 4         | 4         |
| Diabetes Mellitus                     | 3         | 3         | 3         |
| Peptic Ulcer Disease                  | 3         | 3         | 3         |
| <b>TOTAL</b>                          | <b>88</b> | <b>77</b> | <b>63</b> |

Source: Municipal Health Office



Graph HS-2. Ten Leading Causes of Mortality for the Past Three Years



Source: Municipal Health Office



As seen in the above table, Pneumonia once again was the top cause of mortality in 2015. However, among the leading causes of mortality in the past five years, 70- 80% were non-communicable or degenerative diseases which are lifestyle diseases and are preventable. It is also noteworthy to mention that cancer was the 3<sup>rd</sup> cause of mortality since 2011 except in 2013 when it was number 5 cause of mortality. Thus, it is imperative that health programs, projects and activities should focus on the promotion of healthy lifestyle in the coming years.

It is also noteworthy to mention that Pulmonary Tuberculosis was no longer a cause of mortality in 2015. This is probably because, case finding activities for PTB was enhanced and that patients were put on medication and treatment success rate was 100% for the disease.

**Teenage Pregnancy**

**Table HS-7. Teenage Pregnancy Trend for the Last 5 Years**

| Year | Number of Teenage Births |
|------|--------------------------|
| 2011 | 79                       |
| 2012 | 121                      |
| 2013 | 148                      |
| 2014 | 184                      |
| 2015 | 88                       |

*Source: Municipal Health Office*

Although there was a significant decrease in teenage pregnancy in 2015, the fact that there are teenage pregnancies is still a problem. The drop in teenage pregnancy was probably due to the massive teenage pregnancy fora that were conducted in schools.

**Toilet Facilities**

The target for sanitary toilet facilities which is 91% was achieved.





Table HS-8 shows that there are almost 5,356 (92.95%) of the households that has sanitary toilet facilities, 354 (6.14%) has unsanitary toilet and 52 (0.9%) don't have access to sanitary toilets.

**Table HS-8. Number of Households in Occupied Housing Units by Type of Toilet Facilities, Year 2015**

| Barangay            | Type of Toilet Facility (No.) |                      |              |                   |           |           |
|---------------------|-------------------------------|----------------------|--------------|-------------------|-----------|-----------|
|                     | Sanitary                      |                      |              | Unsanitary Toilet | No Toilet | TOTAL     |
|                     | Own (Flush Type)              | Water sealed (Buhos) | TOTAL        |                   |           |           |
| Agbatuan            | 2                             | 160                  | 162          | 12                | 1         | 1         |
| Badiang             | 6                             | 400                  | 406          | 25                | 2         | 2         |
| Balabag             | 5                             | 215                  | 220          | 21                | 0         | 0         |
| Balunos             | 4                             | 206                  | 210          | 23                | 5         | 5         |
| Cag-an              | 4                             | 310                  | 314          | 13                | 1         | 1         |
| Camiros             | 6                             | 315                  | 321          | 12                | 2         | 2         |
| Dangula-an          | 6                             | 400                  | 406          | 19                | 2         | 2         |
| Guipsis             | 12                            | 385                  | 397          | 13                | 1         | 1         |
| Manganese           | 2                             | 90                   | 92           | 9                 | 7         | 7         |
| Medina              | 2                             | 130                  | 132          | 18                | 6         | 6         |
| Mostro              | 4                             | 186                  | 190          | 15                | 3         | 3         |
| Palaypay            | 8                             | 305                  | 313          | 36                | 1         | 1         |
| Pantalan            | 7                             | 235                  | 242          | 9                 | 1         | 1         |
| Poblacion           | 7                             | 189                  | 196          | 16                | 3         | 3         |
| Sambag Culob        | 102                           | 375                  | 477          | 2                 | 0         | 0         |
| San Carlos          | 9                             | 444                  | 453          | 20                | 4         | 4         |
| San Juan Crisostomo | 4                             | 180                  | 184          | 9                 | 1         | 1         |
| Serallo             | 6                             | 230                  | 236          | 16                | 3         | 3         |
| Santa Rita          | 6                             | 160                  | 166          | 19                | 5         | 5         |
| Santo Rosario       | 4                             | 135                  | 139          | 9                 | 1         | 1         |
| Vista Alegre        | 3                             | 97                   | 100          | 38                | 3         | 3         |
| <b>TOTAL</b>        | <b>209</b>                    | <b>5,147</b>         | <b>5,356</b> | <b>354</b>        | <b>52</b> | <b>52</b> |

Source: MunicipalRecords



**Water Sources**

Water source in Anilao come from Level I, II, and III source.

**Table HS-9. Number of Households with Access to Safe Water, Year 2015**

| BARANGAY            | NO. OF HH | LEVEL I        |           |                |           | LEVEL II       |           | LEVEL III      |           |
|---------------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|----------------|-----------|
|                     |           | PUBLIC         |           | PRIVATE        |           | PUBLIC         |           | PUBLIC         |           |
|                     |           | No. of sources | HH served | No. of sources | HH served | No. of sources | HH served | No. of sources | HH served |
| AGBATUAN            | 175       |                |           | 15             | 138       |                |           | 1              | 55        |
| BADIANG             | 433       | 1              | 9         | 29             | 297       |                |           |                | 83        |
| BALABAG             | 241       |                |           | 32             | 198       |                |           |                |           |
| BALUNOS             | 238       |                |           | 25             | 120       |                |           |                |           |
| CAG-AN              | 328       |                | 13        | 32             | 289       |                |           |                |           |
| CAMIROS             | 335       | 5              | 30        | 29             | 235       |                |           | 1              | 80        |
| Sambag CULOB        | 427       | 11             | 59        | 23             | 217       | 1              | 427       |                | 115       |
| DANGULA-AN          | 411       | 2              | 13        | 30             | 315       |                |           |                | 91        |
| GUIPIS              | 108       |                |           | 10             | 65        |                |           |                |           |
| MANGANESE           | 156       | 10             | 57        | 15             | 48        |                |           |                |           |
| MEDINA              | 208       | 6              | 98        | 26             | 89        |                |           |                |           |
| MOSTRO              | 350       | 3              | 23        | 37             | 251       |                |           |                |           |
| PALAYPAY            | 252       |                |           | 100            | 238       |                |           |                |           |
| PANTALAN            | 215       |                |           | 15             | 120       | 1              | 215       |                | 95        |
| POBLACION           | 479       | 5              | 22        | 24             | 109       |                |           | 1              | 306       |
| SAN CARLOS          | 478       | 3              | 23        | 65             | 345       |                |           |                | 108       |
| SAN JUAN CRISOSTOMO | 194       | 1              | 9         | 18             | 161       |                |           |                | 109       |
| STA. RITA           | 255       | 3              | 19        | 25             | 153       |                |           |                | 97        |
| STO. ROSARIO        | 189       | 1              | 6         | 15             | 120       |                |           |                | 60        |
| SERALLO             | 149       |                |           | 3              | 55        | 1              | 146       |                |           |
| VISTA ALEGRE        | 141       |                |           | 20             | 131       |                |           |                |           |
| TOTAL               | 5,762     | 52             | 381       | 588            | 3694      |                |           | 3              | 1199      |

Source: Municipal Office



As seen in the Table HS-9, most of the water sources of households in the municipality are Level 1 (communal). Level III water supply is the Anilao Water District which serves Barangays of Poblacion, Pantalan, Sta. Rita, San Carlos, Dangula-an, Culob, Badiang, Agbatuan, San Juan Crisostomo, Camiros and Sto. Rosario. Although majority of the barangays are served by the water district, connection to the water district is at 19% only. This shows that most of the people cannot afford to pay for their monthly bill. In fact, some even had their connections terminated.

There are also five water refilling stations in the municipality and these are found in Barangays Poblacion, Badiang, San Carlos, Dangula-an and in Barangay Agbatuan.

**Cemetery/Memorial Parks**

There are two cemeteries in the municipality, one public and another owned by the Catholic Church. The public cemetery is almost filled up.

**Table HS-10. Cemeteries and Memorial Parks, Year 2017**

| Name of Cemetery/<br>Memorial Park | Brgy.        | Ownership | Area (ha) | Capacity (No. of<br>Plots) | Remarks |
|------------------------------------|--------------|-----------|-----------|----------------------------|---------|
| Municipal                          | SambagCulob  | LGU       | 0.42km    |                            |         |
| Church                             | Sambag Culob | Church    | 0.49ha    |                            |         |

Source: MPDO



**Table HS-11. Maternal Health Benchmark**

| Year | No. of Live Births In The Municipality | No. of Facility Based Delivery | % Facility Based Delivery | No. of Births Attended by Skilled Workers | % Births Attended by Skilled Workers | CPR   |       |
|------|--|--------------------------------|---------------------------|---|--------------------------------------|-------|-------|
|      |  |                                |                           |   |                                      | No.   | %     |
| 2013 | 456                                    | 426                            | 93.0%                     | 426                                       | 93.0%                                | 1,957 | 54%   |
| 2014 | 606                                    | 581                            | 95.8%                     | 581                                       | 95.8%                                | 2,253 | 60.9% |
| 2015 | 266                                    | 257                            | 96.6%                     | 266                                       | 100%                                 | 2,277 | 60.3% |

Source: Municipal Health Office

As seen in Table HS-11, except for the Contraceptive Prevalence Rate, all the maternal benchmarks were met although the CPR was also slightly decreased in 2015. This is probably due to the massive health education conducted by midwives to mothers during their pre-natal check up. The shortfall in the CPR was probably because many still desired to have large family and also the emergence of unplanned pregnancy as in the case of the teenage pregnancies.

**Table HS-12. Child Health Benchmark**

| Year | % Fully Immunized Child | % Infants Exclusively Breastfed | % Undernourished Children |
|------|-------------------------|---------------------------------|---------------------------|
| 2013 | 100%                    | 75.0%                           | 6.8%                      |
| 2014 | 100%                    | 75.0%                           | 6.36%                     |
| 2015 | 91.0%                   | 83.0%                           | 4.8%                      |

Source: Municipal Health Office

Fully immunized child (FIC) was not 100% like the previous two years and many years back. The FIC was usually between 98-100%. However, in 2015, there were no allocation of vaccines in the first quarter of the year and then in the subsequent months, the allocations were inadequate - we received only about 50% of our monthly allocations. Exclusive breastfeeding was the same for two years but increased significantly in 2015. On the other hand, undernourished children have



been decreasing in the past two years. The improvement in the benchmarks may be attributed to the help of the NDP nurses who have been continuously conducting “Usapan” with mothers.

**Hazard Susceptibility and Risk**

Hazard susceptibility for health facilities ranges from moderate to low expert for Barangay Pantalan which has a high susceptibility to flood. The Barangay Health Center in Barangay Guipis has high susceptibility to flood, (see figure HS-2). Barangay Balunos and Balabag have a moderate risk to landslide as shown in the CDRA report.

**Current and Projected Needs**

With the increasing number in population, there is also an increasing demand for health personnel especially doctors and nurses in the whole municipality as shown in Table HS-13. Based on the current projected manpower need of the RHU, the doctor, nurse, medical technologist and sanitary inspector ratio is inadequate compared to the ideal ratio of 1:20,000. Inadequacy of the said health personnel is seen until year 2025. However, midwife to population ratio is adequate until year 2025.

It is seen that the presence of health stations in every barangay with a deployed regular midwife ensures that health services is never deprived in the municipality (Table HS-14).



Figure HS-2. Health Facilities Exposure to Flooding

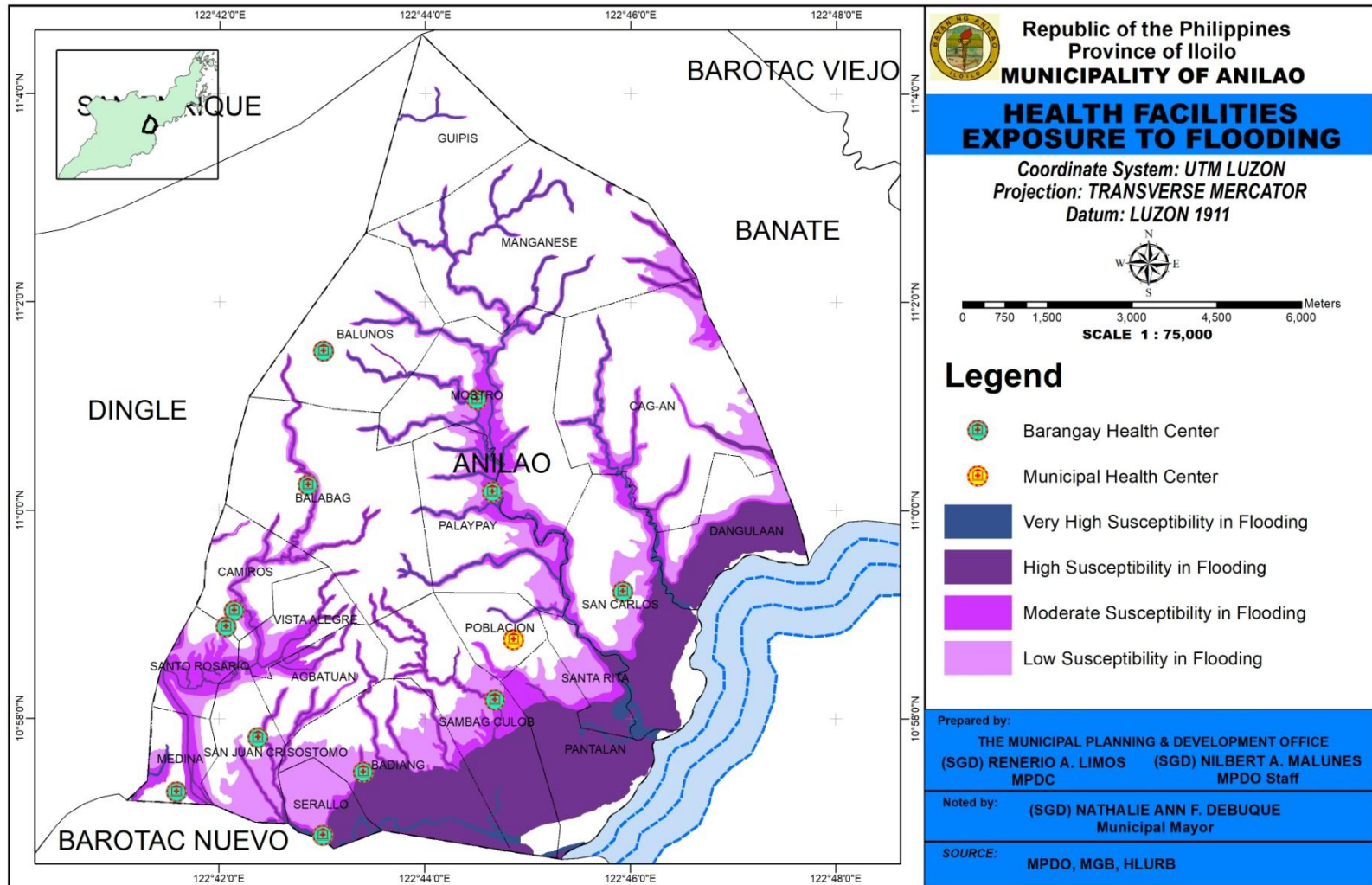




Figure HS-3. Health Facilities Exposure to Landslide

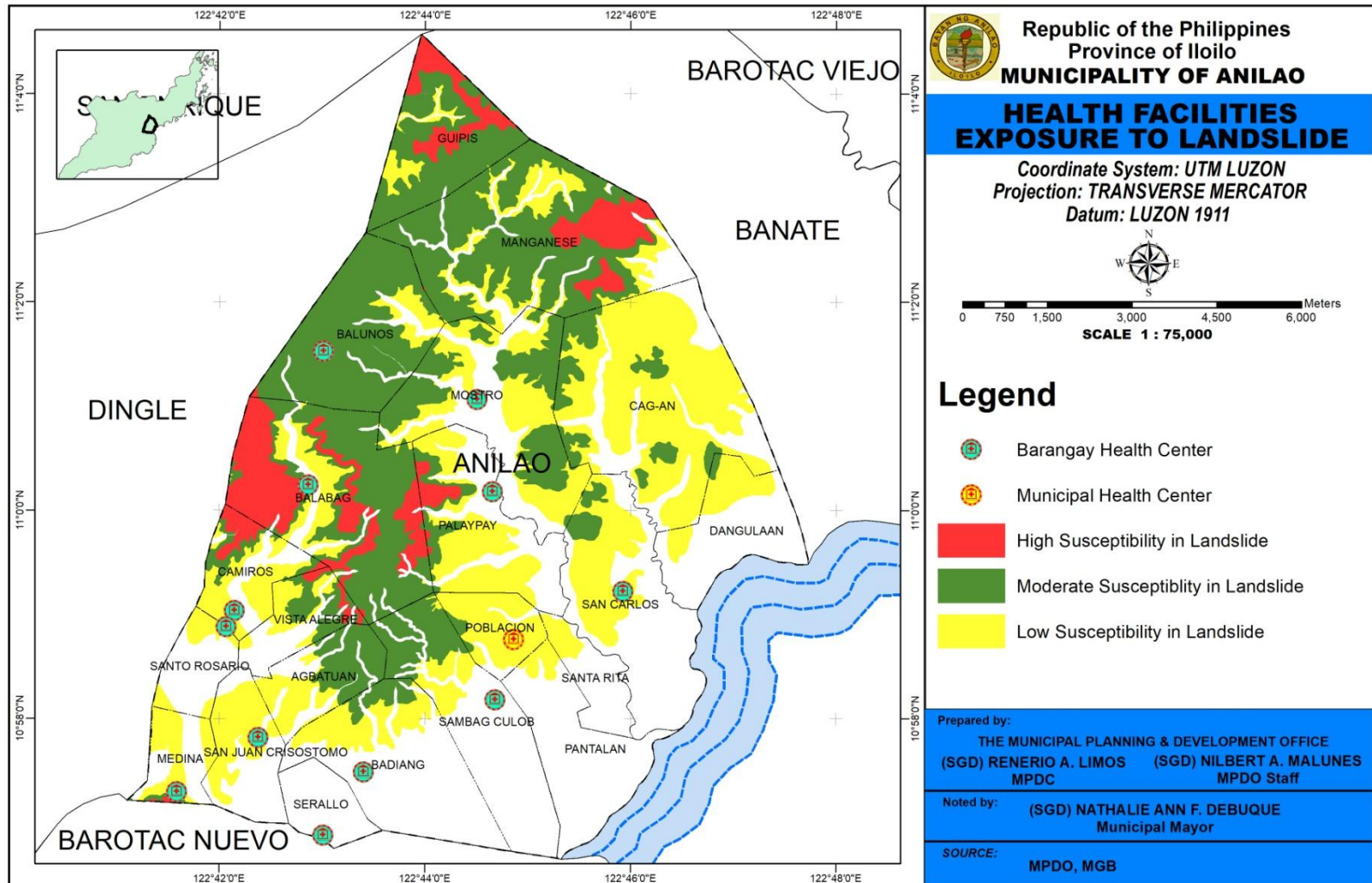
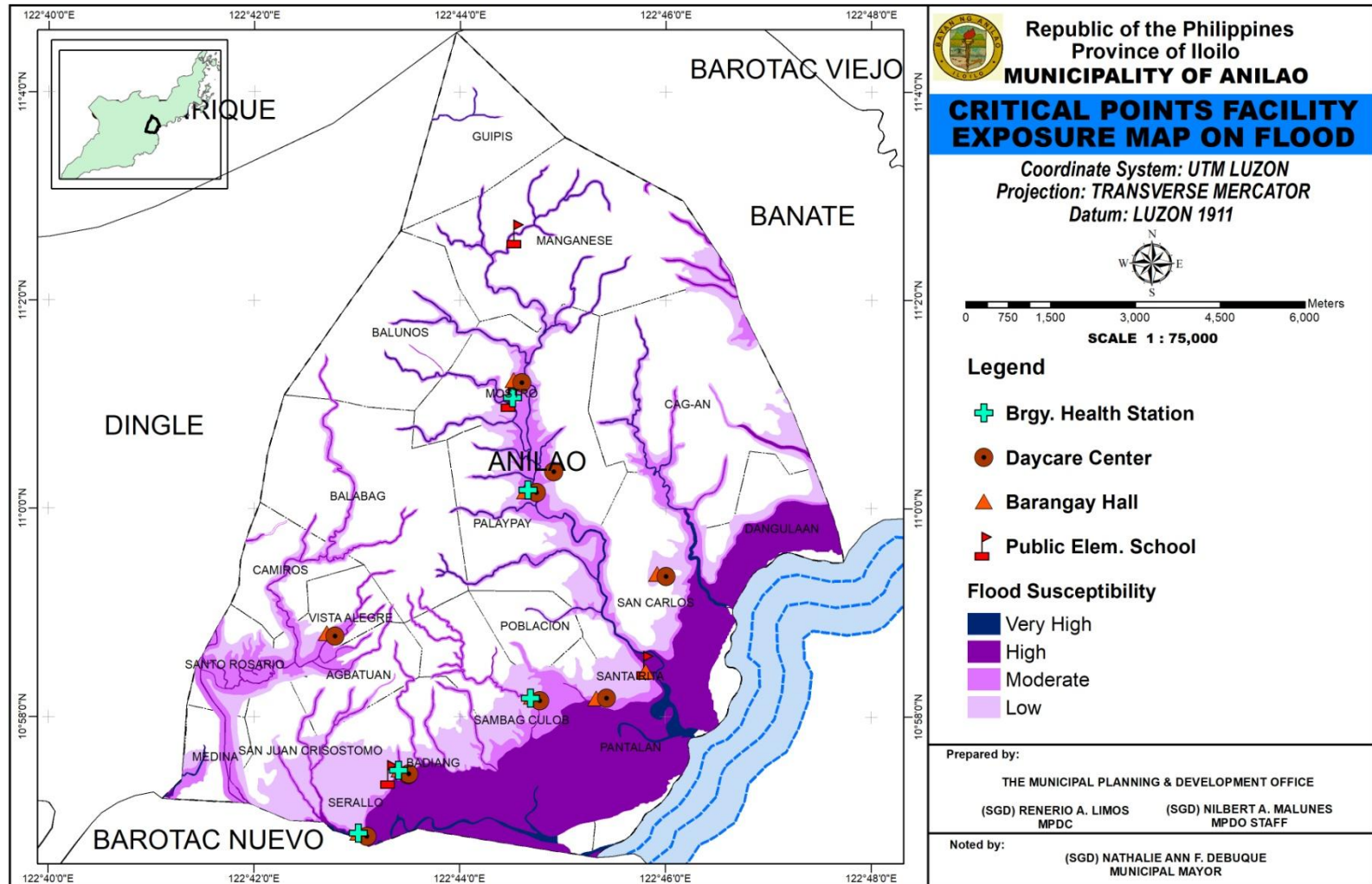




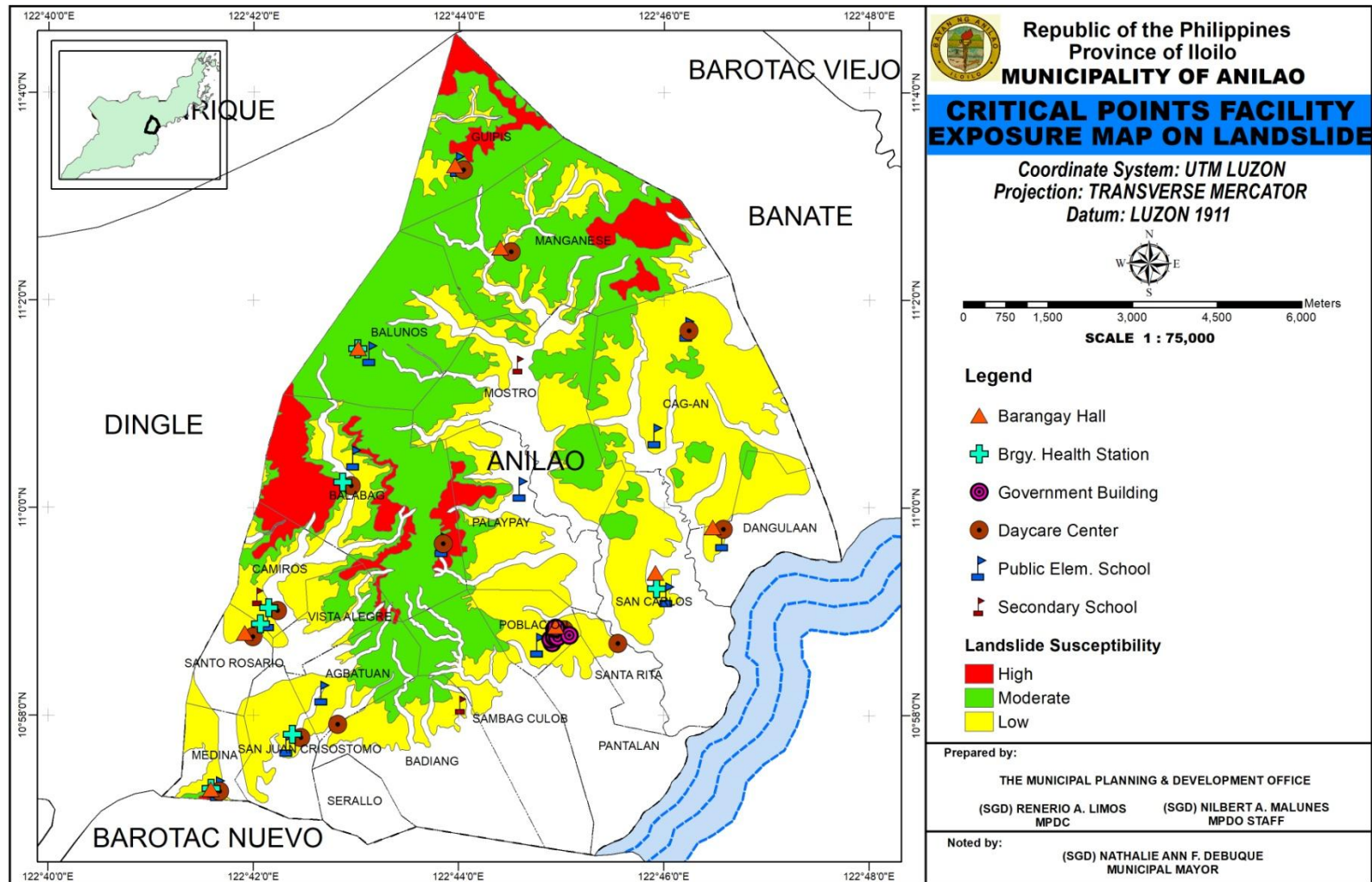
Figure HS-4. Critical Points Facility Exposure Map on Flood



Source: MPDO



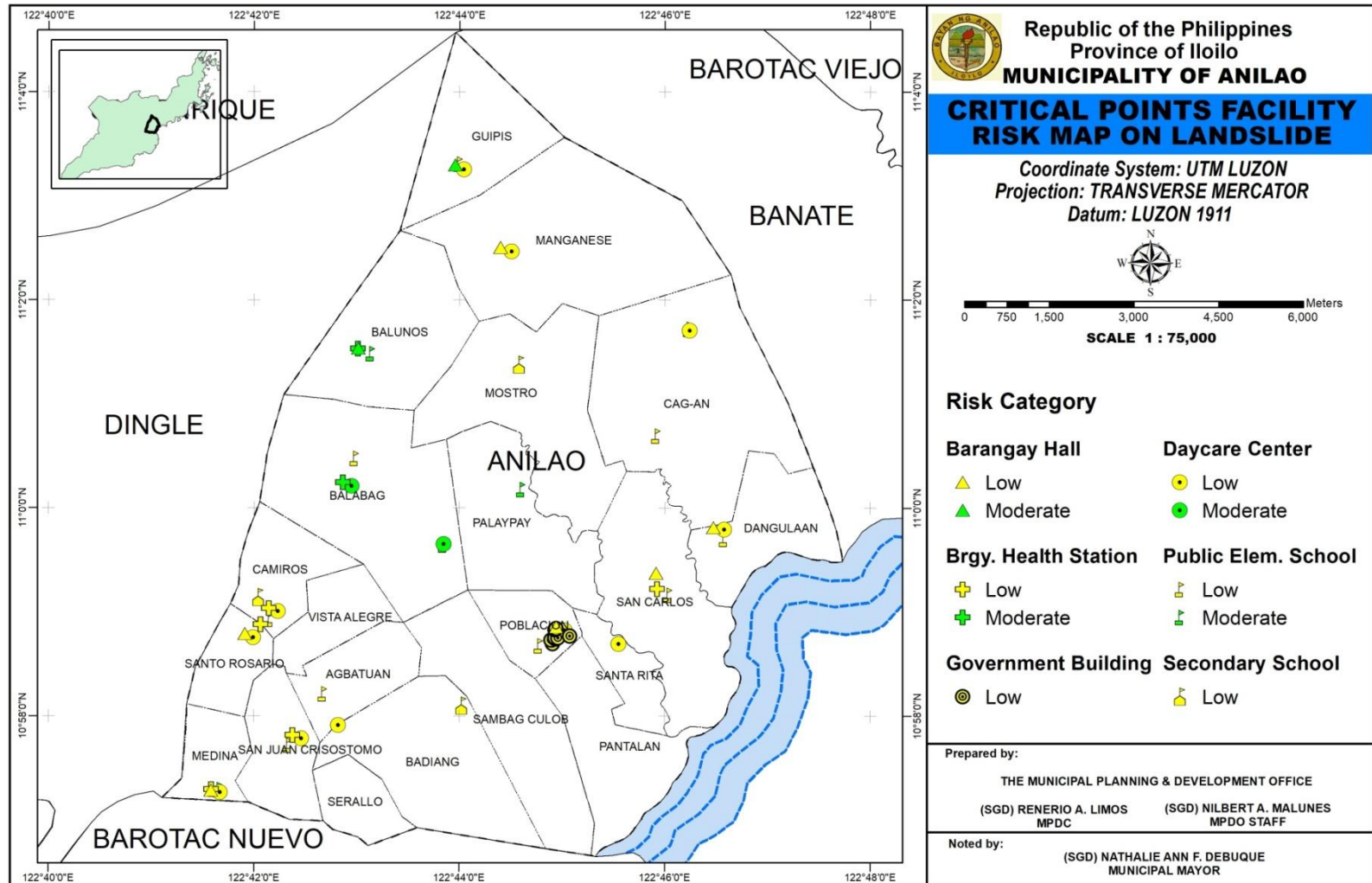
Figure HS-5. Critical Points Facility Exposure Map on Landslide



Source: MPDO



Figure HS-6. Landslide Risk to Critical Facilities Map

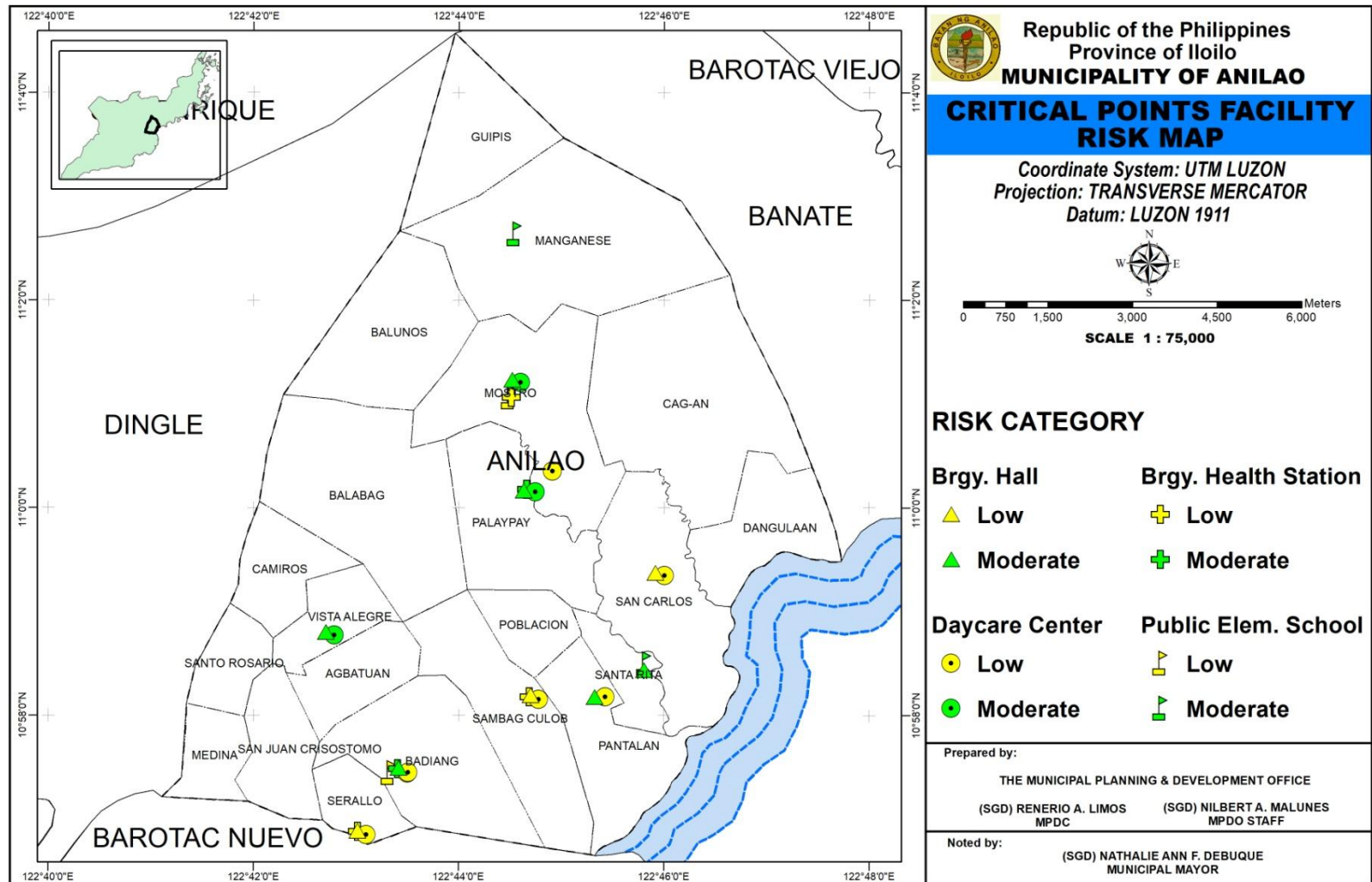


Source: MPDO





Figure HS-7. Critical Points Facility Risk Map



Source: MPDO



Table HS-13. Projected Requirements for Barangay Health Facilities, Year 2017

| Barangay           | No. of Barangay Health Station |      |      |      |      |      |
|--------------------|--------------------------------|------|------|------|------|------|
|                    | 2015                           | 2016 | 2017 | 2018 | 2019 | 2020 |
| AGBATUAN           | 1                              | 1    | 1    | 1    | 1    | 1    |
| BADIANG            | 1                              | 1    | 1    | 1    | 1    | 1    |
| BALABAG            | 1                              | 1    | 1    | 1    | 1    | 1    |
| BALUNOS            | 1                              | 1    | 1    | 1    | 1    | 1    |
| CAG-AN             | 1                              | 1    | 1    | 1    | 1    | 1    |
| CAMIROS            | 1                              | 1    | 1    | 1    | 1    | 1    |
| CULOB              | 1                              | 1    | 1    | 1    | 1    | 1    |
| DANGULA-AN         | 1                              | 1    | 1    | 1    | 1    | 1    |
| GUIPIS             | 1                              | 1    | 1    | 1    | 1    | 1    |
| MANGANESE          | 1                              | 1    | 1    | 1    | 1    | 1    |
| MEDINA             | 1                              | 1    | 1    | 1    | 1    | 1    |
| MOSTRO             | 1                              | 1    | 1    | 1    | 1    | 1    |
| PALAYPAY           | 1                              | 1    | 1    | 1    | 1    | 1    |
| PANTALAN           | 1                              | 1    | 1    | 1    | 1    | 1    |
| POBLACION          | 1                              | 1    | 1    | 1    | 1    | 1    |
| SAN CARLOS         | 1                              | 1    | 1    | 1    | 1    | 1    |
| SN JUAN CRISOSTOMO | 1                              | 1    | 1    | 1    | 1    | 1    |
| STA. RITA          | 1                              | 1    | 1    | 1    | 1    | 1    |
| STO. ROSARIO       | 1                              | 1    | 1    | 1    | 1    | 1    |
| SERALLO            | 1                              | 1    | 1    | 1    | 1    | 1    |
| VISTA ALEGRE       | 1                              | 1    | 1    | 1    | 1    | 1    |
| TOTAL              | 21                             | 21   | 21   | 21   | 21   | 21   |

Source: Municipal Health Office



**Table HS-14. Projected Manpower need of the RHU in the next Nine Years.**

| Manpower             | Present No. | Ideal Ratio | 2017   | 2018   | 2019   | 2020   | 2021   | 2022   | 2023    | 2024   | 2025   |
|----------------------|-------------|-------------|--------|--------|--------|--------|--------|--------|---------|--------|--------|
| Population           |             |             | 29,179 | 29,430 | 29,684 | 29,939 | 30,196 | 30,456 | 30,7182 | 30,982 | 31,249 |
| Doctor               | 1           | 1:20,000    | 2      | 2      | 2      | 2      | 2      | 2      | 2       | 2      | 2      |
| Nurse                | 1           | 1:20,000    | 2      | 2      | 2      | 2      | 2      | 2      | 2       | 2      | 2      |
| Medical Technologist | 1           | 1:20,000    | 2      | 2      | 2      | 2      | 2      | 2      | 2       | 2      | 2      |
| Dentist              | 0           | 1:20,000    | 2      | 2      | 2      | 2      | 2      | 2      | 2       | 2      | 2      |
| Midwives             | 7           | 1:5,000     | 7      | 7      | 7      | 7      | 7      | 7      | 7       | 7      | 8      |
| Sanitation Inspector | 1           | 1:20,000    | 2      | 2      | 2      | 2      | 2      | 2      | 2       | 2      | 2      |

Source: Municipal Health Office

The midwives to population ratio appears to be ideal for now, but if the birthing clinic is to open 24/6 with Sundays “On Call”, there is a need to double the number since 3-4 midwives are needed to go on duty at the birthing center and that at least the midwives shall go on 24 hours duty once or twice a week only. Through this, the midwives can attend to other programs and not only to cater to deliveries.



Health Sector Analysis Matrix

| Technical Findings/Observation   | Implication (EFFECT)  | Recommendation/Intervention  |
|--|---|--|
| 1. Low access to sanitary toilet facilities<br>- * Significant percentage of (Approx. 30%) households have unsanitary toilet or no toilet at all | *Contamination of ground water leading to Increase in:<br>a. water borne diseases<br>b. food borne diseases   | 1. Strengthen zero open defecation program thru:<br>a. Provision of sanitary toilet bowls to HH without toilet facility<br>b. Intensify health education<br>2. Provide additional Sanitary Inspector   |
| 2. Contamination of water sources  | * Increase in water and food borne diseases<br><br>* Increase in the demand for use of bottled water leading to high cost of water  | * Strengthen Solid Waste Management Program<br>* Strict implementation of ordinance on environment<br>Promotion of organic agriculture<br>* Intensify information education  |
| 3. High incidence of degenerative diseases   | *Increase in demand of medicine   | * Provide additional doctor and nurse<br>* Provide enough budget for Non-Communicable Disease Prevention and Control Program<br>* Intensify health education   |
| 4. High percentage of adolescent/teenage pregnancy/Early exposure to sexual exposure   | * Increase in:<br>a. Maternal Death Rate<br>b. Newborn Death Rate<br>c. Infant Death rate<br>* Increase Drop Out Rate in school<br>* Increase risk of sexually transmitted diseases | * Teenage Pregnancy forum in all schools in the municipality<br>* Construction of Teen Center for out-of school youth<br>* Intensify family session (parent with children)   |
| 5. Increased cases of HIV-AIDS   | * Stigma to the people  | * Enactment and implementation of HIV-AIDS Ordinance<br>* Creation of Local Council for HIV-AIDS<br>* Intensify health education on HIV-AIDS esp. to LGBT<br>* Practice of safe sex thru the use of condom<br>* Be faithful<br>* Observance of HIV-AIDS Day in the municipality<br>* Training on HIV-AIDS for untrained health workers |





|  |  |  |
|--|--|--|
| 5. Increased cases of HIV-AIDS         | * Stigma to the people   | <ul style="list-style-type: none"> <li>* Enactment and implementation of HIV-AIDS Ordinance</li> <li>* Creation of Local Council for HIV-AIDS</li> <li>* Intensify health education on HIV-AIDS esp. to LGBT</li> <li>* Practice of safe sex thru the use of condom</li> <li>* Be faithful</li> <li>* Observance of HIV-AIDS Day in the municipality</li> <li>* Training on HIV-AIDS for untrained health workers</li> </ul> |
| 6. Low Contraceptive Prevalence Rate   | *Increase in the number of children in the family as to the national 3-children target | <ul style="list-style-type: none"> <li>* Amend existing Reproductive Health Ordinance to include budget for family planning commodities</li> <li>* Enactment and implementation of Adolescent Reproductive Health Ordinance</li> <li>* Family Planning Training for untrained health workers</li> </ul>  |
| 7. Inadequate manpower except midwives | * Work overload to health personnel  | * Provide additional manpower  |



**EDUCATION SUB-SECTOR**

**Profile and Analysis of the Existing Situation**

For years, the Anilao LGU has demonstrated commitment to support all educational endeavours to enable young Anilaonons to become productive and globally competitive citizens of the world.

Some of its successful interventions are the Libreng Sakay Program and financial support to the elementary and secondary baseball team putting Anilao as the baseball cradle of Iloilo for years. The LGU has also extended maximum support to the education sector specifically on the construction and repair of school buildings, NAT Review, Summer Reading Program, ALS, scouting activities and other student development programs.

All these efforts are undertaken to make Anilao soar high through the years.

**Availability, Types, and Condition of the Educational Facilities**

**Elementary Education**

The Municipality of Anilao consists of 21 barangays with a total land area of 10, 031.4444 hectares. In the elementary level, there is one (1) Private Pre-School, seventeen (17) complete Public Elementary Schools, and one (1) Primary School.

Based on the data provided by DepEd, these schools have facilities necessary for teaching the K – 12 curriculum. Building facilities consist of classrooms, laboratory rooms, shops, libraries, comfort rooms, and school clinic. In terms of land utilization, each school usually has a playground for Physical Education and school sports activities except for Santiago Arandilla Memorial School with no available space to be utilized as playground.

During calamities, most of the schools were used as evacuation center. Data on schools by level, type, facilities and conditions SY 2016 – 2017 is presented in Table ED-2.

Table ED-2 shows that the Private and Public Pre-school , Public Elementary and Secondary Schools have generally poor building facilities.



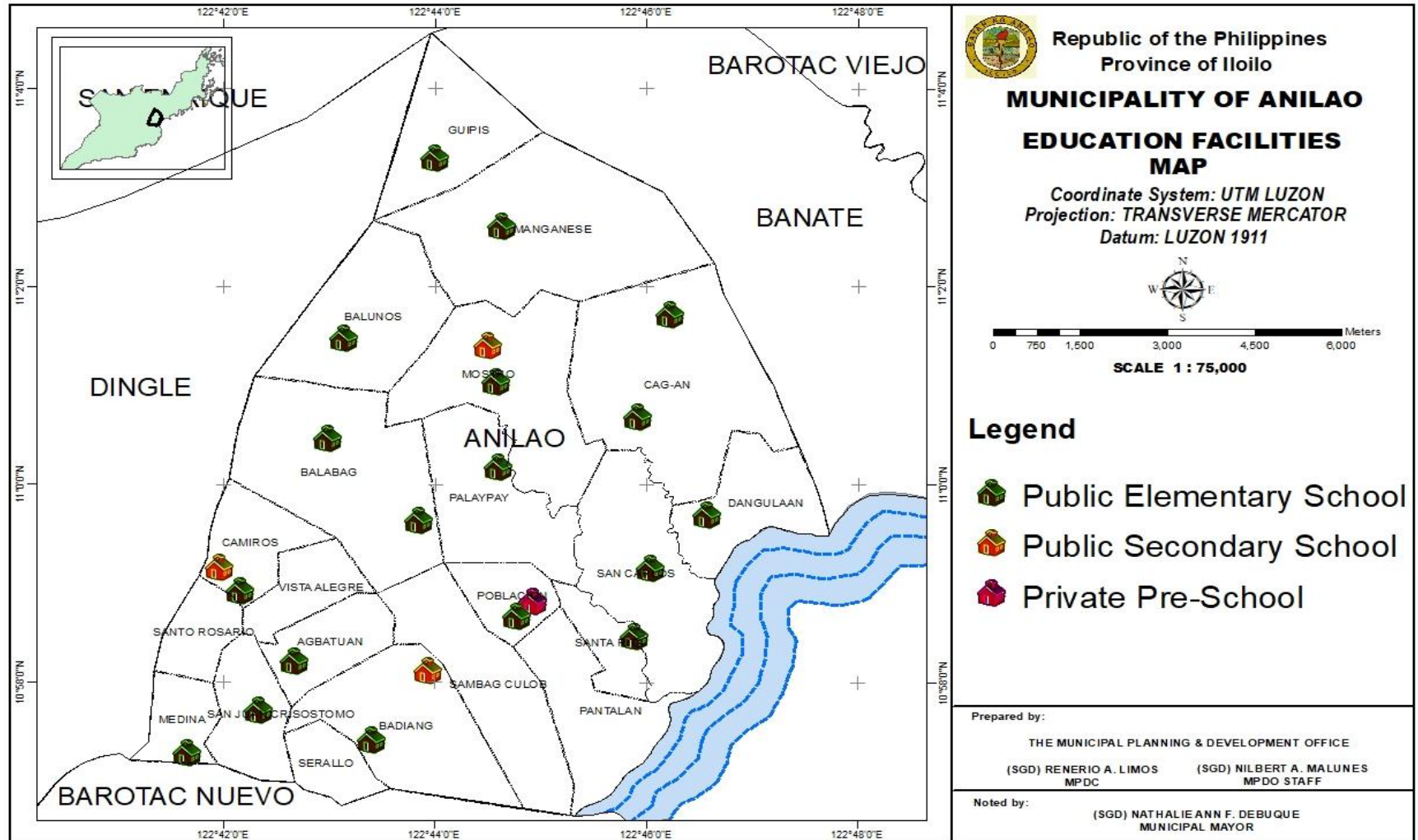
**Secondary Education**

In the Municipality of Anilao, there is a total of three (3) Public Secondary Schools with Anilao NHS offering Senior HS. Similar to the condition of Elementary schools, Public Secondary schools are considered poor in terms of building facilities.



Accessibility of Schools

Figure ED-1. Education Facilities Map



Source: MPDO



Table ED-1. Schools by Level, Type, Facilities & Condition, S.Y. 2016-2017

| School                   | Barangay            | Area Occupied (ha) | Ownership | Facilities And Condition |      |         |        |              |            | Used as Evacuation Center (Y/N) | Hazard Susceptibility (H/M/L) |    |    |
|--------------------------|---------------------|--------------------|-----------|--------------------------|------|---------|--------|--------------|------------|---------------------------------|-------------------------------|----|----|
|                          |                     |                    |           | Laboratory               | Shop | Library | Clinic | Comfort Room | Playground |                                 | Fl                            | Ln | Su |
| <b>Elementary</b>        |                     |                    |           |                          |      |         |        |              |            |                                 |                               |    |    |
| 1.AGBATUAN ES            | Agbatuan            | 1.3649 ha          | Public    | N                        | P    | P       | P      | P            | C          | Y                               |                               | L  |    |
| 2.AGLAY-AO PS            | Balabag             | 0.5 ha             | Public    | N                        | N    | N       | N      | P            | P          | Y                               |                               | M  |    |
| 3.ACES                   | Poblacion           | 1.6 ha             | Public    | N                        | N    | P       | P      | G            | P          | Y                               |                               | L  |    |
| 4.ARANDILLA MES          | Santa Rita          | 1 ha               | Public    | N                        | N    | N       | C      | C            | P          | Y                               | H                             |    | L  |
| 5.APURILLO MS            | Cag-an              | 1 ha               | Public    | N                        | N    | P       | P      | G            | P          | Y                               |                               | L  |    |
| 6.BALABAG ES             | Balabag             | 1.9037 ha          | Public    | N                        | N    | N       | N      | P            | G          | Y                               |                               | L  |    |
| 7.BALUNOS ES             | Balunos             | 1.2581 ha          | Public    | N                        | N    | P       | N      | P            | P          | Y                               |                               | M  |    |
| 8.CAG-AN PS              | Cag-an              | 0.9968 ha          | Public    | N                        | N    | P       | N      | P            | P          | Y                               |                               | L  |    |
| 9.CAMIROS ES             | Camiro              | 1.0594 ha          | Public    | N                        | G    | N       | N      | G            | C          | N                               |                               | L  |    |
| 10.DANGULA-AN ES         | Dangula-an          | 1 ha               | Public    | N                        | N    | N       | N      | P            | P          | Y                               |                               | L  |    |
| 11.DJMFES                | Badiang             | 2 has              | Public    | N                        | N    | N       | P      | G            | G          | Y                               | L                             |    |    |
| 12.GUIPIS ES             | Guipis              | 2.6 has            | Public    | N                        | N    | N       | N      | G            | P          | Y                               |                               | L  |    |
| 13.MANGANESE ES          | Manganese           | 2.733 has          | Public    | N                        | N    | N       | N      | P            | P          | Y                               | M                             |    |    |
| 14.MEDINA ES             | Medina              | 0.9662 ha          | Public    | N                        | N    | P       | N      | P            | P          | Y                               |                               | M  |    |
| 15.MOSTRO ES             | Mostro              | 1.2 has            | Public    | N                        | N    | P       | N      | P            | P          | Y                               | L                             |    |    |
| 16.PALAYPAY ES           | Palaypay            | 1.0252 ha          | Public    | N                        | N    | N       | N      | P            | G          | Y                               |                               | M  |    |
| 17.SAN CARLOS ES         | San Carlos          | 1 ha               | Public    | N                        | N    | P       | P      | G            | G          | Y                               |                               | L  |    |
| 18.SANTIAGO ARANDILLA MS | San Juan Crisostomo | 0.6346 ha          | Public    | N                        | N    | N       | N      | G            | N          | Y                               |                               | L  |    |
| <b>Secondary</b>         |                     |                    |           |                          |      |         |        |              |            |                                 |                               |    |    |
| 1. ANILAO NHS            | Badiang             | 12.6 has           | Public    | G                        | P    | P       | P      | P            | G          | Y                               |                               | L  |    |
| 2. CAMIROS NHS           | Camiro              | 3.6 ha             | Public    | N                        | N    | P       | P      | P            | P          | Y                               |                               | L  |    |
| 3. MOSTRO NHS            | Mostro              | 1.73 ha            | Public    | N                        | N    | C       | P      | P            | P          | Y                               |                               | L  |    |

Source: MPDO, Anilao

**LEGEND:** G – Good

(Well Maintained)

Used as evacuation center - Yes (Y), No (N)

P – Poor

(Needs Improvement)

Types of hazards:

C – Critical

(Requiring Priority Action)

FL – Flood Ln – Landslide

N - None

No Such Facility

Su - Storm Surge



### The Alternative Learning System

The Municipality of Anilao as an outstanding implementer of the Alternative Learning System has continuously catered to the basic and functional literacy needs of its constituents and effectively implemented and sustained its literacy programs and projects.

Courses such as carpentry, masonry, welding, bartending, barista, massage therapy, food and beverages, housekeeping plumbing and consumer electronics had been offered, hence, hundreds of Anilaonons had been employed locally and abroad. The Local Government Unit handles the allowances and payment for the assessment of these Project MATET (Making Anilaonons on Top of Education and Technology) scholars in order to finish their courses in TESDA and acquire NC II certificates.

For unemployed mothers who used to patiently wait for their children's dismissal in school were given the chance to augment their household income by offering them courses such as candle making, cooking, goat-raising, pastries and food preservation classes.

Passers of A & E test were also offered scholarships to enroll in different colleges and universities, take vocational courses or undergo short courses.

Folks who were enrolled in Basic Literacy Program learned how to read and understand simple words, were able to count and improve their personality and way of life. Indigenous people were accommodated and respected according to their culture and beliefs.

The Alternative Learning System and Local Government Unit of Anilao have been working hand in hand in realizing their common dream of improving the lives of every Anilaonon.

### Student-Classroom and Student-Teacher Ratio

#### Preschool

There are 18 public and one (1) preschool in the municipality. In pre-school, the student-teacher ratio is 33:1 and the student-classroom ratio is 33:1 in private schools while the student-teacher ratio in public schools is 39:1 and the student-classroom ratio is 22:1. Some schools in public pre-school have no Kinder Teacher item (see Table ED-2).

#### Elementary

At the Elementary level, the pupil to classroom ratio ranges from 15:1 to 40:1. All schools in the elementary level have met the planning standard of 40:1 set by DepEd in 2010. On the other hand, the pupil to teacher ratio ranges from 16:1 to 40:1. In general, the elementary schools have met the planning standard set by DepEd which is 1:35 except for Dangula-an Elementary School with a pupil – teacher ratio of 40:1.



**Secondary**

In the Secondary level, student – classroom ratio is 25 : 1 to 40 : 1. Two Secondary schools, Anilao NHS and Camiros NHS, have met the planning standard set by DepEd except for Mostro NHS which has a student classroom ratio of 45:1.

On the other hand, student – teacher ratio is 12 :1 to 36 : 1. The three (3) secondary schools, Anilao NHS, Camiros NHS and Mostro NHS have met the planning standard set by DepEd in 2010 which is 40:1.

**Table ED-2. STUDENT-TEACHER AND STUDENT-CLASSROOM RATIO BY LEVEL, 2016**

| TYPE/LEVEL                    | ENROLLMENT |            |            | NO. OF TEACHERS |          |           | NO. OF CLASSROOMS | STUDENT – TEACHER RATIO | STUDENT – CLASSROOM RATIO |
|-------------------------------|------------|------------|------------|-----------------|----------|-----------|-------------------|-------------------------|---------------------------|
|                               | Male       | Female     | Total      | Male            | Female   | Total     |                   |                         |                           |
| <b>PRE-SCHOOL</b>             |            |            |            |                 |          |           |                   |                         |                           |
| ILOILO SCHOOL FOR ADVANCEMENT | 37         | 29         | 66         | 0               | 2        | 2         | 2                 | 33:1                    | 33:1                      |
| <b>PUBLIC</b>                 |            |            |            |                 |          |           |                   |                         |                           |
| AGBATUAN ES                   | 6          | 9          | 15         | 0               | 0        | 0         | 1                 | 15:0                    | 15:1                      |
| AGLAY –AO PS                  | 0          | 4          | 4          | 0               | 1        | 1         | 1                 | 4:1                     | 4:1                       |
| ANILAO CES                    | 43         | 53         | 96         | 0               | 2        | 2         | 2                 | 48:1                    | 48:1                      |
| APURILLO MS                   | 7          | 8          | 15         | 0               | 1        | 1         | 1                 | 15:1                    | 15:1                      |
| ARANDILLA MES                 | 10         | 4          | 14         | 0               | 1        | 1         | 1                 | 14:1                    | 14:1                      |
| BALABAG ES                    | 8          | 7          | 15         | 0               | 1        | 1         | 1                 | 15:1                    | 15:1                      |
| BALUNOS ES                    | 16         | 10         | 26         | 0               | 0        | 0         | 1                 | 26:0                    | 26:1                      |
| CAG –AN PS                    | 5          | 6          | 11         | 0               | 0        | 0         | 1                 | 11:0                    | 11:1                      |
| CAMIROS ES                    | 31         | 15         | 46         | 0               | 0        | 0         | 1                 | 46:0                    | 46:1                      |
| DANGULA – AN ES               | 12         | 13         | 25         | 0               | 0        | 0         | 1                 | 25:0                    | 25:1                      |
| DR. JOSE M FACULTAD ES        | 19         | 22         | 41         | 0               | 1        | 1         | 1                 | 41:1                    | 41:1                      |
| GUIPIS ES                     | 4          | 5          | 9          | 0               | 0        | 0         | 1                 | 9:0                     | 9:1                       |
| MANGANESE ES                  | 6          | 6          | 12         | 0               | 1        | 1         | 1                 | 12:1                    | 12:1                      |
| MEDINA ES                     | 8          | 12         | 20         | 0               | 1        | 1         | 1                 | 20:1                    | 20:1                      |
| MOSTRO ES                     | 8          | 13         | 21         | 0               | 1        | 1         | 1                 | 21:1                    | 21:01                     |
| PALAYPAY ES                   | 11         | 8          | 19         | 0               | 1        | 1         | 1                 | 19:1                    | 19:1                      |
| SAN CARLOS ES                 | 9          | 18         | 27         | 0               | 1        | 1         | 1                 | 27:1                    | 27:1                      |
| SANTIAGO ARANDILLA            | 6          | 3          | 9          | 0               | 0        | 0         | 1                 | 9:0                     | 9:1                       |
| <b>Sub-total</b>              | <b>209</b> | <b>216</b> | <b>425</b> | <b>0</b>        | <b>0</b> | <b>11</b> | <b>19</b>         | <b>39:1</b>             | <b>22:1</b>               |

Source: DepEd Anilao

Note: Number of Classrooms for Public Pre-Schools are incorporated in the Public Elementary Schools





Table ED-2A. STUDENT-TEACHER AND STUDENT-CLASSROOM RATIO BY LEVEL, 2016

| TYPE/LEVEL             | ENROLLMENT |        |       | NO. OF TEACHERS |        |       | NO. OF CLASSROOMS | STUDENT – TEACHER RATIO | STUDENT – CLASSROOM RATIO |
|------------------------|------------|--------|-------|-----------------|--------|-------|-------------------|-------------------------|---------------------------|
|                        | Male       | Female | Total | Male            | Female | Total |                   |                         |                           |
| <b>ELEMENTARY</b>      |            |        |       |                 |        |       |                   |                         |                           |
| AGBATUAN ES            | 93         | 87     | 180   | 1               | 6      | 7     | 8                 | 26:1                    | 23:1                      |
| AGLAY –AO PS           | 40         | 42     | 82    | 1               | 4      | 5     | 3                 | 16:1                    | 27:1                      |
| ANILAO CES             | 571        | 530    | 1101  | 3               | 36     | 39    | 35                | 28:1                    | 31:1                      |
| APURILLO MS            | 94         | 70     | 164   | 1               | 6      | 7     | 7                 | 23:1                    | 23:1                      |
| ARANDILLA MES          | 114        | 89     | 203   | 0               | 7      | 7     | 7                 | 29:1                    | 29:1                      |
| BALABAG ES             | 63         | 73     | 136   | 0               | 7      | 7     | 8                 | 19:1                    | 17:1                      |
| BALUNOS ES             | 119        | 78     | 197   | 1               | 5      | 6     | 7                 | 33:1                    | 28:1                      |
| CAG –AN PS             | 31         | 27     | 58    | 0               | 3      | 3     | 4                 | 19:1                    | 15:1                      |
| CAMIROS ES             | 191        | 194    | 385   | 1               | 14     | 15    | 14                | 26:1                    | 40:1                      |
| DANGULA – AN ES        | 148        | 135    | 283   | 0               | 7      | 7     | 7                 | 40:1                    | 31:1                      |
| DR. JOSE M FACULTAD ES | 198        | 178    | 376   | 1               | 12     | 13    | 12                | 29:1                    | 16:1                      |
| GUIPIS ES              | 64         | 48     | 112   | 0               | 6      | 6     | 7                 | 19:1                    | 18:1                      |
| MANGANESE ES           | 55         | 50     | 105   | 1               | 5      | 6     | 6                 | 18:1                    | 24:1                      |
| MEDINA ES              | 99         | 94     | 193   | 0               | 7      | 7     | 8                 | 28:1                    | 24:1                      |
| MOSTRO ES              | 133        | 151    | 284   | 2               | 10     | 12    | 12                | 24:1                    | 30:1                      |
| PALAYPAY ES            | 120        | 93     | 213   | 0               | 7      | 7     | 7                 | 30:1                    | 31:1                      |
| SAN CARLOS ES          | 147        | 97     | 244   | 1               | 6      | 7     | 8                 | 35:1                    | 33:1                      |
| SANTIAGO ARANDILLA MS  | 77         | 55     | 132   | 1               | 5      | 6     | 4                 | 22:1                    | 27:1                      |
| <b>Sub-total</b>       | 2357       | 2091   | 4448  | 14              | 153    | 167   | 164               |                         |                           |
| <b>SECONDARY</b>       |            |        |       |                 |        |       |                   |                         |                           |
| ANILAO NHS – Junior HS | 688        | 677    | 1365  | 7               | 35     | 42    | 42                | 34:1                    | 34:1                      |
| ANILAO NHS – Senior HS | 175        | 180    | 355   | 4               | 6      | 10    | 10                | 36:1                    | 36:1                      |
| CAMIROS NHS            | 114        | 86     | 200   | 3               | 14     | 17    | 8                 | 12:1                    | 25:1                      |
| MOSTRO NHS             | 161        | 157    | 318   | 2               | 9      | 11    | 7                 | 29:1                    | 45:1                      |
| <b>Sub-Total</b>       | 1138       | 1100   | 2238  | 16              | 64     | 80    | 67                |                         |                           |

Source: DepEd Anilao, 2016



**Educational Trend**

**Participation Rate**

Table ED-3 shows that the Enrolment Participation Rate is increasing for the last five (5) school years for all school levels. In pre-school, a 100% participation rate is achieved in the school year 2015-2016 and both elementary and secondary levels have also achieved an equally good and increasing participation rate. This means that majority of the school going age population in Anilao are in school for the past five years.

**Table ED-3. HISTORICAL ENROLMENT PARTICIPATION RATE FOR THE LAST FIVE (5) YEARS**

| YEAR        | PRE – SCHOOL       | ELEMENTARY         | SECONDARY          |
|-------------|--------------------|--------------------|--------------------|
|             | Participation Rate | Participation Rate | Participation Rate |
| 2011 – 2012 | 99.37%             | 98.51%             | 84.72%             |
| 2012 – 2013 | 99.50%             | 99.72%             | 83.45%             |
| 2013 – 2014 | 99.40%             | 99.25%             | 82.65%             |
| 2014 – 2015 | 99.75%             | 99.53%             | 88.46%             |
| 2015 – 2016 | 100%               | 99.53%             | 85.43%             |

Source: DepEd Anilao

**Table ED-4. HISTORICAL ENROLMENT LEVEL FOR THE PAST FIVE (5) YEARS**

| SCHOOL            | (2012-2013) |    |       | 2013-2014 |    |       | INC./DEC. % | 2014-2015 |    |       | INC./DEC. % | 2015-2016 |    |       | INC./DEC. % | 2016-2017 |    |       | INC./DEC. % |
|-------------------|-------------|----|-------|-----------|----|-------|-------------|-----------|----|-------|-------------|-----------|----|-------|-------------|-----------|----|-------|-------------|
|                   | M           | F  | Total | M         | F  | Total |             | M         | F  | Total |             | M         | F  | Total |             | M         | F  | Total |             |
| <b>PRE-SCHOOL</b> |             |    |       |           |    |       |             |           |    |       |             |           |    |       |             |           |    |       |             |
| AGBATUAN ES       | 11          | 11 | 22    | 10        | 10 | 20    | 9.10% ↓     | 14        | 9  | 23    | 15.0% ↑     | 16        | 8  | 24    | 4.35% ↑     | 6         | 9  | 15    | 37.5% ↓     |
| AGLAY AO ES       | 13          | 7  | 20    | 8         | 10 | 18    | 10.0% ↓     | 7         | 8  | 15    | 16.67% ↓    | 6         | 5  | 11    | 26.67% ↓    | 0         | 4  | 4     | 63.64% ↓    |
| ANILAO CES        | 49          | 45 | 94    | 62        | 50 | 112   | 19.15% ↑    | 65        | 55 | 120   | 7.14% ↑     | 64        | 54 | 118   | 1.67% ↓     | 43        | 53 | 96    | 18.64% ↓    |



|                       |    |    |    |    |    |    |          |    |    |    |          |    |    |    |          |    |    |    |           |  |
|-----------------------|----|----|----|----|----|----|----------|----|----|----|----------|----|----|----|----------|----|----|----|-----------|--|
| APURILLO MS           | 7  | 5  | 12 | 7  | 11 | 18 | 50.0% ↑  | 7  | 8  | 15 | 16.67% ↓ | 9  | 5  | 14 | 6.67% ↓  | 7  | 8  | 15 | 7.14% ↓   |  |
| ARANDILLA MES         | 31 | 24 | 55 | 21 | 19 | 40 | 27.27% ↓ | 20 | 16 | 36 | 10.0% ↓  | 12 | 16 | 28 | 22.22% ↓ | 10 | 4  | 14 | 50% ↓     |  |
| BALABAG ES            | 12 | 13 | 25 | 16 | 10 | 26 | 4.0% ↑   | 7  | 16 | 23 | 11.54% ↓ | 8  | 10 | 18 | 21.74% ↓ | 8  | 7  | 15 | 16.67% ↓  |  |
| BALUNOS ES            | 20 | 14 | 34 | 17 | 11 | 28 | 17.65% ↓ | 9  | 7  | 16 | 42.86% ↓ | 7  | 12 | 19 | 18.75% ↑ | 16 | 10 | 26 | 36.84% ↑  |  |
| CAG – AN PS           | 11 | 8  | 19 | 7  | 7  | 14 | 26.32% ↓ | 6  | 4  | 10 | 28.57% ↓ | 9  | 6  | 15 | 50% ↑    | 5  | 6  | 11 | 26.67% ↓  |  |
| CAMIROS ES            | 24 | 20 | 44 | 21 | 31 | 52 | 18.18% ↑ | 24 | 31 | 55 | 5.77% ↑  | 17 | 19 | 36 | 34.55% ↓ | 31 | 15 | 46 | 27.78% ↑  |  |
| DANGULA – AN ES       | 19 | 18 | 37 | 11 | 14 | 25 | 32.43% ↓ | 16 | 13 | 29 | 16.0% ↑  | 15 | 15 | 30 | 3.45% ↑  | 12 | 13 | 25 | 16.67% ↓  |  |
| DJMF ES               | 15 | 24 | 39 | 34 | 30 | 64 | 64.10% ↑ | 28 | 27 | 55 | 14.06% ↓ | 30 | 26 | 56 | 1.82% ↑  | 19 | 22 | 41 | 26.79% ↓  |  |
| GUIPIS ES             | 9  | 6  | 15 | 11 | 3  | 14 | 6.67% ↓  | 8  | 8  | 16 | 14.29% ↑ | 8  | 11 | 19 | 18.75% ↑ | 4  | 5  | 9  | 52.63% ↓  |  |
| MANGANES E ES         | 6  | 10 | 16 | 8  | 7  | 15 | 6.25% ↓  | 9  | 6  | 15 | 0        | 3  | 11 | 14 | 6.67% ↓  | 6  | 6  | 12 | 14.29% ↓  |  |
| MEDINA ES             | 12 | 12 | 24 | 16 | 13 | 29 | 20.83% ↑ | 12 | 10 | 22 | 24.14% ↓ | 18 | 14 | 32 | 45.45% ↑ | 8  | 12 | 20 | 1.20% ↓   |  |
| MOSTRO ES             | 18 | 21 | 39 | 11 | 16 | 27 | 30.77% ↓ | 22 | 26 | 48 | 77.78% ↑ | 21 | 18 | 39 | 0.09% ↓  | 8  | 13 | 21 | 46.15% ↓  |  |
| PALAYPAY ES           | 16 | 13 | 29 | 19 | 12 | 31 | 6.90% ↑  | 20 | 11 | 31 | 0        | 16 | 10 | 26 | 16.13% ↓ | 11 | 8  | 19 | 26.92% ↓  |  |
| SAN CARLOS ES         | 26 | 11 | 37 | 22 | 12 | 34 | 8.11% ↓  | 11 | 14 | 25 | 26.47% ↓ | 13 | 17 | 30 | 20% ↑    | 9  | 18 | 27 | 10% ↓     |  |
| SANTIAGO ARANDILLA MS | -  | -  | -  | 10 | 8  | 18 | 0        | 13 | 7  | 20 | 11.11% ↑ | 12 | 4  | 16 | 20% ↓    | 6  | 3  | 9  | 43.75% ↓↑ |  |



| TOTAL             | 299 | 262 | 561 | 311 | 274 | 585 |           | 298 | 276 | 574 |          | 284 | 261 | 545 |          | 209 |     | 425  |          |
|-------------------|-----|-----|-----|-----|-----|-----|-----------|-----|-----|-----|----------|-----|-----|-----|----------|-----|-----|------|----------|
| <b>ELEMENTARY</b> |     |     |     |     |     |     |           |     |     |     |          |     |     |     |          |     |     |      |          |
| AGBATUAN ES       | 110 | 99  | 209 | 103 | 92  | 195 | 6.70% ↓   | 95  | 81  | 176 | 9.74% ↓  | 92  | 84  | 176 | 0        | 87  | 78  | 165  | 6.25% ↓  |
| AGLAY AO ES       | 39  | 34  | 73  | 42  | 29  | 71  | 2.74% ↓   | 46  | 36  | 82  | 15.49% ↑ | 52  | 43  | 95  | 13.41% ↑ | 40  | 38  | 78   | 16.13% ↓ |
| ANILAO CES        | 503 | 466 | 969 | 505 | 451 | 956 | 1.34% ↓   | 502 | 452 | 954 | 1.89% ↓  | 528 | 461 | 989 | 3.62% ↑  | 528 | 477 | 1005 | 3.40% ↑  |
| APURILLO MS       | 84  | 62  | 146 | 71  | 61  | 132 | 9.59% ↓   | 88  | 71  | 159 | 20.45% ↓ | 93  | 66  | 159 | 0        | 87  | 62  | 149  | 6.29% ↓  |
| ARANDILLA MES     | 92  | 87  | 179 | 99  | 85  | 184 | 2.79% ↑   | 110 | 97  | 207 | 8.96% ↓  | 102 | 92  | 194 | 20.16% ↓ | 104 | 85  | 189  | 2.58% ↓  |
| BALABAG ES        | 62  | 57  | 119 | 73  | 62  | 135 | 13.45% ↑  | 75  | 68  | 143 | 2.96% ↓  | 67  | 71  | 138 | 0        | 55  | 66  | 121  | 12.95% ↓ |
| BALUNOS ES        | 129 | 85  | 214 | 123 | 87  | 210 | 1.87% ↓   | 115 | 81  | 196 | 6.67% ↓  | 110 | 73  | 183 | 6.63% ↓  | 103 | 68  | 171  | 6.56% ↓  |
| CAG – AN PS       | 35  | 30  | 65  | 37  | 26  | 63  | 3.08% ↓   | 37  | 22  | 59  | 6.35% ↓  | 22  | 25  | 52  | 11.86% ↓ | 26  | 21  | 47   | 10.64% ↓ |
| CAMIROS ES        | 226 | 209 | 435 | 195 | 194 | 389 | 10.57% ↓  | 196 | 186 | 382 | 1.8% ↓   | 182 | 186 | 368 | 3.66% ↓  | 160 | 179 | 339  | 7.88% ↓  |
| DANGULA – AN ES   | 121 | 117 | 238 | 126 | 117 | 268 | 12.61% ↑  | 139 | 121 | 260 | 7.46% ↑  | 139 | 114 | 253 | 12.15% ↓ | 136 | 122 | 258  | 1.98% ↑  |
| DJM FES           | 184 | 155 | 339 | 185 | 158 | 405 | 19.47% ↑  | 190 | 163 | 353 | 1.73% ↑  | 179 | 167 | 346 | 16.02% ↓ | 179 | 156 | 335  | 3.18% ↓  |
| GUIPIS ES         | 67  | 63  | 130 | 60  | 54  | 114 | 12.31% ↓  | 65  | 41  | 106 | 7.02% ↓  | 62  | 42  | 104 | 1.89% ↓  | 60  | 43  | 103  | 0.96% ↓  |
| MANGANES E ES     | 75  | 49  | 124 | 64  | 46  | 125 | 0.81% ↑   | 58  | 44  | 102 | 6.4% ↓   | 59  | 39  | 98  | 16.23% ↓ | 49  | 44  | 93   | 5.10% ↓  |
| MEDINA ES         | 87  | 111 | 198 | 86  | 99  | 185 | 6.57% ↓   | 90  | 102 | 192 | 3.78% ↑  | 85  | 98  | 183 | 4.69% ↓  | 91  | 82  | 173  | 5.46% ↓  |
| MOSTRO ES         | 166 | 144 | 310 | 161 | 151 | 312 | 0.65% inc | 144 | 144 | 288 | 7.69% ↑↓ | 133 | 148 | 281 | 36.46% ↓ | 125 | 138 | 263  | 6.04% ↑  |



|                       |             |             |             |             |             |             |           |             |             |             |          |             |             |             |          |             |             |             |          |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|-------------|-------------|-------------|----------|-------------|-------------|-------------|----------|-------------|-------------|-------------|----------|
| PALAYPAY ES           | 103         | 105         | 208         | 104         | 103         | 207         | 0.48% ↓   | 108         | 99          | 207         | 0        | 103         | 90          | 193         | 6.76% ↓  | 109         | 85          | 194         | 0.52% ↑  |
| SAN CARLOS ES         | 121         | 91          | 212         | 126         | 81          | 207         | 2.36% dec | 134         | 75          | 209         | 3.38% ↑  | 136         | 79          | 215         | 0.47% ↑  | 138         | 79          | 217         | 0.93% ↑  |
| SANTIAGO ARANDILLA MS | 31          | 29          | 60          | 42          | 36          | 78          | 30% ↑     | 50          | 42          | 92          | 17.95% ↑ | 68          | 56          | 124         | 34.78% ↑ | 71          | 52          | 123         | 0.81% ↓  |
| <b>TOTAL</b>          | <b>2235</b> | <b>1993</b> | <b>4228</b> | <b>2202</b> | <b>1932</b> | <b>4134</b> |           | <b>2242</b> | <b>1925</b> | <b>4167</b> |          | <b>2217</b> | <b>1934</b> | <b>4151</b> |          | <b>2148</b> | <b>1875</b> | <b>4023</b> |          |
| <b>SECONDARY</b>      |             |             |             |             |             |             |           |             |             |             |          |             |             |             |          |             |             |             |          |
| Anilao NHS            | 514         | 635         | 1209        | 630         | 641         | 1271        | 5.13% ↑   | 660         | 127         | 1287        | 0.5% ↑   | 642         | 621         | 1263        | 6.08% ↑  | 873         | 857         | 1730        | 35.90% ↑ |
| Camiros NHS           | 175         | 172         | 347         | 163         | 168         | 331         | 4.61% ↓   | 176         | 153         | 329         | 0.6% ↓   | 144         | 122         | 266         | 19.15% ↓ | 107         | 98          | 205         | 22.93% ↓ |
| Mostro NHS            | 120         | 118         | 238         | 118         | 122         | 240         | 0.84% ↓   | 140         | 130         | 270         | 12.08% ↑ | 157         | 145         | 302         | 6.69% ↑  | 161         | 157         | 318         | 10.45% ↑ |
| Total                 | <b>869</b>  | <b>925</b>  | <b>1794</b> | <b>911</b>  | <b>931</b>  | <b>1840</b> |           | <b>976</b>  | <b>910</b>  | <b>1886</b> |          | <b>943</b>  | <b>888</b>  | <b>1831</b> |          | <b>1141</b> | <b>1112</b> | <b>2253</b> |          |

Source: DepEd Anilao

### Hazard Susceptibility and Risk

Three (3) Day Care Centers in Barangay Vista Alegre, Palaypay, Mostro and two (2) Elementary Schools located in Barangay Manganese and Arandilla Memorial Elementary School in barangay Sta. Rita has moderate risk to flood (see CDRA Report).

CDRA Report also shows that barangay Camiros, Aglay-ao and Balabag Day Care Centers have moderate risk to landslide. Aglay-ao Primary School in barangay Balabag, Palaypay Elementary School and Balunos Elementary School have moderate risk to landslide



**Current and Projected Needs**

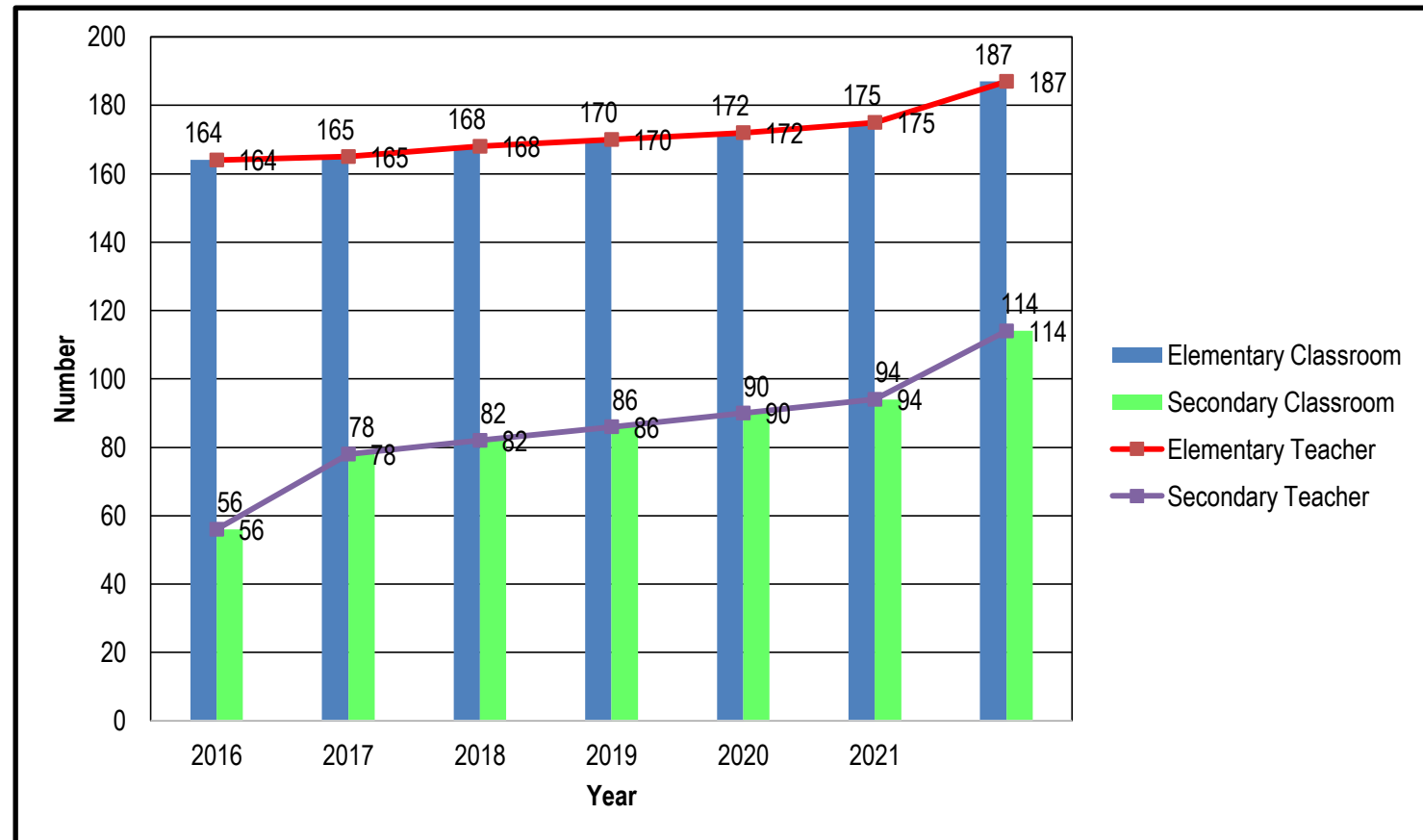
**Table ED-5. Projected Classroom-Teacher Requirement in Public Schools by Level**

| LEVEL            | PLANNING PERIOD |      |      |      |      |      |      |
|------------------|-----------------|------|------|------|------|------|------|
|                  | 2016            | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
| <b>ENROLMENT</b> |                 |      |      |      |      |      |      |
| ELEMENTARY       | 4448            | 4963 | 5034 | 5105 | 5176 | 5247 | 5602 |
| SECONDARY        | 2248            | 3118 | 3283 | 3453 | 3623 | 3793 | 4648 |
| <b>CLASSROOM</b> |                 |      |      |      |      |      |      |
| ELEMENTARY       | 164             | 165  | 168  | 170  | 172  | 175  | 187  |
| SECONDARY        | 56              | 78   | 82   | 86   | 90   | 94   | 114  |
| <b>TEACHER</b>   |                 |      |      |      |      |      |      |
| ELEMENTARY       | 164             | 165  | 168  | 170  | 172  | 175  | 187  |
| SECONDARY        | 56              | 78   | 82   | 86   | 90   | 94   | 114  |

Source: DepEd Anilao



Graph ED-1. Projected Classroom, Teacher Requirements in Public Schools by level



Source: DepEd Anilao





Figure ED-2. Education Facilities Exposure to Flooding

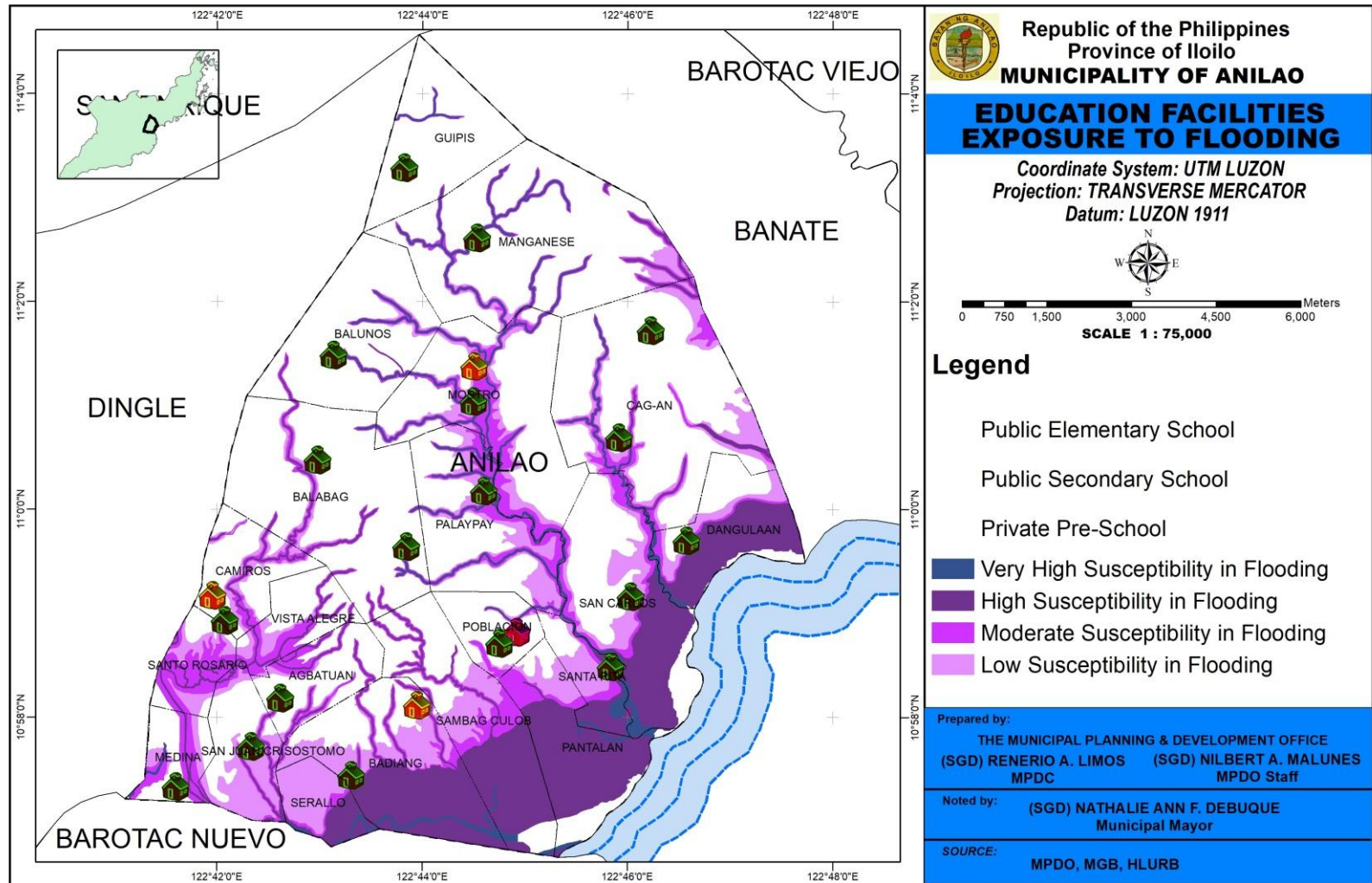


Figure ED-3. Education Facilities Exposure to Landslide

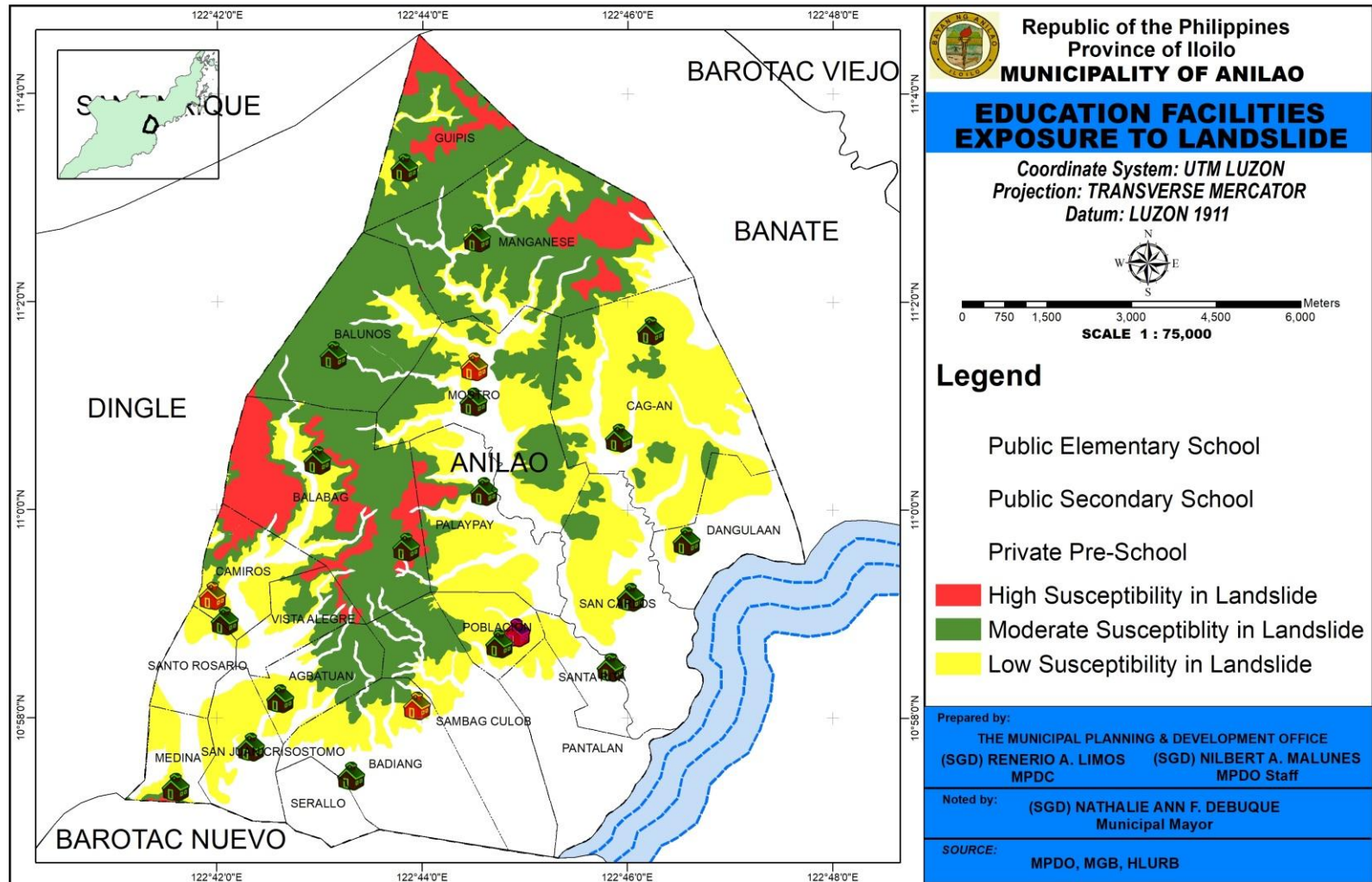


Figure ED-4. Education Facilities Exposure to Stormsurge

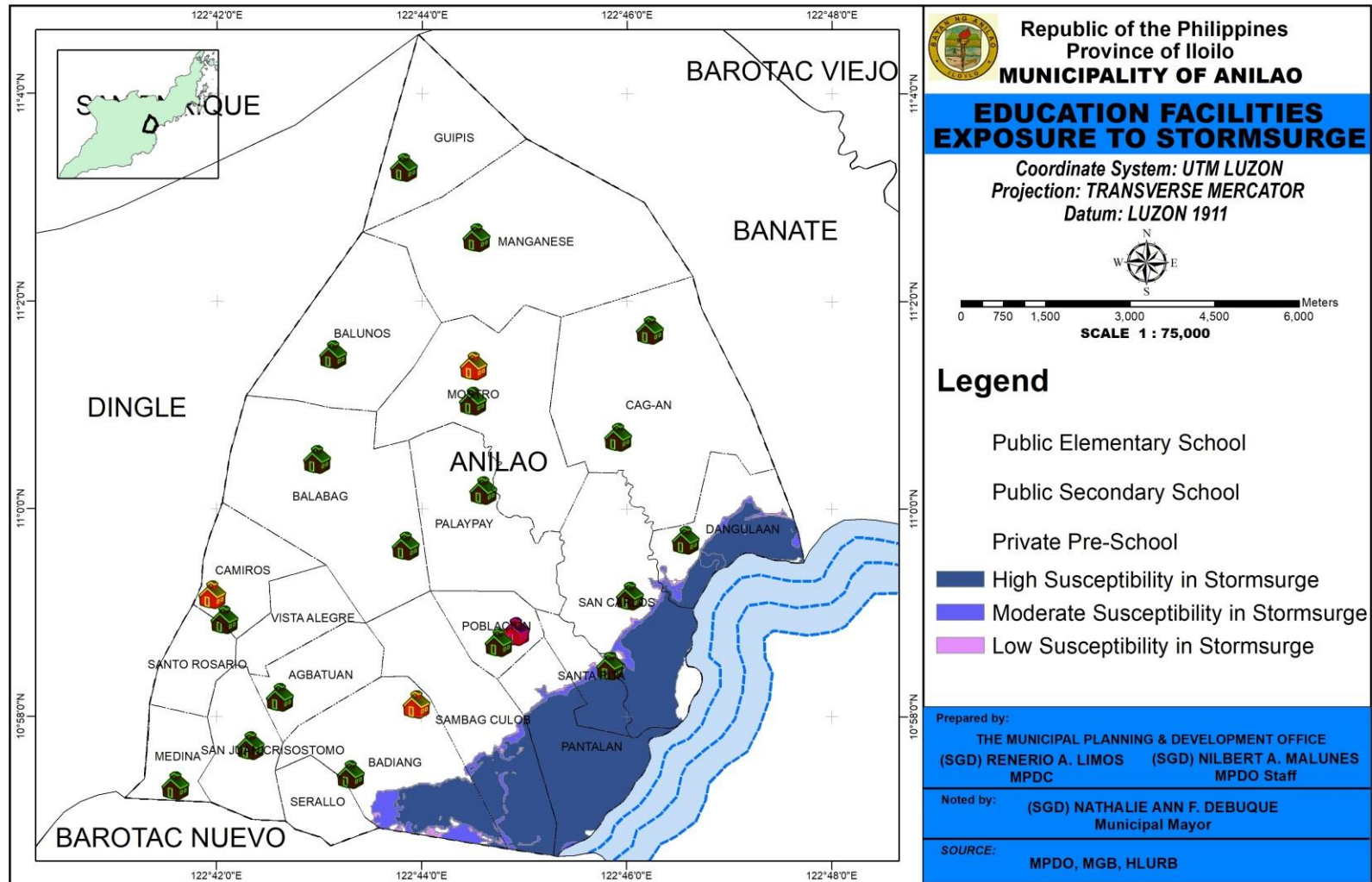
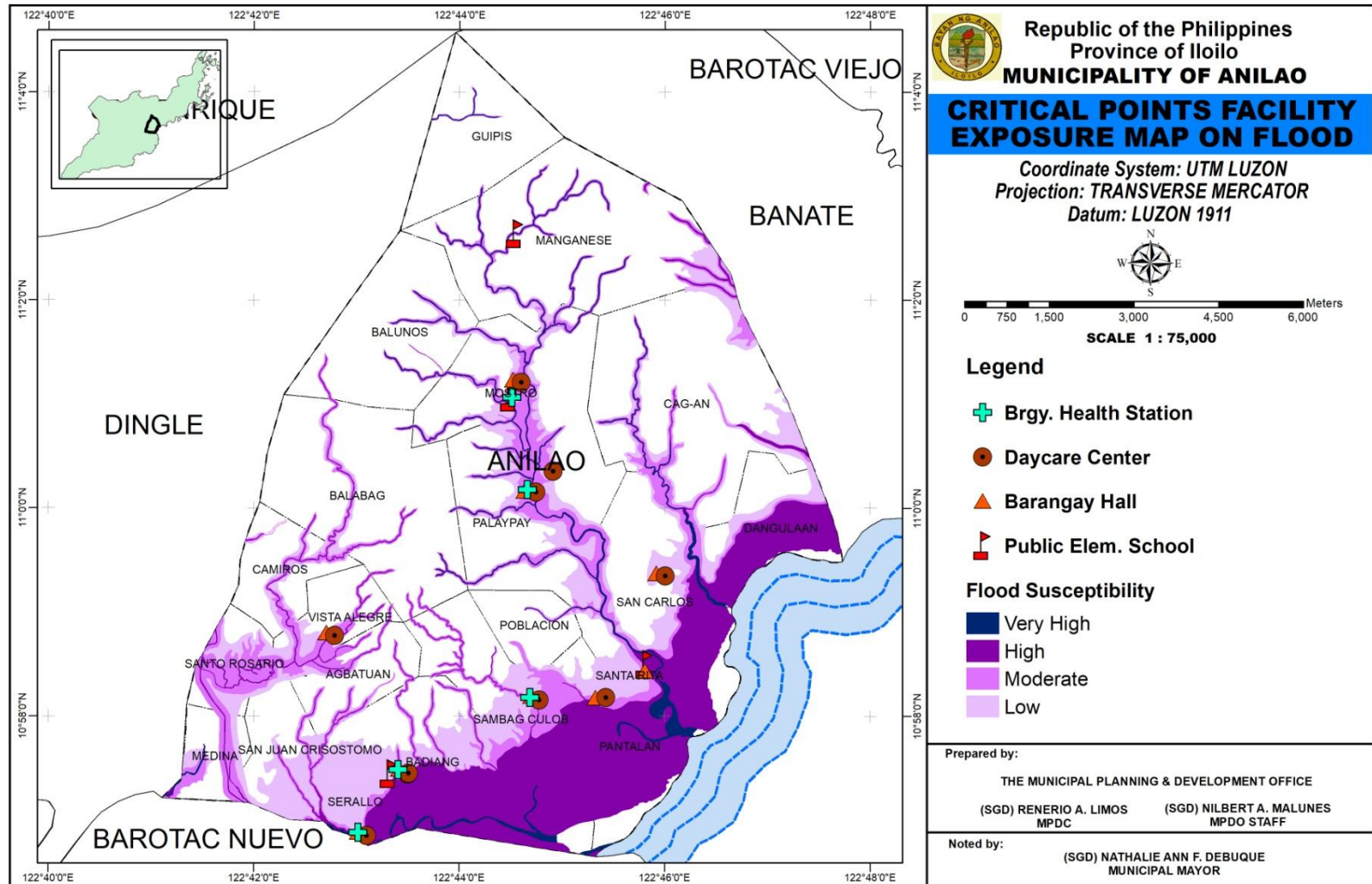




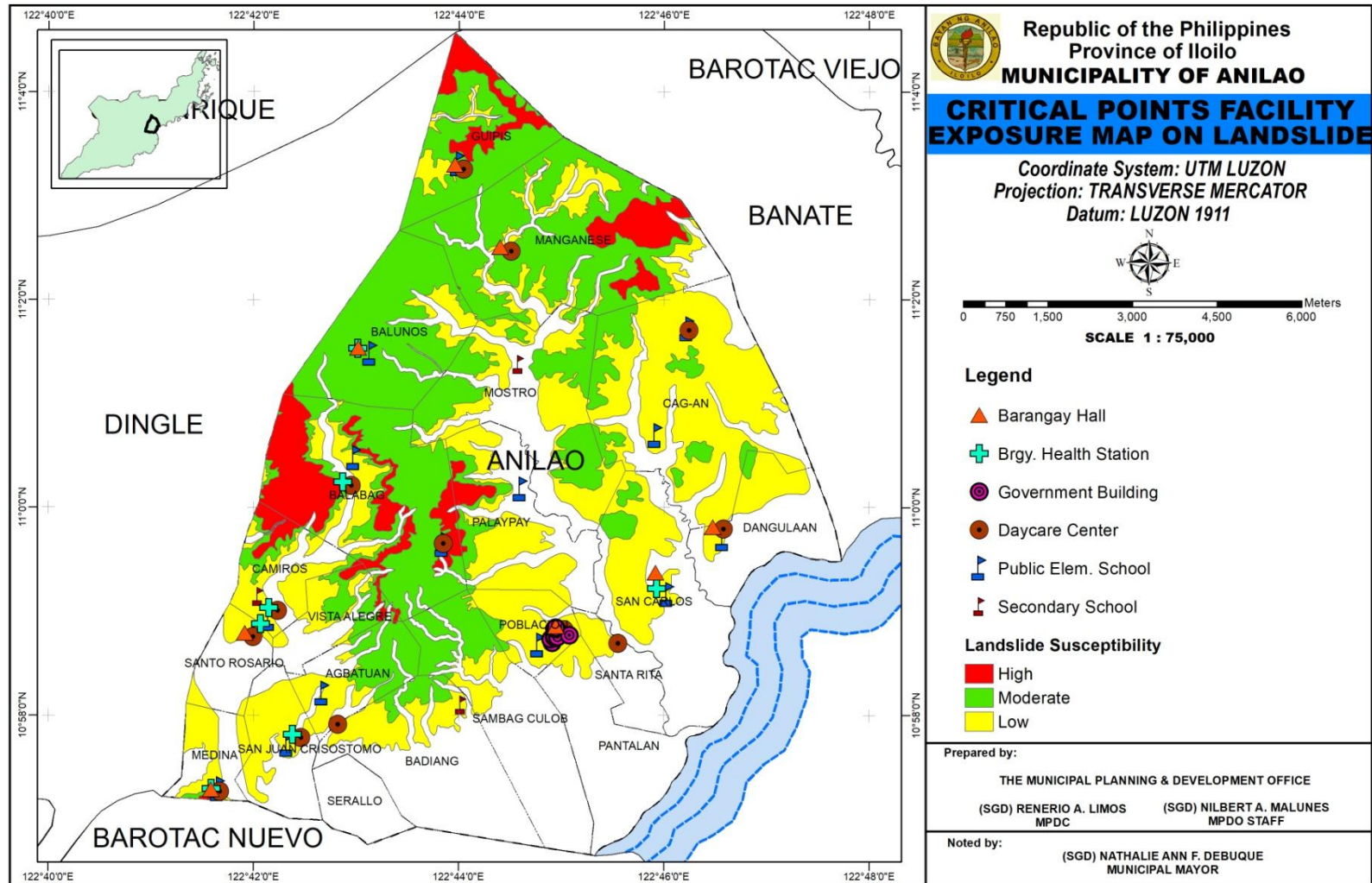
Figure ED-5. Critical Points Facility Exposure Map on Flood



Source: MPDO



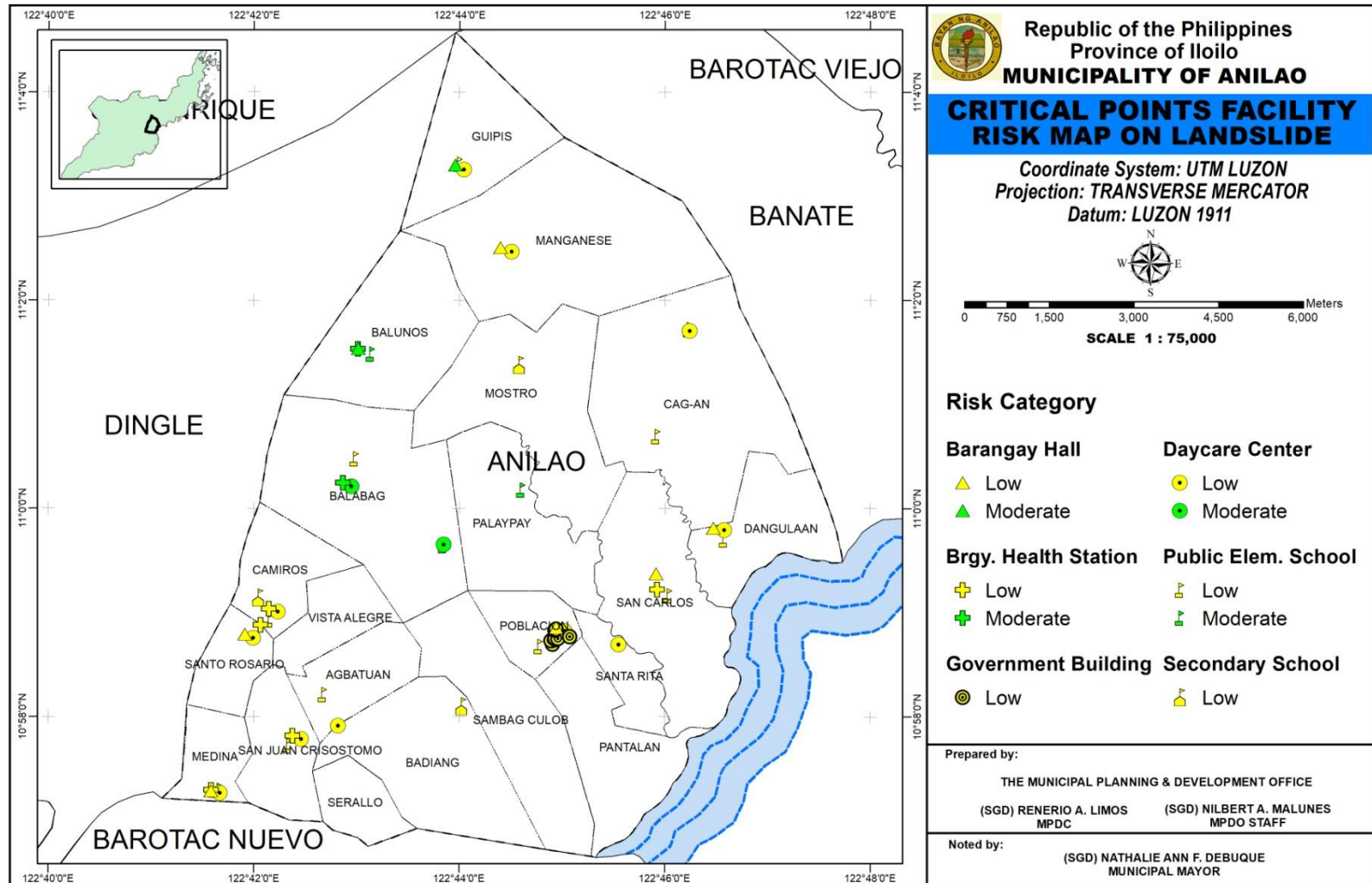
Figure ED-6. Critical Points Facility Exposure Map on Landslide



Source: MPDO



Figure ED-7. Landslide Risk to Facilities Map

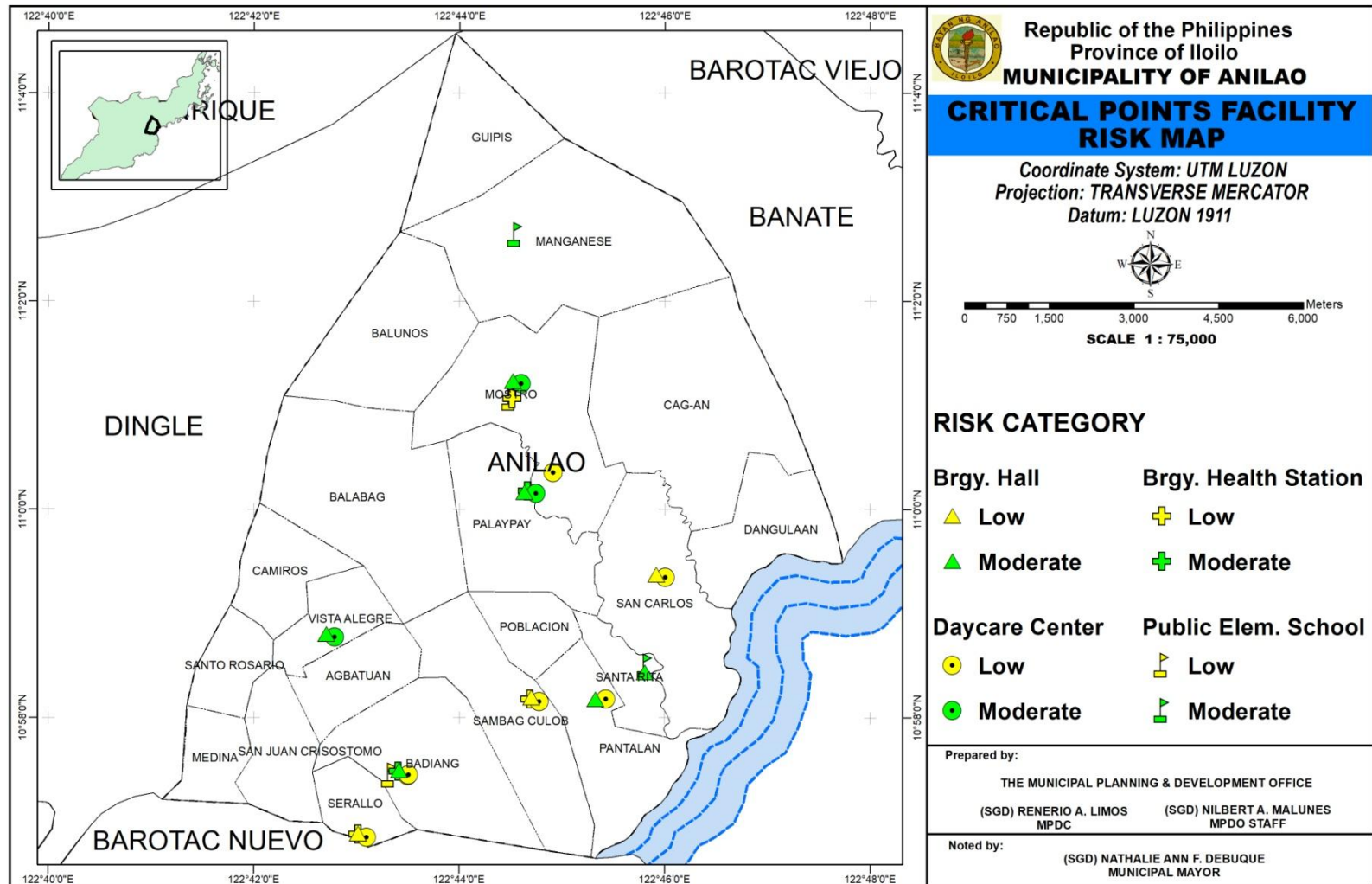


Source: MPDO





Figure ED-8. Critical Points Facility Risk Map



Source: MPDO





Education Sector Analysis Matrix

| TECHNICAL FINDINGS/<br>OBSERVATIONS                                     | IMPLICATIONS/EFFECTS   | POLICY OPTIONS/INTERVENTIONS  |
|---|--|---|
| Insufficient instructional materials for the students/pupils (LMs, TGs) | Academic performance of students is below the national standards | Prioritization of fund allocation for the purchase of instructional materials   |
| Insufficient instructional facilities and equipment                     | Low academic performance/ low quality education                  | Allocation of funds from national/ local government for the purchase of equipment and construction/repair of school facilities  |
| Low achievement rate of public secondary schools                        | Low achievement rate   | Allocation of funds from the government to purchase goal – oriented SIMs<br><br>Provision of funds for the purchase of ITC equipment for effective teaching - learning process<br><br>Upgrade teachers’ teaching strategies and skills through seminar workshops, school – based INSET and LAC sessions |
| High drop – out rate in secondary schools                               | Increase in the no. of OSYs                                      | Provision of livelihood programs to parents<br>Linkage with ALS<br>Conduct symposium/orientation to minimize early pregnancy  |
| High percentage of pupils in frustration reading levels                 | Increase in drop – out rate<br><br>Low achievement rate          | Implementation of Remedial Reading program and Summer Reading class<br><br>Production of Big Books<br><br>Inclusion of non/slow readers in SBFP.  |
| Most of the schools were used as evacuation centers during calamities   | Disruption of classes  | Recommend for the putting-up of barangay and municipal evacuation center(s)   |



## SOCIAL WELFARE SUB-SECTOR

### Profile and Analysis of the Existing Situation

The Municipal Social Welfare and Development Office (MSWDO) is mandated to implement programs and projects on Social Welfare and other related regulations. The MSWDO is composed of one (1) Municipal Social Welfare and Development Officer III one (1) Social Welfare Officer III, one (1) Administrative Officer 1, one (1) Administrative Aide 1, two (2) Job-hires, two (2) LGU Municipal Link 4Ps, five (5) Municipal Coordinating Team LGU counterpart, twenty-seven (27) Child Development Workers, one (1) job-hire for the Office of Senior Citizens' Association and the OSCA Head.

### Day Care Service Program

All throughout twelve barangays, there are twenty-seven (27) active and accredited existing day care centers with corresponding twenty- seven (27) Child Development Workers that cater 2.5 to 4 years of age with a total number of Nine Hundred Thirty Five (935) pre-schoolers.

Accredited Day Care Centers (DCC) must be fully equipped with necessary facilities in accordance to the standard requirements of the agency. It is noted that parents realized the importance and advantages of sending their pre-school aged children to the center. The Child Development Worker should have a continuous training to aim adequate knowledge and updated tools in dealing with children.

### PWD Program

The comprehensive program for Persons with Disabilities (PWD) aims to promote services to all types of PWDs. The program focuses on areas of disability prevention, rehabilitation and equalization of opportunities. It is intended to enhance PWDs capacity to attain a more meaningful, productive and satisfying way of life and ultimately become self-reliant, productive and contributing members of society.

The LGU has a total registered number of One Hundred Eighty Two (182) PWD's all over municipality.

### Senior Citizens Program

Senior Citizens Program is a community-based project for the elderly persons of whom the LGU believe that they have maximum contribution to nation building. In this, the LGU support this sector's implementing rules as stated in R.A. 9994. As to date, the office already issued Five Thousand Six Hundred Twenty Nine (5,629) ID cards as well as booklets for medicines and groceries. However, the center is not yet accredited by the DSWD Central Office.



### Youth Welfare Program

Youth Welfare Program includes the provision of wide range of development, preventive and remedial services to enable the youth to become active contributor in national development. The LGU thru the MSWDO organized the youth sector in all barangays and now on its on-going reactivation.

Presently, there are 400 active PYAP members. The LGU supports their regular participation in the provincial and regional summits. They are mobilized by the LGU and are given designated task so as to make use of their skills, knowledge and attitudes on LGU/MSWDOs program implementation.

### Implementation of R.A. 9344 of 2006

Continuing information dissemination in coordination with Barangay Officials regarding child protection laws is to being done to ensure that children and youth are given proper protection and guidance.

Based on the assessment of DRRMO, all Day Care Centers are disaster/hazard free.

### Poverty Incidence

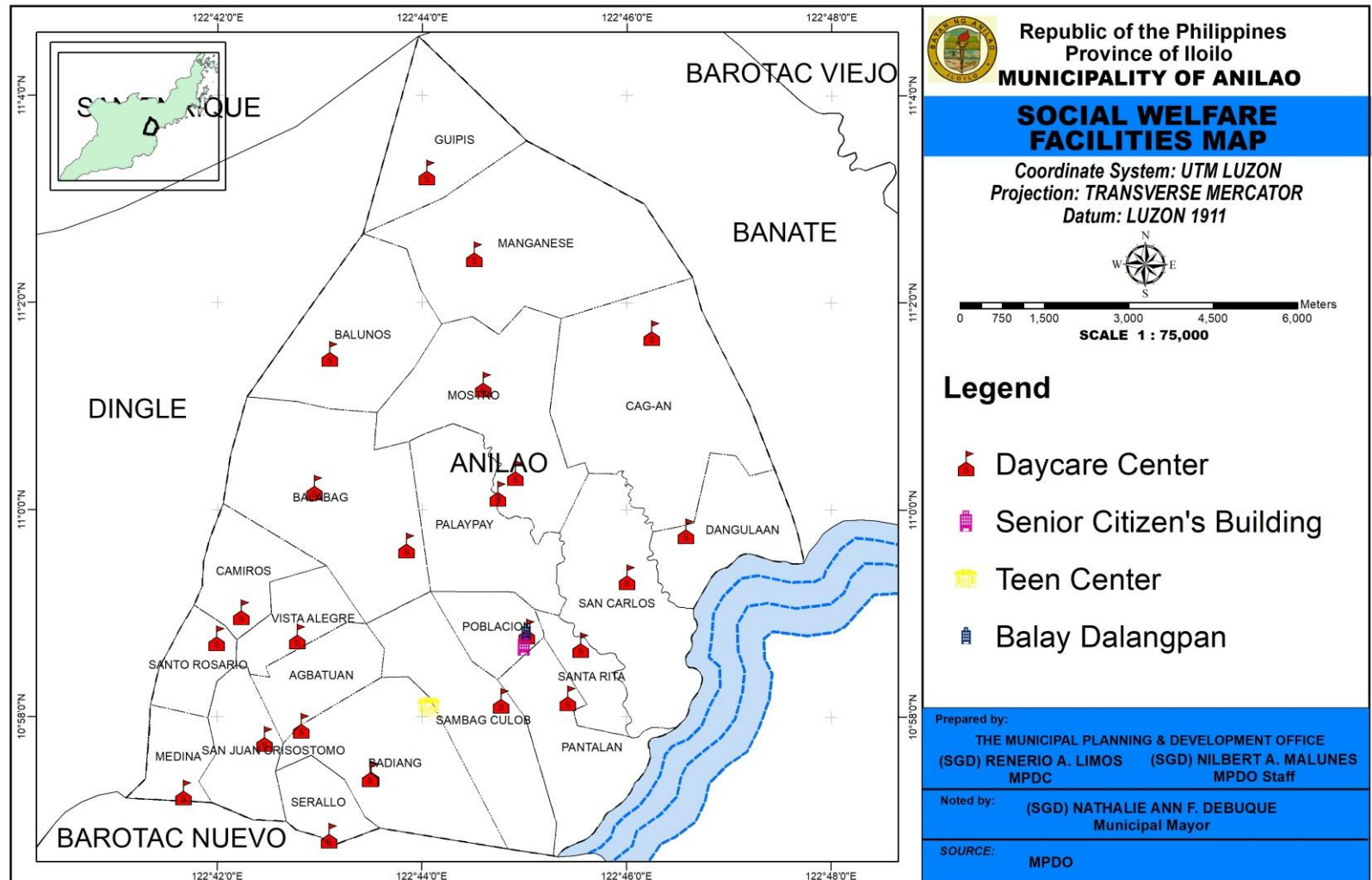
Poverty incidence in the Municipality of Anilao per the official data of PSA on Municipal level small area poverty estimates year in 2009 is 31.5% and lately in 2012 is 27.3%. It is notable that there is a decrease in the poverty incidence of 4.2% for the span of three (3) years. It is because of the concerted effort of the Local Government Unit through its frontline agencies who implemented livelihood activities and skills training programs that created income generating projects which consequently resulted to the increase of family income of its constituents. The Municipal Agriculture Office initiated modern method of farming and provide assistance thru fertilizer and seeds which in return produce high rice production.

The Municipal Health Office implements various health programs such as Health Fair Week aimed at providing free health screenings and educational forum. This contributed much on the prevention of severe sickness among Anilaonons thus family expenses lessen in terms of family health concerns.

The Municipal Social Welfare and Development Office is implementing social protection program such as 4P's, Social Pension, Sustainable Livelihood Programs and Aid to Individual in Crises Situation. These programs and activities contributed to the decrease of poverty situation in the Municipality. Livelihood programs are being implemented and monitored properly to warrant its sustainability to help beneficiaries out of their expenses for education and basic needs. The Department of Education has its Alternative Learning System catering those who cannot go to formal schooling to finish their 2<sup>nd</sup> level education. It contributed to the decrease of poverty incidence in a way that they have to spend less for their education and in order to find job in the future.



Figure SW-1. Social Welfare Facilities Map



**Social Welfare Services**

The recipients of the services of MSWDO of Anilao are as follows:

Children ages 3-4 who are classified as Pre-schoolers are those needing socialization programs and activities. The succeeding year will be dedicated to kindergarten work, pre-schooler at this level are being prepared for the grade school education. MSWDO personnel are in charge of supervising pre-school educators conducting sessions in this level. Parents of these children are encouraged to participate and have a full cooperation with the Day Care Workers and teacher as to the development of their children. Results of which are shown in Table SWI. Massive Campaign on the implementation/ enforcement of our Municipal Children’s Welfare Code is a must.

The MSWDO also conducts pre-marriage counselling to couples applying for marriage license. Group session is used by trained and accredited marriage councilors as their strategy to carry-out a more comprehensive and effective discussion Other private organizations such as Couples’ for Christ and other church-based organizations are also conducting pre-marriage counselling sessions to concerned couples.

Another type of service is the Family Development Program whose clientele are the families of SLP beneficiaries, Day Care Service Parents Association, PWD, LGBT, Solo Parents, VAW Victims, 4Ps beneficiaries and other client groups served by MSWDO Anilao. Collaborative efforts of Civil Society Organizations and other government line agencies lead to the success of this program. Counselling, peer group meetings, case conference and home visits and other related programs and services needed to respond to the surfaced needs of beneficiaries are the strategies used by MSWD Office for the effective delivery of this program.

For Senior Citizens, 2,218 beneficiaries and its growing population had been identified as recipients of Social Pension. It is expected to raise its number every year as the guideline lower down the age bracket to sixty (60) years old and above to qualify for the program.

Another child related program is the Supplemental Feeding for pre-schoolers. This program aims to improve the nutritional level of pre-schooler enrolled in Child Development Centers.

On Sectoral Groups Development Program, capability building of sectoral groups such as women, Solo Parents, LGBT, PWD, Children, Senior Citizen and other groups are the beneficiaries of this program. They were organized by the LGU and some of them were accredited by the Sangguniang Bayan, SEC, DOLE and other accredited government agencies for them to have a legal identity and for possible availment of leadership trainings that may be available in the future. Financial management and other organizational strengthening activities will be provided by MSWDO and other line agencies to ensure that these sectoral groups are functional. Sustainable/Livelihood activities will able them to be self- reliant members of our society.



Cash assistance to indigent families and individuals under difficult circumstances needs thorough assessment and validation with the recommendation and certification from respective Punong Barangay. These are the granting of hospitalized, death, sick, stranded, educational needs, victims of man-made and natural calamities. Granting of financial assistance may vary according to the scope, the type of crisis they are undergoing and the material and financial capacity of the family/victim. The assistance may be in the form of check or cash to be disbursed by the Municipal Treasurer or duly authorized person.

Health Care Program is similar to the granting of financial assistance to individuals and families in crisis situations however, disbursement of fund goes directly to hospitals (with MOA) where the client is admitted. Documents required for this program are medical certificate and hospital bills of eligible identified clients. Granting of assistance depends on the situation of the client and assessment of a social worker or any authorized staff of MSWD Office.

Free Mortuary Services Program provides free coffin to the dead family member of identified indigent family. Cost of coffin to be provided by LGU will be based on the assessment of a Social Worker and on the financial capacity of the client/family. Assistance/payment for coffin will be paid directly to the servicing funeral parlor where Anilao LGU has a MOA.

Libreng/Sakay Program is a provision of transportation facilities to 24 high school students of Anilao National High School living in Barangays which are very far from Poblacion area and the transportation fare is very high. Parents and students undergo series of meetings and orientations for them to know their obligations in availing such program. Student beneficiaries are required to earn a very satisfactory grade to maintain availment of the program.

Gender and Development Capability Building focuses on gender equality and finding solutions and formulation of plans on gender issues and gender based violence. It also includes conduct of GAD planning and budgeting sessions to Government line agencies and the mainstreaming of GAD to all levels of governance. Enacted in 2009, GAD Code needs to be reviewed and updated.

Special Programs (refer to Tables SW-1 and SW-2) downloaded by National Agencies requires provision of local counterpart both financial, physical and personnel for effective delivery of basic services attached to MSWDO programs. This consists of provision of cash counterparts to municipal and barangay projects, hiring and travel allowance of personnel and provision of goods to ensure efficient implementation of programs and projects in the municipal level. To ensure the attainment of its goals and objectives, monitoring and evaluation of the program being implemented shall be regularly done.



Table SW-1. Social Welfare Facilities, Services and Clientele, Year 2017

| Facility              | Barangay     | Services Offered                        | Type of Clientele | No. of Clientele | Staff | Ownership | Physical Condition | Hazard Susceptibility (H/M/L) |    |    |
|-----------------------|--------------|---|-------------------|------------------|-------|-----------|--------------------|-------------------------------|----|----|
|                       |              |   |                   |                  |       |           |                    | FI                            | Ln | Su |
| Senior Citizen Center | Poblacion    | Elderly Care                            | Elderly           | 15               | 3     | Public    | F                  |                               | L  |    |
| Daycare               | Serallo      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 45               | 1     | Public    | F                  | L                             |    |    |
|                       | Badiang      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 30               | 1     | Public    | F                  | M                             |    |    |
|                       | Sambag Culob | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 28               | 1     | Public    | F                  | L                             |    |    |
|                       | Pantalan     | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 18               | 1     | Public    | F                  | L                             |    |    |
|                       | San Carlos   | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 43               | 1     | Public    | F                  | L                             |    |    |
|                       | Sta. Rita    | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 36               | 1     | Public    | F                  | L                             |    |    |
|                       | Cag-an       | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 42               | 1     | Public    | F                  |                               | L  |    |
|                       | Dangula-an   | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 40               | 1     | Public    | F                  |                               | L  |    |
|                       | Mostro       | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 30               | 1     | Public    | F                  |                               |    |    |
|                       | Palaypay     | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 25               | 1     | Public    | F                  |                               |    |    |
|                       | Manganese    | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 42               | 1     | Public    | F                  |                               | L  |    |
|                       | Camiros      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 33               | 1     | Public    | F                  |                               | L  |    |
|                       | Balunos      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 32               | 1     | Public    | F                  |                               | M  |    |





| Facility              | Barangay     | Services Offered                        | Type of Clientele | No. of Clientele | Staff | Ownership | Physical Condition | Hazard Susceptibility (H/M/L) |    |    |
|-----------------------|--------------|---|-------------------|------------------|-------|-----------|--------------------|-------------------------------|----|----|
|                       |              |   |                   |                  |       |           |                    | Fl                            | Ln | Su |
| Senior Citizen Center | Poblacion    | Elderly Care                            | Elderly           | 15               | 3     | Public    | F                  |                               | L  |    |
| Daycare               | Serallo      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 45               | 1     | Public    | F                  | L                             |    |    |
|                       | Badiang      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 30               | 1     | Public    | F                  | M                             |    |    |
|                       | Sambag Culob | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 28               | 1     | Public    | F                  | L                             |    |    |
|                       | Pantalan     | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 18               | 1     | Public    | F                  | L                             |    |    |
|                       | San Carlos   | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 43               | 1     | Public    | F                  | L                             |    |    |
|                       | Sta. Rita    | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 36               | 1     | Public    | F                  | L                             |    |    |
|                       | Cag-an       | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 42               | 1     | Public    | F                  |                               | L  |    |
|                       | Dangula-an   | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 40               | 1     | Public    | F                  |                               | L  |    |
|                       | Mostro       | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 30               | 1     | Public    | F                  |                               |    |    |
|                       | Palaypay     | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 25               | 1     | Public    | F                  |                               |    |    |
|                       | Manganese    | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 42               | 1     | Public    | F                  |                               | L  |    |
|                       | Camiros      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 33               | 1     | Public    | F                  |                               | L  |    |
|                       | Balunos      | Day Care Services, Supplemental Feeding | Pre-Schoolers     | 32               | 1     | Public    | F                  |                               | M  |    |

Source: Municipal Social Welfare and Development Office      Legend: Physical Condition: F – Fair, G- Good, O – Operational

Hazard Susceptibility: L-Low, M-Moderate H-High



**Table SW- 2. Historical Number of Population Served by Type of Clientele System**

| Type of Clientele                           | Previous Years |            |            | 2017       |      |
|---|----------------|------------|------------|------------|------|
|   | 2014           | 2015       | 2016       | No.        | %    |
| Women in especially difficult circumstances | No data        | 5          | 9          | 5          | 0    |
| Persons with Disabilities                   | 24             | 5          | 22         | 62         | 0.20 |
| Senior Citizens                             | 203            | 435        | 408        | 737        | 2.56 |
| Solo Parents                                | No data        | 5          | 13         | 4          | 0    |
| <b>TOTAL</b>                                | <b>227</b>     | <b>450</b> | <b>452</b> | <b>808</b> |      |

*Source: Municipal Social Welfare and Development Office*

Table SW-3 below shows the social welfare related projects approved and funded for implementation from 2017 to 2026.



Table SW-3. Social Welfare Related Projects, Approved/Funded for Implementation, Year 2017-2026

| Name/ Location of Project   | Barangay       | Type | Proponent (Government, Private, Other) | Estimated Start Date | Estimated Date of Completion |
|---|----------------|------|--|----------------------|------------------------------|
| Improvement/Rehabilitation of Balay Dalangpan   | Poblacion      | Hard | Government                             | 2017                 | 2018                         |
| Aid to Individual in Crisis Situation   | Poblacion      | Soft | Government                             | 2017                 | Continuing                   |
| KALAHI-CIDDS Program Counterpart  | Poblacion      | Soft | Government                             | 2017                 | Continuing                   |
| Children's Development Program  | Municipal Wide | Soft | CSO                                    | 2017                 | Continuing                   |
| Social Welfare Services   | Poblacion      | Soft | Government                             | 2017                 | Continuing                   |
| Senior Citizens Development Program   | Municipal Wide | Soft | CSO                                    | 2017                 | Continuing                   |
| Aids to Individuals in Crisis Situation/Indigents/Displaced Persons or Families                             | Municipal Wide | Soft | Government                             | 2017                 | Continuing                   |
| Health Care Program   | Municipal Wide | Soft | Government                             | 2017                 | Continuing                   |
| Sectoral Group Development Program  | Municipal Wide | Soft | CSO                                    | 2017                 | Continuing                   |
| Gender and Development (GAD) Only Program   | Municipal Wide | Soft | Government                             | 2017                 | Continuing                   |
| Libreng Sakay Program   | Barangay       | Soft | Government                             | 2017                 | Continuing                   |
| Free Mortuary Services Program  | Municipal Wide | Soft | Government                             | 2018                 | Continuing                   |
| Rehabilitation of Balay Dalangpan   | Poblacion      | Hard | Government                             | 2018                 | 2018                         |
| Construction of Evacuation Center   | Poblacion      | Hard | Government                             | 2019                 | 2020                         |
| Assistance to Indigent Individual of Families (Educational Assistance for High School and College Students) | Municipal Wide | Soft | CSO                                    | 2019                 | Continuing                   |
| Assistance to Indigent Individual of Families (Cash for Work Tree Planting Project)                         | Municipal Wide | Soft | CSO                                    | 2019                 | Continuing                   |
| Assistance to Indigent Individual of Families (Food Assistance)   | Municipal Wide | Soft | CSO                                    | 2019                 | Continuing                   |



|  |                |      |            |      |            |
|--|----------------|------|------------|------|------------|
| Assistance to Indigent Individual of Families - Assistance to Individual in Crisis Situation (Burial, Hospitalization and other related cases arising from crisis situation) | Municipal Wide | Soft | CSO        | 2019 | Continuing |
| KALAHI-CICCS Program (Infrastructure Counterpart)  | Kalahi         | Hard | Government | 2017 | 2018       |
| Anti-Illegal Drug Development Program  | Poblacion      | Hard | Government | 2017 | 2018       |
| Municipal Livelihood Support Program (Women, Senior Citizen, Disabled and other CSOs)  | Municipal Wide | Soft | CSO        | 2017 | Continuing |
|  |                |      |            |      |            |

Source: Municipal Social Welfare and Development Office/ MPDO

**Current and Projected Needs**

Mostly all barangays in the municipality have been provided with social services one of which is the Day Care Center. The current situation of Day Care Centers lessens the interest of the pre-school children to go to school because of the inconvenience in going to elementary schools and inadequate facilities and learning materials. Attentiveness is a challenge in pre-school learning as their span of attention depends on the type of learning facilities and materials. The Day Care Centers should be rehabilitated and improved and provided with additional facilities, teachers, reading materials and instructional materials.

The structure of the Senior Citizens' Center is located at the Municipal Public Plaza with a limited space for them to do their daily activities. Every time there is a meeting, the place is congested and this situation gives inconvenience to senior citizens. Expansion of the Center is very needed for them to enjoy their daily activities.

Since most social services concerns are under this office, there are other programs of the Social Welfare Services that needs to be monitored and improved such as the implementation of livelihood activities under the Sustainable Livelihood Program and Skills Training along Beauty Culture, Food Processing, Catering, Massage and Hilot Wellness, Carpentry, Sari-sari- Store and all others. These are the livelihood initiatives which needs thorough and close monitoring. However, some of this projects are situated in far flung areas. The problem would come in if there is no available vehicle. Provision of vehicle for MSWD Office will answer this problem.

The problem for Children in Conflict with the Law (CICL) is getting higher in the barangay level. The municipality does not have a detention and rehabilitation center for CICL. There is really a need to have a staff who will handle/cater the emotional and psychological needs of these minors.



Figure SW- 2. Social Welfare Facilities Map showing Exposure to Flooding

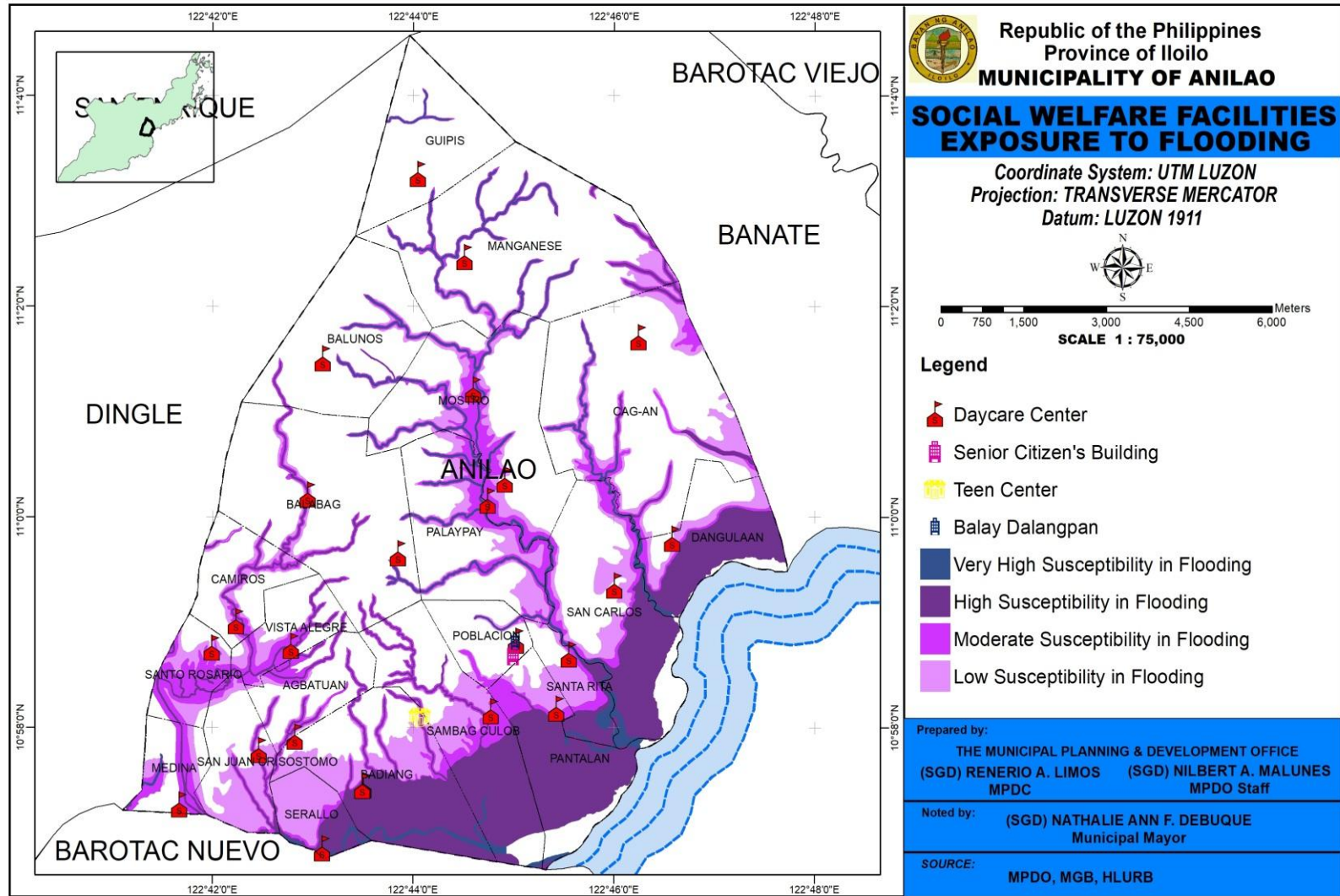




Figure SW- 3. Social Welfare Facilities Exposure to Landslide

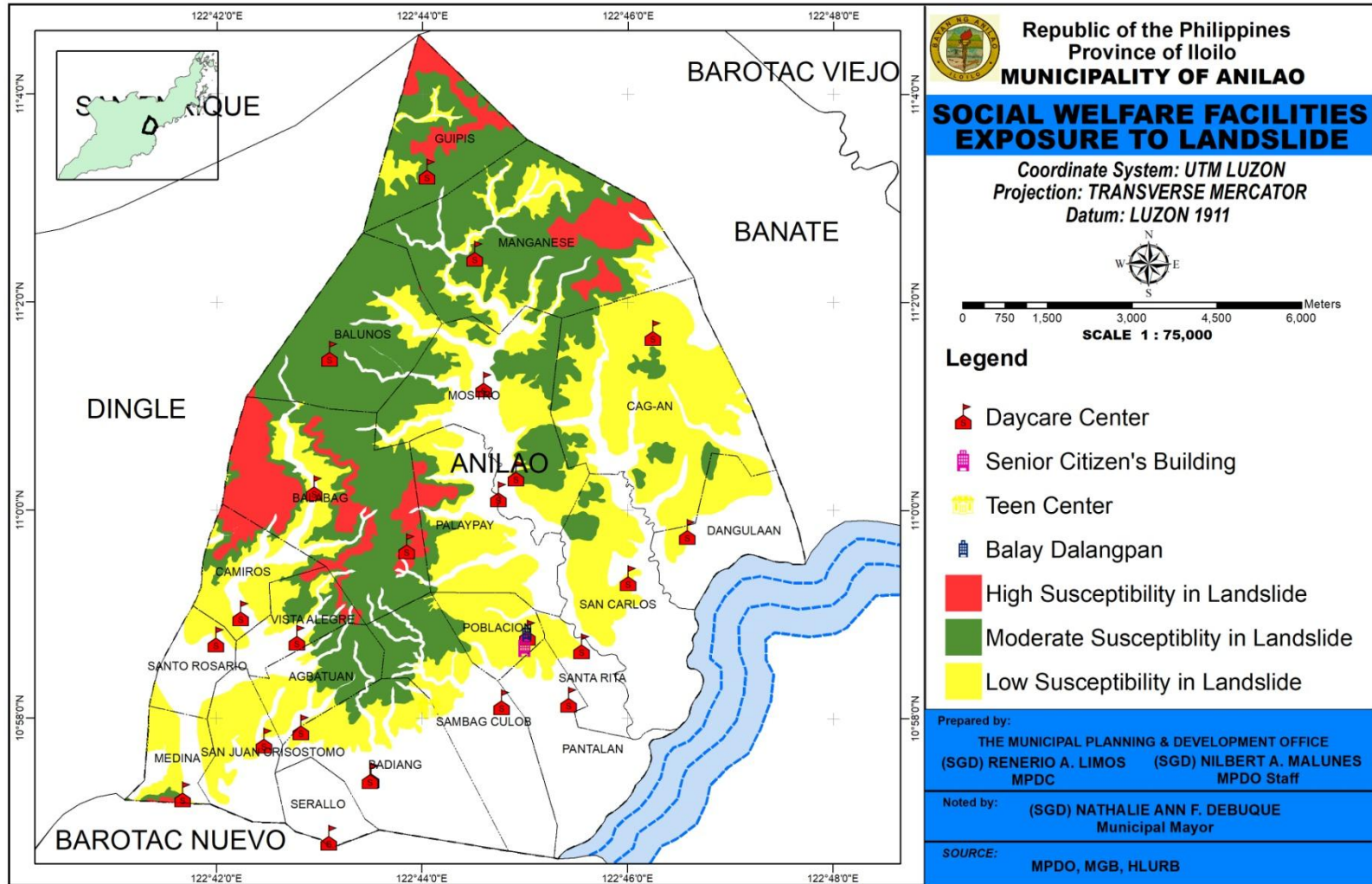


Figure SW- 4. Social Welfare Facilities Exposure to Stormsurge

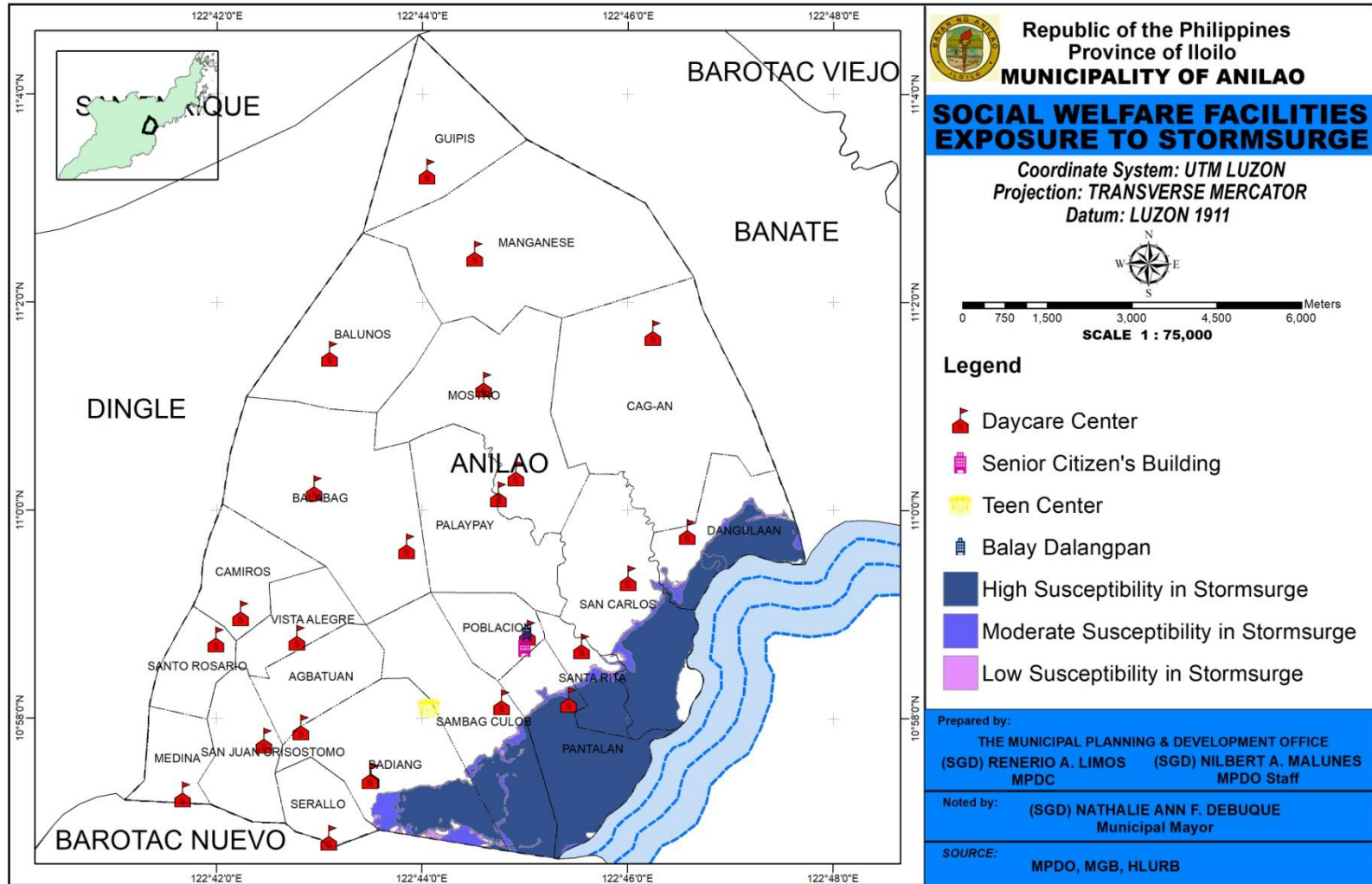
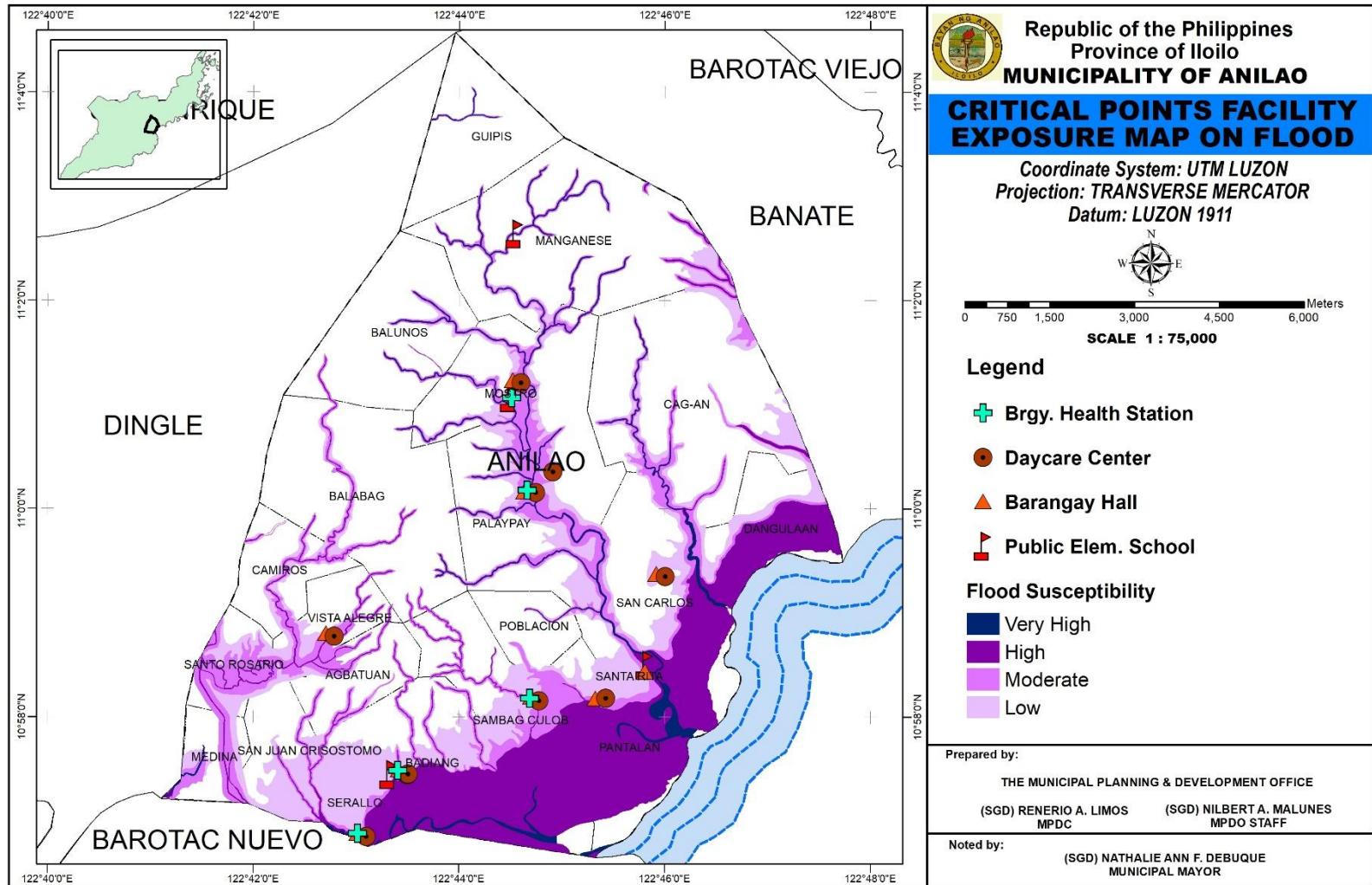




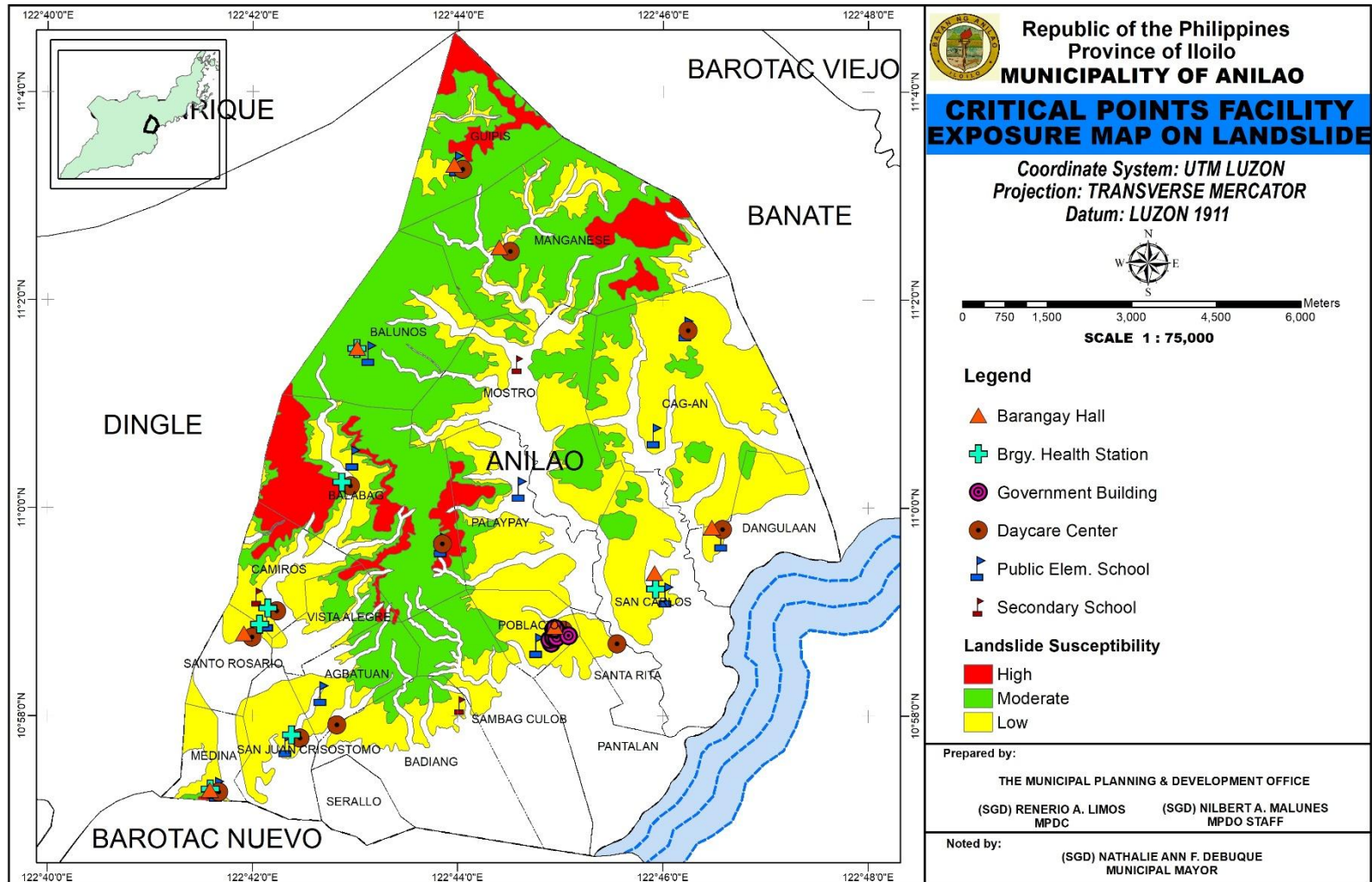
Figure SW- 5. Critical Points Facility Exposure Map on Flood



Source: MPDO



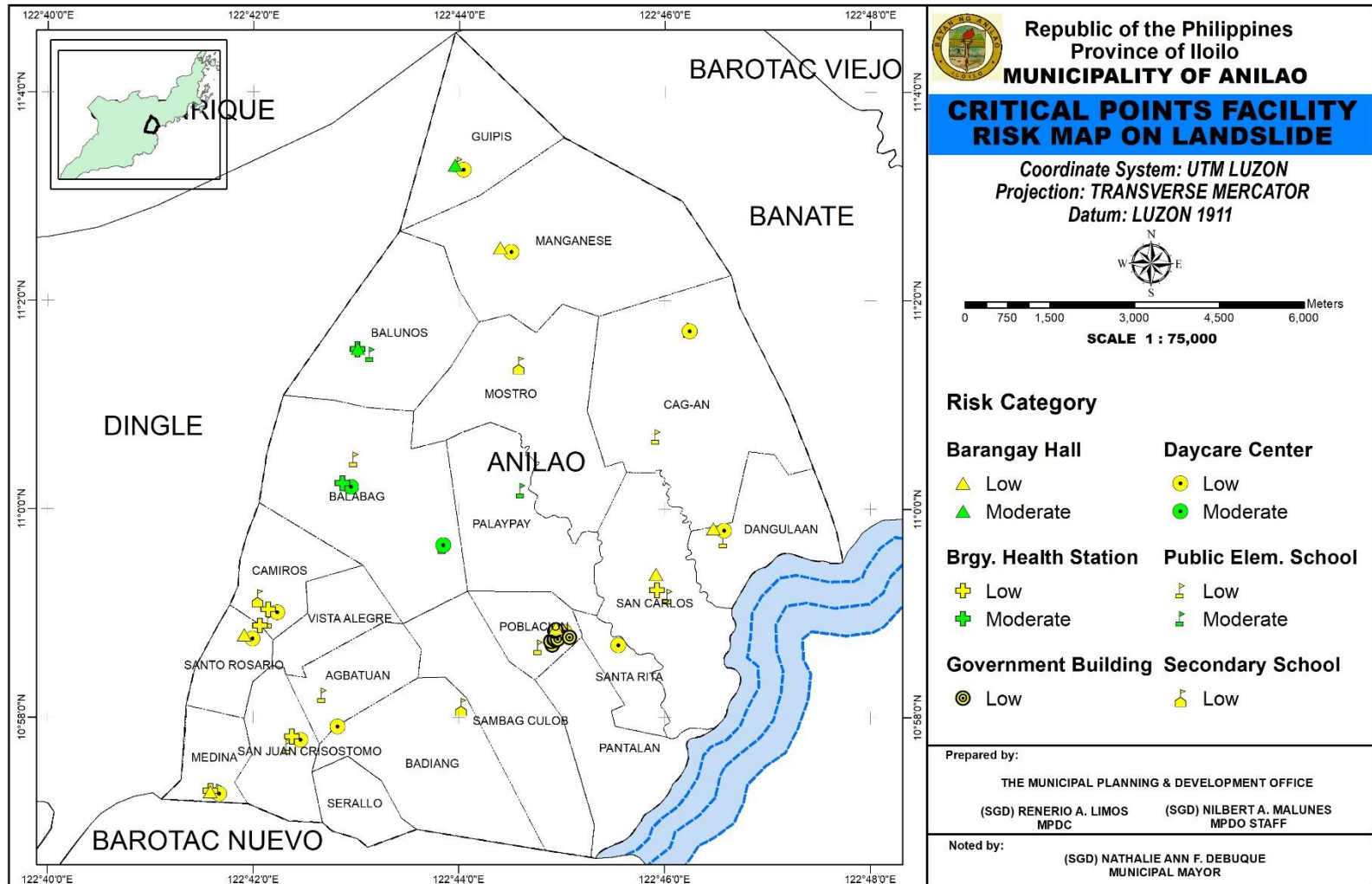
Figure SW- 6. Critical Points Facility Exposure Map on Landslide



Source: MPDO



Figure SW- 7. Landslide Risk to Facilities Map

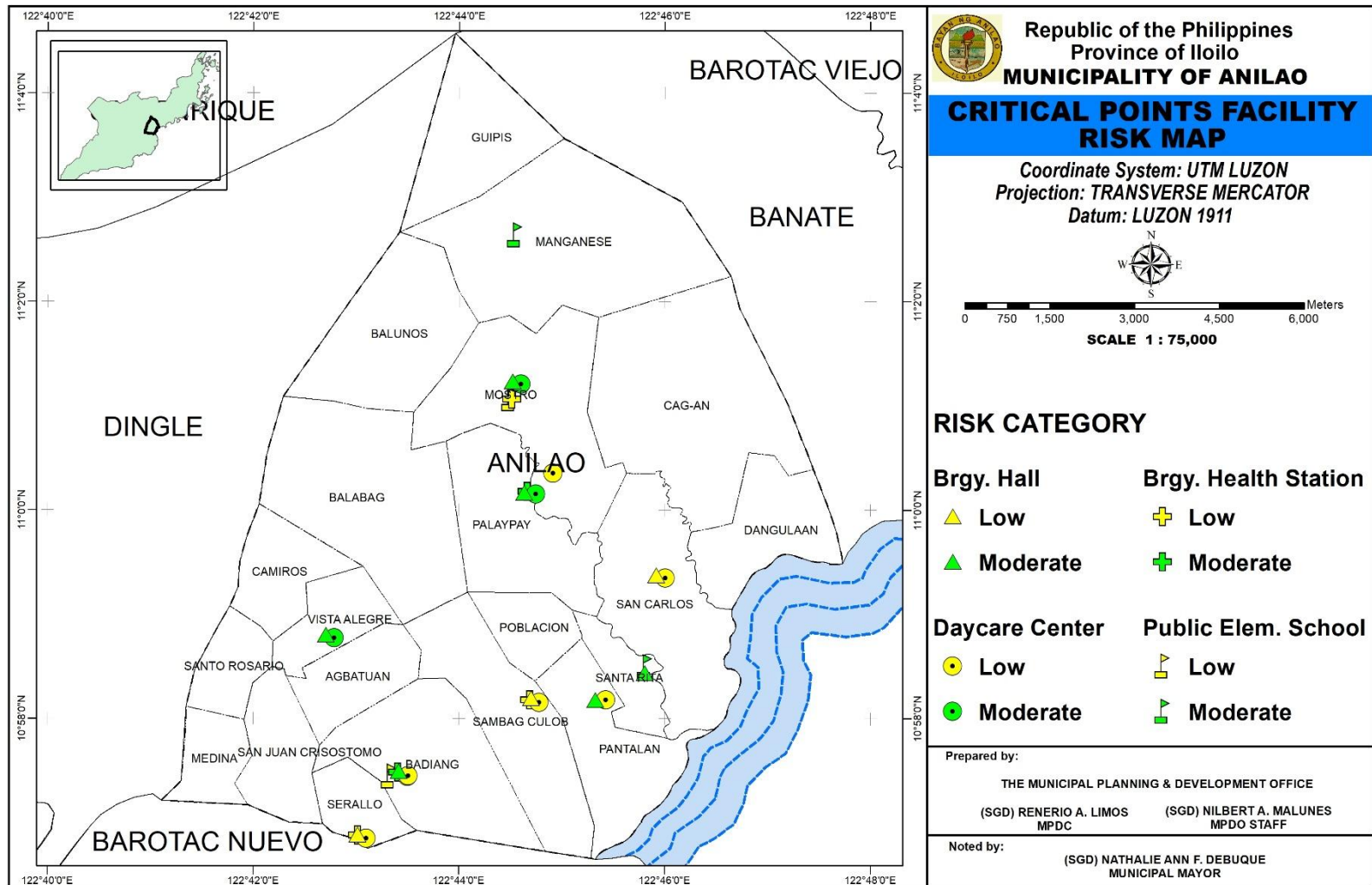


Source: MPDO





Figure SW- 8. Critical Points Facility Risk Map



Source: MPDO



**Social Welfare Analysis Matrix**

| Technical Findings/Issues/Concerns                                     | Effects/Implications   | Possible Solution/Policy Options/Interventions  |
|--|--|---|
| 1. Child labor   | -Increase Out of school youth  | -Request DSWD to conduct survey on child labor and conduct advocacy and counseling.<br>- Implementation of Ordinance No. 2014-02 (Child Labor Awareness Month)<br>- Implementation of Children’s Welfare Code   |
| 2. Crimes committed involving minors                                   | -Increase in crime incidence involving minors  | -Barangay Visitation to be conducted by WCPD and DSWD in disseminating information regarding the current laws on Violation Against Women and their Children and child in conflict with the Law.<br>- Educate the parents of their responsibility for the discipline of their over their children. |
| 3. Physical improvement of Day Care Centers                            | -Inconvenient atmosphere<br>-Inadequate facilities<br>-Poor program implementation                           | -Rehabilitation and beautification enhancement of Day Care Centers.<br>-Provision additional facilities<br>-Purchase of reading materials and visual aides  |
| 4. Physical improvement of Senior Citizens Pavilion (RA 7876)          | -Inconvenient atmosphere<br>-Senior Citizens’ building not accredited  | -Expansion of Senior Citizens Building<br>-Accreditation of Senior Citizens’ Building   |
| 5. Absence of Detention/Rehabilitation Center for the minors (RA 9344) | -Non-functional Balay Dalangpan/Halfway House.<br>-No professional staff assigned to handle problems on CICL | -Accreditation of Balay Dalangpan<br>-Provision of budget for Balay Dalangpan/Halfway house   |
| 6. A.O. 82 S. 2003 SWD Delivery system                                 | -No permanent staff to handle CICL<br>-Poor/slow delivery of social services                                 | -Additional Staff to handle CICL<br>-Provision of 1 utility vehicle Intended for official transactions.   |



|   |   |   |
|---|---|---|
| 7. Strengthening of PWD organization                  | -Inactive participation of PWDs   | Provision of 1 utility vehicle intended for official transactions.<br>-Provision of wide office area<br>-provision of exclusive space/room for interview and counseling for the clients.<br>-Create concrete plans for the implementation of PWD programs.<br>-Create advocacy campaign disability Prevention, rehabilitation and equalization<br>-Allocate funds for skills training |
| 8. Strengthening/Reorganization of Women Organization | -Inactive participation of some women members   | -Create concrete plans for the implementation of program for the women<br>-Reorganized women organization in respective barangays.  |
| 9. Sustainability of Youth Program                    | -No sustainable activities for youth.<br>-Increase number of juvenile delinquency   | -Create concrete plans to sustain youth program.<br>-Construction of Youth Center<br>-Provision of skills training for employment.<br>-Create concrete plans for sustainable implementation of the program.<br>-Provide leadership and skills trainings<br>-Provide livelihood assistance   |
| 10. Strengthening of ERPAT                            | -No sustained ERPAT organization in the Municipality<br>-Inactive participation of “Fathers” group in community activities. | -Organization of ERPAT in 21 barangays<br>-Create concrete plan for ERPAT   |



## Sports and Recreation Sub-Sector

### Profile and Analysis of the Existing Situation

Anilaonons are sports loving people as observed since mid-50's. Baseball, volleyball and basketball are the main attraction during town fiesta, Anilao Anniversary Celebration and even on Lenten season. The town plaza, ANHS and ACES playgrounds and the public market are main venue of these events.

Anilao established its name nationwide in sports particularly in little league and junior baseball where Anilao athletes represented the province in regional meets and the region in national games several times in the past.

The municipality has several sports and recreation facilities. Well known is the Centennial Park situated in the Poblacion. This facility is utilized for sports and recreation activities. Anilaonons spend their past time in the park every morning and afternoon strolling and walking as mode of light exercise.

There are five (5) covered gym situated in the Poblacion, Mostro National High School, Barangay Dangula-an, Anilao National Central School and Camiros Elementary School.

All 21 barangays of the municipality have basketball courts, which are also utilized as volleyball courts. Some other barangays have even more than one basketball courts. During summer, many rice fields are temporarily utilized as baseball/softball fields, volleyball courts in some barangays. (See Table SR-1)

Other recreational facilities in the municipality are found in Camiros National High School and Anilao National High School with its Gym. Also beside the town plaza is a children's playground. A campsite is also present in Brgy. Dangula-an and a Baringan Beach in Barangay San Carlos serves as a bathing and swimming ground for Anilaonons specially during summer. Despite the prohibition of law, presence of mini cockpits in some barangays is notable during fiestas. This is so because Anilaonons are known to be cock fighting lovers.

Although the town has no cable TV lines, people content themselves of the popular daily TV programs especially prime time shows.





Figure SR-1. Sports and Recreation Map

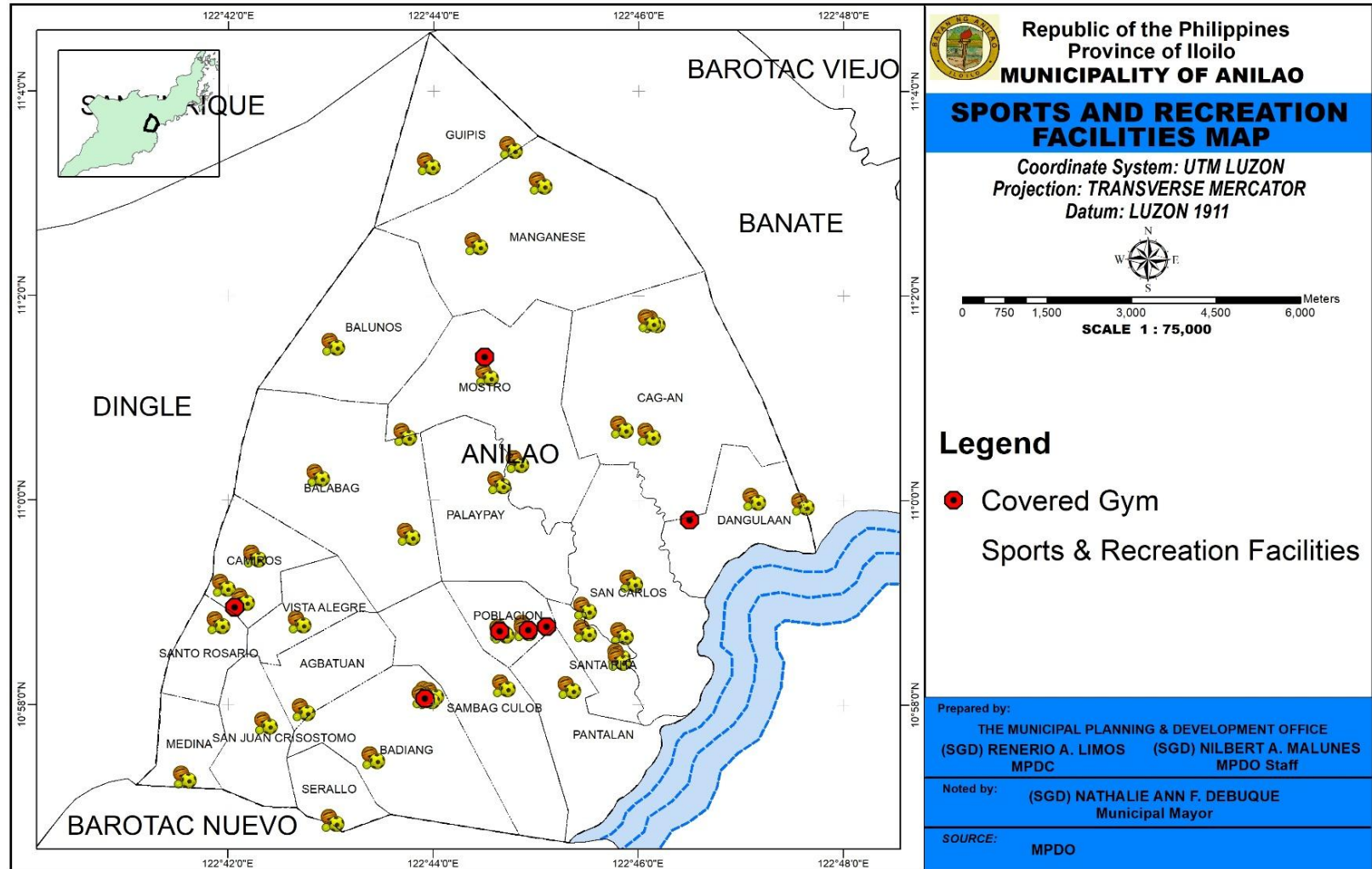


Table SR – 1. Location/Number/Size/Area of Existing Sports Recreational Facilities by Type

| LOCATION/BARANGAY       | TYPE OF FACILITIES  | NUMBER | TYPE OF OWNERSHIP |        | AREA (sq.m.) | GENERAL CONDITION                              |
|-------------------------|---|--------|-------------------|--------|--------------|--|
|                         |   |        | Private           | Public |              |  |
| 1. Agbatuan             | Basketball Court  | 1      |                   | ✓      |              | Maintained                                     |
| 2. Badiang              | Basketball Courts   | 4      |                   | ✓      | 475          |  |
| 3. Balabag              | Basketball Court  | 1      |                   | ✓      |              | Concrete                                       |
| 4. Cag-an               | Basketball Courts   | 2      |                   | ✓      |              | Concrete                                       |
| 5. Balunos              | Basketball Court/School Playground  | 1      |                   | ✓      |              |  |
| 6. Camiros              | School Playground (Elem. School) /Basketball Court  | 1      |                   | ✓      | 450          | Well maintained                                |
| 7. Dangula-an           | Basketball Court/Camp Site  | 1      | Camp Site         | ✓      | 520/650,000  | Dilapidated                                    |
| 8. Guipis               | Basketball Court/Wild Life  | 1      |                   | ✓      |              | Well maintained                                |
| 9. Manganese            | Basketball  | 1      |                   | ✓      |              | Well maintained/None                           |
| 10. Medina              | Multi-Purpose Pavement  | 2      |                   | ✓      |              | Well maintained                                |
| 11. Mostro              | Basketball Court  | 1      |                   | ✓      |              | Well maintained                                |
| 12. Palaypay            | Basketball Court/School Playground  | 1      | ✓                 | ✓      | 840          |  |
| 13. Pantalan            | Basketball Court  | 1      |                   |        |              | Well maintained/not concrete                   |
| 14. Poblacion           | Gymnasium Football/Baseball field/Volleyball Court/Elem. School Playground/Basketball Court/Billiard Tables | 8      | Billiard          | 5      |              | Well maintained                                |
| 15. SambagCulob         | Basketball Court  | 3      | ✓                 | 2      |              | (Private)not concrete/(Public) well maintained |
| 16. San Carlos          | Basketball Court/School Playground  | 1      |                   | ✓      |              | 2 Well maintained/dilapidated                  |
| 17. San Juan Crisostomo | Basketball Court  |        |                   | ✓      |              |  |
| 18. Sta. Rita           | Basketball Court  | 2      |                   | ✓      |              | 2 Well maintained/dilapidated                  |
| 19. Serallo             | Basketball Court  | 1      |                   | ✓      |              | Well maintained                                |
| 20. Sto. Rosario        | Basketball Court  | 1      |                   | ✓      |              | Well maintained                                |
| 21. Vista Alegre        | Basketball Court  | 1      |                   | ✓      |              | Not concreted                                  |
| 22. Camiros High School | Basketball Court  | 1-1    |                   | ✓      | 1,440        | Well maintained                                |
| 23. ANHS (Badiang)      | Gym/Track oval/Sepak Takraw/Football/ Baseball Field  | 5      |                   | ✓      |              | Well maintained                                |

Source: MPDO



Table SR-2. Existing Sports and Recreational Facilities by Barangay, Year 2016

| Barangay            | Type of Facility  | Ownership | Physical Condition of Facility | Used as Evacuation Center (Y/N) | Hazard Susceptibility (H/M/L) |    |    |
|---------------------|-------------------|-----------|--------------------------------|---------------------------------|-------------------------------|----|----|
|                     |                   |           |                                |                                 | FI                            | Ln | Su |
| Agbatuan            | Sports/Recreation | Private   | Good                           | N                               |                               | Ln |    |
| Badiang             | Sports/Recreation | Barangay  | Good                           | N                               | M                             |    |    |
| Balabag             | Sports/Recreation | Barangay  | Good                           | N                               |                               | H  |    |
| Balunos             | Sports/Recreation | Barangay  | Good                           | N                               |                               | M  |    |
| Cag-an              | Sports/Recreation | Barangay  | Good                           | N                               |                               | L  |    |
| Camiros             | Sports/Recreation | Private   | Good                           | N                               |                               | L  |    |
| Sambag Culob        | Sports/Recreation | Barangay  | Good                           | N                               | L                             |    |    |
| Dangula-an          | Sports/Recreation | Barangay  | Good                           | N                               |                               | L  |    |
| Guipis              | Sports/Recreation | Barangay  | Good                           | N                               |                               | H  |    |
| Manganese           | Sports/Recreation | Barangay  | Good                           | N                               |                               | L  |    |
| Medina              | Sports/Recreation | Barangay  | Good                           | N                               |                               | L  |    |
| Mostro              | Sports/Recreation | Barangay  | Good                           | N                               | L                             |    |    |
| Palaypay            | Sports/Recreation | Barangay  | Good                           | N                               | H                             |    |    |
| Pantalan            | Sports/Recreation | Private   | Good                           | N                               | M                             | L  | H  |
| Poblacion           | Sports/Recreation | LGU       | Good                           | Y                               |                               | L  |    |
| San Carlos          | Sports/Recreation | Barangay  | Good                           | N                               | L                             | L  |    |
| San Juan Crisostomo | Sports/Recreation | Barangay  | Good                           | N                               |                               | L  |    |
| Santa Rita          | Sports/Recreation | Barangay  | Good                           | N                               | H                             | L  | H  |
| Santo Rosario       | Sports/Recreation | Barangay  | Good                           | N                               | L                             | L  |    |
| Serallo             | Sports/Recreation | Barangay  | Good                           | N                               |                               | L  |    |
| Vista Alegre        | Sports/Recreation | Municipal | Good                           | N                               | H                             | H  |    |
| ANHS                | Sports/Recreation | National  | Good                           | N                               |                               | L  |    |
| ACES                | Sports/Recreation | National  | Good                           | N                               | H                             | L  |    |
| CNHS                | Sports/Recreation | National  | Good                           | N                               | H                             | L  |    |

Source: MPDO

Legend: Y – Yes

N – N Hazard Susceptibility:

FI – Flood

Ln – Landslide

Su – Storm Surge



Table SR-2 shows that among the sports facilities, those located in Barangay Sta. Rita, Palaypay, Vista Alegre, Anilao Central Elementary School (ACES) and Camiros National High School (CNHS) has high level of hazard susceptibility to flooding. Barangay Sta. Rita is experiencing 1-2 meters flood height that stays for 1-2 days during typhoons, while those located in Palaypay, Camiros and Vista Alegre are prone to flooding due to its nearness to riverbanks.

The areas along Balabag, Guipis and Vista Alegre are areas with slopes which have a steep to very steep characteristics, the soils are non-cohesive and evident tension cracks are present.

Those located along coastal barangays, storm surge has higher possibility of storm surge in areas near coast lines such as in Barangay Pantalan and Sta. Rita.

### Current and Projected Needs

The current area for sport and recreation of the municipality is inadequate based on the standard of 500 square meters per 1,000 population. The municipality needs a 1.45 hectare facility by 2017 and an additional of 0.06 hectares by 2026.

Moreover, because baseball is the sport where the municipality excels, there is a proposed standard oval for baseball and football located in Barangay Poblacion (see Table SR-3 below) The facility is seen with low level of hazard susceptibility to flooding.



Figure SR-2. Sports and Recreation Facilities Map showing levels of hazard susceptibility to Flooding

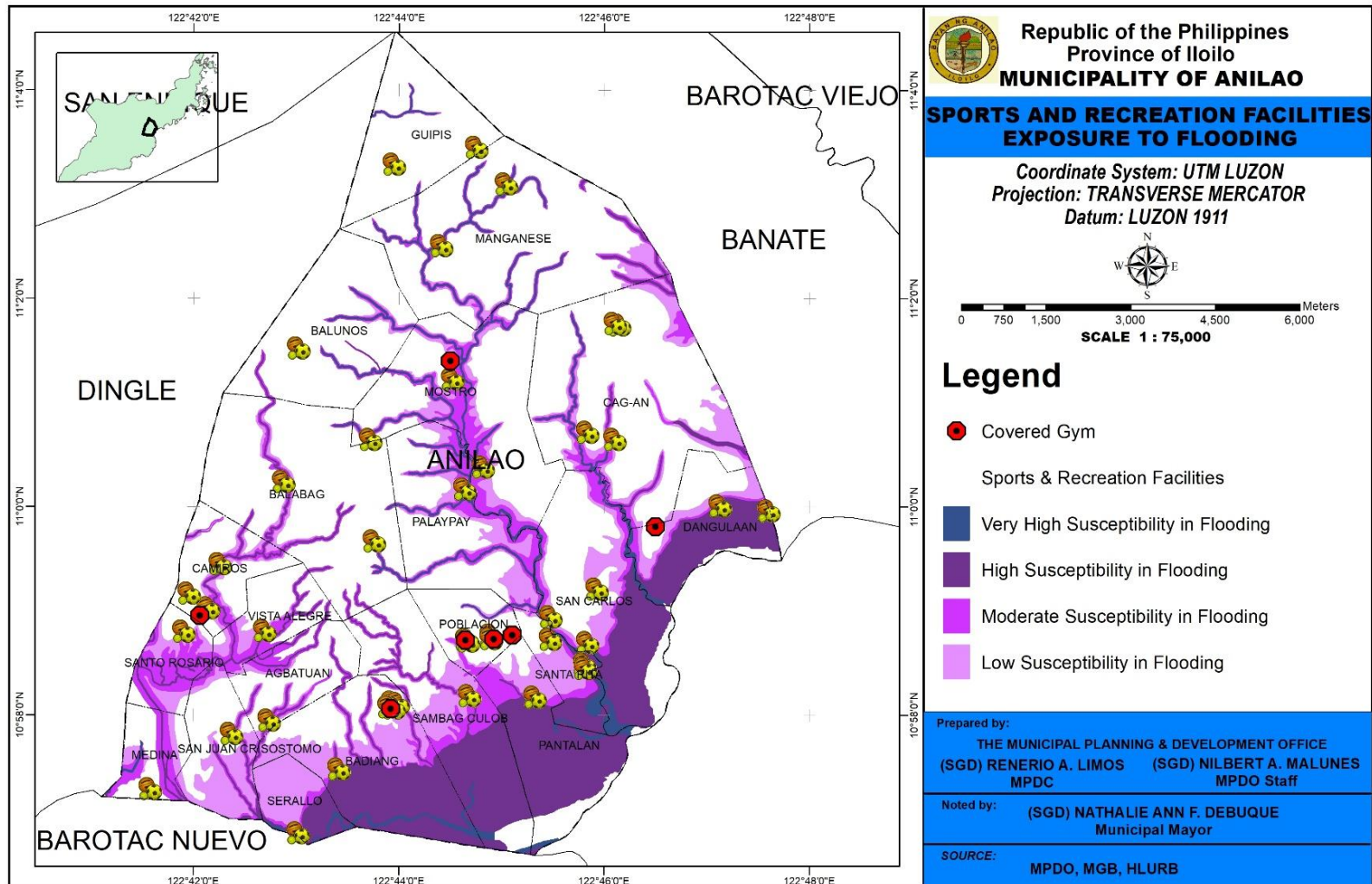




Figure SR-3. Sports and Recreation Facilities Map showing levels of hazard susceptibility to Landslide

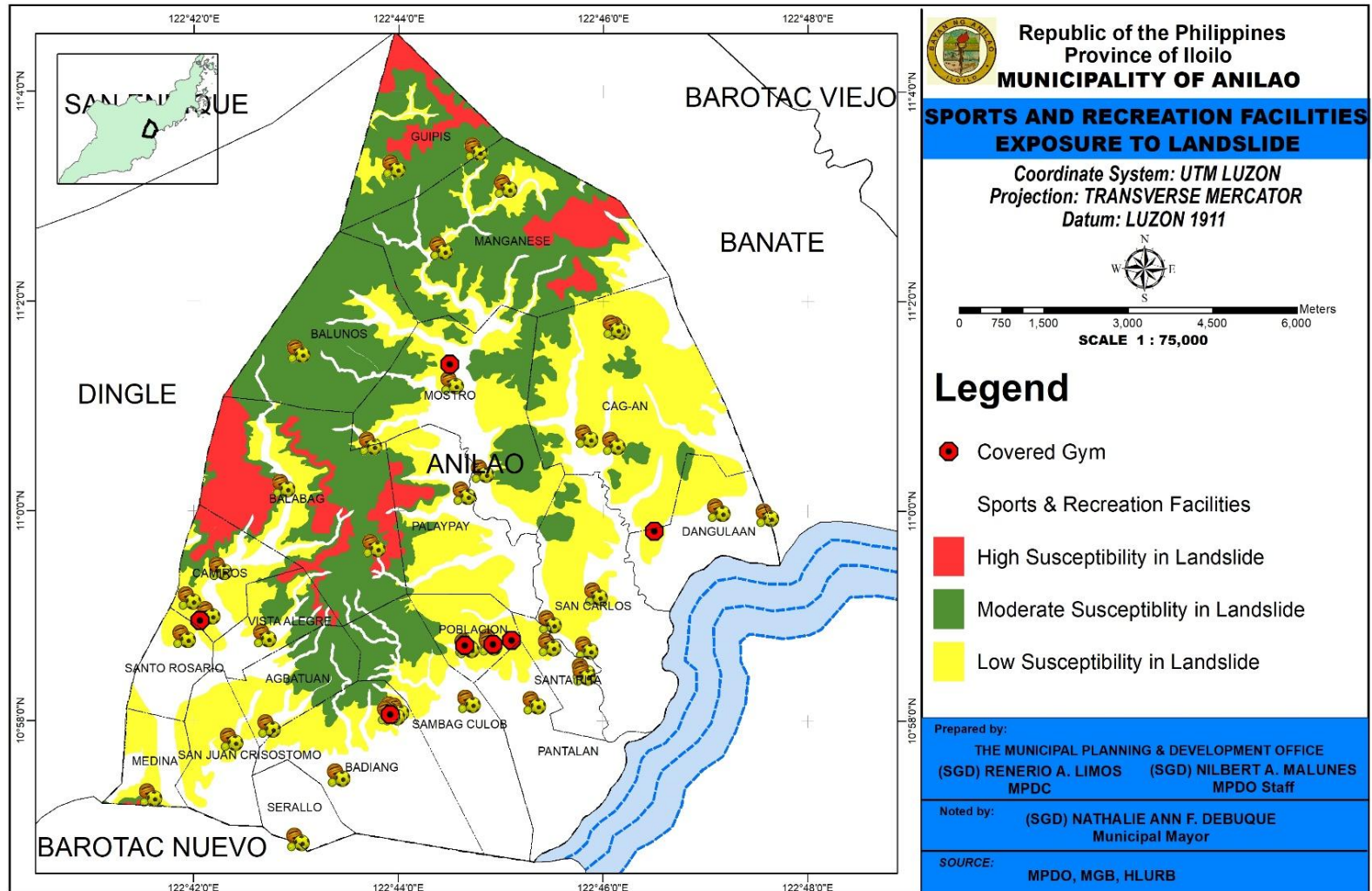
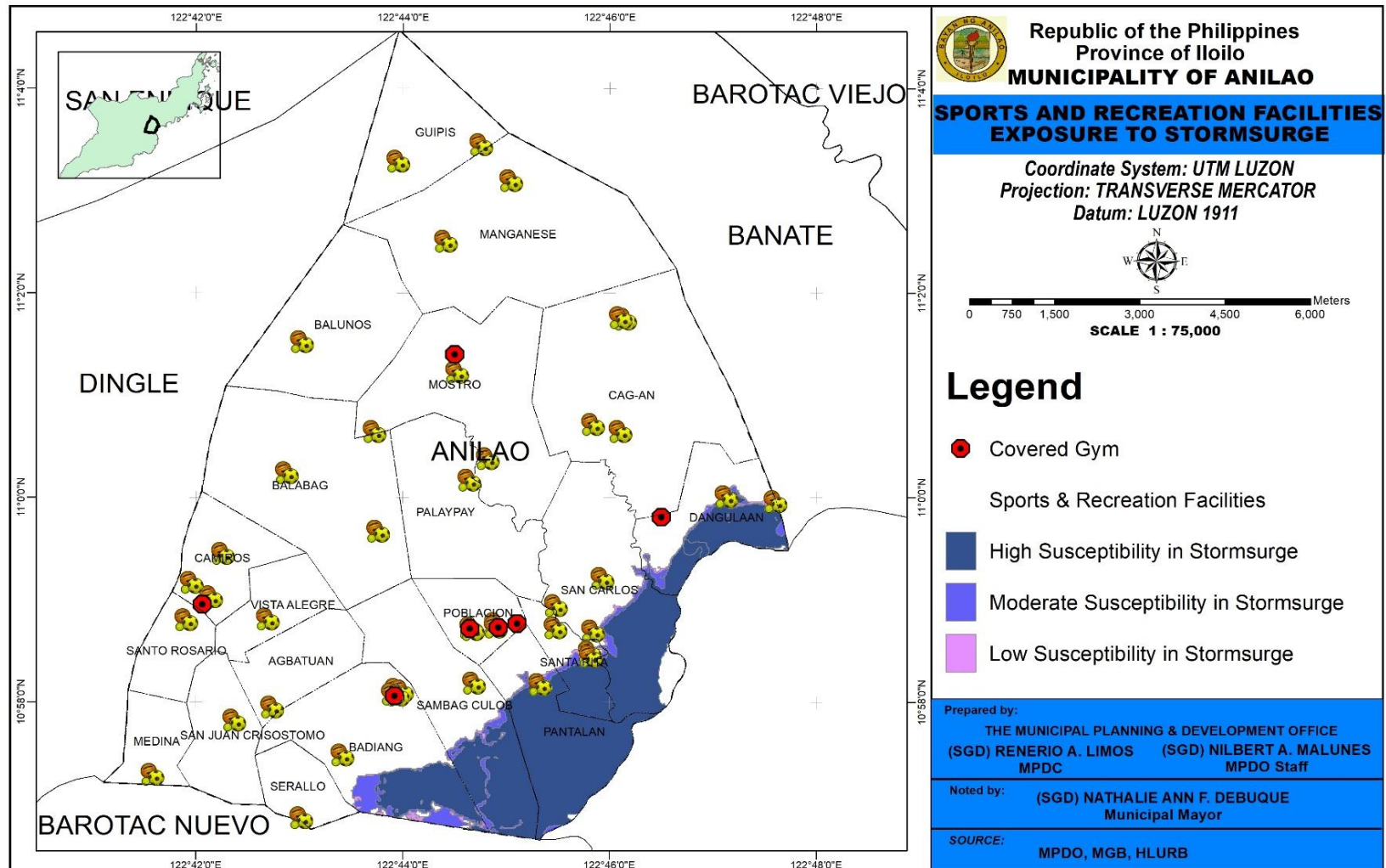


Figure SR-4. Sports and Recreation Facilities Map showing levels of hazard susceptibility to Storm Surge





**Table SR-3. Proposed Recreation Facility, Year 2016**

| Proposed Recreation Facility                   | Barangay  | Type of Facility                 | Ownership | Area (ha/sq m) | Hazard Susceptibility (H/M/L) |      |      |
|--|-----------|----------------------------------|-----------|----------------|-------------------------------|------|------|
|  |           |                                  |           |                | FI                            | Ln   | Su   |
| Standard oval with baseball and football field | Poblacion | Sports and Recreational Facility | LGU       | 20,000 sq.m.   | L                             | None | None |

Source: MPDO      Legend:      Hazard Susceptibility: FI- Flood      Ln- Landslide      Su-Stormsurge

**Sports and Recreation Sector Analysis Matrix**

| Technical Findings/ Observations   | Implications (Effects)   | Policy Options/ Interventions  |
|--|--|--|
| Inactive Sports Council in the Barangay Inactive Barangay Sports Councils  | More youth are susceptible to other illegal activities and vices | - Activate Barangay Sports Councils<br>- Conduct sports leagues  |
| Lack of sports amenities and recreation facilities such as toilet, water supply and bleachers                              | Inconvenience to athletes and spectators                         | Provision of budget for the improvement of sports and recreation facilities  |
| Lack of sports and recreational equipment  | Less people would engage in sports and recreational activities   | Provision of budget for the procurement of sports and recreation equipment   |
| Location of sports and recreational facilities in/near danger areas such as near rivers and creeks and in with high slopes | Risk to lives  | Provide mitigation measures such as improvement of drainage system along the facilities and recommend for relocation in safer areas. |



## HOUSING SUB-SECTOR

### Profile and Analysis of the Existing Situation

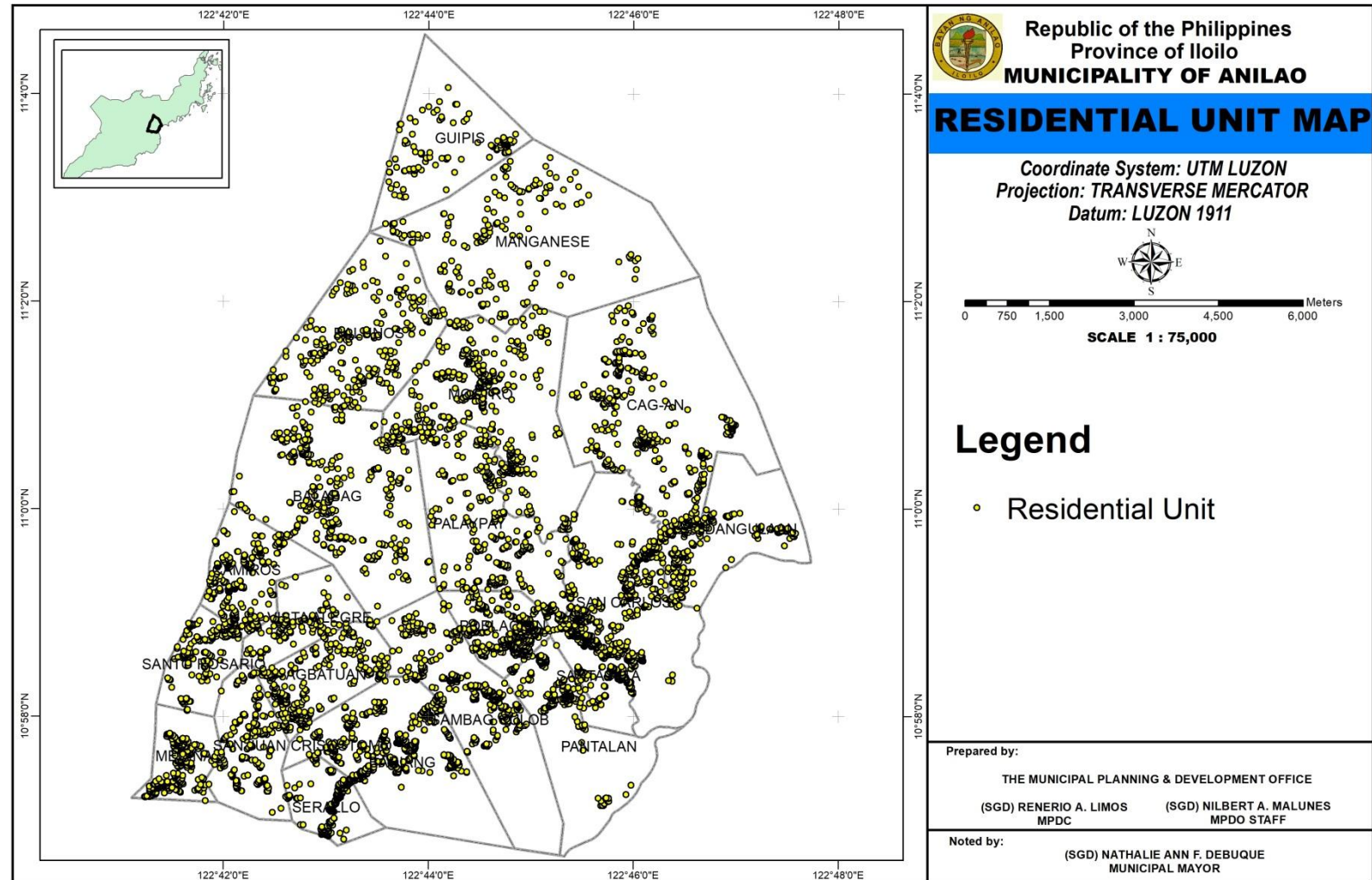
#### Occupied Housing Units, Household Population by type of Building

For 2015 census data, the municipality had 6,561 total number households for a household population of 28,684. The average household size is 4.36. The result also showed that the total occupied housing units were 6,509 and the ratio of households to occupied housing unit is 1 while the ratio of household population to occupied housing unit is 4.40. This indicates that there were 100 households to every 100 housing unit and 4 persons per occupied housing unit. Table HO-1 below shows the housing situation for the past 3 censal years.

As shown in Table HO-2, out of the total 6,509 occupied housing units in Anilao, 6,425 are single houses (98,71%), 72 (1.11%) are duplex, 6 (0.092%) are multi-unit residential 1 (0.015%) commercial/industrial/agricultural building and 1 (0.015%) institutional living quarters (Table HO- 10).Also Figure HO-Shown the location of residential units in the municipality.



Figure HO-1. Residential Unit Map



Source:MPDO

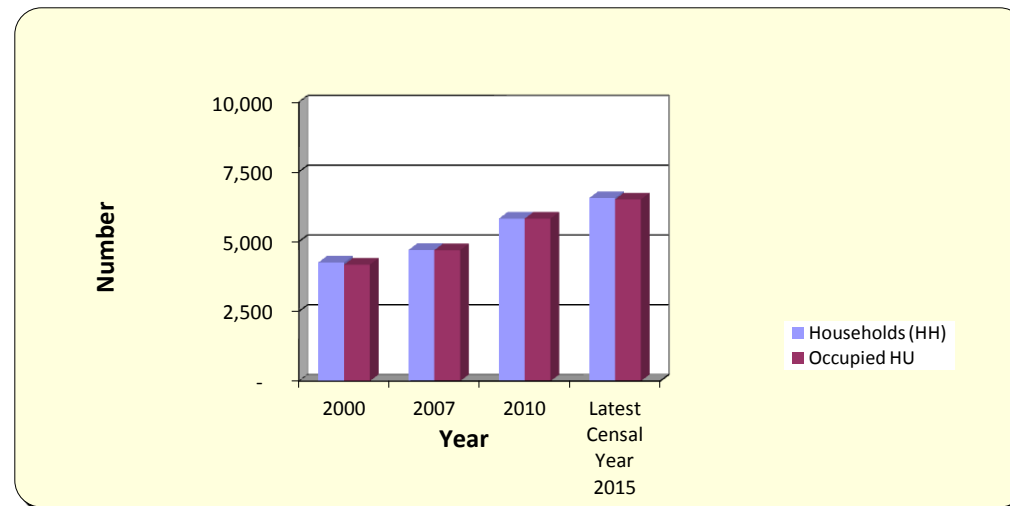


Table HO-1. Housing Situation for the Past Three Censal Years

|                                       | 2000   | 2007   |                  | 2010   |                  | Latest Censal Year 2015 |                  |
|---------------------------------------|--------|--------|------------------|--------|------------------|-------------------------|------------------|
|                                       | No.    | No.    | % Inc./ Decrease | No.    | % Inc./ Decrease | No.                     | % Inc./ Decrease |
| Households (HH)                       | 4,248  | 4,700  | 10.64            | 5,824  | 23.91            | 6,561                   | 12.70            |
| Household Population                  | 22,166 | 23,462 | 5.85             | 27,486 | 17.15            | 28,679                  | 4.30             |
| Housing Units (HU)                    | 4,172  | 4,690  | 12.42            | 5,824  | 24.18            | 6,509                   | 11.80            |
| Occupied HU                           | 4,172  | 4690   | 12.42            | 5,824  | 24.20            | 6,509                   | 11.80            |
| Vacant HU                             | 0      | 0      | 0                | 0      | 0                | 0                       | 0                |
| Ratio of HH to Occupied HU            | 1.01   | 1.00   |                  | 1.00   |                  | 1.00                    |                  |
| Ratio of HH Population to Occupied HU | 5.31   | 5.00   |                  | 4.70   |                  | 4.40                    |                  |

Source: PSA & MPDO Anilao

Graph HO-1. Housing Situation for the Past Three Censal Years



Source: PSA & MPDO Anilao



**Table HO-2. Number of Occupied Housing Units, Number of Household Population, and Ratio of Households and Household Population to Occupied Housing Unit 2015**

| Type of Building and Municipality  | Occupied Housing Units | Number of Households | Household Population | Average Household Size | Ratio of Households to Occupied Housing Units | Ratio of Household Population to Occupied Housing Units |
|------------------------------------|------------------------|----------------------|----------------------|------------------------|---|---|
| Total                              | 6,509                  | 6,561                | 28,679               | 4.37                   | 1.01  | 4.41  |
| Single house                       | 6,425                  | 6,477                | 28,331               | 4.37                   | 1.01  | 4.41  |
| Duplex                             | 72                     | 72                   | 298                  | 4.14                   | 1.00  | 4.14  |
| Multi-unit residential             | 6                      | 6                    | 21                   | 3.50                   | 1.00  | 3.50  |
| Commercial/Industrial/agricultural | 1                      | 1                    | 6                    | 6.00                   | 1.00  | 6.00  |
| Institutional living quarter       | 1                      | 1                    | 6                    | 6.00                   | 1.00  | 6.00  |
| Others                             | -                      | -                    | -                    | -                      | -   | -   |
| Not Reported                       | 4                      | 4                    | 17                   | 4.25                   | 1.00  | 4.25  |

Source: PSA

**Housing Units as to Type of Construction Materials of the Outer Walls and Roof**

As to the type of construction materials of roof as shown in Table HO-3, out of the total occupied housing units of 6,509, 6,047 are made galvanized iron/aluminum, 7 units are made of tile/concrete/clay, 14 are half galvanized iron and half concrete, 423 units made of bamboo, 1 made of asbestos, 12 made makeshift salvage /improvised materials and 3 units are made of trapal. See table HO-3 for other materials used as outer walls of the occupied housing units.



**Table HO-3. Occupied Housing Units by Construction Materials of the Outer Walls and Roof, and Municipal: 2015**

| Construction Materials of the Outer Walls | Total Occupied Housing Units | Construction Materials of the Roof |                          |  |                             |          |  |          |
|---|------------------------------|------------------------------------|--------------------------|--|-----------------------------|----------|--|----------|
|   |                              | Galvanized iron/ aluminum          | Tile/con crete/clay tile | Half galvanized iron and half concrete | Bamboo/ cogon/ nipa/ anahaw | Asbestos | Makeshift/salvaged/ improvised materials | Trapal   |
| <b>Total</b>                              | <b>6,509</b>                 | <b>6,047</b>                       | <b>7</b>                 | <b>14</b>                              | <b>423</b>                  | <b>1</b> | <b>12</b>                                | <b>3</b> |
| Concrete/brick/stone                      | 1,772                        | 1,758                              | 7                        | 4                                      | 1                           | 1        | 1  | -        |
| Wood                                      | 346                          | 327                                | -                        | 1                                      | 18                          | -        | -  | -        |
| Half concrete/brick/stone/ and half wood  | 885                          | 879                                | -                        | 1                                      | 18                          | -        | -  | -        |
| Galvanized iron/aluminum                  | 18                           | 17                                 | -                        | -                                      | 1                           | -        | -  | -        |
| Bamboo/sawali/cogon/nipa                  | 3,431                        | 3,027                              | -                        | 7                                      | 390                         | -        | 4  | 3        |
| Asbestos                                  | 1                            | 1                                  | -                        | -                                      | -                           | -        | -  | -        |
| Glass                                     | -                            | -                                  | -                        | -                                      | -                           | -        | -  | -        |
| Makeshift/salvaged/improvised materials   | 29                           | 17                                 | -                        | -                                      | 5                           | -        | 7  | -        |
| Trapal                                    | 4                            | 2                                  | -                        | -                                      | -                           | -        | -  | -        |
| Others                                    | -                            | -                                  | -                        | -                                      | -                           | -        | -  | -        |
| No walls                                  | -                            | -                                  | -                        | -                                      | -                           | -        | -  | -        |
| Not Reported                              | 23                           | 19                                 | -                        | -                                      | 2                           | -        | -  | -        |

Source: PSA 2015

**Housing Backlog**

Table HO-4 and Graph HO-2, shows the housing backlog for the year 2000 to 2015. Housing backlog is the number of housing dwelling units needed at the beginning of the planning period due to double-up households, unacceptable dwelling units, houses made of makeshift or improvised material. Doubled- up households exist when one dwelling unit is shared by two or more households.

Housing backlog reflected in Table HO-2 shows an increasing trend from 285 housing units in 2000 and rises to 407 in 2015 having an increase of 42.81%.



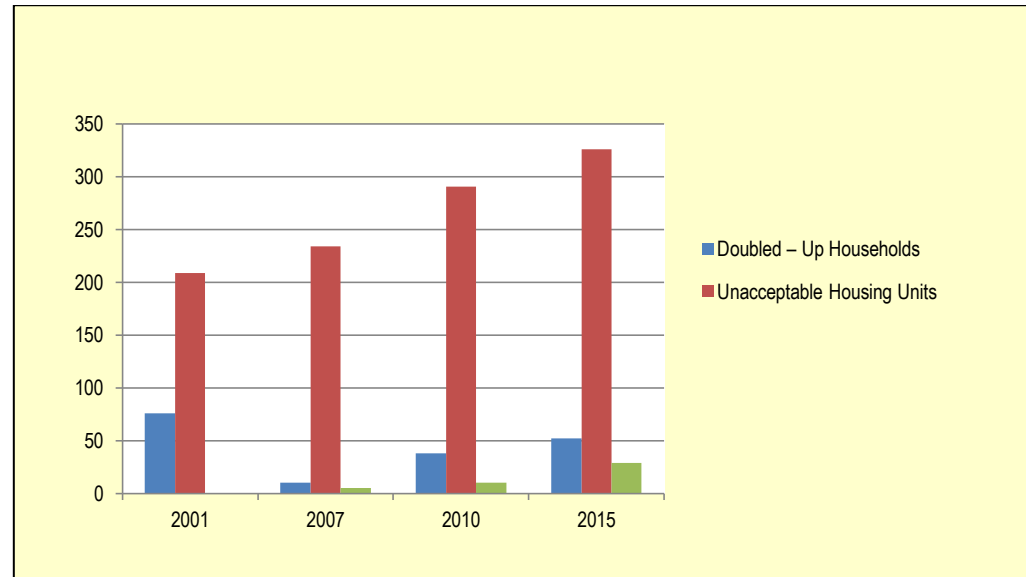


**Table HO-4. Housing Backlog, Year 2000-2015**

| Backlog                          | 2000       |   | 2007       |       | 2010       |       | 2015       |       |
|----------------------------------|------------|---|------------|-------|------------|-------|------------|-------|
|                                  | No.        | % | No.        | %     | No.        | %     | No.        | %     |
| Doubled – Up Households          | 76         |   | 10         | 40.00 | 38         | 11.20 | 52         | 12.80 |
| Unacceptable Housing Units       | 209        |   | 234        | 94.00 | 291        | 85.80 | 326        | 0.10  |
| Makeshift / Salvage/ Improved HU |            |   | 5          | 2.00  | 10         | 2.90  | 29         | 7.10  |
| <b>Total Backlog</b>             | <b>285</b> |   | <b>249</b> |       | <b>339</b> |       | <b>407</b> |       |

Source: PSA

**Graph HO-2. Housing Backlog, Year**



Source: PSA





**Resettlement Areas**

In 2013, Typhoon Yolanda have affected approximately 30% of the total housing units in the municipality totally or partially. Part of the rehabilitation project of the national government was to establish a resettlement area for the victims. A total of 385 housing units were constructed in Barangay Badiang with facilities and utilities provided by the government. Same table shows that this resettlement area has low susceptibility to flooding.

**Table HO-6. Resettlement Areas, Year 2017**

| Name of Resettlement Area | Barangay | Land Ownership | No. of Households | No. of Housing Units | Utilities/ Facilities/ Amenities | Administration | Hazard Susceptibility (H/M/L) |        |
|---------------------------|----------|----------------|-------------------|----------------------|----------------------------------|----------------|-------------------------------|--------|
|                           |          |                |                   |                      |                                  |                | FI                            | Others |
| Anilao Peoples Village    | Badiang  | Public         | 385               | 385                  | Power, water and roads           | NHA/MSWDO      | L                             |        |
| <b>Total</b>              |          |                | <b>385.00</b>     | <b>385.00</b>        |                                  |                |                               |        |

Source: MPDO

**Residential Subdivision**

There is one existing complex subdivision in the Municipality of Anilao. It occupies an area of approximately 7.98 hectares and a total of 180 numbers of lots. This is shown in Table HO-7. Same table shows that this subdivision has low hazard susceptibility to flooding.



Table HO-7. Inventory of Residential Subdivisions, Year 2017

| Name of Subdivision/ Condominium | Type        | Barangay | Area (ha) | No. of Lots/ Units | Hazard Susceptibility (H/M/L) |        |
|----------------------------------|-------------|----------|-----------|--------------------|-------------------------------|--------|
|                                  |             |          |           |                    | FI                            | Others |
| Leticia Homes                    | Open Market | Badiang  | 7.98      | 180                | L                             |        |
|                                  |             |          |           |                    |                               |        |
| <b>TOTAL</b>                     |             |          |           |                    |                               |        |

Source: MPDO

### Housing Facilities and Utilities

Table HO-8 shows the housing facilities and utilities of the occupied housing units in the municipality from 2010 to 2015. Utilities present in these housing units were sources of water supply, electricity, water-sealed toilets and garbage collection. Data in 2015 indicates that majority of the households have their own water supply. This constitutes 5,754 or 88% of the total households. Households with electricity- 5,695 (87%), 5,324 or 82% have water sealed toilets and 5425 (83%) have garbage collection system.

Table HO-8. Housing Facilities and Utilities Situation for the Past two Censal Years (2010-2015)

| Utilities                 | 2010                 |              |          | 2015                 |              |          |
|---------------------------|----------------------|--------------|----------|----------------------|--------------|----------|
|                           | No. of Housing Units | No. Served   | % Served | No. of Housing Units | No. Served   | % Served |
| Water Supply              | 5824                 | 5448         | 94%      | 6509                 | 5754         | 88%      |
| Electricity               | 5824                 | 5636         | 97%      | 6509                 | 5695         | 87%      |
| Water – Sealed Toilets    | 5824                 | 5389         | 93%      | 6509                 | 5324         | 82%      |
| Garbage Collection System | 5824                 | 5723         | 98%      | 6509                 | 5425         | 83%      |
| <b>Total</b>              |                      | <b>22196</b> |          |                      | <b>22198</b> |          |

Source: PSA



**Tenurial Status of House and Lot**

PSA data reflected in Table HO-9 showed the tenurial status of the occupied housing units and lots from 2007 to 2015. In the 2015 data, 1,965 or 30% of the total households owned/amortized the housing units they occupied while 1,865 or 32.31% owned/amortized the lots they occupied. Compared to 2015 data, 2007 and 2010 available data on tenurial status was for housing units only. Notable in the 2010 data was a higher number of households who owned/amortized their housing units which is approximately 96.57% of the total households. However, in 2015, there was a substantial decrease in the number of households who owned/amortized their housing units by about 3,715.

**Table HO-9 Occupied Housing Units and Lots by Tenure Status for the Past Three Censal Years (2007-2015)**

| Tenure Status                                    | 2007         |            |          |          | 2010         |             |          |          | 2015         |             |              |             |
|--|--------------|------------|----------|----------|--------------|-------------|----------|----------|--------------|-------------|--------------|-------------|
|  | Housing Unit |            | Lot      |          | Housing Unit |             | Lot      |          | Housing Unit |             | Lot          |             |
|  | No.          | %          | No.      | %        | No.          | %           | No.      | %        | No.          | %           | No.          | %           |
| Owned/Being Amortized                            | 1,528        | 32.64%     | -        | -        | 5,680        | 97.06%      | -        | -        | 1,965        | 29.95%      | 1,865        | 32.31%      |
| Rented   | 62           | 1.32%      | -        | -        | 5            | 0.09%       | -        | -        | 16           | 0.24%       | 16           | 0.28%       |
| Being Occupied for Free With Consent of Owner    | 3,080        | 65.80%     | -        | -        | 162          | 2.77%       | -        | -        | 4,357        | 66.40       | 3,870        | 67.04%      |
| Being Occupied for Free Without Consent of Owner | 11           | 0.23%      | -        | -        | 5            | 0.09%       | -        | -        | 223          | 3.40        | 22           | 0.38%       |
| <b>Total</b>                                     | <b>4,681</b> | <b>100</b> | <b>-</b> | <b>-</b> | <b>5,852</b> | <b>100%</b> | <b>-</b> | <b>-</b> | <b>6,561</b> | <b>100%</b> | <b>5,773</b> | <b>100%</b> |

Source: PSA/MPDO

**Potential Lands for Housing**

Land is one of the most important local resources the municipality can provide for a housing program to succeed. Mandated in RA 7279, LGUs should conduct inventory on all their lands potential for housing. Shown in table HO-10 are the two potential areas for development into socialized housing sites. These are situated in Barangays Badiang and San Carlos occupying a total land area of 5.7 hectares. The actual land use of these socialized housing sites is still agricultural. Also, these socialized housing sites are not flooded except landslide which has low susceptibility.



Table HO-10. Inventory of Potential Lands for Housing, Year 2015

| Owner    | TCT No. | Barangay   | Area (ha) | Classification     | Fair Market Value | Actual Land Use | Zoning Classification | Utilities Present (Y/N) |   |   |   |   |   | Hazard Susceptibility (H/M/L) |        |
|----------|---------|------------|-----------|--------------------|-------------------|-----------------|-----------------------|-------------------------|---|---|---|---|---|-------------------------------|--------|
|          |         |            |           |                    |                   |                 |                       | W                       | P | S | R | T | C | Ln                            | Others |
| Cabangal |         | Badiang    | 1.80      | Socialized Housing |                   | Agricultural    | SHZ                   | √                       | √ | √ | √ | √ | √ | L                             |        |
|          |         | San Carlos | 3.90      | Socialized Housing |                   | Agricultural    | SHZ                   | √                       | √ | √ | √ | √ | √ | L                             |        |

Source: MPDO

Legend: Utilities: W-Water

P - Power S -Sewerage

T -Transportation

C -Communication

**Exposure, Risk and Vulnerability**

**Flooding**

Based on the data shown in Figure HO-2 on Residential Units Exposure Map on Flood and CDRA table, there are houses susceptible to high and very high flooding while the rest have either low to moderate susceptibility. Also, population exposure data based and risk on flooding landslide and storm surge were made as basis for determining the exposure, vulnerability and risk of residential units in the municipality.

CBMS survey in 2017 shows a total of 6,268 dwelling units in the municipality. Based on the data, a total of 3,068 are exposed to varying level of susceptibility to flooding. Residential units susceptible to very high flooding totals to 137 units affecting 14 barangays. This is 2.19% of the total dwelling units in the municipality. Same data shows 393 housing units have high susceptibility affecting 20 barangays except Barangay Serallo and 952 units have moderate susceptibility affecting all barangays. Percentage of exposed dwelling units have minimal impact to the total dwelling units in the municipality because most of these exposed units are situated along bodies of water such as rivers and creeks which are usually prone to flooding. Moreover, even in the upland areas there are dwelling units that are situated near water tributaries, which made them susceptible to this type of hazard.

Exposed residential units were subjected to vulnerability and adaptive capacity assessment using the Climate and Disaster Risk Assessment. Indicators used in the assessment of vulnerability include the percentage of informal settlers, young and old dependents, persons with disabilities, malnourished individuals and those living below the poverty threshold. Likewise, the structures of the dwelling units if made of light or makeshift materials. For the adaptive capacity indicators which will affect the result of risk analysis include access to financial assistance, access to information, government investment, capacity to retrofit or relocate access to infrastructure and related mitigation measures. The result of the risk analysis shows that those dwelling units identified as high to very high susceptibility to flooding





came out as moderate risk while those with moderate susceptibility have low risk. CDRA result shows there are 1,348 or 21.51% of all dwelling units in the municipality with moderate risk and 1,701 have low risk or 27.13% of the total dwelling units. (See figure HO-5)

**Landslide**

For landslide, there are 29 dwelling units have high susceptibility to landslide affecting 4 barangays. This constitute 3.19% of the total number of houses in the municipality. Data also shows 771 units have moderate susceptibility while 1,961 units have low susceptibility (see Figure HO-3). Assessment of the risk of the exposed units based on CDRA, there were dwelling units with high susceptibility however have moderate risk only while there are residential units with low susceptibility after risk assessment have either low or moderate a risk. Subjecting the exposed units to vulnerability and adaptive capacity indicators will likely affect the results of risk assessment. Based on risk analysis, there are 567 units with moderate risk or 9.04% of the total dwelling units in the municipality. These dwelling units are situated in 7 barangays. A residential unit assessed to have low risk totals to 233 and is situated in 10 barangays. Indicators for vulnerability and adaptive capacity indicators for flooding were also utilized in determining the risk for landslide. (See figure HO-6)

**Storm Surge**

Exposure data base for storm surge shows that out of 364 dwelling units affected, 219 or 3.49% of the total dwelling units in the municipality have high susceptibility with greater than 1.5 meters inundation height affecting 4 barangays. About 76 or 1.2% of the total housing units are moderately susceptible affecting 5 barangays while 69 dwelling units have low susceptibility. (See figure HO-4)

Based on CDRA result, a total of 219 dwelling units have moderate risk affecting 4 barangays namely Dangula-an, Pantalan, San carlos and Sta Rita while 145 units have low risk covering 5 barangays. The same indicators for vulnerability and adaptive capacity for flooding and landslide were used to determine the risk of exposed units.

Dwelling units with moderate risk to storm surge need to be relocated to a safe area considering the danger of inundation particularly during occurrence of severe typhoons. (See figure HO-7)

**Current and Projected Needs**

The present housing needs of the municipality is 3,219 housing units as reflected in Table HO-11 below. This is due to housing backlogs of 407 housing units, household formation due to the increase in population of 699 housing units and 2,113 units for upgrading needs which represents housing units with tenure status issues. Same table shows the future housing needs for 2026 which totals to 2,478 units. Included in the future housing needs are new households due to increase in population and upgrading needs specifically households without security of tenure on the lot they occupied. Housing backlog was not included in the computation of the housing needs, assuming that every year up to the end of the planning period the needs will be provided. The total projected housing units of



2,478 will need approximately 49.56 to 74.34 hectares at 200 to 300 square meters of land area per housing unit and the municipality has adequate residential areas allocated for future housing need. This is reflected in the proposed land use of the municipality for the year 2017-2026.

There are several strategies or options for addressing the need of the LGU for a decent, affordable and disaster resilient shelter the municipality is planning to establish socialized housing sites for the underprivileged and the homeless in two barangays of the municipality. A Joint Venture Agreement with the private sector is also being look into. Another option for the LGU is the promotion of Community Mortgage Program. Private and public partnership should be intensified as there are still available areas in the municipality that can be utilized for the future housing needs of the locality. Government financial institutions such as the Home Development Mutual Fund (Pag-ibig), Social Housing Finance Corporation and National Mortgage Finance Corporation to provide financial support for the municipality’s housing program. However, all of these proposals can only be addressed efficiently with the creation of the Municipal Housing Board.

Dwelling units which have moderate risk to flooding, landslide and storm surge are a priority in the relocation sites and socialized housing sites identified for the municipality.

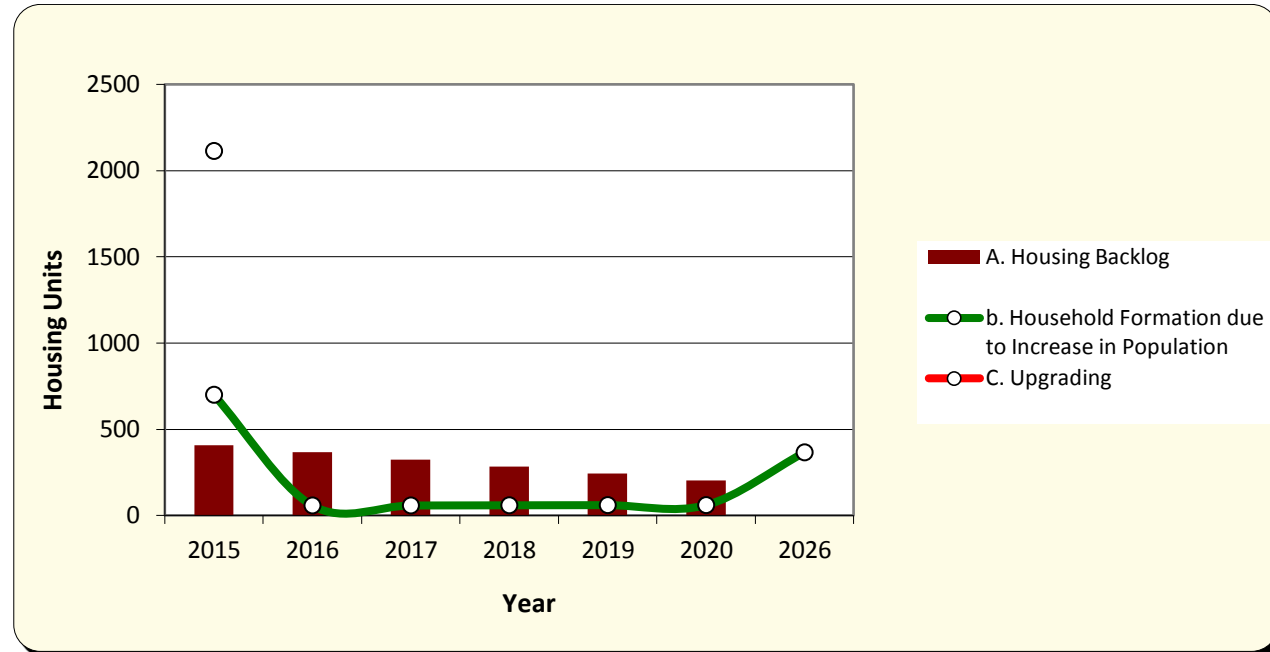
**Table HO-11. Current and Projected Housing Needs (2015-2026)**

| Housing Needs  | 2015         | Future Housing Needs |            |            |            |            |              |
|--|--------------|----------------------|------------|------------|------------|------------|--------------|
|  |              | 2016                 | 2017       | 2018       | 2019       | 2020       | 2026         |
| A. Housing Backlog                                   | 407          | 366                  | 325        | 284        | 243        | 202        | 0            |
| b. Household Formation due to Increase in Population | 699          | 57                   | 57         | 58         | 59         | 59         | 365          |
| C. Upgrading Needs                                   | 2,113        | -                    | -          | -          | -          | -          | 2,113        |
| <b>TOTAL</b>   | <b>3,219</b> | <b>423</b>           | <b>382</b> | <b>342</b> | <b>302</b> | <b>261</b> | <b>2,478</b> |

Source: PSA/MPDO



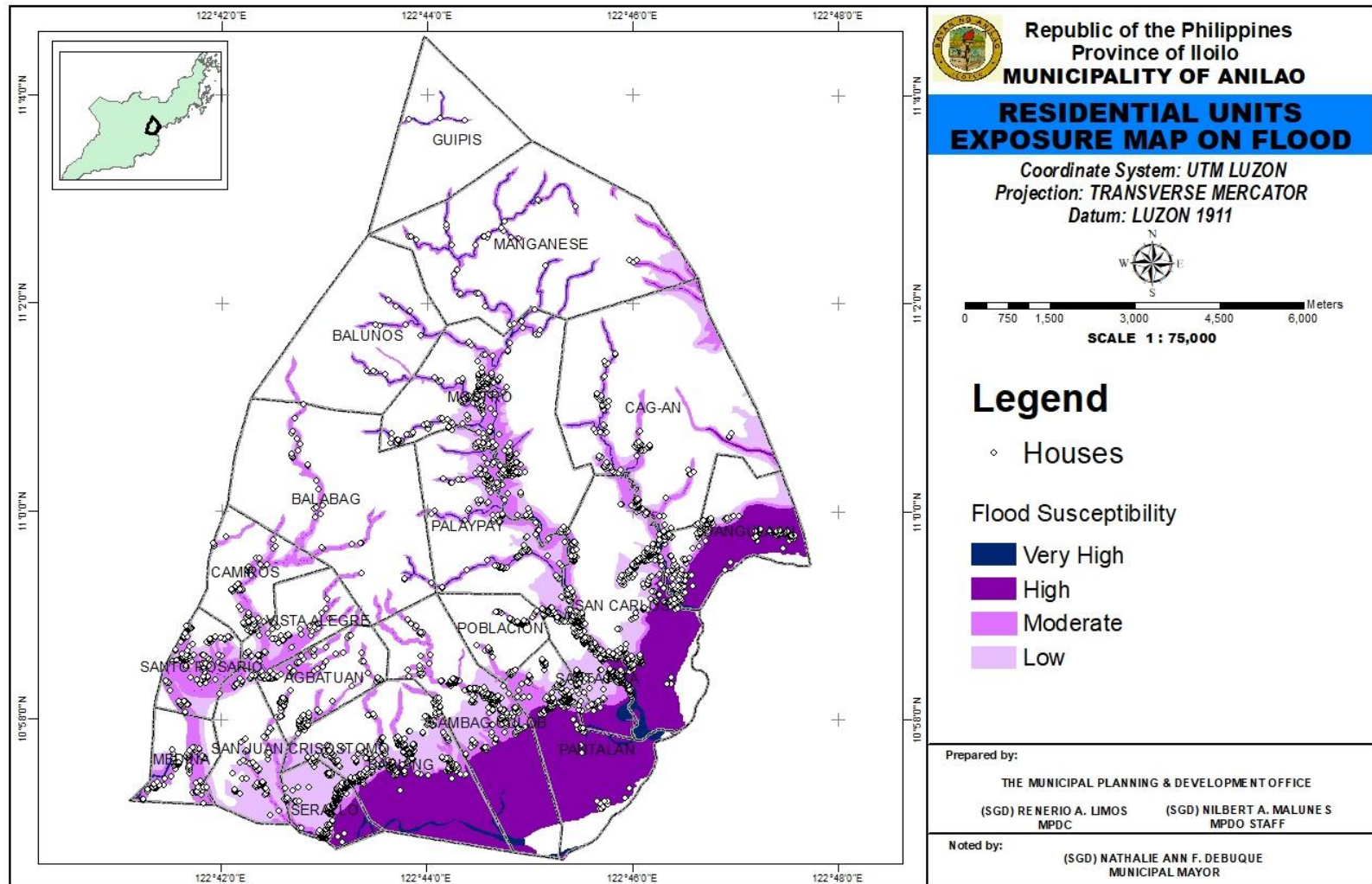
Graph HO-3. Current and Projected Housing Needs



Source: PSA/MPDO



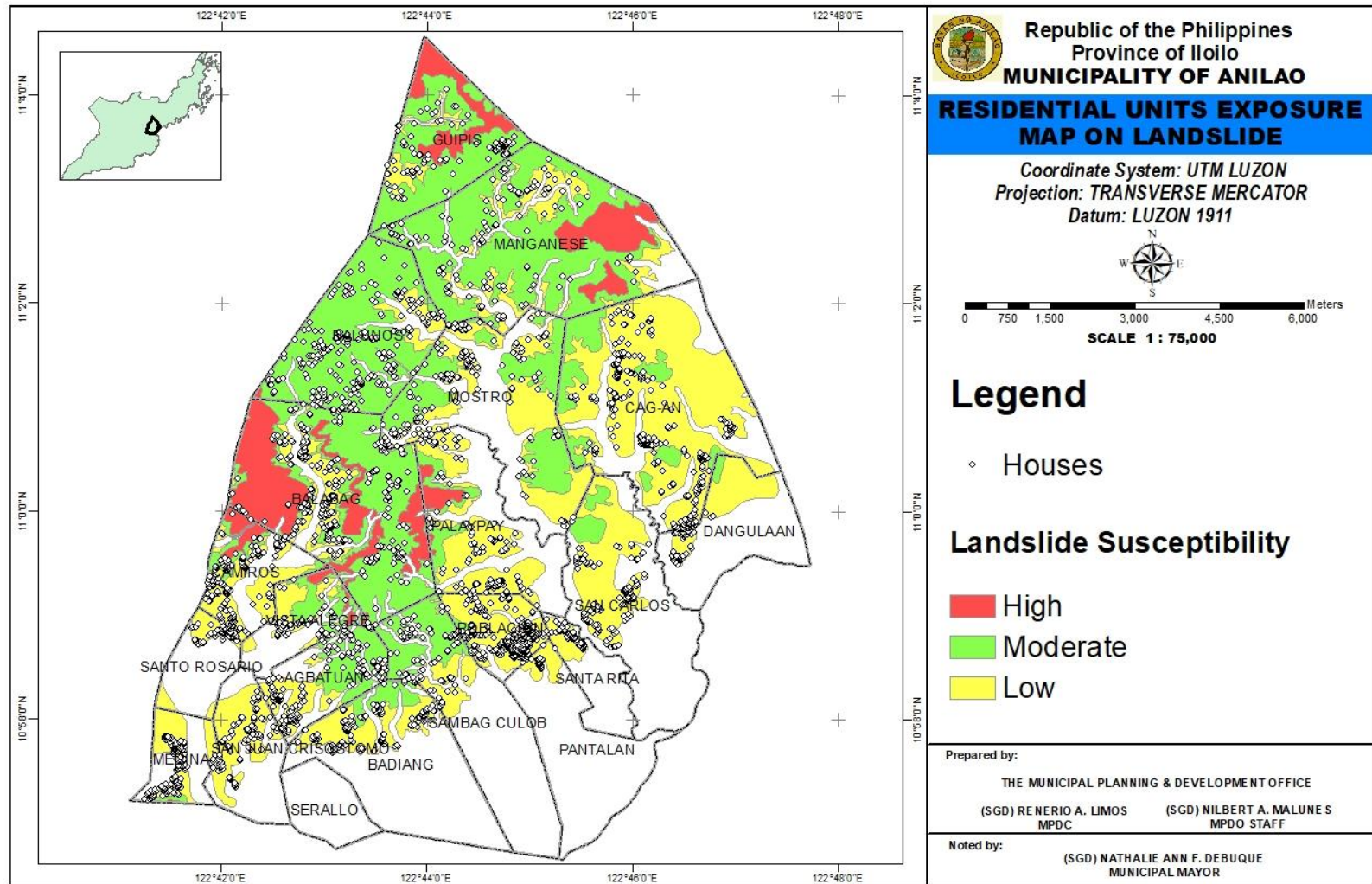
Figure HO-2. Residential Units Exposure Map on Flood



Source: MPDO



Figure HO-3. Residential Units Exposure Map on Landslide

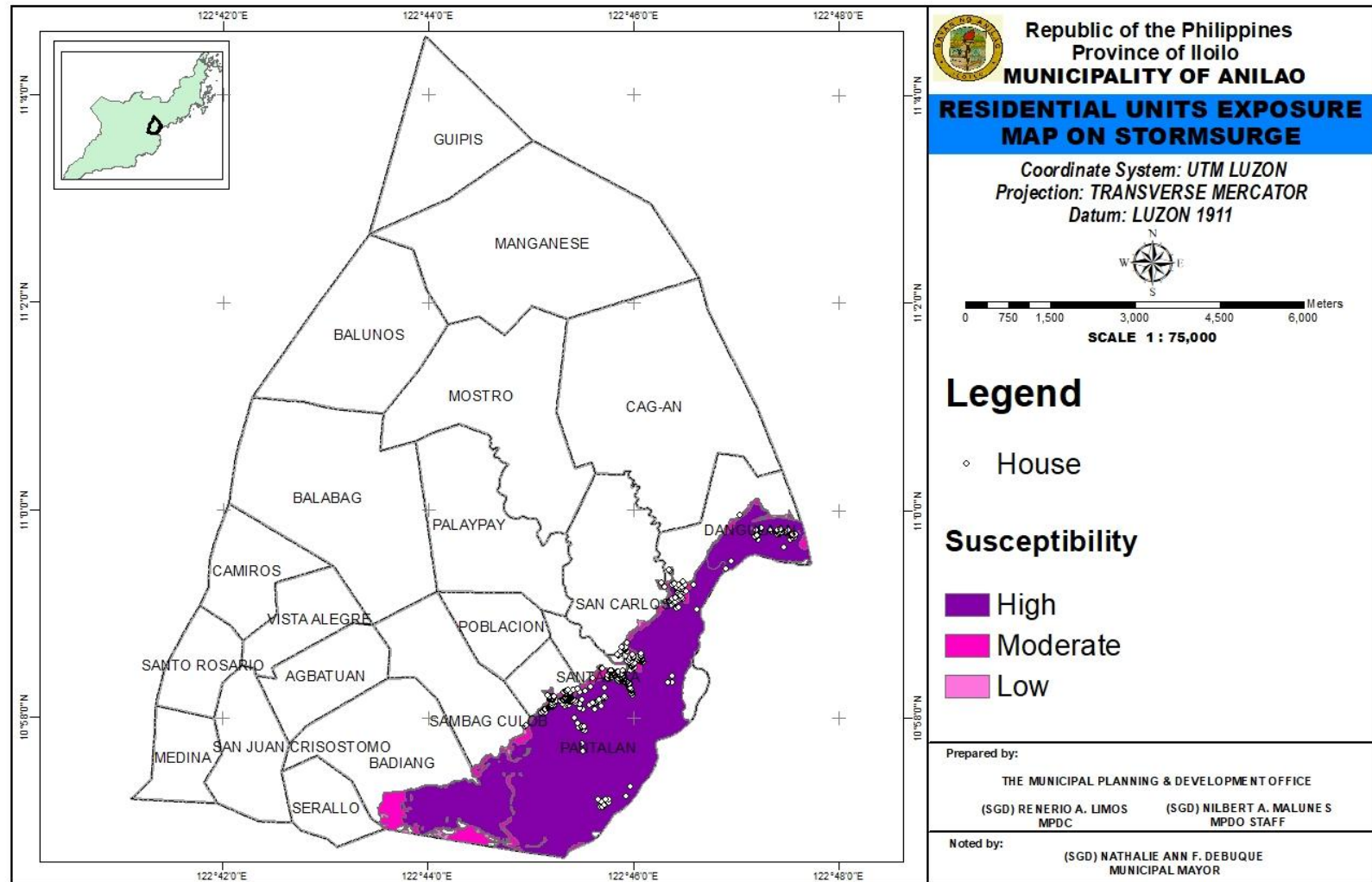


Source: MPDO





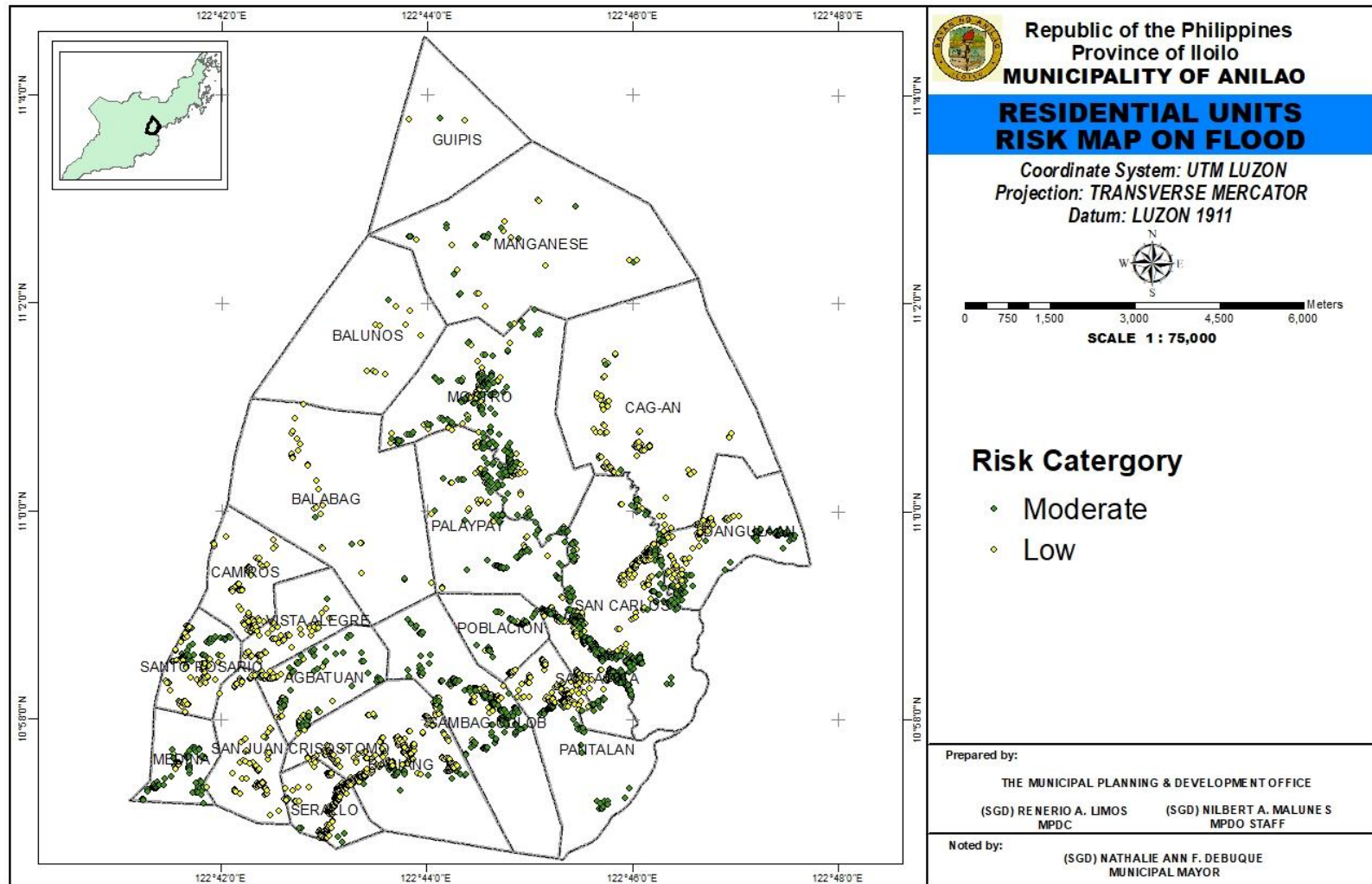
Figure HO-4. Residential Units Exposure Map on Stormsurge



Source: MPDO



Figure HO-5. Residential Units Risk Map on Flood

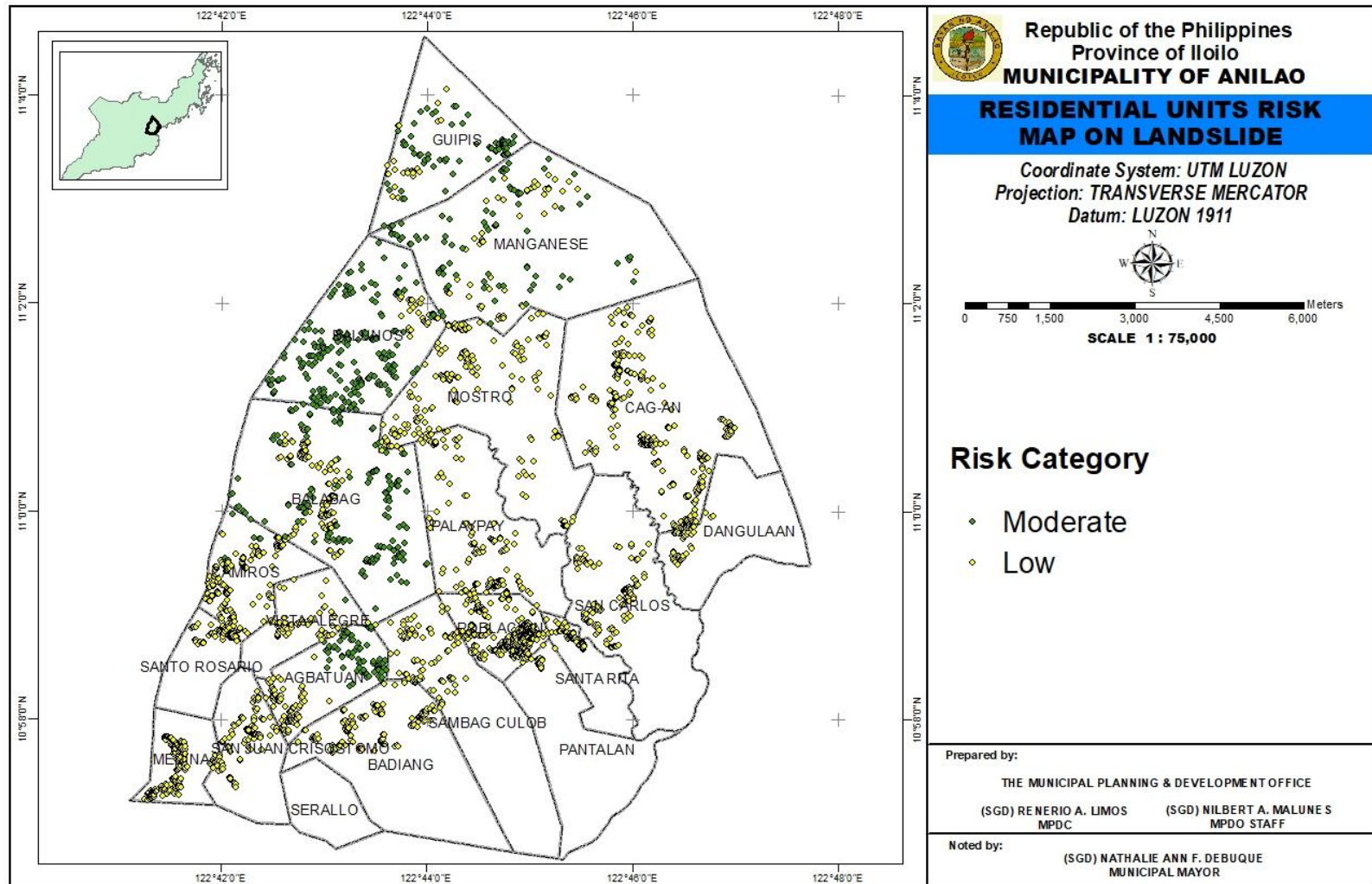


Source: MPDO





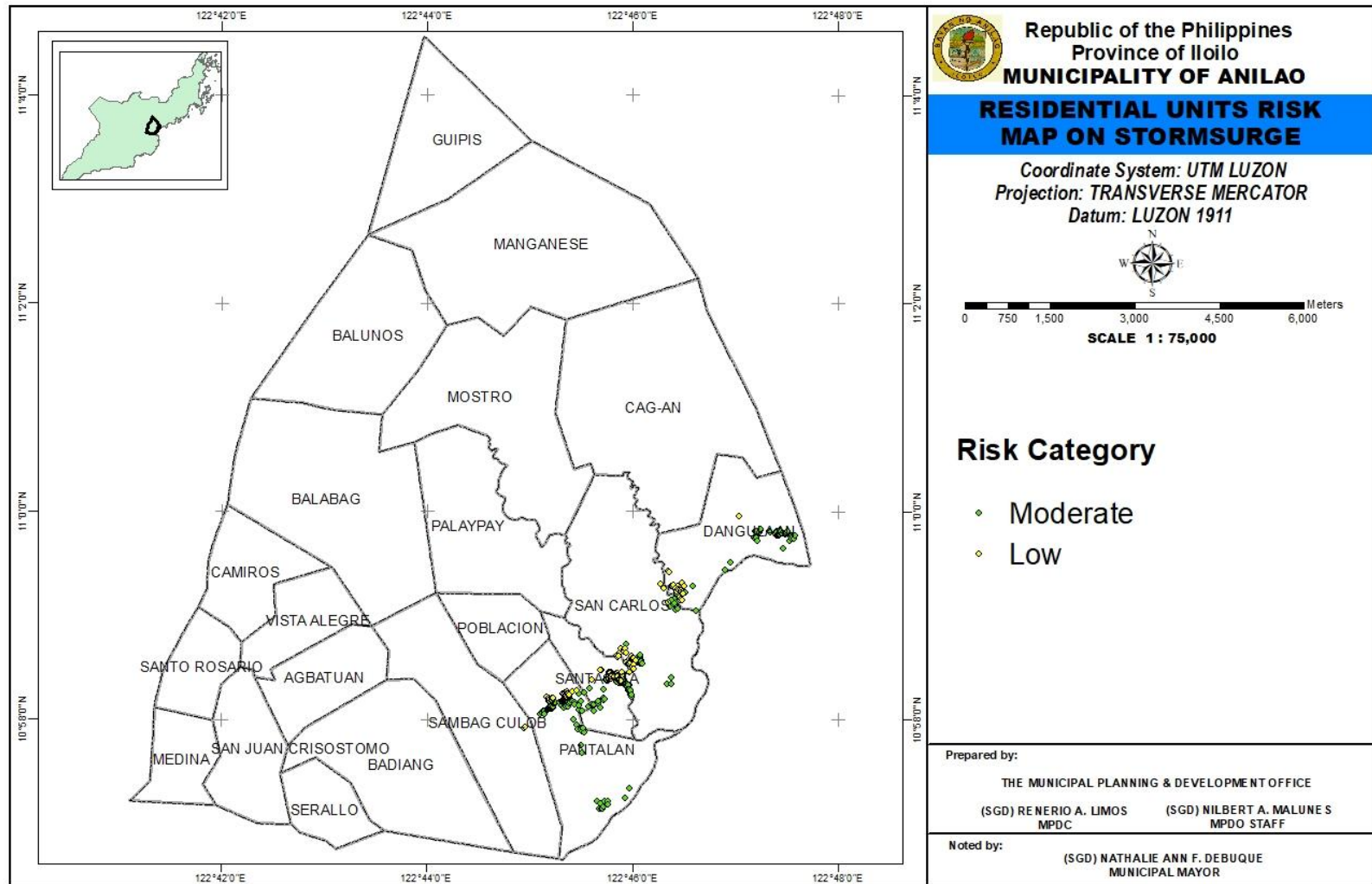
Figure HO-6. Residential Units Risk Map on Landslide



Source: MPDO



Figure HO-7. Residential Units Risk Map on Stormsurge



Source: MPDO



**Housing Sector Analysis Matrix**

| Technical Findings/Observations   | Implications  | Policy Options/Interventions   |
|---|---|--|
| <p>1. Projected Housing needs of 2,478 units by 2026 and 407 existing housing backlog</p> <p>2. Presence of 191 informal settlers in Barangays Dangula-an, Pantalan, San Carlos and Sta. Rita</p> <p>3. 98 houses are situated along the river bank and creek easements of Barangays Cag-an, Dangula-an, Manganese, Mostro, Palaypay and San Carlos</p> <p>4. 1,348 residential units or 21.51% of the total dwelling units are identified as</p> | <ul style="list-style-type: none"> <li>• Inadequate shelter for the future needs</li> </ul> <p>No security of tenure on the land they occupied</p> <ul style="list-style-type: none"> <li>• Danger to lives and properties of residents situated in these areas due to natural hazards</li> </ul> <ul style="list-style-type: none"> <li>• Danger to lives and properties of</li> </ul> | <ul style="list-style-type: none"> <li>• Construction of new housing units</li> <li>• Establishment of socialized housing sites and relocation sites</li> <li>• Inventory of available or potential lands for housing</li> <li>• Joint Venture Agreement</li> <li>• Provision of Socialize Housing Sites</li> <li>• Establishment of Relocation Sites</li> <li>• Promotion of Community Mortgage Program</li> <li>• Relocate residents of affected Barangays to safe areas.</li> <li>• Establish relocation sites/ socialized housing identified by LGUs</li> <li>• Provision of climate proof evacuation centers</li> <li>• Relocation of residents along affected</li> </ul> |



|  |  |   |
|--|--|---|
| <p>moderate risk to flooding in all the 21 barangays of the municipality</p> <p>5. 567 residential units or 9.05% of the entire dwelling units in the municipality have a moderate risk to landslide situated in Barangays Agbatuan, Balabag, Balunos, Camiros, Guipis, Manganese and Vista Alegre</p> <p>6. 219 residential dwelling units or 3.49% of all dwelling units have a moderate risk to storm surge in Barangays Dangula-an, Pantalan, San Carlos and Sta Rita.</p> | <p>residents situated in moderate risk areas flooding, landslide and storm surge</p> | <p>areas especially the vulnerable sector</p> <ul style="list-style-type: none"> <li>• Provide mitigation measures such as the early warning system, contingency planning and the formulation and implementation of climate proof Zoning Ordinance.</li> <li>• Enforcement of easement along affected areas. Along river banks and coastal areas</li> <li>• Introduce to the residents of affected barangays the importance of insurance on their respective dwelling units.</li> </ul> |
| <p>LGU has no Housing Board</p>  | <p>Problems/issues are on housing cannot be fully addressed</p>                      | <p>Creation on Local Housing Board</p>  |



## PROTECTIVE SERVICES SUB-SECTOR

### Profile and Analysis of the Existing Situation

The protective services sector involves people who have duties to serve and protect the community which is not only limited to public safety officers such as: Philippine National Police, Bureau of Fire Protection and BJMP. It also includes barangay security forces and others who are serving for the protection and safety of the community.

#### Existing Police Force, Facilities and Equipment

The police force has three (3) types of services. These consist of headquarters, outpost and traffic management. The police headquarters is attached to the municipal building of Anilao with fair physical condition hazard susceptibility. It is manned by 26 Uniformed Personnel and 4 Non-Uniformed Personnel (NUPs). Barangay Tanod outposts are located in all barangays.

The current ratio of police force to the population for 2015 is 1:1,177 while the minimum standard ratio recommended is 1:1000. Based on the projected population figure in the year 2025 the municipality will have 31,249 populations. By that year there is a need of thirty one (31) police personnel to meet the minimum standard ratio.

The ideal ratio of police to population or even the minimum standard ratio is of great help to maintain the peace and order situation in the municipality. The pro-active measure is the best strategy to prevent the commission of a crime by increasing the police visibility in crime prone areas.

Regarding the facilities and equipment, the headquarter has one (1) Toyota Innova, one (1) Patrol Jeep and two PNP motorcycles all maintained by the LGU. All police personnel have issued fire arms some from the PNP and some from the LGU. Communication equipment is also provided by the PNP and LGU Anilao. Although the police station has existing sets of communication and computer equipment in particular but still MPS need additional sets because it is insufficient and also subjected for the tear and wear and need for updates also for efficient performance in catering the growing population/clients.

#### Crime Incidence

Index Crime involving crime against person and property and non-Index involving Special Laws are presented in Table PS-1. for crime involving the adults and Table PS- for crime involving Child In Conflict with the Law (CICL).



Table PS-1 apparently shows a significant decrease in total crime volume from 2013 to 2015 both index and non-index crimes. However among the crime against person, the physical injuries contributed the most. In crimes against properties; theft contributed most. Non-index crime contributed the most in the total crime volume because it includes the barangay level cases. In general the Municipality of Anilao has improved in its campaign against criminality.

**Barangay Tanods**

The Local Government Code provides for the organization of Barangay Tanods. This is projected to maintain peace and order within the barangay. Their duties and responsibilities are embodied in the Local Government Code of 1991 and because of this mandate all barangays of the municipality of Anilao have activated BarangayTanods with a total number of 240.

**Barangay Tanod Outpost**

Every barangay have at least one (1) tanod outpost with an area of 9 sq. m more or less and made of light materials. Repair and maintenance of this structure is funded from 20% IRA of each Barangay and from Iloilo Provincial Government. Multi-cab, handheld radio, batuta, flashlight, whistle and motorcycle are the facilities and equipment being provided at the outpost to be used by the barangay tanods.

**Personnel**

The present number of PNP personnel is insufficient to meet the minimum standard police to population ratio of 1:1000 based on the projected population by 2025 there is a need of additional Twelve (33) PNP personnel to be assigned in Anilao.

**Land Requirement**

The classification of Police Stations by population stated in the NAPOLCOM Resolution No. 9236 the Municipality of Anilao by 2025 required to have type “B” PNP building with lot area of 600 sq.m. to balance the number of population of 30,000 to less than 75,000.





**Existing Fire Force, Facilities and Equipment**

**The Fire Station**

The Anilao BFP was established last March 1, 2000. The fire truck was given by the BFP to the Municipality of Anilao thru late Mayor Joel “Batok” Debuque. The Municipality then donated the Senior Citizens’ Affair Office to the Anilao BFP to be used as its official station.

A 400 square meters lot is planned to be donated by the LGU to the BFP for the construction of the New Fire Station/Building of Anilao. It is scheduled for implementation by year 2017. If realized, this will have a great impact on the comfort and security of the community.

**Fire Truck**

With the presence of a fire station, the BFP personnel are assigned to man the station. All transactions related to the BFP were processed at the station. The fire station was maintained and recognized with the help of the local government. The maintenance of the fire truck and its operating expenses is a great help in fire prevention activities like fire drills, inspections and fire suppressions activities though it needs replacement.

**Fire Hydrant**

A need for the construction of fire hydrant is important. As of now, there is no fire hydrant in the Municipality of Anilao. Strategic locations of the hydrants specifically in the Public Market and Poblacion areas are needed.

**Facilities and Equipment**

Communication facilities need to be upgraded. The station lacks handheld radios for fire operations. Personal Protection Equipments (PPEs) are also necessary. Some fire coats (bunket) are dilapidated and need replacement. Fire boots are inadequate. Each Personnel should have a complete set of PPEs.

Additional computers are also needed. As of now, there is sharing of computer for each section.

**The Fire Personnel**

There are seven (7) personnel manning the fire station. As of 2015, the ratio is 1 firefighter to 4,097 population. The actual additional personnel needed is fourteen (14). The Bureau is now facilitating recruitment of the needed personnel.



Figure PS-1. Protective Services Facilities Map

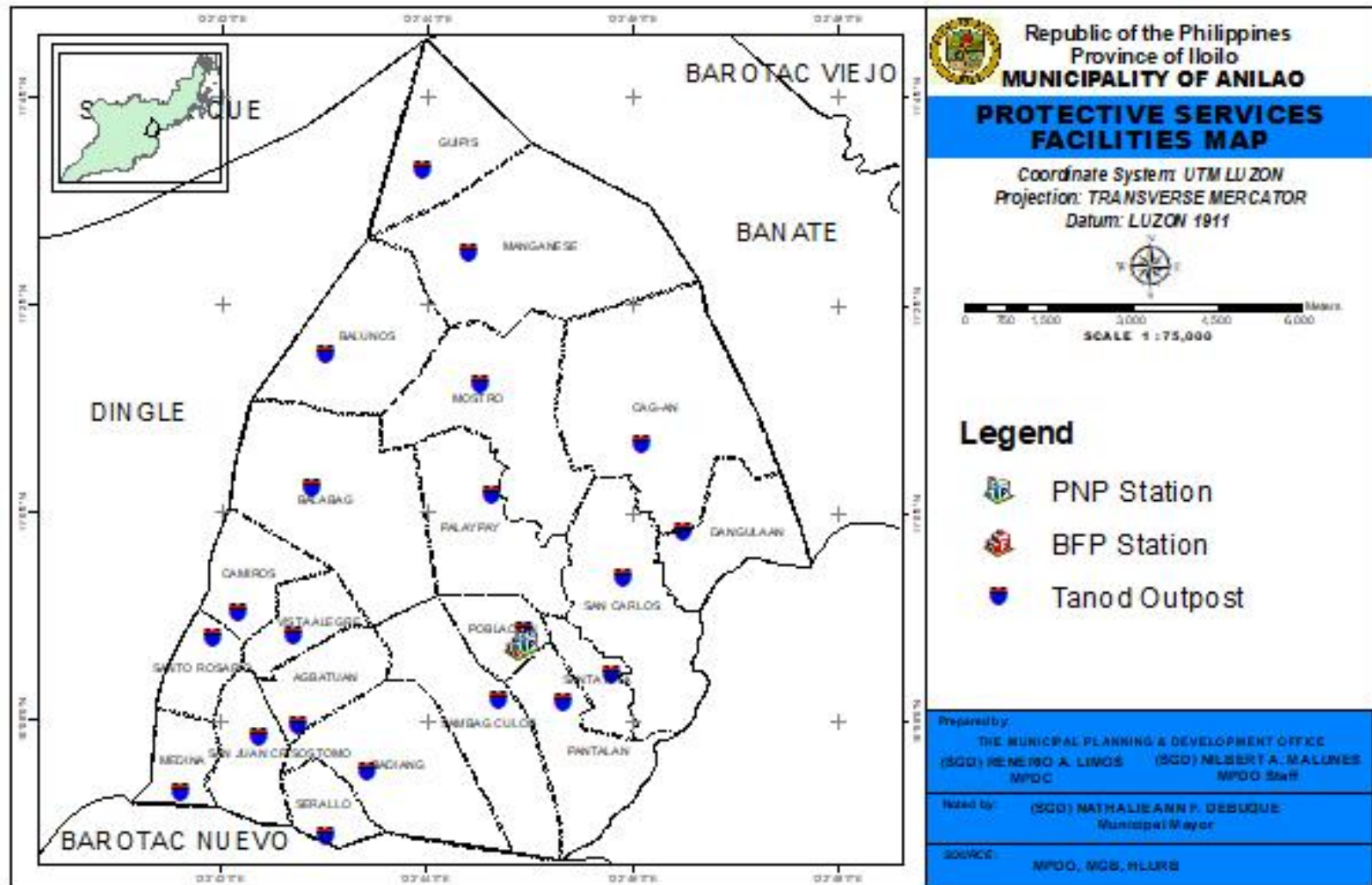


Table PS-1.Crime Incidence by Barangay for Adults for the Past Five Years

| Barangay                   | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |   |
|----------------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|---|
|                            |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |   |
|                            |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |   |
| A<br>g<br>b<br>a<br>u<br>n | Index Crimes            | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 2     | 0            | 1        | 0      | 2     | 0            | 2        | 0      | 0     | 0            | 0        | 0      | 0 |
|                            | Crimes Against Person   | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0 |
|                            | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|                            | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|                            | c. Physical Injury      | 0     |              |          |        |       |              |          |        | 1     |              | 1        |        | 1     |              | 1        |        |       |              |          |        |   |
|                            | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|                            | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0      | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0 |
|                            | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|                            | b. Theft                | 0     |              |          |        |       |              |          |        | 1     |              | 1        |        | 1     |              |          |        |       |              |          |        |   |
|                            | Non-index Crimes        | 2     | 2            |          | 2      |       |              |          |        | 9     | 1            | 2        | 2      | 3     | 2            | 2        |        | 2     | 2            | 1        |        |   |

| Barangay                        | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|---------------------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|                                 |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|                                 |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| B<br>a<br>d<br>i<br>a<br>n<br>g | Index Crimes            | 5     | 3            | 3        | 0      | 5     | 1            | 2        | 0      | 9     | 0            | 4        | 0      | 6     | 0            | 4        | 0      | 5     | 0            | 3        | 0 |
|                                 | Crimes Against Person   | 3     | 3            | 3        | 0      | 3     | 1            | 2        | 0      | 4     | 0            | 3        | 0      | 3     | 0            | 3        | 0      | 3     | 0            | 3        | 0 |
|                                 | a. Murder               | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                                 | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | c. Physical Injury      | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | Crimes Against Property | 2     | 0            | 0        | 0      | 2     | 0            | 0        | 0      | 5     | 0            | 1        | 0      | 3     | 0            | 1        | 0      | 2     | 1            | 0        | 0 |
|                                 | a. Robbery              | 2     |              |          |        | 2     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | b. Theft                | 0     |              |          |        |       |              |          |        | 5     |              | 1        |        | 3     |              | 1        |        | 2     | 1            |          |   |
|                                 | Non-index Crimes        | 6     | 5            |          | 5      | 1     | 8            | 4        | 11     | 20    | 2            | 14       | 2      | 20    | 9            | 16       |        | 13    | 11           | 1        |   |

| Barangay                   | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|----------------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|                            |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|                            |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| B<br>a<br>l<br>i<br>o<br>n | Index Crimes            | 2     | 2            | 2        | 0      | 3     | 2            | 3        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 2     | 0            | 2        | 0 |
|                            | Crimes Against Person   | 2     | 2            | 2        | 0      | 3     | 2            | 3        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 2     | 0            | 2        | 0 |
|                            | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        | 2     | 2            |          |   |
|                            | c. Physical Injury      | 2     | 2            | 2        |        | 3     | 2            | 3        |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 1      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | Non-index Crimes        |       |              |          |        | 1     |              |          |        | 2     |              | 2        |        |       |              |          |        |       |              |          |   |

| Barangay                   | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|----------------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|                            |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|                            |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| B<br>a<br>l<br>i<br>o<br>n | Index Crimes            | 1     | 1            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | Crimes Against Person   | 1     | 1            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | c. Physical Injury      | 1     | 1            | 1        |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                            | Non-index Crimes        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |



| Barangay              | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|-----------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|                       |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|                       |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| C<br>a<br>-<br>a<br>n | Index Crimes            | 2     | 2            | 1        | 1      | 3     | 2            | 1        | 1      | 1     | 1            | 1        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0      |
|                       | Crimes Against Person   | 2     | 2            | 1        | 1      | 3     | 2            | 1        | 1      | 1     | 1            | 1        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0      |
|                       | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|                       | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|                       | c. Physical Injury      | 2     | 2            | 1        | 1      | 2     | 2            | 1        | 1      |       |              |          |        |       |              |          |        |       |              |          |        |
|                       | d. Rape                 | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|                       | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|                       | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|                       | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|                       | Non-index Crimes        | 2     |              |          |        | 4     | 1            |          | 2      | 2     | 3            | 1        | 3      | 2     |              |          |        |       |              |          |        |

| Barangay                        | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|---------------------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|                                 |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|                                 |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| C<br>a<br>m<br>i<br>r<br>o<br>s | Index Crimes            | 4     | 2            | 4        | 0      | 1     | 1            | 1        | 0      | 4     | 1            | 4        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0 |
|                                 | Crimes Against Person   | 3     | 2            | 3        | 0      | 1     | 1            | 1        | 0      | 4     | 1            | 4        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0 |
|                                 | a. Murder               | 0     |              |          |        |       |              |          |        | 1     | 1            | 1        |        | 1     |              | 1        |        | 1     |              | 1        |   |
|                                 | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | c. Physical Injury      | 3     | 2            | 3        |        | 1     | 1            | 1        |        | 3     |              | 3        |        |       |              |          |        |       |              |          |   |
|                                 | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | Crimes Against Property | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                                 | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | b. Theft                | 1     |              |          | 1      |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|                                 | Non-index Crimes        | 5     | 5            | 4        | 1      | 3     | 2            | 2        | 2      | 2     | 4            | 2        | 4      | 2     | 4            | 2        | 4      | 2     | 1            |          |   |

| Barangay                                  | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|---|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|   |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|   |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| D<br>a<br>n<br>g<br>u<br>i<br>p<br>i<br>s | Index Crimes            | 3     | 0            | 2        | 0      | 6     | 1            | 4        | 1      | 9     | 0            | 4        | 0      | 7     | 1            | 3        | 0      | 4     | 0            | 3        | 0 |
|   | Crimes Against Person   | 2     | 0            | 1        | 0      | 6     | 1            | 4        | 1      | 3     | 0            | 3        | 0      | 2     | 0            | 2        | 0      | 3     | 0            | 3        | 0 |
|   | a. Murder               | 1     |              |          |        | 1     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|   | b. Homicide             | 1     |              | 1        |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|   | c. Physical Injury      | 0     |              |          |        | 5     | 1            | 4        | 1      | 3     |              | 3        |        | 2     |              | 2        |        | 3     |              | 3        |   |
|   | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|   | Crimes Against Property | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 6     | 0            | 1        | 0      | 5     | 1            | 1        | 0      | 1     | 0            | 0        | 0 |
|   | a. Robbery              | 0     |              |          |        |       |              |          |        | 3     |              | 1        |        | 1     | 1            | 1        |        |       |              |          |   |
|   | b. Theft                | 1     |              |          | 1      |       |              |          |        | 3     |              |          |        | 4     |              |          |        | 1     |              |          |   |
|   | Non-index Crimes        | 10    | 4            | 8        | 1      | 6     | 4            | 4        | 1      | 17    | 2            | 11       | 4      | 15    | 7            | 12       | 4      | 1     |              |          |   |

| Barangay                   | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|----------------------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|                            |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|                            |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| G<br>u<br>i<br>p<br>i<br>s | Index Crimes            | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0 |
|                            | Crimes Against Person   | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0 |
|                            | a. Murder               | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | b. Homicide             | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | c. Physical Injury      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | d. Rape                 | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0 |
|                            | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | a. Robbery              | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | b. Theft                | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|                            | Non-index Crimes        | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |



| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| Mangaya  | Index Crimes            | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|          | Crimes Against Person   | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|          | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          | 1      |       | 1            |          |        |       |              |          |        |
|          | c. Physical Injury      | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | Non-index Crimes        | 1     | 1            | 1        | 1      |       |              |          |        | 2     | 2            | 1        |        |       |              |          |        |       |              |          |        |

| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| Medina   | Index Crimes            | 4     | 2            | 2        | 0      | 2     | 2            | 2        | 0      | 0     | 0            | 0        | 1      | 1     | 1            | 0        | 0      | 0     | 0            | 0        | 0 |
|          | Crimes Against Person   | 4     | 2            | 2        | 0      | 2     | 2            | 2        | 0      | 0     | 0            | 0        | 1      | 1     | 1            | 0        | 0      | 0     | 0            | 0        | 0 |
|          | a. Murder               | 1     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|          | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|          | c. Physical Injury      | 2     | 2            | 2        |        |       |              |          |        |       |              |          | 1      | 1     | 1            |          |        |       |              |          |   |
|          | d. Rape                 | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|          | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|          | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|          | Non-index Crimes        | 2     | 1            | 1        |        | 2     |              |          |        | 2     |              | 1        | 7      | 1     | 6            |          | 1      |       | 1            |          |   |

| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |
| Moroto   | Index Crimes            | 8     | 4            | 7        | 0      | 3     | 1            | 1        | 0      | 4     | 0            | 0        | 0      | 2     | 1            | 2        | 0      | 1     | 0            | 1        | 0 |
|          | Crimes Against Person   | 7     | 3            | 6        | 0      | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 2     | 1            | 2        | 0      | 1     | 0            | 1        | 0 |
|          | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|          | b. Homicide             | 1     |              | 1        |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |
|          | c. Physical Injury      | 5     | 3            | 5        |        | 1     |              |          |        |       |              |          | 2      | 1     | 2            |          | 1      |       | 1            |          |   |
|          | d. Rape                 | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|          | Crimes Against Property | 1     | 1            | 1        | 0      | 2     | 1            | 1        | 0      | 4     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        | 1     |              |          |        |       |              |          |        |       |              |          |   |
|          | b. Theft                | 1     | 1            | 1        |        | 2     | 1            | 1        |        | 3     |              |          |        |       |              |          |        |       |              |          |   |
|          | Non-index Crimes        | 1     | 1            | 1        |        | 3     |              |          |        | 5     | 4            |          |        | 2     | 1            | 1        |        | 1     |              |          |   |

| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |   |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|---|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |   |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |   |
| Palaya   | Index Crimes            | 2     | 2            | 2        | 0      | 4     | 2            | 3        | 0      | 0     | 0            | 0        | 2      | 0     | 1            | 0        | 1      | 1     | 0            | 0        | 0 |   |
|          | Crimes Against Person   | 2     | 2            | 2        | 0      | 3     | 2            | 2        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 1            | 0        | 0 |   |
|          | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | c. Physical Injury      | 2     | 2            | 2        |        |       |              |          |        |       |              |          | 2      | 2     | 2            |          |        |       |              |          |   |   |
|          | d. Rape                 | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 |   |
|          | Crimes Against Property | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 2      | 0     | 1            | 0        | 0 | 0 |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          | 1      |       | 1            |          |        |       |              |          |   |   |
|          | Non-index Crimes        | 1     | 1            | 1        |        | 6     | 2            | 3        | 1      | 4     |              | 4        | 4      | 1     |              |          | 4      |       | 4            |          |   |   |



| Barangay | Type of Crime                  | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|----------|--------------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|          |                                | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|          |                                |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| Panaitan | <b>Index Crimes</b>            | 2     | 1            | 1        | 0      | 1     | 1            | 1        | 0      | 3     | 0            | 2        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|          | <b>Crimes Against Person</b>   | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|          | a. Murder                      | 1     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | b. Homicide                    | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | c. Physical Injury             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | d. Rape                        | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | <b>Crimes Against Property</b> | 1     | 1            | 1        | 0      | 1     | 1            | 1        | 0      | 3     | 0            | 2        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|          | a. Robbery                     | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|          | b. Theft                       | 1     | 1            |          | 1      | 1     | 1            | 1        |        | 3     |              | 2        |        |       |              |          |        |       |              |          |        |
|          | <b>Non-index Crimes</b>        | 1     | 1            |          | 1      | 1     | 1            |          | 4      |       | 1            |          | 3      |       | 1            | 1        | 3      | 2     | 1            |          |        |

| Barangay  | Type of Crime                  | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|-----------|--------------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|           |                                | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|           |                                |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| Panopolis | <b>Index Crimes</b>            | 6     | 4            | 4        | 0      | 10    | 5            | 8        | 0      | 22    | 0            | 8        | 1      | 20    | 3            | 11       | 1      | 11    | 1            | 8        | 0      |
|           | <b>Crimes Against Person</b>   | 4     | 4            | 4        | 0      | 8     | 5            | 8        | 0      | 6     | 0            | 4        | 0      | 9     | 3            | 9        | 0      | 8     | 0            | 8        | 0      |
|           | a. Murder                      | 0     |              |          |        |       |              |          |        | 1     |              | 1        |        |       |              |          |        |       |              |          |        |
|           | b. Homicide                    | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|           | c. Physical Injury             | 4     | 4            | 4        |        | 7     | 5            | 7        |        | 4     |              | 2        |        | 8     | 3            | 8        |        | 7     |              | 7        |        |
|           | d. Rape                        | 0     |              |          |        | 1     |              | 1        |        | 1     |              | 1        |        | 1     |              | 1        |        | 1     |              | 1        |        |
|           | <b>Crimes Against Property</b> | 2     | 0            | 0        | 0      | 2     | 0            | 0        | 0      | 16    | 0            | 4        | 1      | 11    | 0            | 2        | 1      | 3     | 1            | 0        | 0      |
|           | a. Robbery                     | 0     |              |          |        | 1     |              | 1        |        | 5     |              | 1        |        | 5     |              | 1        |        | 1     |              | 1        |        |
|           | b. Theft                       | 2     |              |          |        | 1     |              | 1        |        | 15    |              | 4        | 1      | 6     |              | 1        | 1      | 2     |              | 2        |        |
|           | <b>Non-index Crimes</b>        | 16    | 16           |          | 12     | 18    | 2            | 7        | 1      | 47    | 5            | 36       | 2      | 23    | 8            | 16       | 1      | 22    | 16           |          |        |

| Barangay  | Type of Crime                  | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|-----------|--------------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|           |                                | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|           |                                |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| San Mateo | <b>Index Crimes</b>            | 1     | 1            | 1        | 0      | 3     | 2            | 2        | 0      | 3     | 0            | 2        | 0      | 3     | 1            | 2        | 0      | 1     | 1            | 0        | 0      |
|           | <b>Crimes Against Person</b>   | 0     | 0            | 0        | 0      | 1     | 1            | 1        | 0      | 1     | 0            | 1        | 0      | 3     | 1            | 2        | 0      | 0     | 0            | 0        | 0      |
|           | a. Murder                      | 0     |              |          |        |       |              |          |        |       |              |          |        | 1     | 1            | 1        |        |       |              |          |        |
|           | b. Homicide                    | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|           | c. Physical Injury             | 0     |              |          |        | 1     | 1            | 1        |        | 1     |              | 1        |        | 1     |              | 1        |        |       |              |          |        |
|           | d. Rape                        | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|           | <b>Crimes Against Property</b> | 1     | 1            | 1        | 0      | 2     | 1            | 1        | 0      | 2     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 1     | 1            | 0        | 0      |
|           | a. Robbery                     | 0     |              |          |        |       |              |          |        | 1     |              |          |        |       |              |          |        |       |              |          |        |
|           | b. Theft                       | 1     | 1            |          | 1      | 2     | 1            | 1        |        | 1     |              | 1        |        |       |              |          | 1      | 1     |              |          |        |
|           | <b>Non-index Crimes</b>        | 8     | 3            |          | 3      | 17    | 2            | 3        |        | 1     |              |          |        | 5     | 2            | 5        |        | 7     |              | 5        |        |

| Barangay   | Type of Crime                  | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|------------|--------------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|            |                                | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|            |                                |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| San Carlos | <b>Index Crimes</b>            | 4     | 3            | 3        | 0      | 5     | 1            | 3        | 0      | 6     | 0            | 5        | 0      | 5     | 0            | 3        | 0      | 4     | 0            | 4        | 0      |
|            | <b>Crimes Against Person</b>   | 2     | 2            | 2        | 0      | 3     | 1            | 3        | 0      | 5     | 0            | 5        | 0      | 3     | 0            | 3        | 0      | 2     | 0            | 2        | 0      |
|            | a. Murder                      | 0     |              |          |        |       |              |          |        | 1     |              | 1        |        |       |              |          |        |       |              |          |        |
|            | b. Homicide                    | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|            | c. Physical Injury             | 2     |              |          |        | 1     | 1            | 1        |        | 3     |              | 3        |        | 1     |              | 1        |        |       |              |          |        |
|            | d. Rape                        | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0      | 2     | 0            | 2        | 0      | 2     | 0            | 2        | 0      | 2     | 0            | 2        | 0      |
|            | <b>Crimes Against Property</b> | 2     | 1            | 1        | 0      | 2     | 0            | 0        | 0      | 1     | 0            | 0        | 0      | 2     | 0            | 0        | 0      | 2     | 0            | 2        | 0      |
|            | a. Robbery                     | 1     |              |          |        | 1     |              | 1        |        | 1     |              | 1        |        |       |              |          |        | 1     |              | 1        |        |
|            | b. Theft                       | 1     | 1            |          | 1      | 1     |              | 1        |        |       |              |          |        | 2     |              | 1        |        | 1     |              | 1        |        |
|            | <b>Non-index Crimes</b>        | 6     | 5            |          | 5      | 5     | 2            | 4        | 1      | 14    | 1            | 12       | 2      | 9     | 5            | 9        |        | 6     |              | 4        | 1      |





| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |   |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|---|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |   |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |   |
| San Juan | Index Crimes            | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0 |
|          | Crimes Against Person   | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0 |
|          | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|          | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|          | c. Physical Injury      | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|          | d. Rape                 | 1     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|          | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0 |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|          | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |   |
|          | Non-index Crimes        | 1     |              |          |        | 1     | 1            | 2        | 3      | 2     | 2            | 1        | 2      |       |              |          |        |       |              |          |        |   |

| Barangay   | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |   |
|------------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|---|
|            |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |   |
|            |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |   |
| Santa Rita | Index Crimes            | 2     | 1            | 1        | 0      | 0     | 0            | 0        | 0      | 2     | 0            | 2        | 0      | 4     | 0            | 0        | 0      | 0     | 0            | 0        | 0 | 0 |
|            | Crimes Against Person   | 1     | 1            | 1        | 0      | 0     | 0            | 0        | 0      | 2     | 0            | 2        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 | 0 |
|            | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|            | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|            | c. Physical Injury      | 1     | 1            | 1        |        |       |              |          |        | 2     | 2            |          |        |       |              |          |        |       |              |          |   |   |
|            | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|            | Crimes Against Property | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 4     | 0            | 0        | 0      | 0     | 0            | 0        | 0 | 0 |
|            | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|            | b. Theft                | 1     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|            | Non-index Crimes        | 3     | 3            | 3        | 3      | 5     | 1            | 1        | 7      | 1     | 4            | 4        | 1      | 3     | 1            | 1        | 1      | 1     | 1            |          |   |   |

| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |   |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|---|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |   |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |   |
| Sitorio  | Index Crimes            | 2     | 2            | 1        | 1      | 3     | 2            | 3        | 0      | 2     | 0            | 2        | 0      | 0     | 0            | 0        | 0      | 2     | 0            | 1        | 0 | 0 |
|          | Crimes Against Person   | 2     | 2            | 1        | 1      | 3     | 2            | 3        | 0      | 2     | 0            | 2        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0 | 0 |
|          | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | c. Physical Injury      | 2     | 2            | 1        | 1      | 3     | 2            | 3        |        | 2     | 2            |          |        |       |              |          |        |       |              |          |   |   |
|          | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | Crimes Against Property | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0 | 0 |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | b. Theft                | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | Non-index Crimes        | 3     | 2            | 2        | 2      |       |              |          |        | 5     | 1            | 3        | 2      | 1     | 1            | 1        | 1      | 1     | 1            |          |   |   |

| Barangay | Type of Crime           | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |   |   |
|----------|-------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|---|---|
|          |                         | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |   |   |
|          |                         |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              |          |   |   |
| Sitorio  | Index Crimes            | 4     | 3            | 3        | 0      | 3     | 1            | 2        | 0      | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 | 0 |
|          | Crimes Against Person   | 3     | 3            | 3        | 0      | 2     | 1            | 2        | 0      | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 | 0 |
|          | a. Murder               | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | b. Homicide             | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | c. Physical Injury      | 3     | 3            | 3        |        | 2     | 1            | 2        |        | 1     | 1            |          |        |       |              |          |        |       |              |          |   |   |
|          | d. Rape                 | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | Crimes Against Property | 1     | 0            | 0        | 0      | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0 | 0 |
|          | a. Robbery              | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |   |   |
|          | b. Theft                | 1     |              |          |        |       |              |          |        | 1     |              |          |        |       |              |          |        |       |              |          |   |   |
|          | Non-index Crimes        | 2     | 2            | 2        | 2      | 4     | 4            | 4        | 4      | 4     | 2            | 7        | 6      | 6     | 1            | 7        | 4      |       |              |          |   |   |



| Barangay   | Type of Crime                  | 2011  |              |          |        | 2012  |              |          |        | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        |
|--|--------------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|
|  |                                | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        |
|  |                                |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |
| V<br>i<br>s<br>t<br>a<br><br>A<br>l<br>i<br>e<br>g<br>r<br>e | <b>Index Crimes</b>            | 1     | 0            | 0        | 0      | 2     | 0            | 1        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0      |
|  | <b>Crimes Against Person</b>   | 0     | 0            | 0        | 0      | 1     | 0            | 0        | 0      | 0     | 0            | 0        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0      |
|  | a. Murder                      | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|  | b. Homicide                    | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|  | c. Physical Injury             | 0     |              |          |        | 1     |              |          |        |       |              |          | 1      |       | 1            |          | 1      |       | 1            |          | 1      |
|  | d. Rape                        | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|  | <b>Crimes Against Property</b> | 1     | 0            | 0        | 0      | 1     | 0            | 1        | 0      | 1     | 0            | 1        | 0      | 0     | 0            | 0        | 0      | 0     | 0            | 0        | 0      |
|  | a. Robbery                     | 0     |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |
|  | b. Theft                       | 1     |              |          |        | 1     |              | 1        |        | 1     |              | 1        |        |       |              |          |        |       |              |          |        |
|  | <b>Non-Index Crimes</b>        | 1     | 1            |          | 1      | 4     | 1            | 4        |        | 1     |              | 1        |        |       |              |          |        | 1     |              | 1        |        |

Source: Municipal Police Station, Anilao



**Table PS-2. Protective Services by Facilities and Equipment, Year 2016**

| Type of Services       | Barangay  | Area (sq m) | Physical Condition of Facility | No. of Personnel | Personnel to Pop'n Ratio | Vehicles |            | Contact No.   | Hazard Susceptibility (H/M/L) |    |    |        |
|------------------------|-----------|-------------|--------------------------------|------------------|--------------------------|----------|------------|---------------|-------------------------------|----|----|--------|
|                        |           |             |                                |                  |                          | No.      | Types      |               | Fl                            | Ln | Su | Others |
| <b>Police</b>          |           |             | Good                           | 26               | 1:1,217                  | 5        | Mahindra   | (0)9989673723 |                               |    |    |        |
| Headquarters           | Poblacion | 500         | Poor (Congested)               | 29               | 1:1,177                  |          | Innova     |               |                               | L  |    |        |
| Sub-Station            | None      |             |                                |                  |                          |          | Revo       |               |                               |    |    |        |
| Outpost                | Badiang   | 54          | Fair                           | 4*               |                          |          | Rouser     |               |                               |    |    |        |
| Traffic                | None      |             |                                |                  |                          |          | XR 200     |               |                               |    |    |        |
| <b>Fire Protection</b> |           |             |                                |                  |                          |          |            |               |                               |    |    |        |
| Headquarters           | Poblacion | 80          | Poor                           | 6                | 1,666                    | 1        | Fire Truck | 3312595       |                               | L  |    |        |
| Sub-Station            | none      |             |                                |                  |                          |          |            |               |                               |    |    |        |
| <b>Jail Management</b> |           |             |                                |                  |                          |          |            |               |                               |    |    |        |
| City/Mun. Jail         | Poblacion | 6           | Poor                           | Managed by PNP   |                          |          |            | (0)9989673723 |                               | L  |    |        |
| <b>Others</b>          | none      |             |                                |                  |                          |          |            |               |                               |    |    |        |
| <b>Total</b>           |           |             |                                |                  |                          | 6        |            |               |                               |    |    |        |

Source: PNP/BFP \* - Included in the number of PNP personnel Legend: Fl-Flood Ln- Landslide Su-Stormsurge

**Table PS-3. Classification of Police Station and Jail Facility by Population**

| TYPE   | Population                           |
|--|--------------------------------------|
| <b>Municipal Police Station Classification by Population</b> |                                      |
| “C”  | 28,684                               |
| <b>Jail Facility Classification by Population</b>            |                                      |
| Municipal Jail   | 250 inmates and below                |
| <b>Jail Facility Type and Requirements</b>                   |                                      |
| “C”  | Minimum Jail Population = 20 or less |
|  | Lot Area = 0.5 hectares              |

Source: PNP/BFP



Table PS-2 shows the number and condition of facilities and equipment used by the PNP and Fire Personnel in the municipality. It shows that since both PNP and BFP headquarters are temporarily situated in municipal buildings, It is very congested and facilities need repair and rehabilitation. Most of the inmates were immediately transferred to the BJMP because the jail facility is way below the standard jail classification.

**Current and Projected Needs**

**Table PS-4. Current and Projected Requirement for Police and Fire Personnel**

| TYPE           | Existing No. (2015) | Projected Population* and Required No. of Personnel** |        |        |        |        |        |        |        |        |
|----------------|---------------------|---|--------|--------|--------|--------|--------|--------|--------|--------|
|                |                     | 2017  | 2018   | 2019   | 2020   | 2021   | 2022   | 2023   | 2024   | 2025   |
| Population*    | 28,684              | 31,950  | 32,644 | 33,353 | 34,078 | 34,818 | 35,575 | 36,348 | 31,138 | 37,945 |
| Police Force** | 26                  | 32  | 33     | 33     | 34     | 35     | 36     | 36     | 31     | 38     |
| Fire Force     | 7                   | 16  | 16     | 17     | 17     | 17     | 18     | 18     | 16     | 19     |
|                |                     |   |        |        |        |        |        |        |        |        |

Source: PNP/BFP

**Notes:**

\*based on population increase rate = 2.17% per annum (with base population of 2010)

\*\* computed based on population projection and standard ratios

Table PS-4 shows the current and projected needs of the police and fire force in the municipality. As of 2015, there is still a need for 2 police personnel basing on the standard of the NAPOLCOM which is 1 for every 1,000 population. However, since Anilao is a peaceful municipality the demand for additional personnel is not very high as seen in the number of crimes for the past five years. The number of BFP personnel is way below the standard set by the Bureau of Fire Protection which is 1 fire personnel for every 2,000 population. This was reflected in the Protective Services Analysis Matrix with the policy option to either hire additional personnel and continuous training of fire brigades.



Graph PS-1. Current and Projected Requirement for Police, Fire and Jail Personnel (as per standard ratio)

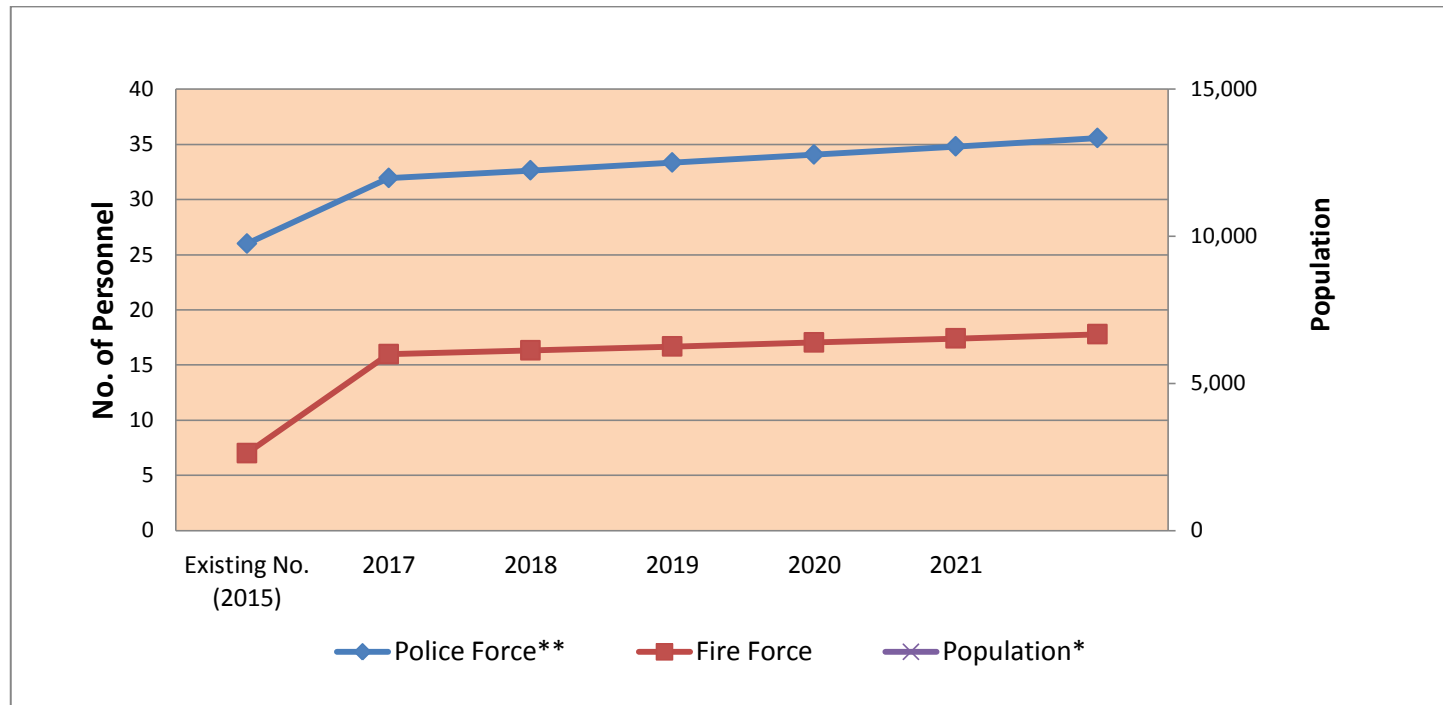


Figure PS-2. Protective Services Exposure to Flooding

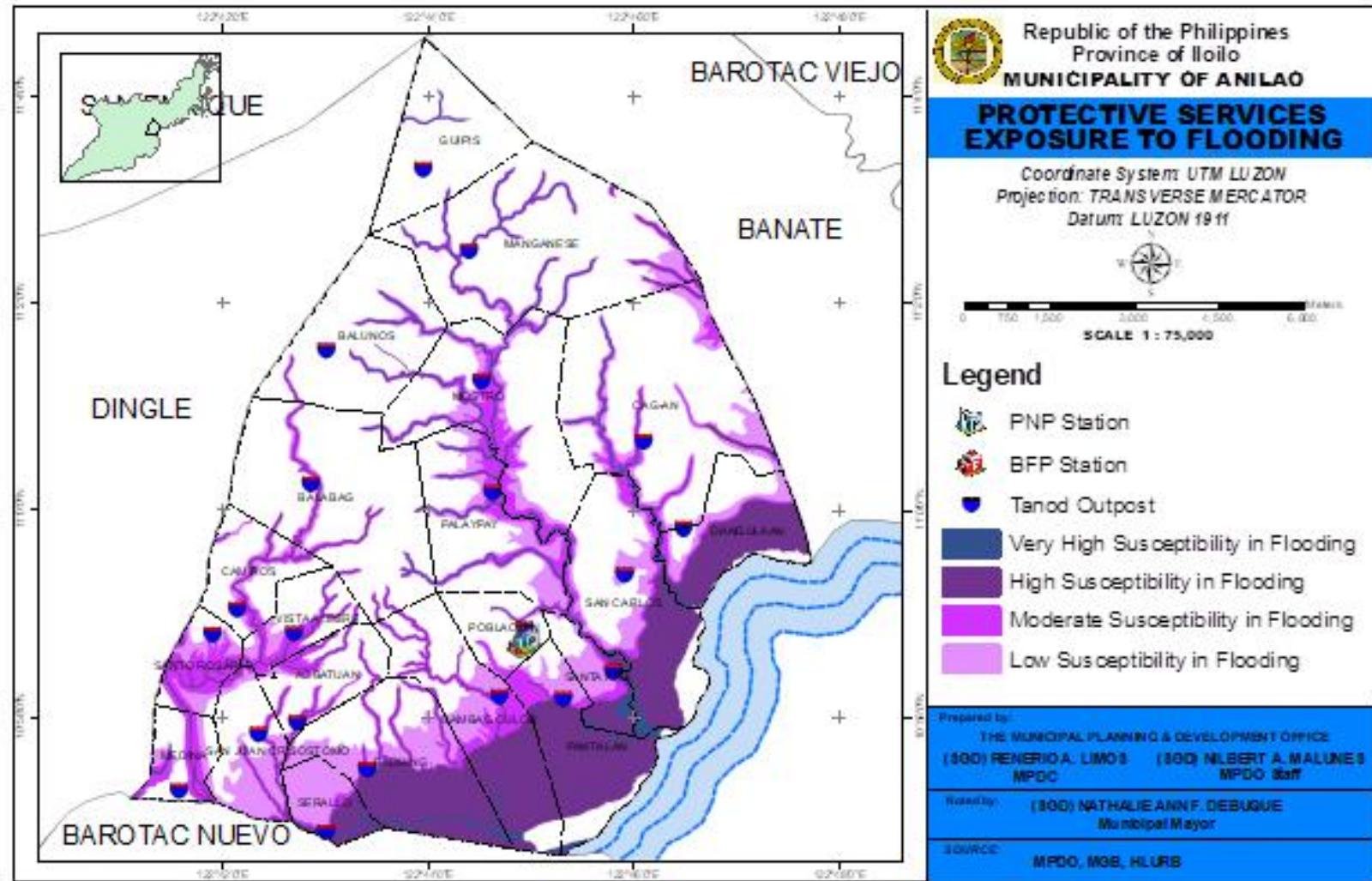




Figure PS-3. Protective Services Exposure to Landslide

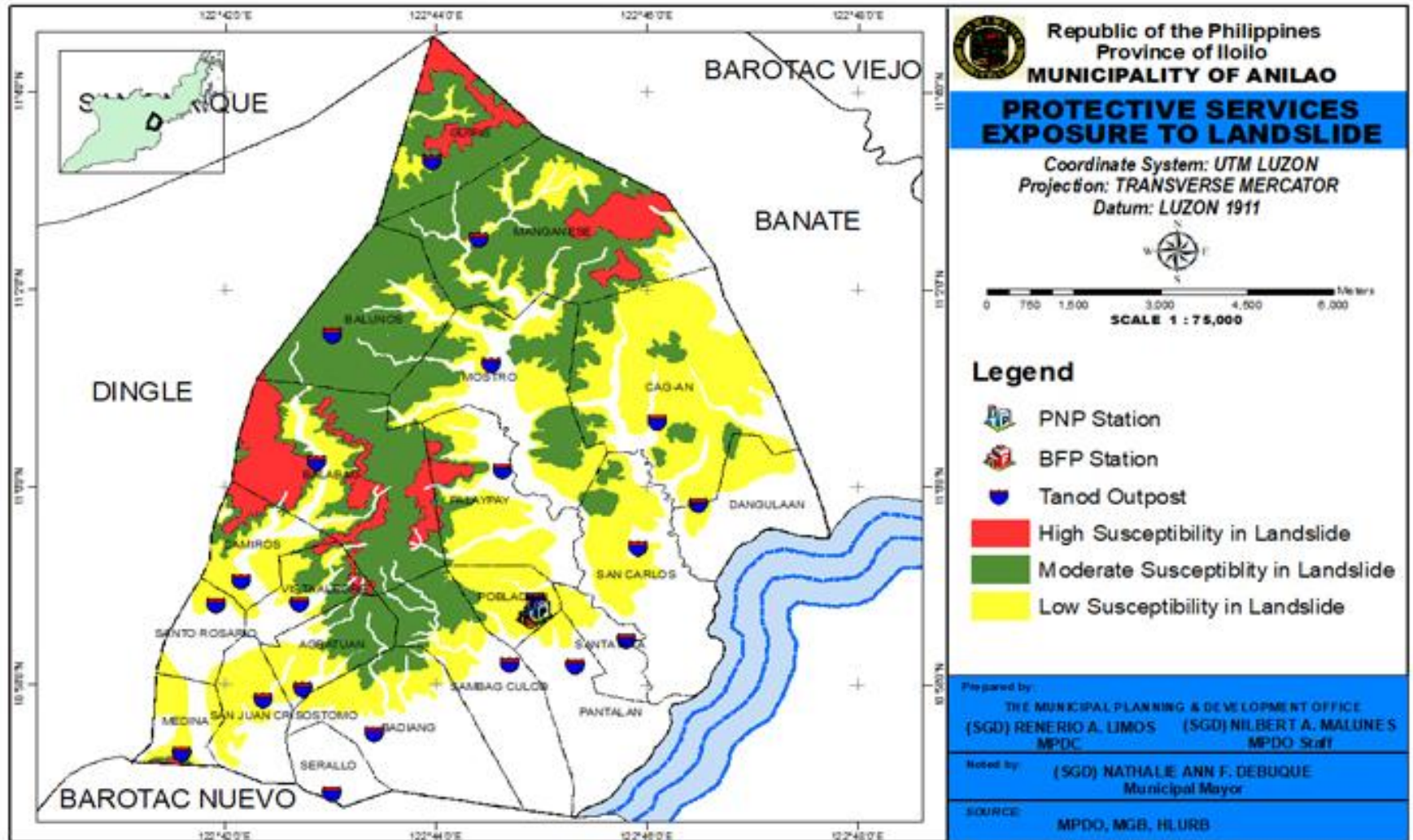


Figure PS-4. Protective Services Exposure to Stormsurge

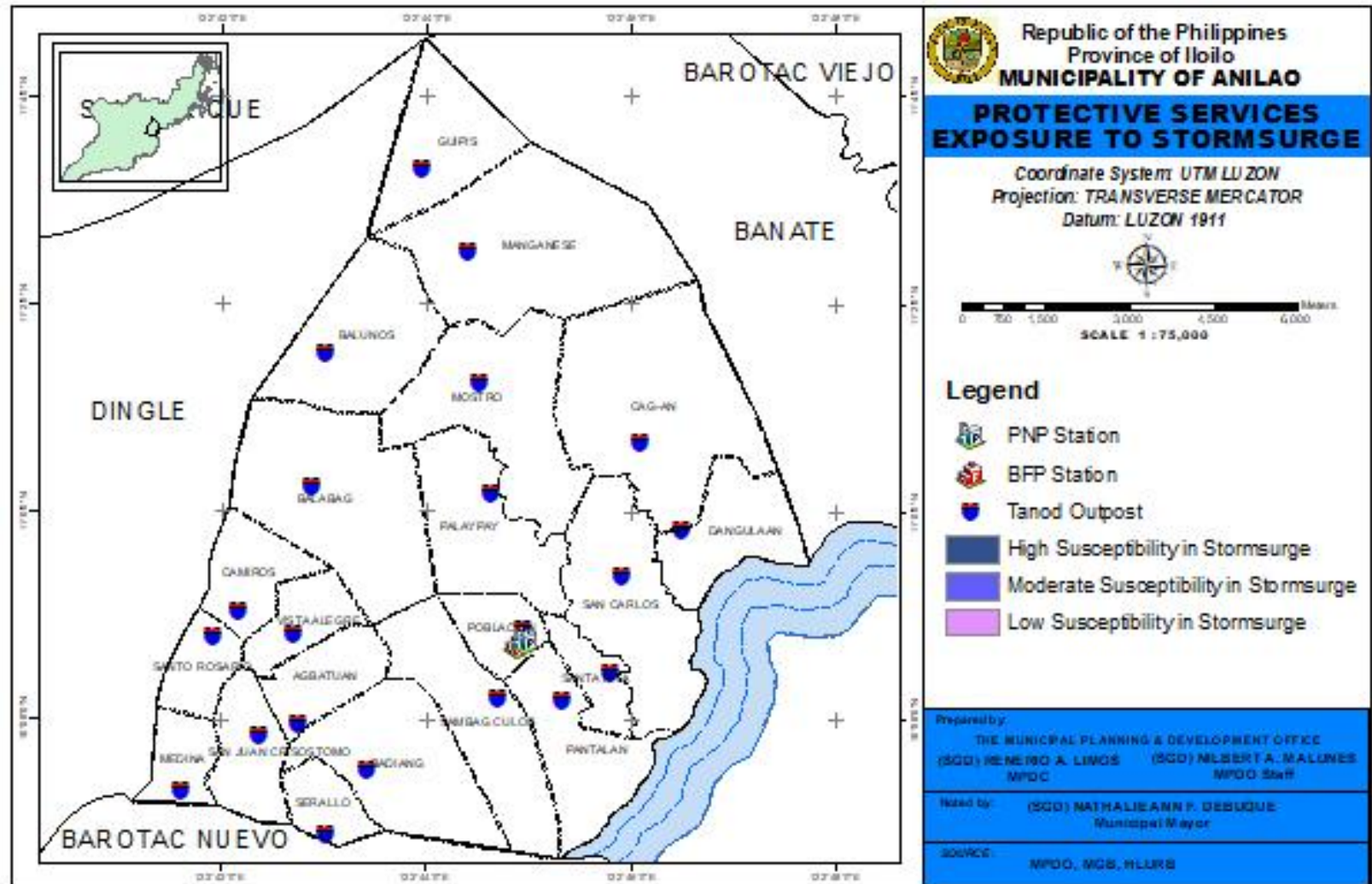


Table PS-5. Barangay Security Force and Volunteers by Type of Service, Year 2017

| Type of Services   | Number of Security Force/Volunteer | Facilities / Equipment              | Condition of facilities/ equipment |
|--------------------|------------------------------------|-------------------------------------|------------------------------------|
| Traffic            | 8 Tanods                           | Whistle                             | Functional                         |
| Peace and Order    | 18 Bantay Bayan                    | Batuta<br>Multi-Cab (2)             | Functional                         |
| Disaster           | 210 BERT/20 Alert                  | Rescue Equipment<br>Patrol Boat (2) | Functional                         |
| Auxiliary Services | 240 Tanods                         | Batuta/Whistle                      | Functional                         |
| Others             |                                    |                                     |                                    |

Source: Barangay Offices



Table PS-6. Fire Incidence for the Past Five Years

| Barangay  | Origin / cause   | Frequency of Occurrence |             |             |             |             |
|---|--|-------------------------|-------------|-------------|-------------|-------------|
|   |  | 2013                    | 2014        | 2015        | 2016        | 2017        |
| Cag-an<br>Fuentes   | Unattended Improvised Lamp<br>Electrical Short Circuit   | 2                       | 0           | 0           | 0           | 0           |
| Palaypay<br>Badiang<br>Agbatuan<br>Sambag Culob<br>Dangula-an<br>Poblacion<br>San Juan Crisostomo | Vehicle Fire/Electrical Short Circuit (Spark)<br>Vehicle Fire/Electrical Short Circuit (Battery)<br>Unattended Rubbish Fire<br>Cigarette Butt<br>Unattended Rubbish Fire<br>Unattended Charcoal Ember<br>Overheated Heater | -                       | 8           | -           | -           | -           |
| Poblacion<br>Poblacion<br>Serallo<br>Agbatuan<br>Badiang<br>Balabag<br>Balunos                    | Unattended Charcoal Ember<br>Gasoline leakage<br>Overheated Heater<br>Cigarette Butt<br>Unattended Cooking<br>Electrical Short Circuit<br>Electrical Short Circuit   | -                       | -           | 7           | -           | -           |
| Agbatuan<br>Poblacion<br>Vista Alegre<br>Palaypay<br>Poblacion<br>Cag-an<br>Vista Alegre          | Unattended Rubbish Fire<br>Vehicular/Electrical Short Circuit<br>Vehicular/Electrical Short Circuit<br>Cigarette Butt<br>Lightning<br>Unattended Cooking<br>Unattended Cooking   | -                       | -           | -           | 7           | -           |
| Badiang<br>San Carlos<br>San Carlos<br>Aglay-ao<br>Poblacion                                      | Unattended Bonfire<br>Cigarette Butt<br>Unattended Rubbish Fire<br>Unplugged Chargeable Flashlight<br>Unattended Cooking   | -                       | -           | -           | -           | 5           |
| <b>Total</b>  |  | <b>2.00</b>             | <b>8.00</b> | <b>7.00</b> | <b>7.00</b> | <b>5.00</b> |

Source: BFP



Table PS-7. Crime Incidence by Barangay for Children (below 18 years old) in Conflict with the Law for the Past Five Years

| Barangay                           | Type of Crime                  | 2013  |              |          |        | 2014  |              |          |        | 2015  |              |          |        | 2016  |              |          |        | 2017  |          |        |       |
|------------------------------------|--------------------------------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|--------------|----------|--------|-------|----------|--------|-------|
|                                    |                                | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Cases Solved | Offender |        | Total | Offender |        | Total |
|                                    |                                |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       |              | Male     | Female |       | Male     | Female |       |
| Badiang                            | <b>Index Crimes</b>            |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | <b>Crimes Against Person</b>   |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | a. Murder                      |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | b. Homicide                    |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | c. Physical Injury             |       |              |          |        |       |              |          |        |       |              |          |        | 2     | 2            | 1        | 1      | 2     | 1        | 1      | 2     |
| Sambag Culob, Poblacion and Medina | d. Rape                        |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | <b>Crimes Against Property</b> |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | a. Robbery                     |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | b. Theft                       | 7     | 7            | 7        | 0      | 1     | 1            | 1        | 0      | 1     | 1            | 1        | 1      | 1     | 1            | 1        | -      | 2     | /        | /      | 2     |
|                                    |                                |       |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |
|                                    | <b>Non-index Crimes</b>        | none  |              |          |        |       |              |          |        |       |              |          |        |       |              |          |        |       |          |        |       |

Source: Anilao Municipal Police Station

Table PS-7 shows the crimes of children in conflict with the law (CICL). Most of these are physical injury and theft which are very minimal.



**Protective Services Analysis Matrix**

| Technical Finding/ observation                               | Implication (Effects)  | Policy Options/intervention   |
|--|--|---|
| Absence of separate Standard PNP and BFP Building            | Not enough space for PNP & Fire personnel, uncondusive office and service lane to cater needs of clients.  | Donation of Lot and construction of standard PNP and BFP building   |
| Inadequate police and fire personnel based on standard ratio | Poor Police Visibility in the area of responsibilities particularly in crime prone areas   | Lobby to the higher headquarters for additional PNP personnel to be assigned in the municipality of Anilao to meet the minimum standard of police to population ratio of 1:1000.<br>Maintain existing Volunteer Fire Brigades |
| Inadequate equipment   | Poor performance , untimeliness of compliances and inconvenience of clients.<br>Delayed response and augmentation of supporting units during emergencies (fire | Purchase of additional communication and fire-fighting equipment and computers  |
| Lack of Traffic Enforcers                                    | Increase number of vehicular accident  | Hiring of traffic enforcers and deputation from LTO   |
| Old Fire Truck   | Hampers firefighting operations and services   | <ul style="list-style-type: none"> <li>- Repair of Fire truck</li> <li>- Purchase of additional firetruck</li> </ul>  |
| No visible fire hydrants                                     | Firefighting operations are hampered and delayed   | <ul style="list-style-type: none"> <li>- Construction of fire hydrants in strategic places</li> </ul>   |





**CHAPTER V – ECONOMIC SECTOR**

**AGRICULTURE SUB-SECTOR**

**Profile and Analysis of Existing Situation**

**Crop Production**

The Municipality of Anilao is a predominantly agricultural town. Out of its total municipal area of 10,101.44 hectares, 6,088.95 hectares or 60.04% is utilized for agricultural crop production. Sugarcane ranks number 1 in major crops planted with an area of 2,795.68 hectares. Sugarcane as the number one crop of the municipality, produce 297,546 metric tons. These production area is owned or cultivated by small sugarcane farmers since 90% is a CARP area. Rice is the next most planted crop with 2061.2 hectares. This is followed by mango with 439.5 hectares, corn with 307 hectares, fruit and vegetables with 141 hectares, Squash with 98.0 hectares, Banana with 94.0 hectares, coconut with 92.27 hectares and 60 hectares of root crops.

Table AG-1 shows other data such as the annual production, product market, number of farmers, type of farming technology, existing agricultural support facilities and hazard susceptibility of agricultural areas planted to different crops.

**Table AG-1. Existing Major Agricultural Crops by Area, Production and Market, 2016**

| Major Crop | Location (Barangay) | Area    |               | Annual Production |                | Product Market | No. of Farmers | No. of Tenants | Type of Farming Technology | Existing Agricultural Support Facilities |  | Hazard Susceptibility (H/M/L) |    |    |
|------------|---------------------|---------|---------------|-------------------|----------------|----------------|----------------|----------------|----------------------------|--|--|-------------------------------|----|----|
|            |                     | ha      | % Utilization | Volume (MT)       | Value (Php)    |                |                |                |                            | Pre-Harvest                              | Post-Harvest                                 | FI                            | Ln | Su |
| Sugarcane  | All Barangays       | 2795.68 | 100%          | 267546.576        | 428,074,521.60 | Local          | 3150           | 3054           | Modern                     | 4-wheel Tractor – 12                     | Hauling Trucks- 50                           | L                             | L  | L  |
| Rice       | All Barangays       | 2061.2  | 95%           | 13758.51          | 178860630      | Local          | 1949           | 1253           | Traditional / Modern       | Hand Tractor-200                         | Flatbed Dryer – 3, MPDP-15, Rice Tresher-109 | M                             | M  | L  |





|                  |  |       |      |         |            |       |      |     |                      |                    |  |   |   |   |
|------------------|--|-------|------|---------|------------|-------|------|-----|----------------------|--------------------|--|---|---|---|
| Corn             | 15 Barangays   | 307   | 80%  | 2072.25 | 7634169000 | Local | 287  | 203 | Traditional / Modern | 4-wheel Tractor    | Flatbed Dryer – 3, MPDP-15, Corn Sheller-2 | H | M | L |
| Coconut          | All Barangays  | 92.27 | 100% | 2491.29 | 64773540   | Local | 2002 |     | Traditional          | -                  | -  | L | L | L |
| Mango            | All Barangays  | 439.5 | 100% | 21975   | 769125000  | Local | 468  |     | Modern               | Power sprayer – 20 |  | L | L | L |
| Banana           | All Barangays  | 94    | 100% | 2444    | 48880000   | Local | 1000 |     | Traditional          |                    |  | H | L | L |
| Squash           | 15 Barangays   | 98    | 100  | 980     | 9800000    | Local | 75   |     | Modern               |                    |  | H | H | H |
| Root Crops       | Balunos, Balabag, Manganese, Vista Alegre, Agbatuan, Guipis,                               | 60    | 100% | 360     | 10800000   | Local | 268  |     | Traditional          |                    |  | H | L | L |
| Fruit Vegetables | Balunos, Balabag, Manganese, Vista Alegre, Agbatuan, Guipis, Badiang, Mostro, Sambag Culob | 141   | 100% | 987     | 19740000   | Local | 275  |     | Traditional / Modern |                    |  | H | H | H |

Source: MAO

Legend: Hazard Susceptibility: Fl-Flood Ln-Landslide Su-Stormsurge



Figure AG-1. Crop Map

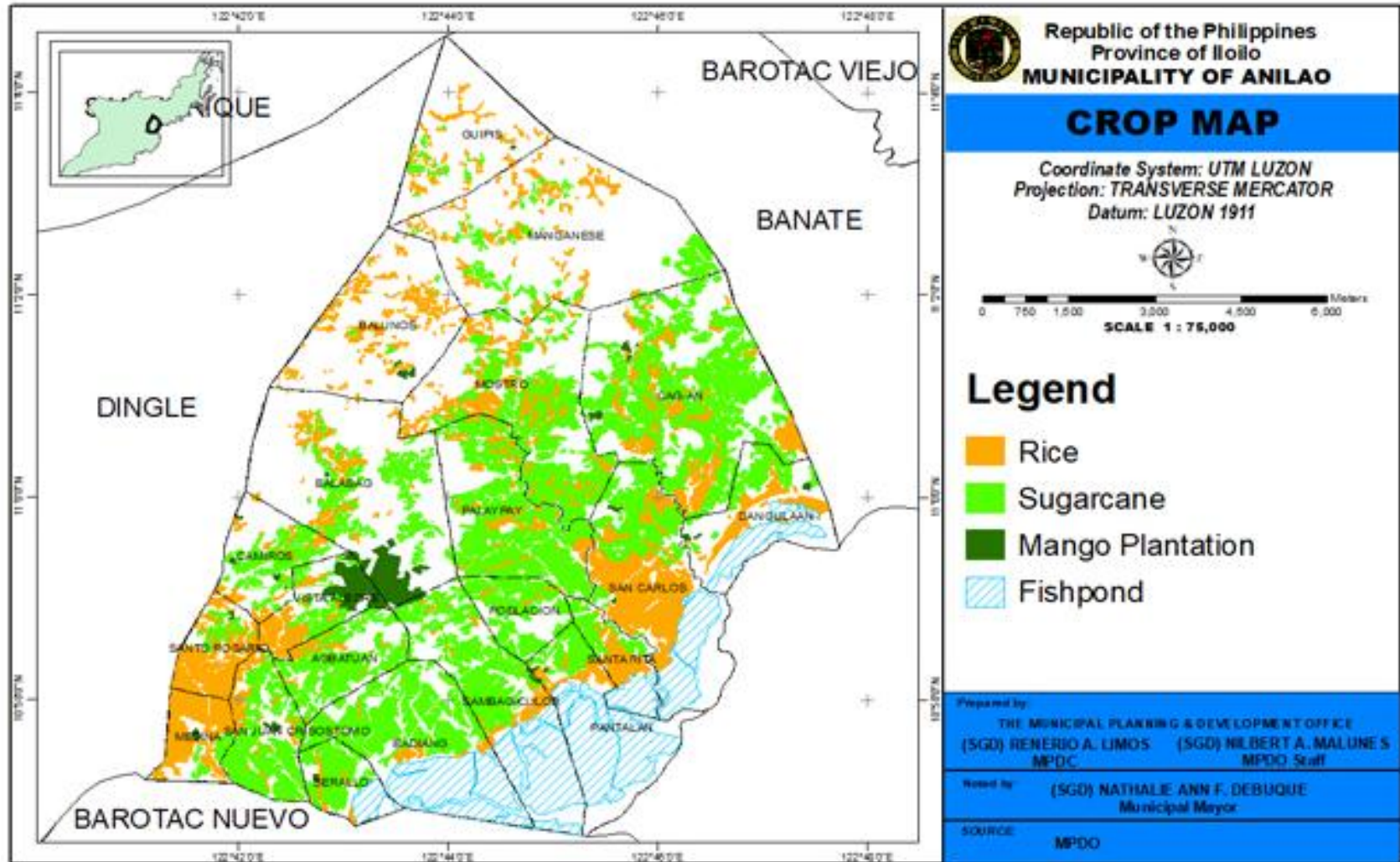
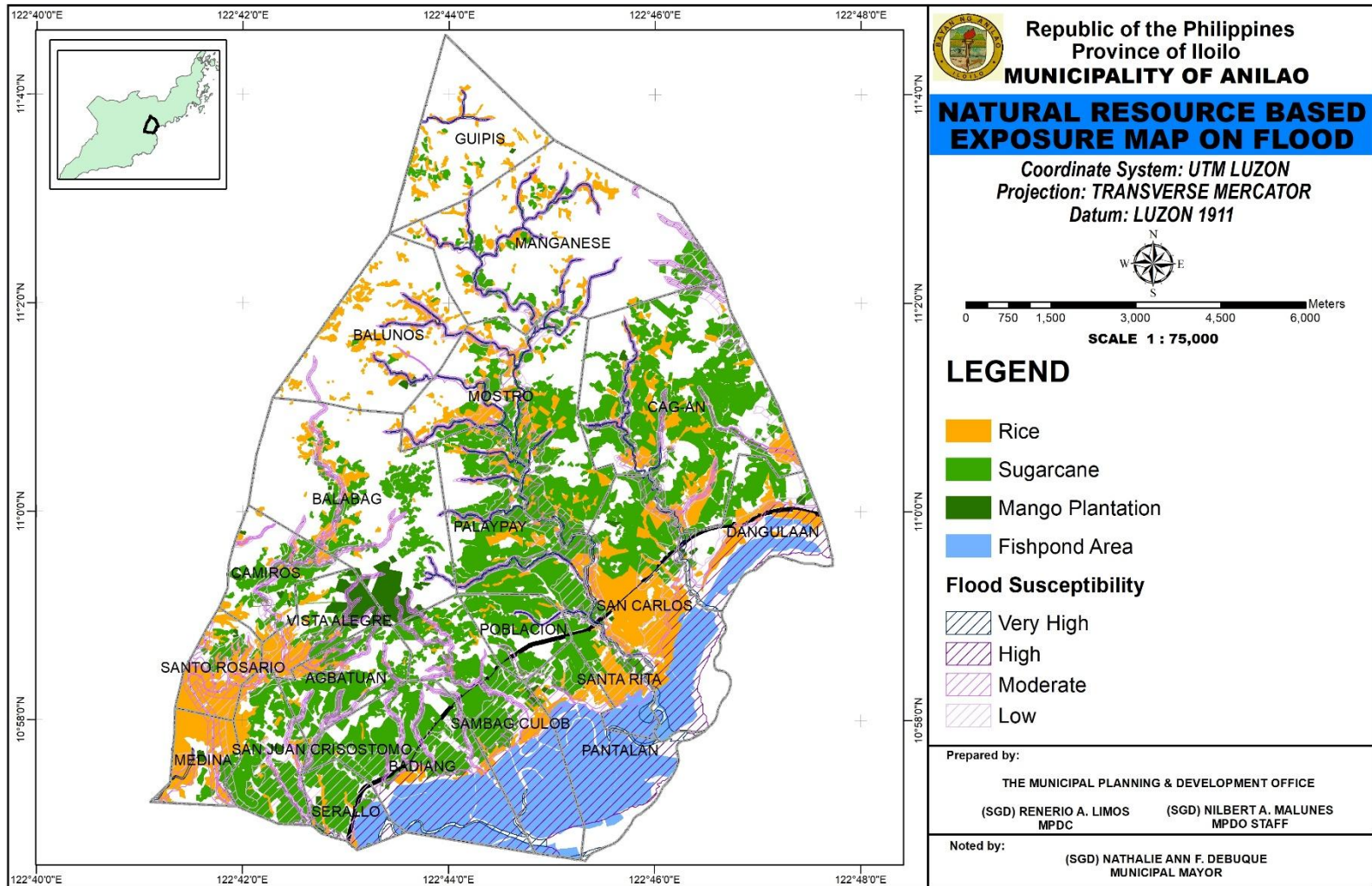


Figure AG-2. Natural Resources Based Exposure Map on Flood

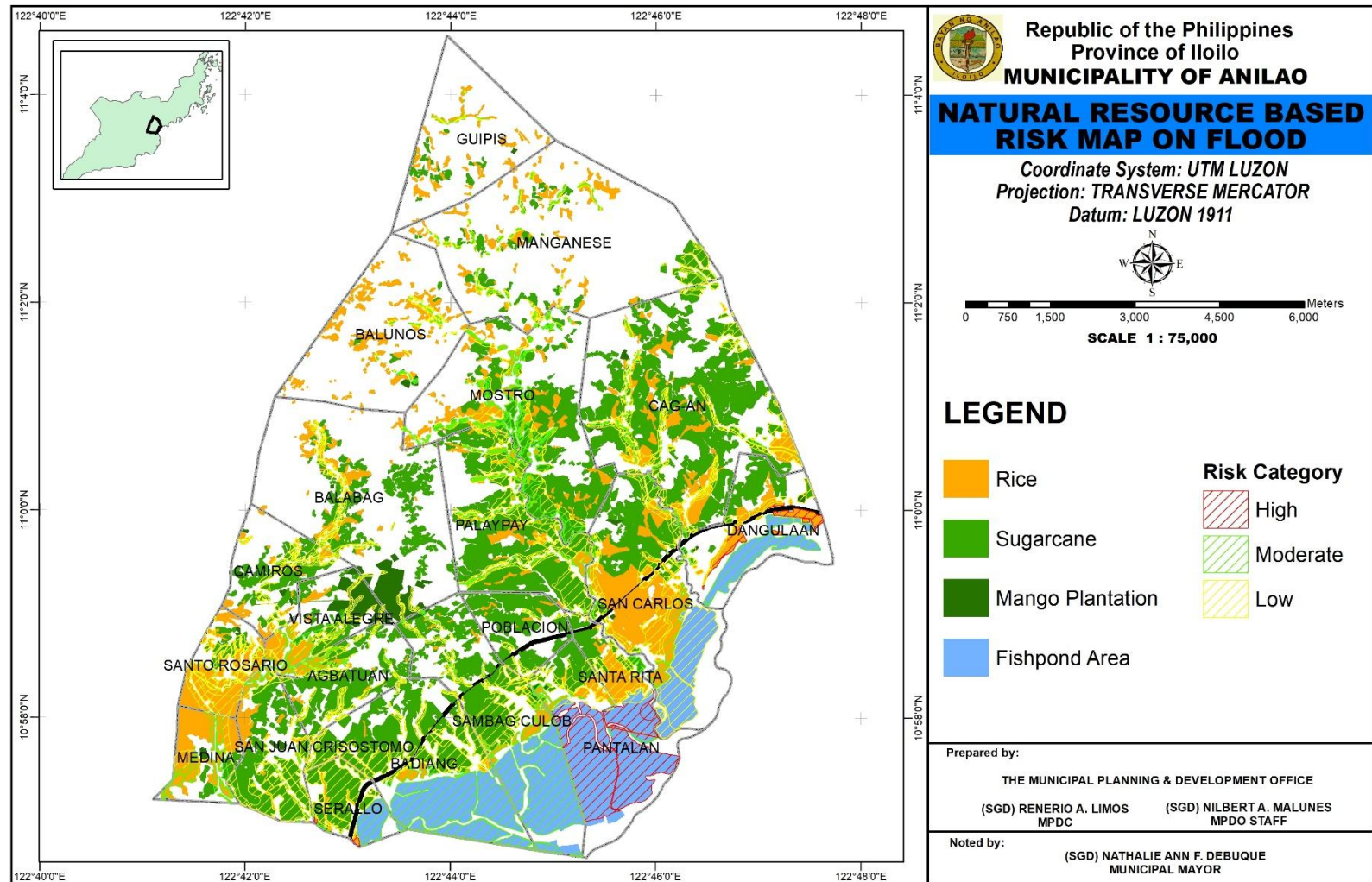


Source: MPDO





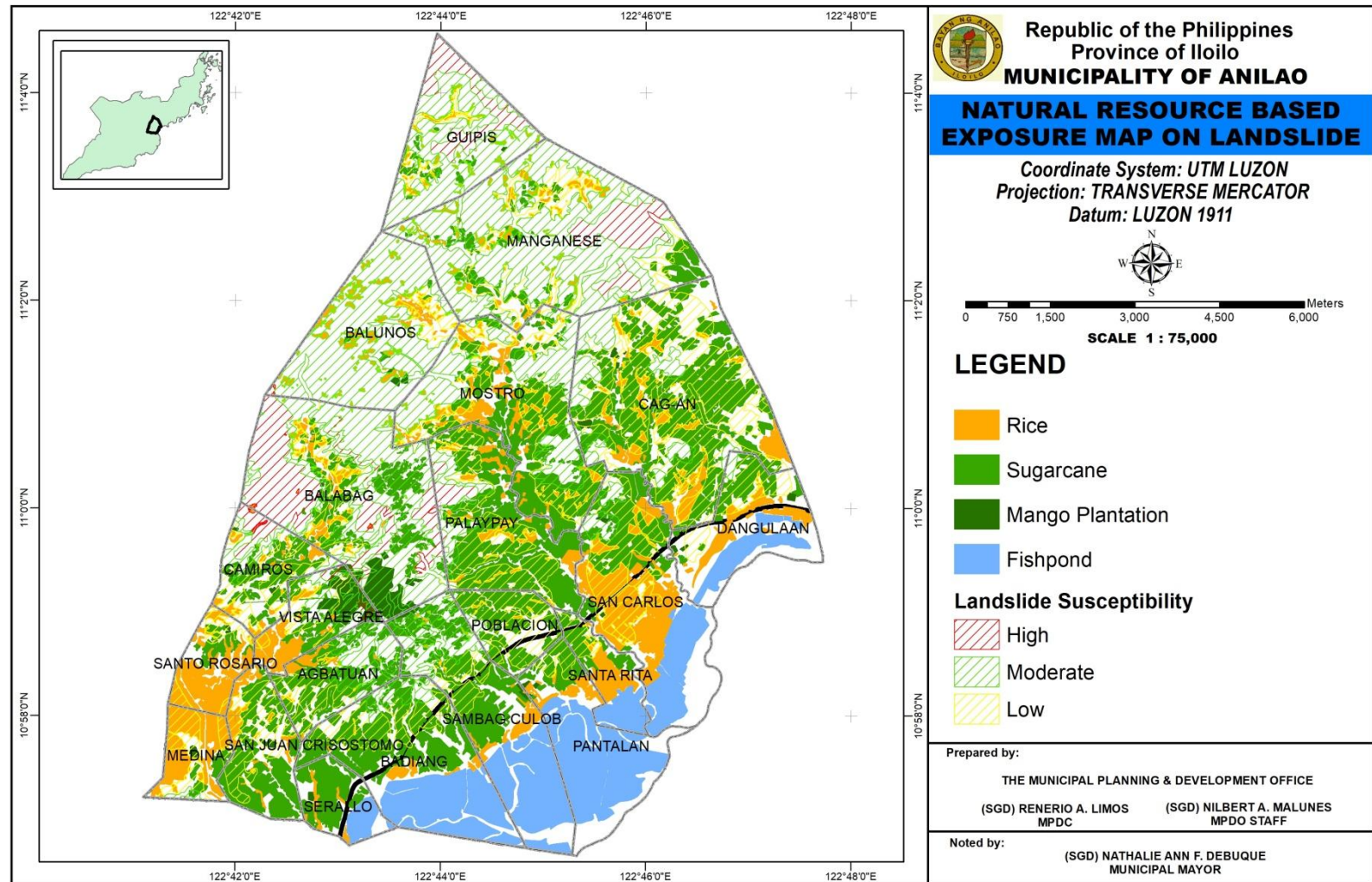
Figure AG-3.Natural Resources Based Risk Map on Flood



Source:MPDO



Figure AG-4. Natural Resource Based Exposure Map on Landslide

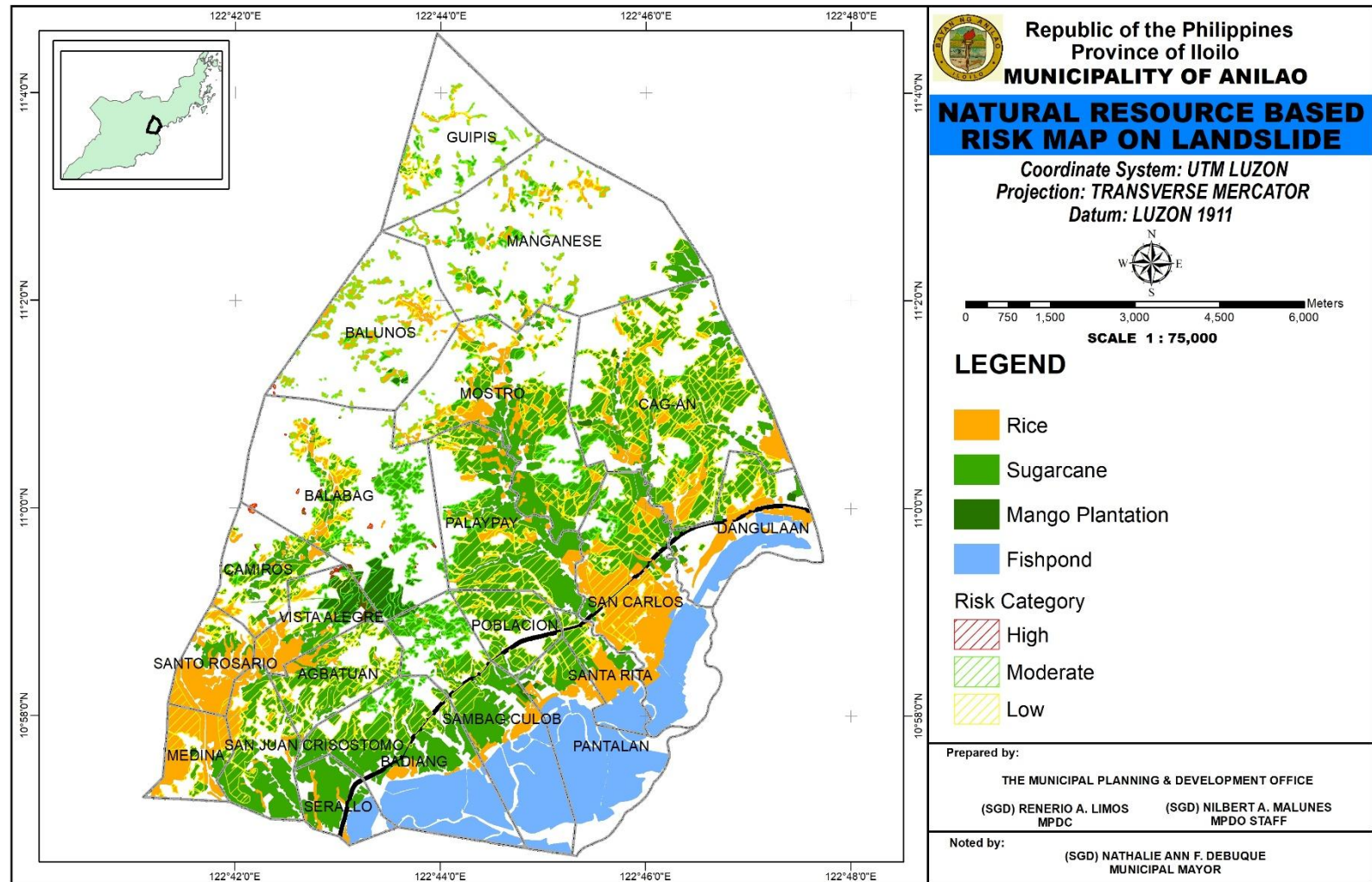


Source:MPDO





Figure AG-5. Natural Resources Based Risk Map on Landslide



Source:MPDO



In terms of the volume of production in 2016, sugarcane has the highest compared to the combined volume of production of all crops. The sugar produced are sold in domestic and foreign markets.

Table AG-2, shows a 3.43 % increase in the area planted to sugarcane from year 2015 to 2016. Likewise, volume of production increased by 24.32%. The largest increase in area planted to crops came from corn with 51.14% while coconut has the highest increase in the volume of production with 82.22%. Rice production decreased by 37.54% in 2016. This is due to severe El Niño phenomenon during the last quarter of the year that affected the municipality. Other agricultural crops show an increasing and decreasing trends. Surplus in agricultural produced are sold in the neighboring cities and municipalities.

**Table AG-2. Comparative Agricultural Crop Areas and Production**

| Major Crops      | Area (ha) |          |                        | Volume of Production MMT |            |                        |
|------------------|-----------|----------|------------------------|--------------------------|------------|------------------------|
|                  | 2015      | 2016     | %Increase/<br>Decrease | 2015                     | 2016       | %Increase/<br>Decrease |
| Sugarcane        | 2699.68   | 2,795.68 | 3.43                   | 2,02476                  | 267,546.58 | 24.32                  |
| Rice             | 2061.2    | 2,061.2  | 0.00                   | 20,199.68                | 14,686.05  | -37.54                 |
| Corn             | 150       | 307      | 51.14                  | 585                      | 2,072.25   | 71.77                  |
| Coconut          | 92.27     | 92.27    | 0.00                   | 442.896                  | 2,491.29   | 82.22                  |
| Mango            | 439.5     | 439.5    | 0.00                   | 13185                    | 2,491.29   | -429.24                |
| Banana           | 94        | 94       | 0.00                   | 3,666                    | 2,444      | -50.00                 |
| Squash           | 98        | 98       | 0.00                   | 980                      | 980        | 0.00                   |
| Root Crops       | 55        | 60       | 8.33                   | 275                      | 360        | 23.61                  |
| Fruit Vegetables | 125       | 141      | 11.35                  | 625                      | 987        | 36.68                  |

Source: Municipal Agricultural Office

The general slope and topography of the municipality is suitable for sugarcane and upland crops. At present, some areas with a slope of 30-50% are utilized for agricultural crops production specifically corn which resulted to soil degradation. To mitigate its effects, it is recommended that sloping areas should be planted with trees.

The Office of the Municipal Agriculturist is the lead agency of the government responsible for the community’s agricultural growth and development in terms of farming, fishery, livestock raising. It coordinates with the Department of Agriculture, Department of Agrarian Reform,





National Irrigation Authority and other agencies in the implementation of national programs and projects The Office of the Municipal Agriculturist has nine (9) Agricultural Extension Workers to provide technical assistance to farmers and fisherfolks.

Rural-based groups and cooperatives were organized and strengthened to provide support to agricultural programs, projects and activities. Seventeen (17) Farmers Associations, Federated FA, Rural Improvement Club, 4H, Horticulture Association, Paravet Association, Municipal Agricultural and Fisheries Council, 7 BFARMCs, Bantay Peste and 4 cooperatives are presently providing the local farmers and fisherfolks with financial needs and projects. A barangay bagsakan project is operated by Pantalan Farmers Association, Pantalan, Anilao.

Organic Farming is being promoted in some areas to produce vegetables, rice, and fruits that are healthy for population consumption.

A municipal nursery located in Poblacion is being maintained to provide quality planting materials for the farmers and for reforestration.

The total irrigated area of Anilao is 731.23 hectares or 35.48% of the total rice area. There are 4 Communal Irrigation Systems located at barangays Palaypay, Mostro and Camiros serving a total of 241.75 hectares, 5 units of SFRs which serves at least a hectare per unit, 4 Small Diversion Dams at Barangays San Carlos, Vista Alegre, Badiang and Sambag Culob also serves 104.25 hectares of riceland. A National Irrigation project known as Jalaur Extension traverses through Barangays Camiros, Sto. Rosario, San Juan Crisostomo and Medina and supplies irrigation water to about 356 hectares which allows the farmers to have 3 croppings per year. Other irrigation facilities are shallow Tube Wells and open source.

At present, there is an on-going project study on the establishment/construction on Small Irrigation Reservoir at Brgy. Manganese. This will supply 2 irrigation facilities downstream with a service area of 50-100 hectares of ricefields.

### **Livestock and Poultry**

Livestock species like carabao, cattle, goat and hogs are raised in the municipality through backyard scale only. Barangay Mostro and Manganese topped the record with 210 heads of carabao while Sta. Rita has the lowest carabao population of 12. Barangay Balunos leads cattle population with 368 heads and Agbatuan has the lowest of 15 heads. These animals were used as draft animals and others are sold in the market for meat purposes as culled.



Carabaos could produce meat of about 611,200 kilos (611.2 MT) with a total estimated value of Php 44,090,000.00. Cattle population could produce 891,600 kilos (891.6 MT) and a total estimated value of Php 67,590.00

Hog industry in the municipality is classified as backyard growing and mostly for meat purposes. There is no commercial hog and commercial livestock farms in the municipality. Presently, there is a hog raising program with the DOLE at Barangay Mostro and Palaypay. Cattle and Goat dispersal from the Department of Agriculture was released to 100 beneficiaries. The total estimated value of backyard hog raising in the municipality is Php 16,810,200.00.

Native chicken is commonly raised in the rural and urban community. Other species are ducks, turkey, pigeon, and gamefowls. These poultry products are for local consumption and livelihood. Table AG-3 below shows the existing livestock and poultry farms in the municipality in 2017.

**Table AG-3. Existing Livestock and Poultry Farms, Year 2017**

| Type           | Barangay      | Area (ha)   | No. of Heads | Production Classification | Production   |                | Product Market | No. of Tenants | Hazard Susceptibility (H/M/L) |    |    |
|----------------|---------------|-------------|--------------|---------------------------|--------------|----------------|----------------|----------------|-------------------------------|----|----|
|                |               |             |              |                           | Volume (kg)  | Value (Php)    |                |                | Fl                            | Ln | Su |
| Livestock      | all barangays | 761.67      | 7460         | Backyard                  | 4,374,389.36 | 132,642,200.00 |                |                |                               |    |    |
| Carabao        | all barangays | 305.6       | 1528         | Backyard                  | 8,400.00     | 44,090,000.00  |                |                |                               |    |    |
| Cattle         | all barangays | 400.2       | 2001         | Backyard                  | 8,370.00     | 67,590,000.00  |                |                |                               |    |    |
| Goat           | all barangays | 0.51        | 2547         | Backyard                  | 203,760.00   | 16,810,200.00  |                |                |                               |    |    |
| Hog/Swine      | all barangays | 55.36       | 1384         | Backyard                  | 4,153,859.36 | 4,152,000.00   |                |                |                               |    |    |
| Grand Total    |               | 761.67      | 7,460.00     | Backyard                  | 4,374,389.36 | 132,642,200.00 |                |                |                               |    |    |
| Poultry        |               | Grand Total | 1955.54      | 3066023                   |              | 374,264,000.00 |                |                |                               |    |    |
| Native Chicken | Sub Total     | 769.84      | 19246        |                           | 19,246.00    | 2,886,900.00   |                |                |                               |    |    |



|                      |                     |           |           |            |              |                |        |      |   |   |   |
|----------------------|---------------------|-----------|-----------|------------|--------------|----------------|--------|------|---|---|---|
| Chicken Broiler Type | Cag-an              | 18.73     | 2,016,000 | Commercial | 2,016,000.00 | 241,920,000.00 | Export | none | M | L |   |
|                      | Sambag Culob        | 1.95      | 210,000   | Commercial | 210,000.00   | 25,200,000.00  | Local  | none | M | L | M |
|                      | San Juan Crisostomo | 3.34      | 360,000   | Commercial | 360,000.00   | 43,200,000.00  | Local  | none | M | L |   |
|                      | Serallo             | 2.51      | 270,000   | Commercial | 270,000.00   | 32,400,000.00  | Local  | none | H | L | M |
|                      | Camiros             | 0.84      | 90000     | Commercial | 90,000.00    | 10,800,000.00  | Local  | none | M | L |   |
|                      | Vista Alegre        | 0.56      | 60000     | Commercial | 60,000.00    | 7,200,000.00   | Local  | none | H | L |   |
|                      | Sub Total           | 27.93     | 3037406   |            | 3,006,000.00 | 365,430,900.00 |        |      |   |   |   |
|                      |                     |           |           |            |              |                |        |      |   |   |   |
| Duck                 | Sub Total           | 977.3     | 5403      |            | 10806        | 1080600        |        |      |   |   |   |
| Turkey               | Sub Total           | 128.71    | 695       |            | 1390         | 139000         |        |      |   |   |   |
| Geese                | Sub Total           | 50.56     | 273       |            | 546          | 54,600.00      |        |      |   |   |   |
|                      |                     |           |           |            |              |                |        |      |   |   |   |
| Egg Type             | Agbatuan            | 3000 SQ.M | 1000      | Backyard   | 292,000.00   | 1,168,000.00   | Local  | none | L | L | L |
|                      | Palaypay            | 3000 SQ.M | 1000      | Backyard   | 292,000.00   | 1,168,000.00   | Local  | none | L | L | L |
|                      | Vista Alegre        | 3000 SQ.M | 500       | Backyard   | 292,000.00   | 1,168,000.00   | Local  | none | L | L | L |
|                      | San Carlos          | 3000 SQ.M | 500       | Backyard   | 292,000.00   | 1,168,000.00   | Local  | none | L | L | L |
|                      | Sub Total           | 1.2       | 3000      |            |              | 4,672,000.00   |        |      |   |   |   |

Source: Municipal Agricultural Office

Legend: FI-Flood Ln-Landslide Su-Stormsurge



Other than backyard poultry and piggery, there are 4 commercial meat type poultry (vent-type) in operation located at Barangays San Juan Cristostomo, Serallo, Sambag Culob and Cag-an. At present, the commercial poultry in Barangay Cag-an produce the highest of about 2016 metric tons

of chicken meat for 2017. The total poultry produce reaches up to 3 037 406 heads or an estimated value of Php 365 430 900.00 per year. The chickens were sold in the neighboring municipalities in the Province of Iloilo and in other areas outside of the region.

**Fisheries**

The municipality has substantial area for brackishwater fishery business occupying a total area of 1081.0 hectares. There is also an additional 8.2 hectares freshwater fish production. Fishponds produced 9,729 metric tons bangus annually having a value of production of Php778,320,000.00. These fishponds are under the Fishpond Leasehold Agreement (FLA) with BFAR while some are titled fishponds.

The municipality has also an extensive shoreline covering more or less 7.0 kilometers. It has 2 Marine Protected Areas, 32.0 hectares of Seagrass Reserve and 4.0 hectares Anilao Coral Garden, all located at Brgy Dangula-an, Anilao, Iloilo. There are 2 species of seagrass found in the reserve area, the *Enhalos acoriodes* and *Halophila minor*.

**Table AG-4. Species Sea Grass in Anilao**

| Sea grass Species |                    |    |                     |
|-------------------|--------------------|----|---------------------|
| 1                 | <i>Acropora</i>    | 11 | <i>Stylophora</i>   |
| 2                 | <i>Montipora</i>   | 12 | <i>Hydrophora</i>   |
| 3                 | <i>Favites</i>     | 13 | <i>Euphylla</i>     |
| 4                 | <i>Turbinaria</i>  | 14 | <i>Echinopora</i>   |
| 5                 | <i>Pocillopora</i> | 15 | <i>Fungia</i>       |
| 6                 | <i>Pavona</i>      | 16 | <i>Herpolitha</i>   |
| 7                 | <i>Merulina</i>    | 17 | <i>Goniopora</i>    |
| 8                 | <i>Galaxea</i>     | 18 | <i>Favia</i>        |
| 9                 | <i>Porites</i>     | 19 | <i>Lythophyllon</i> |
| 10                | <i>Seriatopora</i> | 20 | <i>Goniastrea</i>   |

Source:MAO



The Anilao Coral Garden was established in 2009 with 528 concrete artificial reefs (box type) planted with 20 species of corals and preserved a number of fish species.

**Table AG-5. Transplanted Coral Genera in Anilao Coral Garden (ACG)**

|                    |                     |
|--------------------|---------------------|
| <i>Acropora</i>    | <i>Stylophora</i>   |
| <i>Montipora</i>   | <i>Hydnophora</i>   |
| <i>Favites</i>     | <i>Euphyllia</i>    |
| <i>Turbinaria</i>  | <i>Echinopora</i>   |
| <i>Pocillopora</i> | <i>Fungia</i>       |
| <i>Pavona</i>      | <i>Herpolitha</i>   |
| <i>Merulina</i>    | <i>Goniopora</i>    |
| <i>Galaxea</i>     | <i>Favia</i>        |
| <i>Porites</i>     | <i>Lithophyllon</i> |
| <i>Seriatopora</i> | <i>Goniastrea</i>   |

Source: MAO

Supply of fishery products are sufficient in the municipality due to the presence of 2 Marine Protected Areas. The annual average fish catch for 2015 is 3,630 metric tons. The total value of production is estimated at Php 290,438,400.00. Fish corrals (tangkop), push nets, crab pots, are some of the gears used by local fishermen. Acetes caught is processed into ginamos, a known product of Anilao which are then processed into ready-to-eat items in bottles or sealed pouches, and has become a favourite pasalubong items of balikbayans.

Seashells are also abundant in this 7 kilometer shoreline. Green mussels, brown mussels, oysters, and other bivalves gleaned are collected by fisherfolks as their source of livelihood. Likewise, surplus in this fishery item is sold in the neighboring municipalities and at Iloilo Fishport. Table AG-5 shows the existing fishing grounds and aquaculture production in 2015. Likewise, this table shows the hazard susceptibility of fishing grounds and aquaculture production.



Table AG-6. Existing Fishing Grounds and Aquaculture Production, Year 2015

| Fishing Grounds | Barangay     | Production  |            | Post-Harvest Facilities |        |          |        | Product Market | Hazard Susceptibility (H/M/L) |    |    |
|-----------------|--------------|-------------|------------|-------------------------|--------|----------|--------|----------------|-------------------------------|----|----|
|                 |              | Volume (mt) | Value      | Type                    | Number | Capacity | Status |                | FI                            | Ln | Su |
| <b>Marine</b>   |              | 3630.88     | 290438400  |                         |        |          |        |                |                               |    |    |
|                 | Dangula-an   | 250.52      | 20,025,600 |                         |        |          |        |                | M                             | L  | M  |
|                 | San Carlos   | 668.64      | 53491200   |                         |        |          |        |                | H                             | L  | M  |
|                 | Sta. Rita    | 819.84      | 65587200   |                         |        |          |        |                | H                             | M  | M  |
|                 | Pantalan     | 581.28      | 46502400   |                         |        |          |        |                | H                             | L  | M  |
|                 | Sambag culob | 616.56      | 49324800   |                         |        |          |        |                | H                             | L  | M  |
|                 | Badiang      | 502.52      | 40185600   |                         |        |          |        |                | H                             | L  | M  |
|                 | Serallo      | 191.52      | 15321600   |                         |        |          |        |                | H                             | L  | M  |
| <b>Inland</b>   |              |             |            |                         |        |          |        |                |                               |    |    |
|                 | Badiang      | 55          | 4400       |                         |        |          |        |                | H                             | L  | M  |
|                 | Balabag      | 55          | 4400       |                         |        |          |        |                | M                             | M  | L  |
|                 | Balunos      | 55          | 4400       |                         |        |          |        |                | M                             | M  | L  |
|                 | Dangula-an   | 55          | 4400       | Ice Plant               | 1      |          | O      |                | M                             | L  | M  |
|                 | Mostro       | 55          | 4400       |                         |        |          |        |                | M                             | M  | L  |
|                 | Palaypay     | 55          | 4400       |                         |        |          |        |                | M                             | M  | L  |
|                 | Pantalan     | 55          | 4400       |                         |        |          |        |                | H                             | L  | M  |
|                 | Poblacion    | 55          | 4400       | Shrimp paste Processing | 1      |          | O      | Local          | M                             | L  | L  |
|                 | Sambag culob | 55          | 4400       |                         |        |          |        |                |                               |    |    |
|                 | San Carlos   | 55          | 4400       |                         |        |          |        |                | H                             | L  | M  |
|                 | Serallo      | 55          | 4400       |                         |        |          |        |                | H                             | L  | M  |
|                 | Sta. Rita    | 55          | 4400       |                         |        |          |        |                | H                             | L  | M  |
|                 | Vista Alegre | 55          | 4400       |                         |        |          |        |                | M                             | M  | L  |

Source: MAO, BFAR Legend: Hazard Susceptibility: FI-Flood Ln-Landslide Su-Stormsurge

Hazard susceptibility of fishpond areas are reflected in Fig.AG-1 shows a total of 115.hectares are affected by flooding. With the CDRA result,





### Other Agri-Support Programs

Table AG-5 shows existing agricultural support facilities and services. The Municipal Agriculture provides technical assistance to farmers. Disease identification, diagnoses, and treatment, information dissemination, technology updating and community organizing are basic services given to all farmers of Anilao. Other agricultural support services include the conduct of farmers field schools, technology demonstrations and other programs and projects in coordination with the national agencies. Table AG-6 shows existing agricultural support facilities and services as well as the hazard susceptibility of these facilities.

Credit and Financial Assistance is being serviced by Cooperatives and Rural Bank.

Farming in Anilao is supported with different farm machineries. Power tillers such as hand tractors, turtle tillers, and 4-wheel tractors are provided in the production phase. For post-harvest machineries are rice threshers, multi-purpose drying pavement, flatbed dryer, corn sheller, hauling trucks and cono rice mills.

Other support programs implemented by the municipality to enhance productivity include concreting of farm to market roads. Transport of farm products are made easier now by these all-weather roads.



Table AG-7. Existing Agricultural Support Facilities and Services, Year 2016

| Post Harvest Facilities and Support | Barangay   | No. | % Utilization | Type/ Capacity       | Remarks |
|-------------------------------------|--|-----|---------------|----------------------|---------|
| Rice Mill (Cono)                    | San Carlos, Dangula-an, Agbatuan, Guipis, Manganese, Balunos Camiros | 12  | 100           | 20 bags/hour         | O       |
| Warehouse                           | San Carlos   | 2   | 100%          | 200 bags             | O       |
| Corn Sheller                        | Dangula-an   | 1   | 80            | 50 bags/day          | O       |
| Multi-Purpose Drying Pavement       | All barangays  | 37  | 100           | 100 bag/day          | O       |
| Mechanical Dryer                    | San Juan Crisostomo  | 1   | 0             | 100 bags/day         | NO      |
| Flatbed Dryer                       | San Carlos, Camiros, Dangula-an                                      | 3   | 100           | Public/ 100 bags/day | O       |
| Private Thresher                    | All barangays  | 175 | 90            | 100 bags/day         | O       |
| Multi-Harvester                     | San Carlos   | 1   | 100           | 5 has/day            | O       |
| Blowers                             | All barangays  | 175 | 90            | 100 bags/day         | O       |
| Hand Tractor                        | All barangays  | 176 | 90            | 0.5 has/day          | O       |

Source: MAO, MPDO



**Irrigation**

There are 4 Communal Irrigation Systems shown in Table AG-7. It is located at barangays Palaypay, Mostro and Camiros serving a total of 241.75 hectares, 5 units of SFRs which serves at least a hectare per unit, 4 Small Diversion Dams at Barangays San Carlos, Vista Alegre, Badiang and Sambag Culob also serves 104.25 hectares of Riceland. A National Irrigation or known as Jalaur Extension which traverse through Barangays Camiros, Sto. Rosario, San Juan Crisostomo and Medina and supplies irrigation water to about 356 hectares which allows the farmers to have 3 cropping of rice per year. Other irrigation facilities are shallow Tube Wells and open source.

At present, there is an on-going project study on the establishment/construction of Small Irrigation Reservoir at Brgy. Manganese which will supply 2 irrigation facilities downstream, with a proposed expansion service area of 50-100 hectares of ricefields.

In terms of hazard susceptibility of irrigation facilities as reflected in Table AG-6, almost all of the communal irrigation systems are identified as highly susceptible to flooding. These areas are situated in Barangays Camiros, San Carlos, Agtambo and Balunos.

**Table AG-8. Water Irrigation Systems**

| Irrigation System              | Year Constructed | Type of Ownership | Type of Irrigation              | Capacity of Irrigation System (cu <sup>3</sup> /day) | Area Served (ha) | Hazard Susceptibility (H/M/L) |    |    |                    |
|--------------------------------|------------------|-------------------|---------------------------------|--|------------------|-------------------------------|----|----|--------------------|
|                                |                  |                   |                                 |  |                  | FI                            | Ln | Su | Others             |
| <b>National</b>                |                  |                   |                                 |  |                  |                               |    |    |                    |
| Jalaur                         | 1968             | Public            | Pressurized system Open surface |  | 231              |                               |    |    |                    |
|                                |                  |                   |                                 |  |                  |                               |    |    |                    |
| <b>Communal</b>                |                  |                   |                                 |  |                  |                               |    |    |                    |
| Palaypay-San Carlos Irrigation |                  | Public            | Pressurized system Open surface |  | 194              | H                             | L  | L  | Change in rainfall |
| Camiros Irrigation             |                  | Public            | Pressurized system Open surface |  | 44.75            | H                             | L  | L  | Change in rainfall |



|                                 |      |                               |                                 |  |       |   |   |   |                    |
|---------------------------------|------|-------------------------------|---------------------------------|--|-------|---|---|---|--------------------|
| Agtambo Communal Irrigation     | 1987 | Public                        | Pressurized system Open surface |  | 22.5  | H | L | L | Change in rainfall |
| Anilao Cayo Communal Irrigation |      | Public                        | Pressurized system Open surface |  | 25    | H | L | L | Change in rainfall |
| <b>Others</b>                   |      |                               |                                 |  |       |   |   |   |                    |
| <b>Small Diversion Dam</b>      |      |                               |                                 |  |       |   |   |   |                    |
| Badiang                         |      | Public                        | Pressurized system Open surface |  | 22.3  | H | L | L | Change in rainfall |
| Sambag Culob                    |      | Public                        | Pressurized system Open surface |  | 22.25 | H | L | L | Change in rainfall |
| Sto. Rosario                    |      | Public                        | Pressurized system Open surface |  | 15    | H | L | L | Change in rainfall |
| San Carlos                      |      | Private                       | Pressurized system Open surface |  | 15    | H | L | L | Change in rainfall |
| Vista Alegre                    |      | Public                        | Pressurized system Open surface |  | 43.43 | H | L | L | Change in rainfall |
| Shallow Tube Well               |      | Private/<br>Various barangays |                                 |  | 57    |   |   |   |                    |
| Open Source Irrigation System   |      | Private                       |                                 |  | 39    |   |   |   |                    |

Source: MAO

Legend: Fl-Flood Ln-Landslide Su-Stormsurge



Table AG-9 shows the major and minor agricultural occupations in the urban and rural areas. Data indicates a total of 13,216 farmers engaged in farming and fishing activities in the municipality. Records likewise, shows that the number of male workers surpassed the number of female by 2,063.

**Table AG-9. Major and Minor Agricultural Occupations/Groups in Urban and Rural Areas, Year**

| Major and Minor Occupation Groups     | Barangay   | Urban           |               |               | Rural           |                 |                 | TOTAL           |                 |                 |
|---------------------------------------|--|-----------------|---------------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                       |  | Male            | Female        | Total         | Male            | Female          | Total           | Male            | Female          | Total           |
| <b>Farmers</b>                        |  |                 |               |               |                 |                 |                 |                 |                 |                 |
| Crop farmers                          | All Barangays  | 634.00          | 152.00        | <b>786.00</b> | 880.00          | 242.00          | <b>1,122.00</b> | 1,514.00        | 394.00          | <b>1,908.00</b> |
| Orchard farmers                       | Balabag, Vissta Alegre, Dangula-an, Agbatuan, Sambag Culob, Camiros, Manganese, Guipis | 3.00            | 3.00          | <b>6.00</b>   | 3.00            | 2.00            | <b>5.00</b>     | 6.00            | 5.00            | <b>11.00</b>    |
| Ornamental and Other Plant Growers    | Balabag, Vissta Alegre, Dangula-an, Agbatuan, Sambag Culob                             |                 |               | -             | 5.00            | 15.00           | <b>20.00</b>    | 5.00            | 15.00           | <b>20.00</b>    |
| Livestock and dairy farmers           |  | 75.00           | 36.00         | <b>111.00</b> | 732.00          | 645.00          | <b>1,377.00</b> | 807.00          | 681.00          | <b>1,488.00</b> |
| Poultry farmers                       |  | 568.00          | 217.00        | <b>785.00</b> | 1,640.00        | 979.00          | <b>2,619.00</b> | 2,208.00        | 1,196.00        | <b>3,404.00</b> |
| Farm workers                          |  |                 |               | -             | 3,758.00        | 3,791.00        | <b>7,549.00</b> | 3,758.00        | 3,791.00        | <b>7,549.00</b> |
| Sub-total                             |  |                 |               |               |                 |                 |                 |                 |                 | <b>10,953</b>   |
| <b>Fisherfolks</b>                    |  |                 |               |               |                 |                 |                 |                 |                 |                 |
| Aqua-farm cultivators                 | 7 Coastal Barangays,   |                 |               | -             | 68.00           | 4.00            | <b>72.00</b>    | 68.00           | 4.00            | <b>72.00</b>    |
| Inland and Coastal Waters Fisherfolks | 7 Coastal Barangays, Mostro, Poblacion, Balunos  |                 |               | -             | 987.00          | 1,204.00        | <b>2,191.00</b> | 987.00          | 1,204.00        | <b>2,191.00</b> |
| Shallow water Fisherfolks             | 7 Coastal Barangays  |                 |               | -             |                 |                 | -               | -               | -               | -               |
| <b>TOTAL</b>                          |  | <b>1,280.00</b> | <b>408.00</b> |               | <b>8,073.00</b> | <b>6,882.00</b> |                 | <b>9,353.00</b> | <b>7,290.00</b> | <b>13,216</b>   |

Source: PSA



STRATEGIC AGRICULTURE AND FISHERIES DEVELOPMENT ZONES (SAFDZ)

Table AG-10. Strategic Agriculture and Fisheries Development Zones (SAFDZ)

| Name of SAFDZ area (if applicable)   | Barangay            | Area (ha) | Type of SAFDZ | Hazard Susceptibility (H/M/L) |    |    |
|--------------------------------------|---------------------|-----------|---------------|-------------------------------|----|----|
|                                      |                     |           |               | Fl                            | Ln | Su |
| Agricultural Development Zone        |                     |           |               |                               |    |    |
|                                      | Sto. Rosario        | 145       | ADZ           | H                             | L  | L  |
|                                      | Medina              | 116       | ADZ           | H                             | L  | L  |
|                                      | San Juan Crisostomo | 75        | ADZ           | L                             | L  | L  |
|                                      | Camiros             | 45        | ADZ           | L                             | L  | L  |
|                                      | San Carlos          | 194       | ADZ           | M                             | L  | H  |
|                                      | Mostro              | 47.5      | ADZ           | L                             | M  | L  |
|                                      | Vista Alegre        | 49        | ADZ           | H                             | L  | L  |
| Strategic Fishery Production Zone    |                     | 1081      | SFSDZ         |                               |    |    |
|                                      | Serallo             |           | SFSDZ         | H                             | L  | H  |
|                                      | Badiang             |           | SFSDZ         | H                             | L  | H  |
|                                      | Sambag Culob        |           | SFSDZ         | H                             | L  | H  |
|                                      | Pantalan            |           | SFSDZ         | H                             | L  | H  |
|                                      | Sta. Rita           |           | SFSDZ         | H                             | L  | H  |
|                                      | San Carlos          |           | SFSDZ         | H                             | L  | H  |
|                                      | Dangula-an          |           | SFSDZ         | H                             | L  | H  |
| Strategic Livestock Development Zone |                     | 761.67    | SLDZ          |                               |    |    |
|                                      | Balabag             |           | SLDZ          | L                             | L  | L  |
|                                      | Balunos             |           | SLDZ          | L                             | L  | L  |
|                                      | Manganese           |           | SLDZ          | L                             | L  | L  |
|                                      | Guipis              |           | SLDZ          | L                             | L  | L  |
| Strategic Poultry Development Zone   |                     |           |               |                               |    |    |
|                                      |                     |           |               |                               |    |    |





|  |                     |    |        |   |   |   |
|--|---------------------|----|--------|---|---|---|
|  | Cag-an              | 12 | SPDZ   | L | L | L |
|  | Sambag Culob        | 3  | SPDZ   | L | L | L |
|  | San Juan Crisostomo | 2  | SPDZ   | M | L | L |
|  | Serallo             | 2  | SPDZ   | H | L | L |
|  | San Carlos          |    |        | L | L | L |
| Strategic Integrated Crop/Livestock Development Zone                           |                     |    |        |   |   |   |
|  | Balunos             |    | SICLDZ | L | H | L |
|  | Balabag             |    | SICLDZ | L | H | L |
|  | Badiang             |    | SICLDZ | L | L | H |
|  | Manganese           |    | SICLDZ | L | H | L |
|  |                     |    |        |   |   |   |
|  | Mostro              |    | SICLDZ | L | H | L |
| Strategic Integrated Crop/Fishery/Livestock Development Zone                   |                     |    |        |   |   |   |
|  | Badiang             |    | SICFL  | H | L | H |
|  | San Carlos          |    | SICFL  | H | L | H |
|  | Pantalan            |    | SICFL  | H | L | H |
|  | Sta. Rita           |    | SICFL  | H | L | H |
|  | Dangula-an          |    | SICFL  | H | L | H |
|  | Cag-an              |    | SICFL  | L | L | M |
| Remaining NPAAD Reservation; SD-sand dunes/beach area; NIPAS; Proposed Tourism |                     |    |        |   |   |   |

Source: MAO

Legend: FI-Flood Ln-Landslide Su-Stormsurge



There are 8 strategic agriculture and fisheries development zones in the municipality. These are the Agricultural Development Zone, Strategic Fishery Zone, Strategic Livestock Zone, Strategic Poultry Zone, Strategic Integrated Crop/Livestock Development Zone, Strategic Integrated Crop/Fishery/Livestock Development Zone, Remaining NPAAD Reservation, Agro-Forestry Zone, and Watershed Forest Zone.

### **Carpable Areas/Lands**

With several existing large landholdings, areas in 19 barangays have already been covered by the agrarian reform program either through compulsory acquisition, voluntary offer to sell, OLT, GFI or through voluntary land transfer.

On record, Anilao has a total of 2,561.5224 hectares of CARP-eligible lands. Of this figure, 2,415.1320 hectares had already been covered with the remaining 146.3904 hectares still to be covered. The area already covered pertained to 1,587 farmer-beneficiaries while the remaining area is allotted to 124 more beneficiaries.



Figure AG-6. Map Showing the CARP Covered Areas

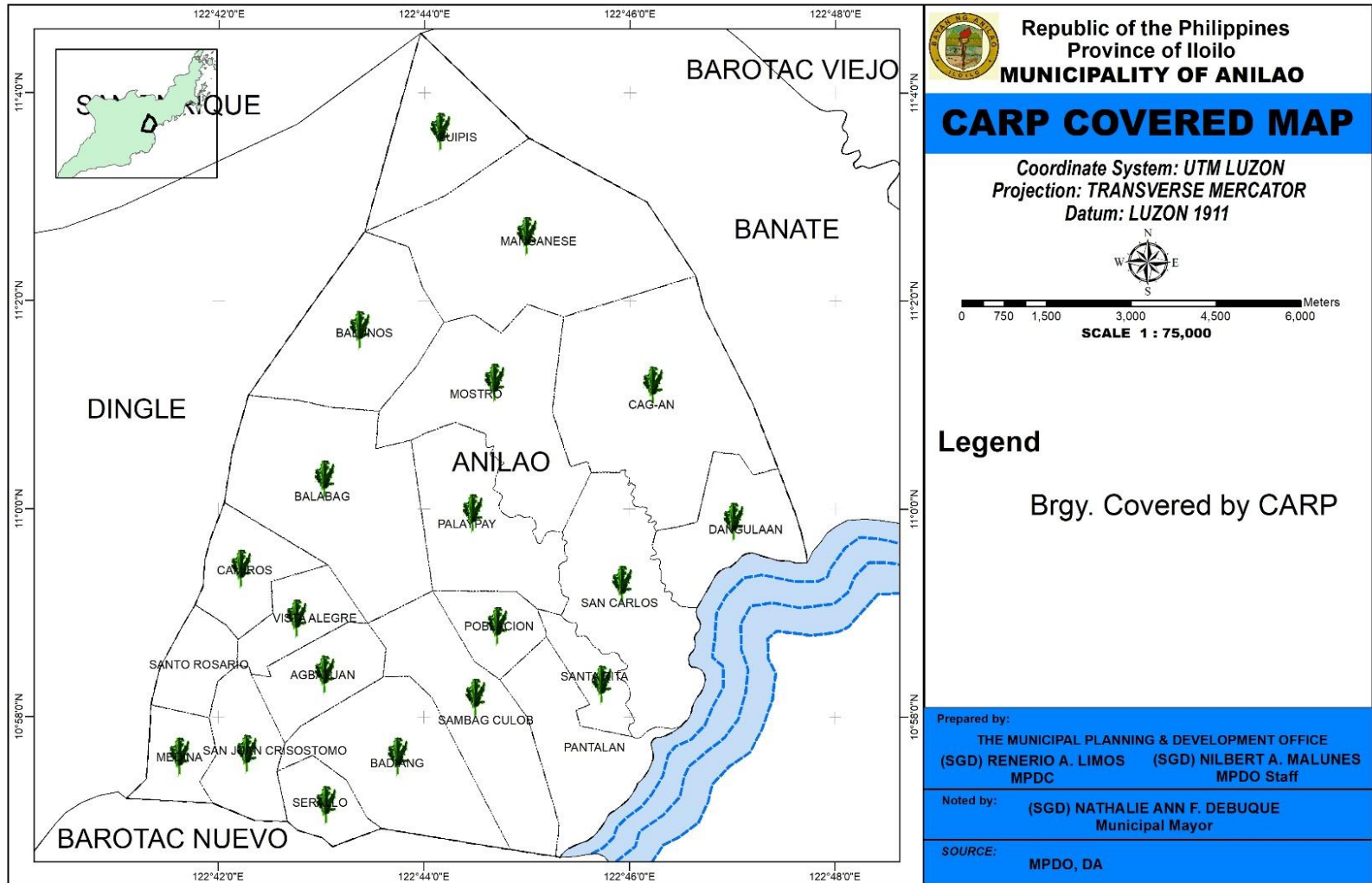


Table AG-11. Carp Covered Areas

|    | Location   | No. of ARBs | Area Covered (has.) |    | Location            | No. of ARBs | Area Covered (has.) |
|----|------------|-------------|---------------------|----|---------------------|-------------|---------------------|
| 1  | Agbatuan   | 80          | 97.007              | 11 | Medina              | 19          | 25.3137             |
| 2  | Badiang    | 157         | 176.7861            | 12 | Mostro              | 273         | 606.5152            |
| 3  | Balabag    | 16          | 33.9700             | 13 | Palaypay            | 240         | 234.0001            |
| 4  | Balunos    | 3           | 8.8033              | 14 | Poblacion           | 2           | 4.8042              |
| 5  | Cag-an     | 415         | 621.0828            | 15 | San Carlos          | 6           | 10.3365             |
| 6  | Camiros    | 79          | 95.3098             | 16 | San Juan Crisostomo | 23          | 48.6651             |
| 7  | Culob      | 3           | 3.0315              | 17 | Serallo             | 23          | 43.3840             |
| 8  | Dangula-an | 29          | 48.3223             | 18 | Sta. Rita           | 10          | 16.4939             |
| 9  | Guipis     | 10          | 18.1075             | 19 | Vista Alegre        | 59          | 96.8119             |
| 10 | Manganese  | 140         | 226.3934            |    | <b>Total</b>        | <b>1587</b> | <b>2,415.1320</b>   |

Source: MAO

Out of the entire area covered, 621.0828 hectares are for the Agrarian Reform Communities (ARC) comprised of 415 farmer-beneficiaries.



**Table AG-12. Agrarian Reform Communities**

|   | <b>Location</b> | <b>No. of ARBs</b> | <b>Area Covered (has.)</b> |
|---|-----------------|--------------------|----------------------------|
| 1 | Cag-an          | 415                | 621.0828                   |

Source: MAO

The remaining areas eligible for coverage which are all subject to compulsory acquisition are as follows:

**Table AG-13. Areas Eligible for Coverage which are all subject to compulsory acquisition**

|   | <b>Location</b> | <b>No. of ARBs</b> | <b>Area Covered (has.)</b> |
|---|-----------------|--------------------|----------------------------|
| 1 | Culob           | 15                 | 36.3491                    |
| 2 | Palaypay        | 23                 | 12.6328                    |
| 3 | Pantalan        | 66                 | 71.6105                    |
| 4 | San Carlos      | 14                 | 18.9553                    |
| 5 | Sta. Rita       | 6                  | 6.8427                     |
|   | <b>Total</b>    | <b>124</b>         | <b>146.3904</b>            |

Source: MAO

With the much desired ultimate goal of empowering the farmer-beneficiaries way beyond the actual possession of the awarded lands, the DAR Provincial Office has submitted the ARC Cluster Development Plan with the coordination of the Municipal Agrarian Reform Office to provide a roadmap for the beneficiaries and to facilitate the creation of necessary sustainable infrastructure while at the same time equipping them with the knowledge, skills and values upon which the success of the land reform program is anchored.



Table AG- 14. Comparative Area Utilization of Significant Agricultural Activities

| Activities                 | 2014      |      | 2015      |     | 2016      |     |
|----------------------------|-----------|------|-----------|-----|-----------|-----|
|                            | Area (ha) | %    | Area (ha) | %   | Area (ha) | %   |
| <b>Crop Production</b>     |           |      |           |     |           |     |
| Sugarcane                  | 2699.68   | 100% | 2699.68   | 100 | 2795.68   | 100 |
| Rice                       | 2061.2    | 100% | 2061.2    | 100 | 2061.2    | 70  |
| Corn                       | 150       | 100% | 150       | 100 | 307       | 70  |
| Coconut                    | 92.27     | 100% | 92.27     | 100 | 92.27     | 100 |
| Mango                      | 439.5     | 100% | 439.5     | 100 | 439.5     | 100 |
| Banana                     | 94        | 90%  | 94        | 100 | 94        | 75  |
| Squash                     | 100       | 100% | 98        | 90  | 98        | 50  |
| Root Crops                 | 65        | 80%  | 55        | 100 | 60        | 75  |
| Fruit Vegetables           | 125       | 85%  | 125       | 85  | 141       | 85  |
|                            |           |      |           |     |           |     |
| <b>Livestock/Poultry</b>   |           |      |           |     |           |     |
| Cattle                     | 465       | 100  | 459       | 100 | 445.8     | 100 |
| Carabao                    | 315       | 100  | 310       | 100 | 305.6     | 100 |
| Goat                       | 55.48     | 100  | 55.5      | 100 | 55.48     | 100 |
| Hogs (Swine)               | 0.5094    | 100  | 0.5       | 100 | 0.5094    | 100 |
| Native Chicken             | 55.36     | 100  | 55.36     | 100 | 55.36     | 100 |
| Broiler /Meat type chicken | 16        | 100  | 17.5      | 100 | 18.155    | 100 |
|                            |           |      |           |     |           |     |
| <b>Fishing</b>             |           |      |           |     |           |     |
| Milkfish                   | 1081      | 86   | 1081      | 90  | 1081      | 92  |
| Tilapia                    | 0.25      | 50   | 0.3       | 50  | 0.5       | 50  |
| African Hito               | 0.8       | 50   | 1.2       | 50  | 1.5       | 50  |
|                            |           |      |           |     |           |     |
| <b>Forest Product</b>      |           |      |           |     |           |     |
| Charcoal                   | 2         | 100  | 2.4       | 100 | 3         | 100 |

Source: MAO, MPDO





Since the municipality is an agricultural and fisheries dominant town, utilization of lands are at its highest of 80% to 100% per crop year depending on the type of crops. Farmers practice rotational and integrated crop management where after harvesting the main crop, another type of crop will be planted on the same area.

Livestock, poultry and vegetables are raised simultaneously at backyard level. This provides the farmer an alternative livelihood while he/she waits the main crop’s harvest.

**Table AG- 15. Agriculture Related Projects, Approved/ Funded for Implementation, Year 2017**

| Name/ Type of Project            | Location                  | Type | Proponent (Government, Private, Other) | Estimated Start Date | Estimated Date of Completion |
|----------------------------------|---------------------------|------|--|----------------------|------------------------------|
| Reforestation Project            | Guipis                    |      | Government                             | 2016                 | 2019                         |
|                                  | Manganese                 |      |  | 2016                 | 2019                         |
|                                  | Balunos                   |      |  | 2016                 | 2019                         |
|                                  | Balabag                   |      |  | 2016                 | 2019                         |
|                                  | Dangulaan                 |      |  | 2016                 | 2019                         |
| Farm to Market road              | Agbatuan                  |      | Government                             | Mar-17               | Aug-17                       |
|                                  | Balunos                   |      | Kalahi-CIDDSS                          | Mar-17               | Jul-17                       |
|                                  | Serallo                   |      | Government                             | Jul-18               | Jan-19                       |
|                                  | BAIunos                   |      | Government                             |                      |                              |
|                                  | Manganese                 |      | Government                             |                      |                              |
| Farm to Mill Road                | Poblacion-Palaypay-Mostro |      | Government                             | Jan-18               | Jul-18                       |
| Water Gate                       | Dangula-an                |      | Government                             | Mar-17               | May-17                       |
| Construction of Artificial Reefs | Dangula-an                |      | Government                             | May-17               | Jul-17                       |

Source: OMA/MENRO

To enhance agricultural production, assorted projects were implemented and funded through the different government agencies.



One of the biggest projects which improved farm productivity is the construction of Farm-to-Market Roads (FMR) which improved accessibility of farm produce from farm to market.

### Risks and Hazards in Agriculture

There are several risks and hazards identified in agricultural areas of Anilao. These hazards are landslide, floods, storm surge and grass fires.

Results of CDRA process were utilized in determining the hazards susceptibility and risk of the different agricultural croplands in the municipality. Figure AG-1, shows that all agricultural lands in the municipality are affected by flooding hazards. A total of 2,337.24 hectares are exposed to either low, moderate, high and very high flooding. Agricultural lands affected includes ricelands, sugarcane and mango plantation. Mostly affected

Climate and Disaster Risk Assessment Report shows a total of 237.86 hectares of ricelands which have moderate risk to flooding. This is followed by sugarcane affecting 137.05 hectares and 10.54 hectares for mango plantation. A total of 31.68 hectares of ricelands in Barangays Dangula-an and Serallo have high risk to flooding including the 3.44 hectares of mango plantation in Barangay Vista Alegre.

Hazards susceptibility to landslide of the different agricultural croplands are shown in Figure AG-3. Majority of the barangays in the municipality are affected by landslide. Ricelands moderately susceptible to flooding are situated in 12 barangays, 14 barangays for sugarcane and 2 barangays for mango plantation while the rest of the areas have low susceptibility. Likewise, exposed to high susceptible landslide are the ricelands in Barangays Balabag, Cag-an and Balunos. Same figure also shows that 5 barangays planted to sugarcane as well as the 2 barangays planted to mango have high susceptibility to landslide.

Results of the Climate and Disaster Risk Assessment taken in the CDRA Report and in Figure AG- 4, a total of 105.40 hectares are identified as high risk areas to landslide involving Barangays of Balunos, balabag, Camiros, Guipis and Manganese. Likewise, for sugarcane, 204.57 hectares are classified as high risk to landslide. These areas are situated in Barangays Balabag, Balinos, Guipis, Sambag Culob, San Carlos and Vista Alegre. For mango plantation, 6 barangays have same assessment as that of the sugarcane. This covers approximately 61.68 hectares.

Another area of concern related to hazard specifically flooding is effect of salt water intrusion into the agricultural lands due to coastal flooding exacerbated by climate change affected. There are about 20 hectares of rice lands in the coastal barangay of Dangula-an currently observed as soil affected with salt water intrusion. However, during high tide approximately 50 hectares are affected.

Fisheries resources are also affected by flooding hazard specifically fishpond along the coastal barangays of Badiang, Dangula-an, Pantalan, San Carlos, Serallo and Sta Rita. CDRA results shows that a total of 840 hectares fishponds are exposed to flooding hazard. Those identified as moderately



susceptible areas to flooding covers 8.97 hectares. High Susceptible to flooding covers an area of 807.88 hectares or 74.73 % of the total fishpond areas while the very high susceptible occupied an area of 22.61 hectares. Barangay San Carlos have very high exposure to flood affecting an area of approximately 9.77 hectares As to its risk a total of 708.51 hectares are affected by moderate to high risk flooding. Moderate risk fishponds areas covered a total of 431 hectares while high risk areas affected a total of 277.51 hectares. This constitutes 77.71% of the total area occupied by fishponds.

**Current and Projected Needs**

The current situation of the agriculture community is a satisfied sector. Low production cost mostly controlled by middlemen, high transportation cost, no definite market, misuse of harmful chemical pesticides/herbicides, insufficient irrigation facility, insufficient pre and post production facilities and insufficient value adding of agri-fishery products.

Low production in agricultural areas is due to insufficient irrigation water supply, rampant use of conventional farming method which also increased the environment degradation. Excessive use of commercial (inorganic) fertilizers, pesticides, herbicides and continuous cultivation decreased soil productivity.

Denudation of forest areas due to charcoal making and lumber production for household purposes also affects the climate and productivity of Anilao.



Table AG-16. Food Supply and Demand Analysis

| COMMODITY                          | VOLUME OF PRODUCTION/YR (in MT) | CONSUMPTION<br>2017 (MT) | SURPLUS /<br>DEFICIT |
|------------------------------------|---------------------------------|--------------------------|----------------------|
|                                    | TOTAL                           |                          |                      |
| Sugarcane                          | 267546.58                       | 2042.53                  | 265504.05            |
| Rice                               | 13758.51                        | 3618.196                 | 10140.31             |
| Corn                               | 2072.25                         | 3618.196                 | -1545.95             |
| Coconut                            | 2491.29                         | 2042.53                  | 448.76               |
| Mango                              | 21975.00                        | 817.012                  | 21157.99             |
| Banana                             | 1222.00                         | 817.012                  | 404.99               |
| Squash                             | 980.00                          | 1137.981                 | -157.98              |
| Root Crops                         | 600.00                          | 1750.74                  | -1150.74             |
| Fruit Vegetables                   | 4230.00                         | 1137.981                 | 3092.02              |
| Livestock                          | 4172.31                         | 1575.666                 | 2596.64              |
| Poultry                            | 4205.99                         | 1575.666                 | 2630.32              |
| Eggs                               | 1168.00                         | 116.716                  | 1051.28              |
| Freshwater Tilapia                 | 14.00                           | 1575.666                 | -1561.67             |
| Hito                               | 39.00                           | 1575.666                 | -1536.67             |
| Milkfish/Brackishwater Aquaculture | 2270.10                         | 1575.666                 | 694.43               |

Source: MAO



As shown in table 16 the municipality has surplus in the supply of sugarcane (265504.05 MT), rice (10140.31 MT), mango (21157.99 MT) and vegetables (3092.02), poultry (2630.32 MT), livestock (2596.64 MT), milkfish (649.43 MT) and coconuts (448.76 MT) and they are sold in the neighbouring municipalities or in the city of Iloilo. Apparently, there are shortage in the supply of corn (1545.95 MT), root crops (1150.74 MT), and freshwater fishes (3098.34 MT).

Table AG-17. Ten year Projection of Food Requirement for Anilao, 2017-2026

| Per capita Dietary/ Food Requirement | Standard Requirement | 2017         | 2018         | 2019         | 2020         | 2021         | 2022         | 2023         | 2024         | 2025         | 2026         |
|--------------------------------------|----------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Agriculture Product                  | Kg./Year             | 29,179.00    | 29,430.00    | 29,684.00    | 29,939.00    | 30,196.00    | 30,456.00    | 30,718.00    | 30,982.00    | 31,249.00    | 31,517.00    |
| Cereals and Cereal Products          | 124.00               | 3,618,196.00 | 3,649,320.00 | 3,680,816.00 | 3,744,304.00 | 3,744,304.00 | 3,776,544.00 | 3,809,032.00 | 3,841,768.00 | 3,874,876.00 | 3,908,108.00 |
| Sugar and Syrup                      | 70.00                | 2,042,530.00 | 2,060,100.00 | 2,077,880.00 | 2,095,730.00 | 2,113,720.00 | 2,131,920.00 | 2,150,260.00 | 2,168,740.00 | 2,187,430.00 | 2,206,190.00 |
| Starchy Roots and Tubers             | 60.00                | 1,750,740.00 | 1,765,800.00 | 1,781,040.00 | 1,796,340.00 | 1,811,760.00 | 1,827,360.00 | 1,843,080.00 | 1,858,920.00 | 1,874,940.00 | 1,891,020.00 |
| Vegetables                           | 39.00                | 1,137,981.00 | 1,147,770.00 | 1,157,676.00 | 1,167,621.00 | 1,177,644.00 | 1,187,784.00 | 1,198,002.00 | 1,208,298.00 | 1,218,711.00 | 1,229,163.00 |
| Fruits                               | 28.00                | 817,012.00   | 824,040.00   | 831,040.00   | 838,292.00   | 845,488.00   | 852,768.00   | 860,104.00   | 867,496.00   | 874,972.00   | 882,476.00   |
| Dried Beans, Nuts and Seeds          | 4.00                 | 116,716.00   | 117,720.00   | 118,736.00   | 119,756.00   | 120,784.00   | 121,824.00   | 122,872.00   | 123,928.00   | 124,996.00   | 126,068.00   |
| Milk and Milk Products               | 16.00                | 466,864.00   | 470,880.00   | 474,944.00   | 479,024.00   | 483,136.00   | 487,296.00   | 491,488.00   | 495,712.00   | 499,984.00   | 504,272.00   |
| Eggs                                 | 4.00                 | 116,716.00   | 117,720.00   | 118,736.00   | 119,756.00   | 120,784.00   | 121,824.00   | 122,872.00   | 123,928.00   | 124,996.00   | 126,068.00   |
| Fish, Meat and Poultry               | 54.00                | 1,575,666.00 | 1,589,220.00 | 1,602,936.00 | 1,616,706.00 | 1,630,584.00 | 1,644,624.00 | 1,658,772.00 | 1,673,028.00 | 1,687,446.00 | 1,701,918.00 |
| Miscellaneous                        | 7.00                 | 204,253.00   | 206,010.00   | 207,788.00   | 209,573.00   | 211,372.00   | 213,192.00   | 215,026.00   | 216,874.00   | 218,743.00   | 220,619.00   |

Source: MAO

Table 17 shows the ten year (2017-2026) projected food requirement for the municipality for the different food items. Rice produced in municipality is adequate for the populace consumption for next ten years. This is reflected in tabulated on the food and supply analysis. Surplus in rice production are sold to other municipalities. However, there will an adequacy in other food items such as root crops, corn and other vegetable. There is a need to intensify production of these crops.



Issues on shortage of some commodity crops, low productivity, and lack of marketing opportunities, and most of all to sustain the projected demand on food sufficiency, the following options are to be considered:

1. Approve, adopt and Implement the Organic Agriculture of the Philippines;
2. Construct/Provide more irrigation facilities;
3. Conduct more trainings on sustainable crop, fishery and livestock production;
4. Orientation, Implementation of fishery and other laws;
5. Strengthen rural based organizations for resiliency and sufficiency through capability buildings;
6. Establish a stable market for agricultural and fisheries products;
7. Establish a value adding system for agricultural and fishery products;
8. Establish environment friendly agriculture related industries;
9. Enhance farm mechanization;
10. Establish / improve post harvest support facilities;
11. Construction of Farm-to-Market Roads to facilitate better accessibility;
12. Zero conversion of agricultural lands to other uses.



**Agriculture Sector Analysis Matrix**

| Technical Findings/Observation | Implications (Effects)   | Policy Options/Interventions  |
|--------------------------------|--|---|
| Low crop production            | Food shortage<br>Low income of farmers   | <ul style="list-style-type: none"> <li>- Intensify production by the provision of Irrigation and adequate post-harvest facilities</li> <li>- Provide subsidy to farmers</li> <li>- Conduct climate field school</li> <li>- Promote multiple cropping and crop rotation</li> <li>- Promote organic farming</li> <li>- introduce climate resilient crops</li> <li>- Additional irrigation facilities</li> </ul> |
| Low crop production            | Food shortage<br>Low income of farmers   | <ul style="list-style-type: none"> <li>- Intensify production by the provision of Irrigation and adequate post-harvest facilities</li> <li>- Provide subsidy to farmers</li> <li>- Conduct climate field school</li> <li>- Promote multiple cropping and crop rotation</li> <li>- Promote organic farming</li> <li>- introduce climate resilient crops</li> <li>- Additional irrigation facilities</li> </ul> |
| Incidence of Pest and Diseases | <ul style="list-style-type: none"> <li>• Low yield</li> <li>• Low income of farmers</li> </ul> | <ul style="list-style-type: none"> <li>- Practice of Integrated Pest Management</li> <li>- Provide subsidy</li> <li>- Conduct climate field school</li> <li>- Promote multiple cropping and crop rotation</li> <li>- Promote organic farming</li> <li>- introduce climate resilient crops</li> <li>- Additional irrigation facilities</li> </ul>  |





|   |   |   |
|---|---|---|
| Poor road condition   | <ul style="list-style-type: none"> <li>• High transportation cost</li> <li>• Low income of farmers</li> </ul> | <ul style="list-style-type: none"> <li>• Construction of more farm to market roads</li> </ul>   |
| High cost of farm inputs  | <ul style="list-style-type: none"> <li>• Low income of farmers</li> </ul>                                     | <ul style="list-style-type: none"> <li>• Provide subsidy in the farm inputs of the farmers</li> </ul>   |
|   |   | <ul style="list-style-type: none"> <li>• - Tap wholesale buyers for a possible high prize to the products</li> </ul>  |
|   |   | <ul style="list-style-type: none"> <li>• - Promote organic farming</li> </ul>   |
| Surplus in other agricultural crops                             | Low prices of farm products   | <ul style="list-style-type: none"> <li>• Promote value adding technologies</li> <li>• Marketing linkages/strategies</li> </ul>  |
| Malpractice of Agri Farming                                     | <ul style="list-style-type: none"> <li>• Soil erosion/degraddation</li> </ul>                                 | <ul style="list-style-type: none"> <li>• -Application of diversified farming/ Organic Farming</li> <li>• Practice SALT Farming</li> <li>• Plant more trees along sloping areas</li> </ul> |
| Decreasing supply of fish and other marine products             | <ul style="list-style-type: none"> <li>• Shortage of marine products</li> </ul>                               | <ul style="list-style-type: none"> <li>• Impose policy/law/ordinance on fish catching during off season</li> </ul>  |
|   | <ul style="list-style-type: none"> <li>• - Low income for the fisherfolks</li> </ul>                          | <ul style="list-style-type: none"> <li>• -Regulate fishing vessel activities</li> </ul>   |
|   |   | <ul style="list-style-type: none"> <li>• - Implement RA 10654</li> <li>• - Revision/Amendments of Municipal Fishing Ordinance</li> </ul>  |
| Inadequacy of other food items such as corn, root crops, squash | <ul style="list-style-type: none"> <li>• Nutritional status of population affected</li> </ul>                 | <ul style="list-style-type: none"> <li>• Provide alternative livelihood programs</li> <li>• Intensify production of agricultural crops</li> </ul>   |



| Technical Findings/Observation   | Implications   | Policy Option/Observation  |
|--|--|--|
| <ul style="list-style-type: none"> <li>• 237.86 has. riceland in 20 barangays, 137.05 has. sugarcane in 19 barangays, and 10.54 mango plantation in 3 barangays have moderate risk to flooding</li> <li>• 31.68 has. of riceland in Barangays Serallo &amp; Dangula-an) &amp; 3.44 has. of mango plantation in Barangay Vista Alegre are high risk to flooding</li> <li>• 151.18 has. of sugarcane in 5 barangays (Balunos, Balabag, Camiros, Guipis &amp; Manganese have moderate risk to landslide</li> <li>• 238.4 has. of sugarcane in 5 barangays (Balabag, Balunos, Guipis Manganese &amp; Palaypay) have moderate risk to landslide</li> <li>• 85.64 has. in 5 barangays (Balabag, Guipis, Sambag Culob, San Carlos &amp; Vista Alegre have moderate risk to landslide</li> </ul> | <ul style="list-style-type: none"> <li>• Insufficient water supply for irrigation</li> <li>• Decrease production yield</li> <li>• Decrease food supply</li> <li>• Low income of farmers</li> <li>• No alternative Livelihood for farmers</li> <li>• Poverty</li> <li>• Malnutrition</li> </ul> | <ul style="list-style-type: none"> <li>• Provision of Irrigation system such as swis,sfr,sdd</li> <li>• Introduce climate resilient crop varieties and farm technologies</li> <li>• Promote multiple cropping and crop rotation</li> <li>• Conduct Climate Field School</li> <li>• Provision of Early Warning System</li> <li>• Subsidy to farmers</li> <li>• Provision of alternative livelihood</li> <li>• Rain Harvesting</li> <li>• Crop insurance for farmers</li> <br/> <li>• Introduce SALT Farming Technology</li> <li>• Planting of tress along Sloping areas</li> <li>• Promote intercropping</li> </ul> |
| <ul style="list-style-type: none"> <li>• 431 hectares have moderate risk to flooding in Barangays Badiang ,Dangula-an, Pantalan, Sambag Culob, Serallo &amp; Sta. Rita</li> <li>• 277.51 are high risk to flooding in Barangay Pantalan and Sta. Rita</li> </ul>   | <ul style="list-style-type: none"> <li>• Decrease fish production</li> <li>• Low income of fisherfolks</li> <li>• Decrease food supply</li> <li>• Threatened food security</li> <li>• No alternative livelihood for fisherfolks</li> </ul>   | <p>Provision of Crop Insurance to fishpond owners<br/>                     Planting mangroves and beach forest trees along coastal areas<br/>                     Provision of alternative livelihood</p>  |



**FORESTRY SUB-SECTOR**

**Profile and Analysis of the Existing Situation**

Anilao’s total land area is consist of 8,092.47 hectares (79.79%) of alienable and disposable land and 2,049.60 (20.21 %) hectares of FFL areas divided into forestlands 961.68 hectares and coastal as shown in table FO-12. Fifteen barangays were included in the FFL and 8 of them were upland namely; Balunos, Guipis, Manganese, Balabag, Vista Alegre, Camiros, Mostro and Cag-an while 7 are coastal namely; Serallo, Badiang, Pantalan, Sambag Culob, Sta. Rita, San Carlos and Dangula-an.

**Table FO-1. Land Classification in the Municipality of Anilao, Year2016**

| Land Classification | Area             | %           |
|---------------------|------------------|-------------|
| A & D               | 8,092.47         | 79.7935%    |
| Forestlands         | 961.68           | 9.4824%     |
| Coastal/Mangroves   | 1,087.62         | 10.7242%    |
| <b>Total</b>        | <b>10,141.77</b> | <b>100%</b> |

Source: Administrative Map, DENR Land Classification 2016 year.

There are three (3) major river systems in the municipality that support the water needs of the people namely Anilao River, Dangula-an River, and Tinorian River. These major rivers serve as a source of water for irrigation. Downstream along the FFL areas, water from major rivers is used for fishpond operation fishing and household activities.

Waste disposal of communities affect the quality of water. The use of commercial fertilizer and pesticides in farming could contaminate the water bodies, specifically the rivers and down towards the sea. Fish kills and red tide occurs as a symptom of water contamination.



The recent vegetative cover of the FFL are annual crops, perennial crops, shrubs/brushlands, wooded grassland, grassland, built-up area, mangrove forest, fishpond and sea water with a total area of 2049.30 hectares. It is prominent that the large portion is the fishpond representing 48.02%. Next is shrubs/brushland which is 26.98% and annual crops is 15.44%. Others are below 5%.

Within the FFL areas, 12.81 hectares is planted with bamboo, 4.82 hectares is currently used as built up areas or scattered settlements in FFL; 17.77 hectares is corn field; 14.03 used as mango plantation; 57.02 hectares is mixed mangrove forest; 99.26 hectares is planted with natural grassland; 46.70 hectares is used in other cultivated annual crops; 461.77 hectares in other wooded I and shrubs; 2.95 hectares is used in peanut; 32.29 hectares is planted with rice paddies while 76.51 hectares and 193.96 hectares is used in sugarcane and wooded grassland, respectively. Majority of the FFL at the coastal area is used as fishpond covering 1,029.41 hectares and other crops.

### **Mangrove or Natural Forest**

Seven (7) barangays in the FFL area has mangrove covers with a total area of 1,087.62 hectares. Naturally grown mangrove land initially settled in the FFL areas especially in Barangays Badiang, Serallo, Sambag Culob, Pantalan, Sta. Rita, San Carlos, Dangula-an while National Greening Project (NGP) has long been implemented in Barangays of Manganese, Balabag, Cag-an.



Table FO-2. Distribution of Area by Barangay Administrative Coverage

| Barangay            | Area    |             |                      | Total    | %       |
|---------------------|---------|-------------|----------------------|----------|---------|
|                     | A & D   | Forestlands | Coastal/<br>Mangrove |          |         |
| Agbatuan            | 264.32  |             |                      | 264.32   | 2.606%  |
| Badiang             | 419.17  |             | 213.87               | 633.04   | 6.242%  |
| Balabag             | 641.89  | 282.21      |                      | 924.1    | 9.112%  |
| Balunos             | 464.89  | 145.03      |                      | 609.92   | 6.014%  |
| Cag-an              | 1059.18 | 24.03       |                      | 1083.21  | 10.681% |
| Camiros             | 235.16  | 32.52       |                      | 267.68   | 2.639%  |
| Dangula-an          | 282.57  | 109.01      |                      | 391.58   | 3.861%  |
| Guipis              | 221.25  | 231.41      |                      | 452.66   | 4.463%  |
| Manganese           | 890.65  | 201.73      |                      | 1092.38  | 10.771% |
| Medina              | 179.15  |             |                      | 179.15   | 1.766%  |
| Mostro              | 754.89  | 14.19       |                      | 769.08   | 7.583%  |
| Palaypay            | 538.6   |             |                      | 538.6    | 5.311%  |
| Pantalan            | 148.4   |             | 299.66               | 448.06   | 4.418%  |
| Poblacion           | 191.86  |             |                      | 191.86   | 1.892%  |
| Sambag Culob        | 388.81  |             | 202.14               | 590.95   | 5.827%  |
| San Carlos          | 508.16  |             | 174.1                | 682.26   | 6.727%  |
| San Juan Crisostomo | 283.52  |             |                      | 283.52   | 2.796%  |
| Serallo             | 119.67  |             | 41.19                | 160.86   | 1.586%  |
| Sta. Rita           | 184.5   |             | 47.65                | 232.15   | 2.289%  |
| Sto. Rosario        | 127.93  |             |                      | 127.93   | 1.261%  |
| Vista Alegre        | 187.9   | 30.56       |                      | 218.46   | 2.154%  |
| TOTAL               | 8092.47 | 1070.69     | 978.61               | 10141.77 | 100%    |

Source: MAO

Table FO-2. shows the land area distribution of 21 barangays by administrative coverage.



There are five (5) sub-watersheds delineated and identified in Anilao namely: Anilao River Subwatershed, Dangulaan River Subwatershed, Tinorian Subwatershed, Bagongbong Creek Subwatershed and Alacaygan Sub-watershed.

Anilao River Sub-watershed is the largest with an area of 4,524.26 hectares composed of Barangays Guipis, Balunos, Manganese, Mostro, Palaypay, Poblacion, San Carlos, Sta. Rita, and Balabag while Tinorian Sub-watershed is the smallest with only 1,298.07 hectares.

Other sub watersheds please refer to the following table:

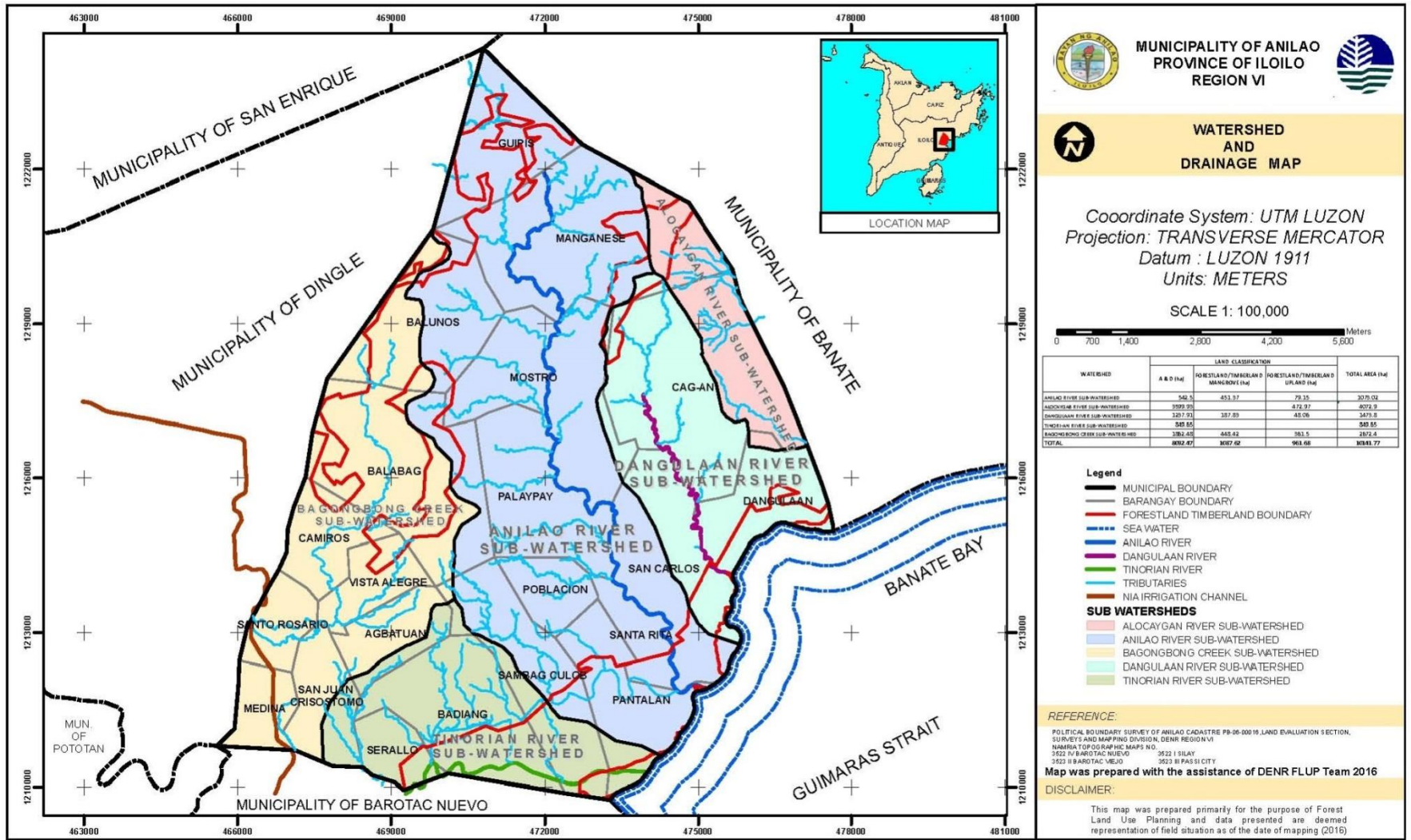
**Table FO-3. Watershed area of Anilao**

| Watershed                      | Area     | Existing Use/Upland-Lowland Link   |
|--------------------------------|----------|--|
| Anilao River Sub-Watershed     | 4,524.26 | Headwaters from Barangays Manganese, Guipis, Balunos and Mostro mainly used for communal irrigations and drains to Anilao River .  |
| Dangula-an River Sub-Watershed | 1,473.81 | Drains to Dangulaan River. Headwaters are from Mt. Patugpahon and Brgy. Cag-an. Contributor to open source irrigation and domestic uses.   |
| Tinorian River Sub-Watershed   | 1298.07  | Drains to Tinorian River. Headwater from Vista Alegre, Balabag, San Juan Crisostomo, Camiros, and Agbatuan. Contributor to open source irrigation system and Small Diversion Dam at Brgy. Badiang. |
| Bagongbong Creek Sub-Watershed | 2,223.98 | Drains to Tinorian River. HeadwaterTinorian sub-watershed.   |
| Alacaygan River Sub watershed  | 621.65   | Drains to Alacaygan River in the Municipality of Banate  |

Source: MENRO



Figure FO-1. Watershed Map of Anilao



Source:FLUP





The watershed areas of Anilao present different hazards. Anilao River Sub-watershed, Dangula-an River Sub-watershed and Tinorian River Sub-watersheds are generally with high landslide susceptibility, flood prone and storm surges, while Bagongbong Creek has high landslide susceptibility and flood prone and lastly, the Alacaygan River Sub-watershed is high landslide susceptible.

**Table FO-4. Danger Areas Per Watershed**

| Watershed                      | High Landslide Susceptibility | Flood Prone | Storm Surges |
|--------------------------------|-------------------------------|-------------|--------------|
|                                | Anilao River Sub-Watershed    | x           | x            |
| Dangula-an River Sub-Watershed | x                             | x           | x            |
| Tinorian River Sub-Watershed   | x                             | x           | x            |
| Bagonbong Creek Sub-Watershed  | x                             | x           |              |
| Alacaygan River sub watershed  | x                             |             |              |
| <b>TOTAL</b>                   |                               |             |              |

Source:MAO



**Production and Protection**

Forest and Forestlands are zoned into production and protected areas. Parcels from barangays Manganese, Balunos, Guipis, Balabag, Camiros, Vista Alegre and Cag-an in the upland parts the municipality are both production and protected FFLs while all coastal FFL barangays are considered protected since it is a mangrove area.

Although there is no forest concessionaire in the municipality, production areas in upland barangays are planted with production trees, sugarcane, agricultural crops and pasture. Production trees includes ipil-ipil, mahogany, gemelina, madre de cacao, and assorted fruit trees. These trees were used as lumber, charcoal and wood fuel as livelihood. There is no available production data on the mentioned economic activities in forest sector.

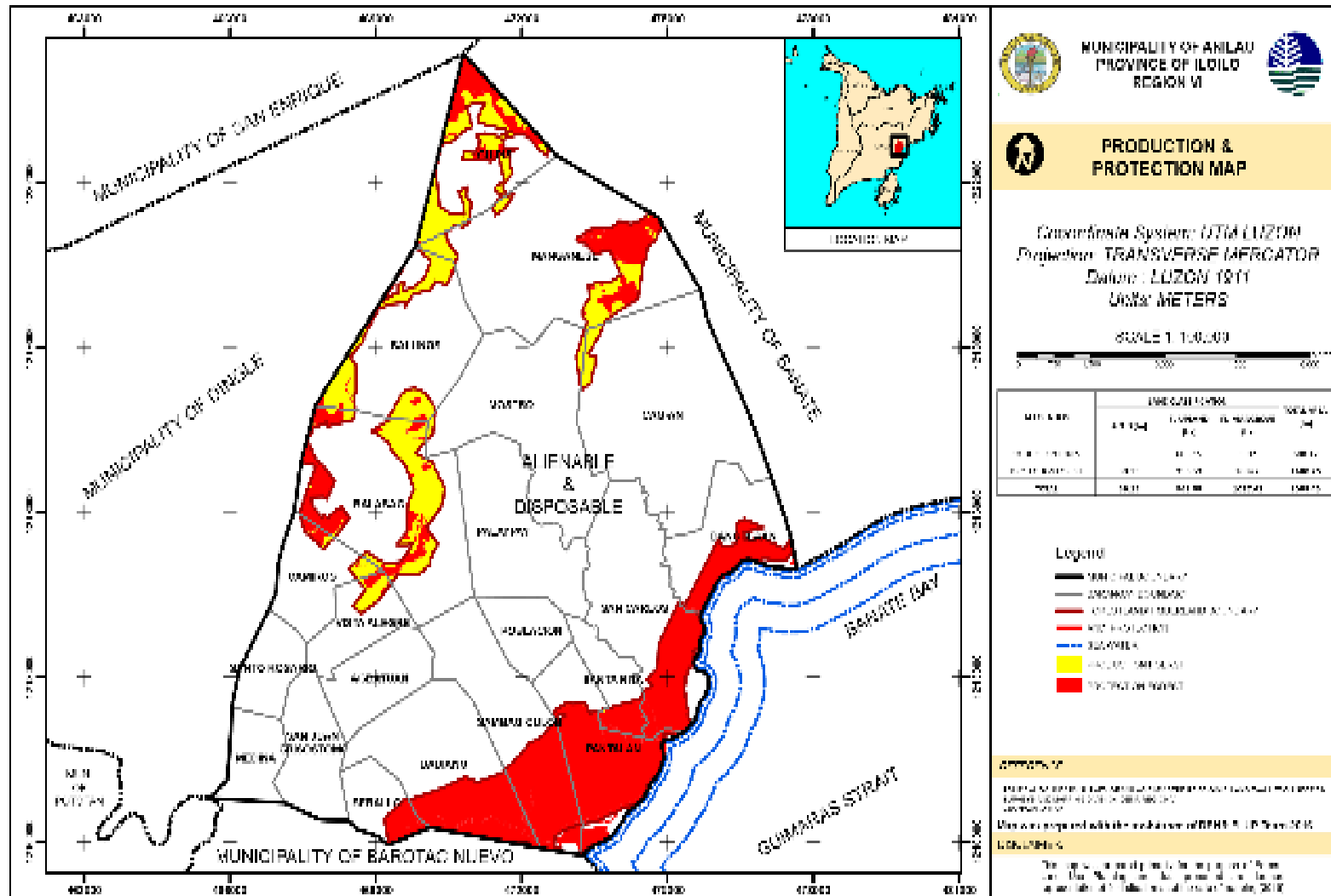
**Table FO-5. Land Classification of the Forest and Forest Land in Anilao**

| ALLOCATION        | LAND CLASSIFICATION |                |                  | TOTAL AREA (ha) |
|-------------------|---------------------|----------------|------------------|-----------------|
|                   | A & D (ha)          | FL UPLAND (ha) | FL MANGROVE (ha) |                 |
| PRODUCTION FOREST |                     | 605.15         | 3.03             | <b>608.18</b>   |
| PROTECTION FOREST | 39.13               | 356.53         | 1084.59          | <b>1480.25</b>  |
| <b>TOTAL</b>      | <b>39.13</b>        | <b>961.68</b>  | <b>1087.62</b>   | <b>2088.43</b>  |

Source: MAO



Figure FO-2. Production and Protection Map of Anilao



Source:FLUP



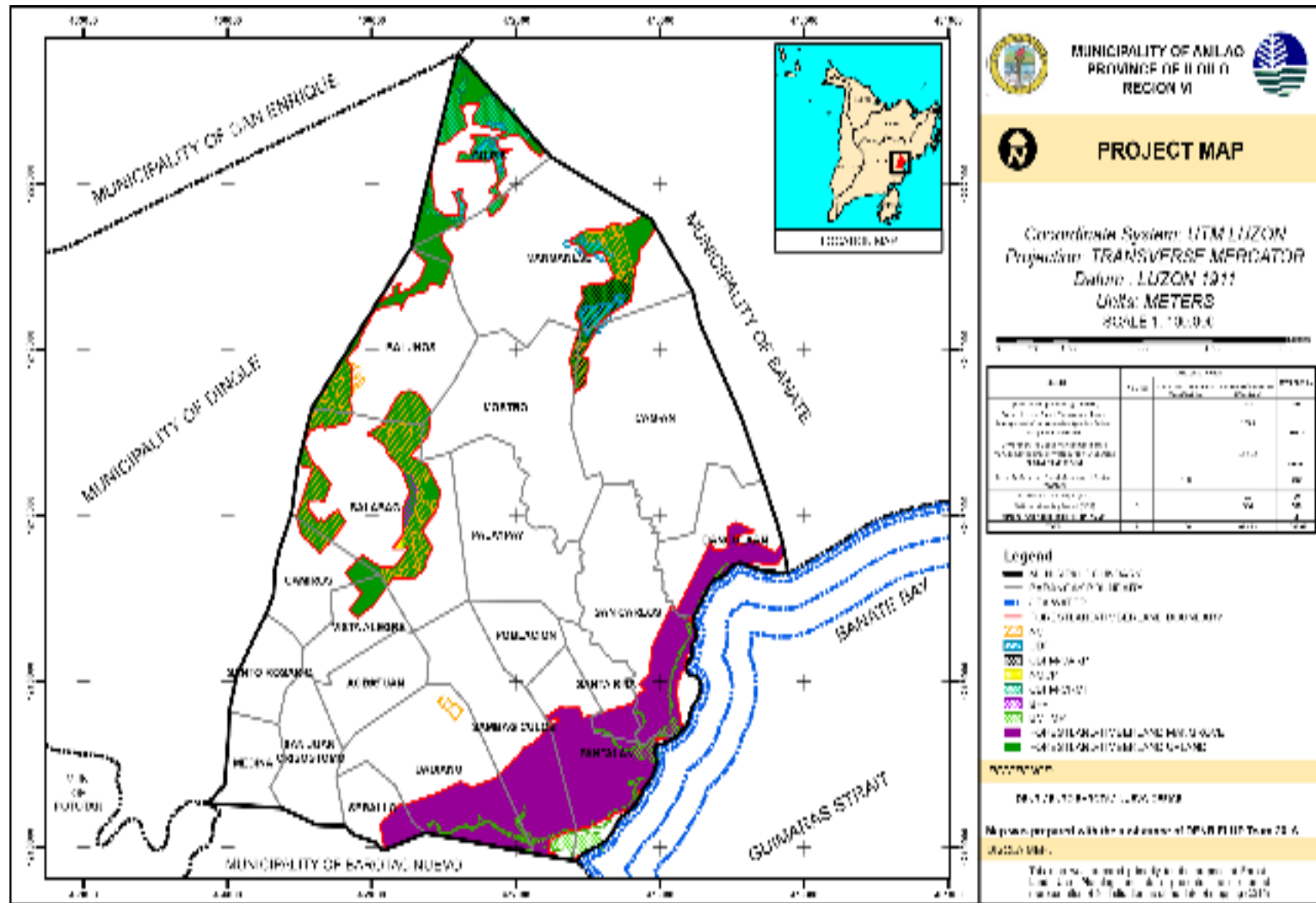
Protected areas which belong to the FFL are those that have an elevation of 101 meters above sea level and above. It is located at Barangays Manganese, Guipis, Balunos, Balabag, Vista Alegre and Camiros. Some parts of these are utilized as agricultural settlement.

Reforestation projects of the government are implemented for rehabilitation of FFL areas. Beach and Mangrove Forest Management Project (BMFMP) are being implemented in various coastal barangays of the municipality. This involves planting of mangrove tree species along the shoreline and in under-utilized fishponds.

In upland FFL areas, Upland Development Project (UDP), National Greening Project (NGP), Community-Based Forest Management-CARP (CBFM-CARP) and CBFM-CRMF, Barangay Forest Project (BFP), and National Grid Corporation (NGCP) is implemented in Barangay Balunos, Manganese, Guipis, Cag-an, Balabag and Vista Alegre.



Figure FO-3. Project Map, CENRO-DENR 2016



Source:FLUP



Forest and Forestland Areas are susceptible to hazards like flood, landslide and storm surge. Protected areas in the uplands are susceptible to landslides. Areas along the banks of the river and creeks and those in the coastal areas are prone to flood. Storm surge is prone to all coastal barangays.

Table FO-6.Inventory of Hazards

| BARANGAY     | HAZARDS |   |   |    |           |   |   |            |   |   |
|--------------|---------|---|---|----|-----------|---|---|------------|---|---|
|              | FLOOD   |   |   |    | LANDSLIDE |   |   | STORMSURGE |   |   |
|              | L       | M | H | VH | L         | M | H | L          | M | H |
| Badiang      | X       | X | X |    | X         | X | X |            |   |   |
| Balabag      | X       | X | X | X  | X         | X | X |            |   |   |
| Balunos      | X       | X | X | X  | X         | X | X |            |   |   |
| Cag-an       | X       | X | X | X  | X         | X | X |            |   |   |
| Camiros      | X       | X | X |    | X         | X | X |            |   |   |
| Dangula-an   | X       | X | X | X  | X         | X |   | X          | X | X |
| Guipis       |         | X | X | X  | X         | X | X |            |   |   |
| Manganese    | X       | X | X | X  | X         | X | X |            |   |   |
| Mostro       | X       | X | X | X  | X         | X | X |            |   |   |
| Pantalan     | X       | X | X | X  | X         |   |   | X          | X | X |
| Sambag Culob | X       | X | X | X  | X         | X | X | X          | X | X |
| San Carlos   | X       | X | X | X  | X         | X |   | X          | X | X |
| Serallo      | X       | X | X | X  |           |   |   | X          | X |   |
| Sta. Rita    |         |   |   |    | X         |   |   | X          | X | X |
| Vista Alegre |         |   |   |    | X         | X | X |            |   |   |

Source:MAO

Legend: L-Low

M-Moderate

H-High

VH-Very High



### Issues and Conflict

The forest land of Anilao is currently has issues on illegal cutting , kaingin and conversion of forestlands to agricultural and a few settlements within, and lastly, issuance of Certificate of Title on forest land into an alienable and disposable land.

The Forest Land Use Plan of the municipality was adopted by the Sangguniang Bayan. Plans on resolving these conflicts are also included. The organization of settlers and locals and hiring of Bantay Gubat on the preservation of the forest area is necessary. Production forest and agro-forestry is a major program foreseen to resolve problems of kaingin and conversions to agricultural land. Settlers are thought to become caretakers of the FFL areas.

Massive reforestation activities and Information Education campaign for 10 years in both upland and mangrove areas and watershed areas would partially solve the problems of soil erosion, flooding, increase in temperature, water shortage, polluted air, bio-diversity degradation and other environmental in nature.

Creation of task force or Bantay Gubat and Implementation of Environmental laws in the municipality in coordination with DENR will be one of the many solutions to forest degradation.





**FOREST SECTOR ANALYSIS MATRIX**

| Ecosystem     | Technical Findings/Observation   | Implications (Effects)  | Policy Options/Interventions   |
|---------------|--|---|--|
| Forest/upland | Rampant "kaingin system"   | Denuded forest Increased exposure to hazards  | Strict implementation of "No kaingin system" policy; Planting trees advocacy   |
|               | Illegal logging  | Increased exposure to hazards   | Enforcement of laws on illegal logging; Planting trees advocacy  |
|               | IP's in watershed area   | Extinction of animal endangered species   | Provide livelihood program and relocation site   |
|               |  | Destruction of Biodiversity   |  |
|               | Laxity in the implementation of forest protective policies             | Flooding, landslides, erosions, siltation   | Strict policy implementation   |
|               | Non awareness of the people of the adverse effects of destroyed forest | Irresponsible cutting of trees  | Motivation Values orientation education  |
|               | Forest Degradation   | <ul style="list-style-type: none"> <li>- Rising temperature</li> <li>- Soil erosions</li> <li>- River Siltation</li> <li>- Forest Denudation</li> <li>- Forest fires</li> </ul> | <ul style="list-style-type: none"> <li>- Impose law in environmental protection</li> <li>- Implement no cutting policy</li> <li>- Implement proper land use as classified by the DENR</li> <li>- Reforestation/ Promote tree growing program</li> </ul> <p>Formulation &amp; Implementation of FLUP<br/>Strengthening of Bantay-Gubat</p> <ul style="list-style-type: none"> <li>- Establishment of MENRO</li> <li>- IECs</li> </ul> |



## COMMERCE AND TRADE SUB-SECTOR

### Profile and Analysis of the Existing Situation

Trade and commerce in the Municipality of Anilao is centered at its public market located at the Poblacion area of the town, around 500 meters away from the seat of its government. While Anilao is blessed with the abundance of natural resources-from the produce of its vast lands and teeming municipal waters, its economic activities lack vitality because most of its produce is marketed outside the town. Strategically, commerce and trade is also affected by its being in between two bigger municipalities of Barotac.Nuevo and Banate.

The leading kind of trade in the municipality is by way of retail as indicated by the number of retail stores present and the absence of a bagsakan center and fish market. Many Anilaonons also engage in house to house vending of their products, especially the basic commodities.

The local government has enacted the Market Code and Investment Incentives Code to boost trade and commerce within the municipality.

A new public market had been constructed in 2014 housing 50 stalls that vend basic commodities like rice, meat, fruits, vegetables and other supplies. Establishments like a drugstore, a parlor, a photography studio and a pawnshop are also present in the public market.

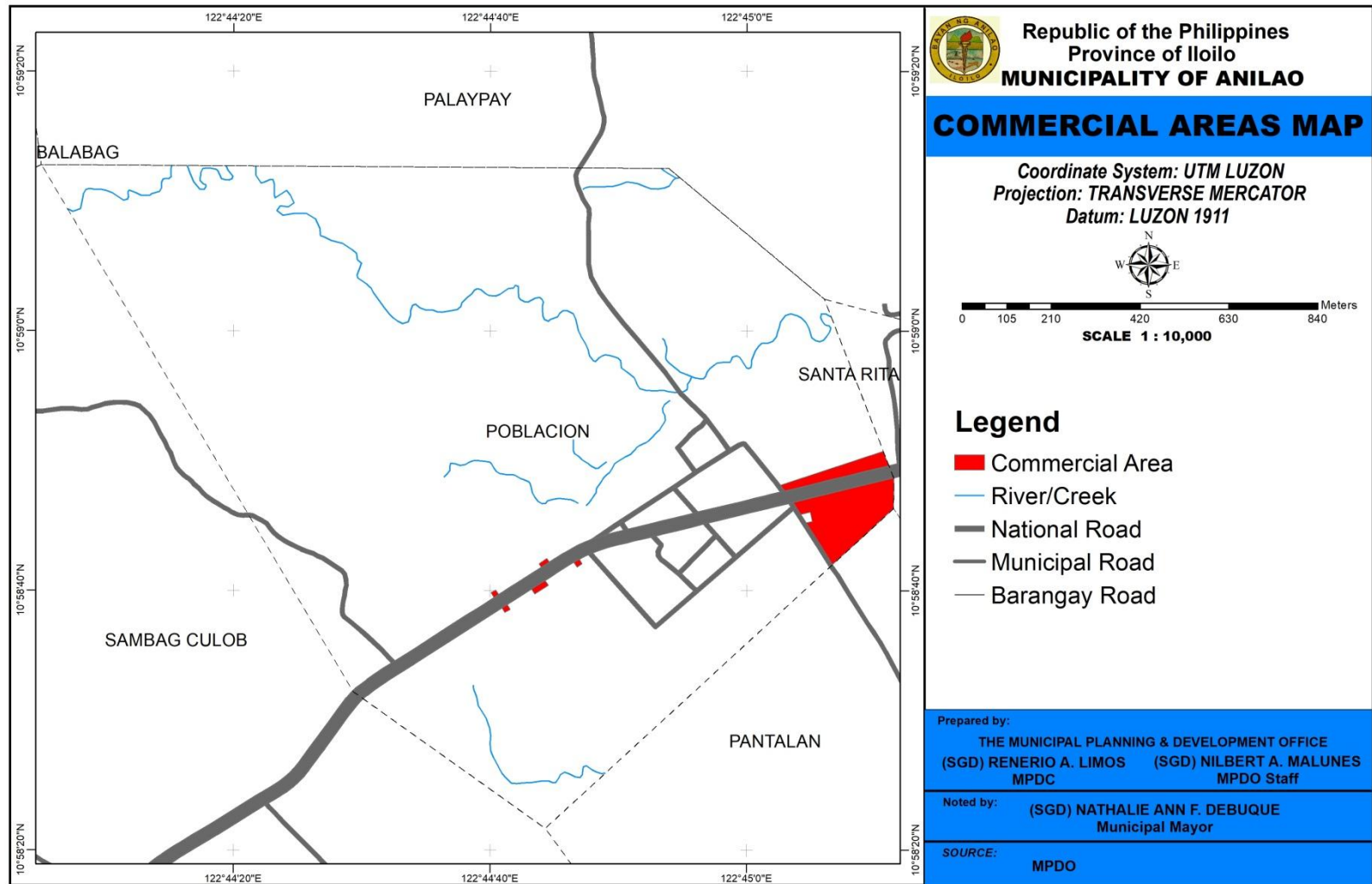
To energize economic activity therein, administrative offices like the Liga ng mga Barangay, the employees' cooperative, and the Department of Agrarian Reform among others are accommodated inside the market area. A rural bank had also been invited to add vigor to the public market.

Improvements from then on had been constantly implemented to attract more investors like the food court area, parking areas and additional stalls. Portion of the market lot had been leased to gas station while some portions were donated to PNP and BFP Offices for the construction of their offices.

The municipality also has several water refilling stations, several bakeries, furniture shops and restaurants to encourage a more lively commerce within the town.



Figure CT-1.Commercial Areas Map



**Table CT-1. Inventory of Commercial Areas, Year 2016**

| Type of Commercial Areas | Location   | Area (sq m/ha) | Market Catered |                  |
|--------------------------|--|----------------|----------------|------------------|
|                          |  |                | Local          | Outside (export) |
| Public Market            | Poblacion  | 2.0 Ha.        | ✓              | -                |
| Commercial strip         | Located along Public Market and Anilao National High School area | 0.6            | ✓              | -                |

Source: Treasurer’s Office

Table CT-1 shows that the total commercial area of the municipality is approximately 2.6 hectares comprising the commercial strip along Public Market area in Poblacion and the commercial strip along the Anilao National High School.

**Table CT-2. Historical Data on Commercial Areas**

| Location                  | Commercial Areas (ha) |       | % Increase/<br>Decrease |
|---------------------------|-----------------------|-------|-------------------------|
|                           | 2015                  | 2016  |                         |
| Serallo (Poultry)         | 0.30                  | 0.30  | 0                       |
| San Juan (Poultry)        | 0.50                  | 0.50  | 0                       |
| Cagan (Poultry)           | 11.62                 | 11.62 | 0                       |
| Sambag Culob (Poultry)    | 0.10                  | 0.10  | 0                       |
| Poblacion (Public Market) | 1.00                  | 2.00  | 100%                    |
|                           |                       |       |                         |

Source: LGU Business Permits and Licensing Office

Based on the data shown in Table CT-3, only the Public Market has increased in area in 2016 due to the implementation of the expansion project. The expansion was only realized in 2016 upon acquiring funds from the Performance Challenge Fund.



Table CT-3. Business Permits Granted for the Past Five Years

| Business Permits                                      | 2012       |              | 2013       |            | 2014       |            | 2015       |              | 2016       |              |
|---|------------|--------------|------------|------------|------------|------------|------------|--------------|------------|--------------|
|   | No.        | %            | No.        | %          | No.        | %          | No.        | %            | No.        | %            |
| <b>Primary</b>  |            |              |            |            |            |            |            |              |            |              |
| Poultry Farm  | 0          | 0%           | 3          | 7.69%      | 3          | 3.23%      | 2          | 25.00%       | 4          | 12.50%       |
| Fishing   | 4          | 80%          | 35         | 89.74%     | 89         | 95.70%     | 5          | 62.50%       | 27         | 84.38%       |
| Mining & Quarrying                                    | 1          | 20%          | 1          | 2.56%      | 1          | 1.08%      | 1          | 12.50%       | 1          | 3.13%        |
| Primary Sub-Total                                     | <b>5</b>   | <b>5%</b>    | <b>39</b>  | <b>33%</b> | <b>93</b>  | <b>48%</b> | <b>8</b>   | <b>6%</b>    | <b>32</b>  | <b>20%</b>   |
| <b>Secondary</b>                                      |            |              |            |            |            |            |            |              |            |              |
| Hollow Blocks/Furniture                               | 2          | 66.67%       | 1          | 50%        | 3          | 75%        | 2          | 66.67%       | 1          | 33.33%       |
| Water Refilling Station                               | 1          | 33.33%       | 1          | 50%        | 1          | 25%        | 1          | 33.33%       | 2          | 66.67%       |
| Secondary Sub-Total                                   | <b>3</b>   | <b>3%</b>    | <b>2</b>   | <b>2%</b>  | <b>4</b>   | <b>2%</b>  | <b>3</b>   | <b>2%</b>    | <b>3</b>   | <b>2%</b>    |
| <b>Tertiary</b>                                       |            |              |            |            |            |            |            |              |            |              |
| Wholesale & Retail trade/                             | 85         | 84.16%       | 61         | 77.22%     | 79         | 81.44%     | 97         | 76.98%       | 94         | 75.20%       |
| Personal & Household Goods                            | 1          | 0.99%        | 2          | 2.53%      | 2          | 2.06%      |            | 0%           |            | 0.00%        |
| Financial Intermediation                              | 4          | 3.96%        | 4          | 5.06%      | 4          | 4.12%      | 4          | 3.17%        | 5          | 4.00%        |
| Refreshment/Carinderia                                | 6          | 5.94%        | 5          | 6.33%      | 5          | 5.15%      | 10         | 7.94%        | 12         | 9.60%        |
| Education   | 1          | 0.99%        | 1          | 1.27%      | 1          | 1.03%      | 1          | 1%           | 1          | 0.80%        |
| Clinics & Drugstores                                  | 2          | 1.98%        | 4          | 5.06%      | 4          | 4.12%      | 2          | 1.59%        | 5          | 4.00%        |
| Storage & Communication Real Estate                   | 2          | 1.98%        | 2          | 2.53%      | 2          | 2.06%      | 2          | 1.59%        | 1          | 0.80%        |
| Other Community, Social & Personal Service Activities | <b>0</b>   | <b>0.00%</b> | <b>0</b>   | <b>0%</b>  | <b>0</b>   | <b>0%</b>  | <b>10</b>  | <b>7.94%</b> | <b>7</b>   | <b>5.60%</b> |
| Tertiary Sub-Total                                    | <b>101</b> | <b>93%</b>   | <b>79</b>  | <b>66%</b> | <b>97</b>  | <b>50%</b> | <b>126</b> | <b>92%</b>   | <b>125</b> | <b>78%</b>   |
| <b>TOTAL</b>  | <b>109</b> |              | <b>120</b> |            | <b>194</b> |            | <b>137</b> |              | <b>160</b> |              |

Source: Treasurer's Office/BPLO

Based from the data shown in Table CT-3, Tertiary Businesses that includes wholesale and retail stores, carinderias and/or refreshments and drugstores have the most number in terms of issuance of permits for the past five (5) years. Anilao's commerce and trade is dependent mostly upon wholesale and



retail business for the past five years. Likewise, there are a number of secondary and primary type of business that were licensed as shown in five years data. The improvement of the Public Market is seen as a factor that will trigger the rise of other kinds of business in the near future.

**Table CT- 4. Inventory of Commercial Establishment by Economic Activities**

| Economic Activities                                     | 2015                  |                   | 2016                  |                   | % Inc/(Dec.) Over Previous Year |                   |
|---|-----------------------|-------------------|-----------------------|-------------------|---------------------------------|-------------------|
|   | No. of Establishments | No. of Employment | No. of Establishments | No. of Employment | No. of Establishments           | No. of Employment |
| Wholesale and Retail Trade                              | 97                    | 110               | 94                    | 143               | 10%                             | 23%               |
| Refreshment/Carinderia                                  | 10                    | 11                | 12                    | 23                | 36%                             | 109%              |
| Ice Plant Storage                                       | 1                     | 10                | 1                     | 10                | 0                               | 0                 |
| Communication   | 1                     | 1                 | 1                     | 1                 | 0                               | 0                 |
| Financial Intermediation                                | 4                     | 24                | 4                     | 26                | 0                               | 8%                |
| Real Estate   | 1                     | 2                 | 0                     | 0                 | 0                               | 0                 |
| Education   | 1                     | 3                 | 1                     | 3                 | 0                               | 0                 |
| Health and Social Work                                  | 6                     | 8                 | 5                     | 8                 | -20%                            | 0                 |
| Other Community, Social and Personal Service Activities | 15                    | 27                | 16                    | 32                | 6%                              | 16%               |
| Mining/Quarry   | 1                     | 20                | 1                     | 20                | 0                               | 0                 |
| Poultry Farms   | 2                     | 18                | 4                     | 34                | 100%                            | 47%               |
| <b>TOTAL</b>  | <b>135</b>            | <b>234</b>        | <b>139</b>            | <b>300</b>        |                                 |                   |

Source: LGU Business Permits and Licensing Office/ Treasurer's Office



Inventory of commercial establishments as shown in Table CT-2 indicates that there is no significant increase in the number of businesses registered in 2015 and 2016. This means that there are only a number of new businesses who were registered in 2016. This was justifiable because on this period, the electronic Business Licensing and Permitting System has just been installed and operational.

**Table CT-5. Employment by Type/Classification/Type of Business and Trade, 2016**

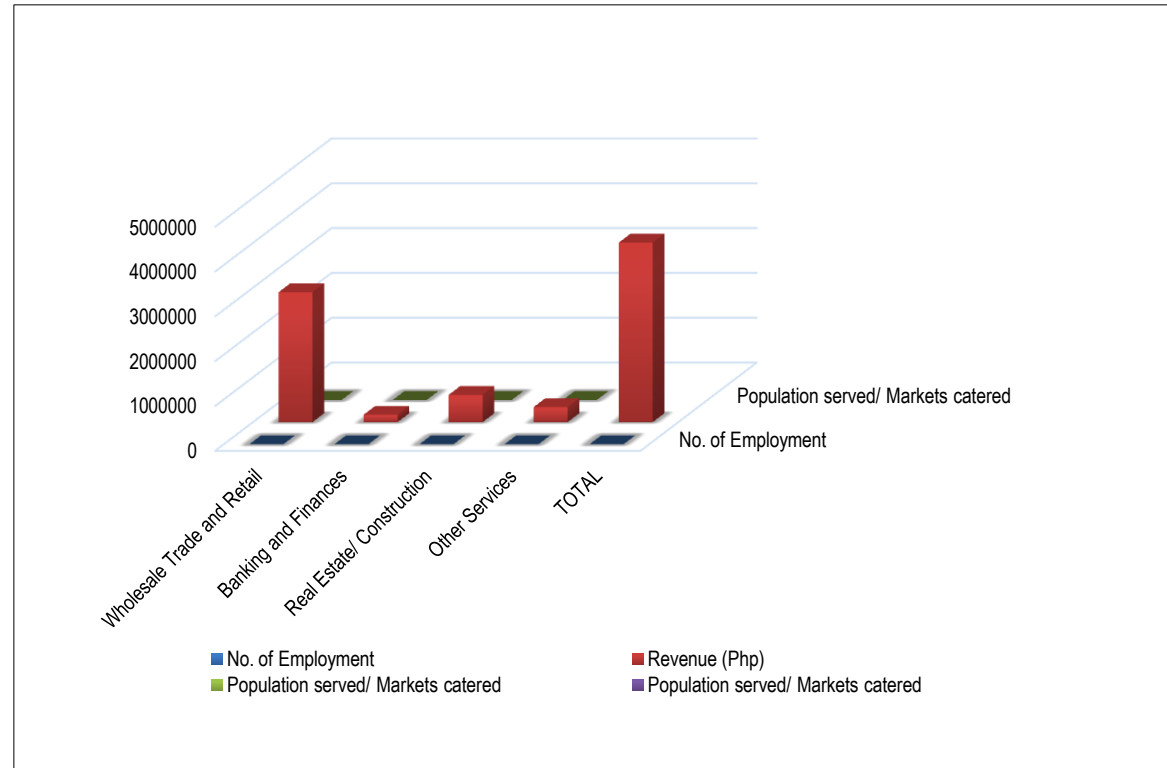
| Type/Classification Kind of Business and Trade | No. of Employment | Revenue (Php)       | Population served/ Markets catered |                  |
|--|-------------------|---------------------|------------------------------------|------------------|
|  |                   |                     | Local                              | Outside (export) |
| Wholesale Trade and Retail                     | 143               | 2,897,609.04        | x                                  |                  |
| Banking and Finances                           | 26                | 163,866.35          | x                                  |                  |
| Real Estate/ Construction                      | 4                 | 607,318.61          | x                                  |                  |
| Other Services                                 | 127               | 336,292.10          | x                                  |                  |
| <b>TOTAL</b>                                   | <b>300</b>        | <b>3,397,774.22</b> |                                    |                  |

Source: Treasurer’s Office/BPLO





Graph CT-1. Employment by Type/Classification/Type of Business and Trade, 2016



Source: Treasurer's Office/BPLO

Table CT-5 and Figure CT-1 shows that the municipality's main revenue derives from wholesale and retail businesses with the highest number of employment for 2016 while real estate and construction follows.



### Existing Programs and Plans

The Treasury Services Program of the Municipality of Anilao is continuously carried out by the Local Government Unit as part of its mandate. Some of the existing programs and plans to promote commerce and trade are the shown below which are primarily to establish an economic data base, promote ease of doing business and promote business opportunities in the municipality.

- Installation/maintenance of eBPLS
- Upgrading of Public Market
- Construction and Improvement of New Public Market
- Construction of Slaughter House
- Construction of Community Fish Landing Center
- Updating/Enhancement of the Revenue Code and Investment and Incentive Code
- Establishment of Business One Stop Shop (BOSS)

In support to the implementation of these programs, the municipality has designated support personnel for the promotion of commerce and trade. Aside from the Office of the Municipal Treasurer, there is a designated Business Processing and Licensing Officer (BPLO), a Local Economic and Investment Promotion Officer (LEIPO) and Market Administrator.

There is available water and power facilities that support commerce and trade in the urban and other commercial centers. There is a presence of banks and lending institutions like lifebank, cooperations and private lending.

### Risk and Hazard to Commerce and Trade Facilities

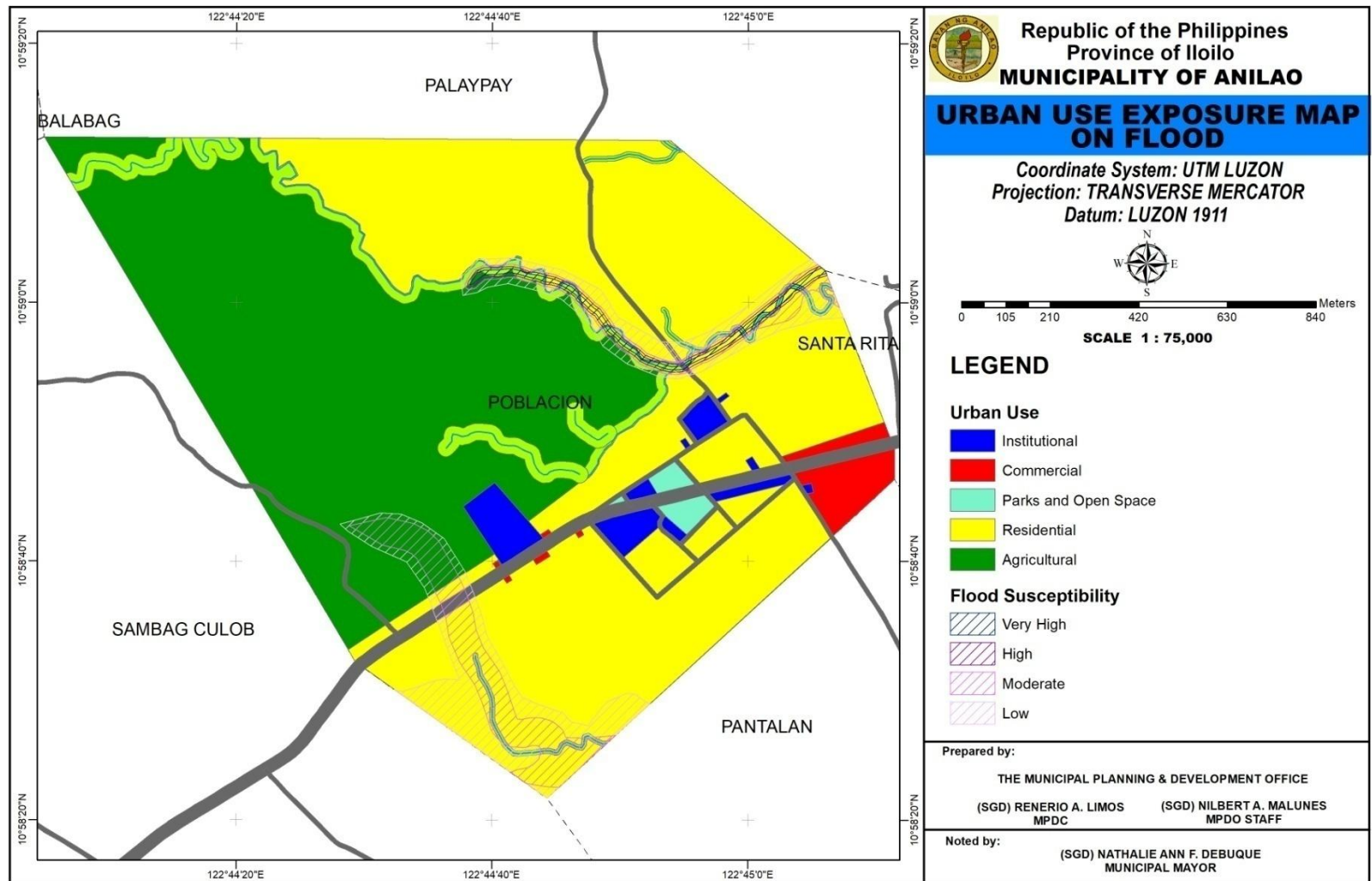
Figures CT-2 and 3 shows that the level of exposure of commercial facilities in the urban area (Poblacion) to flood and landslide which is low and Figure CT-4 shows that the risk is also low.

### Current and Projected Needs

Based on the standard commercial area requirements of 1.5% to 3% of the total build-up are at present the municipality needs 8.08 hectares with the existing commercial area of 2.6 hectares municipality will need additional area of 5.75 hectares for commercial purposes.



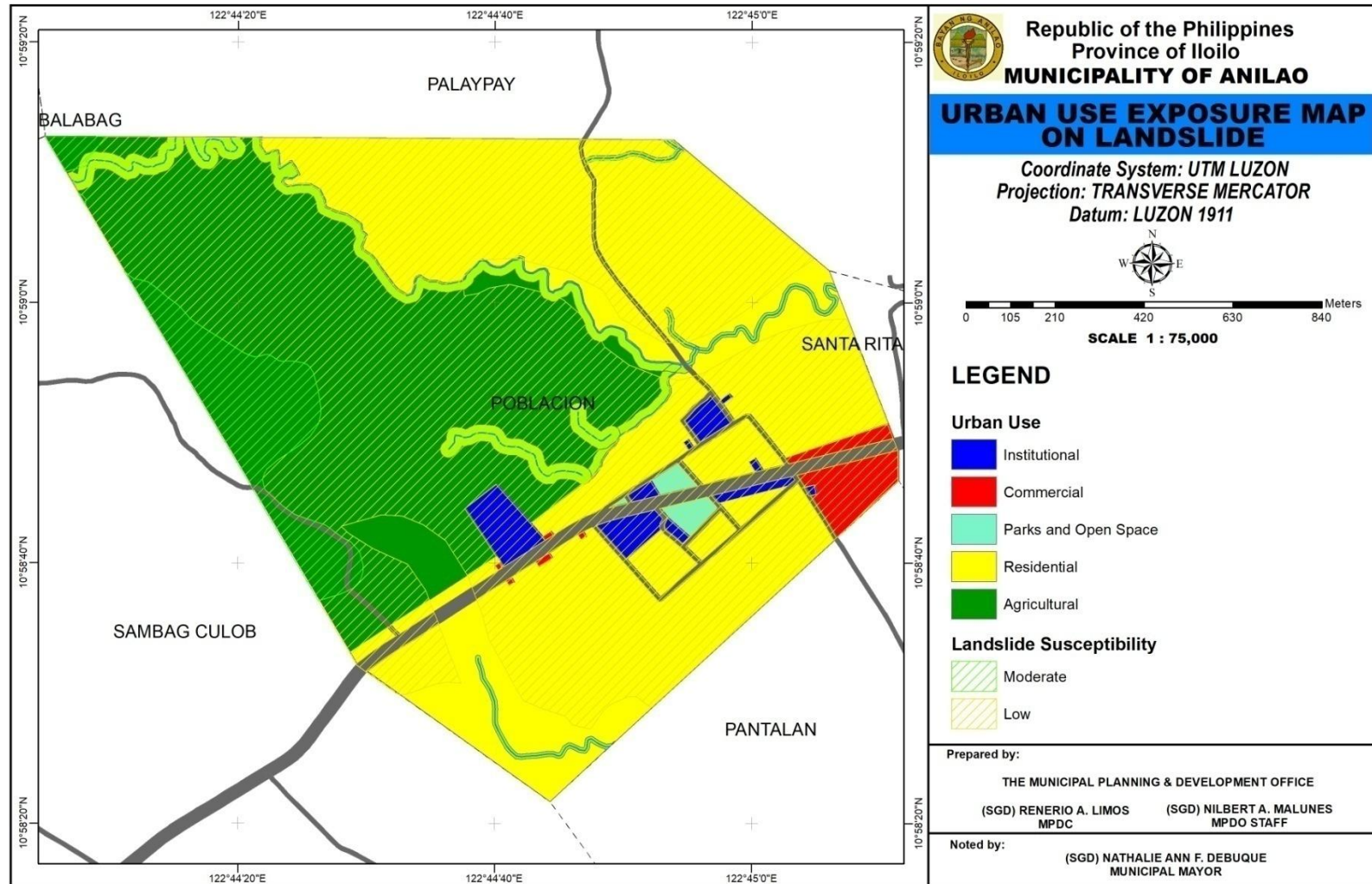
Figure CT-2. Urban Use Exposure Map on Flood



Source:MPDO



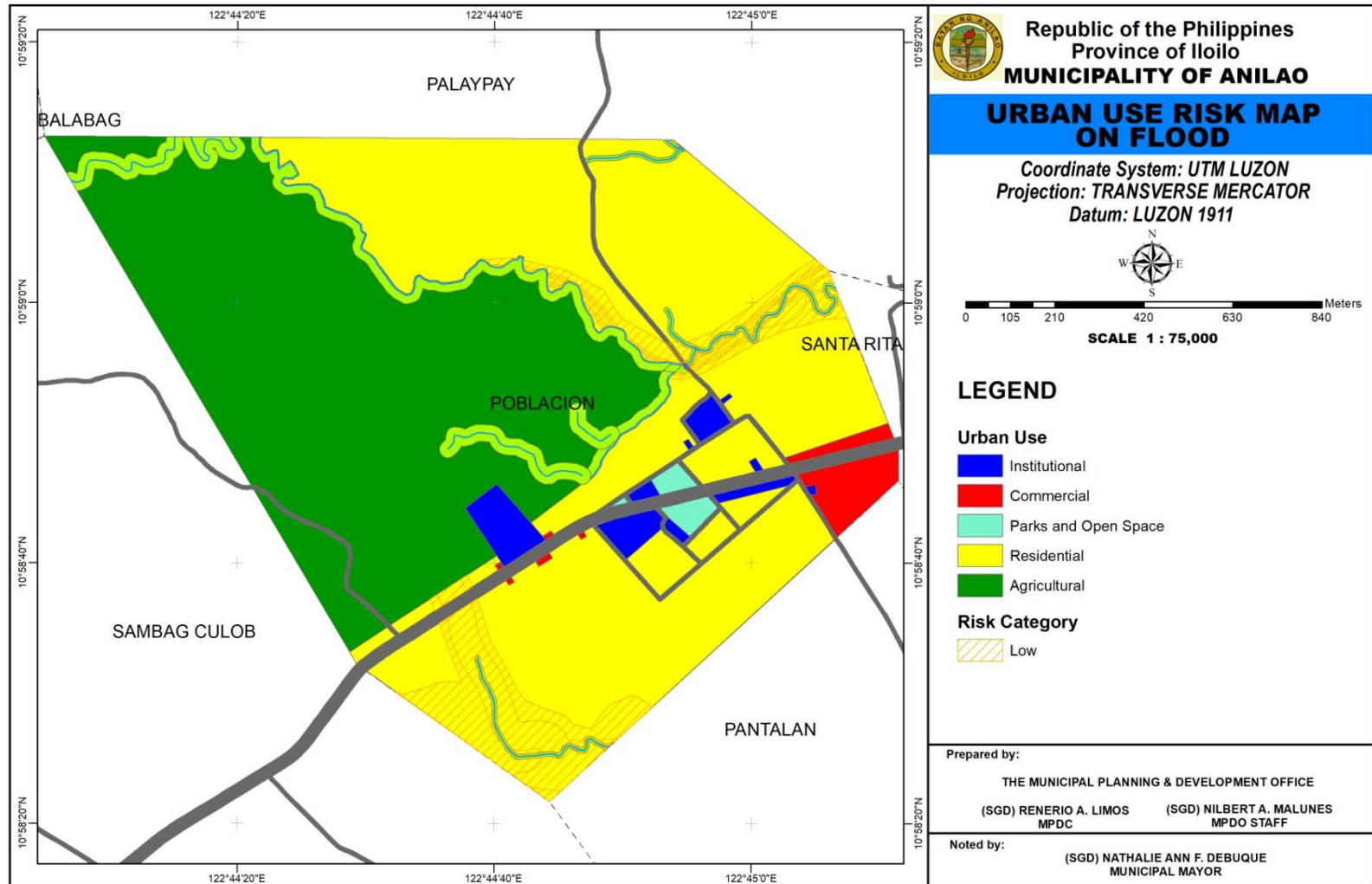
Figure CT-3. Urban Use Exposure Map on Landslide



Source:MPDO



Figure CT-4. Urban Use Risk Map on Flood



Source:MPDO





**Commerce and Trade Sector Analysis Matrix**

| Technical Findings/Observation                    | Implication (Effect)  | Policy Options/Intervention                                |
|---|---|--|
| Absence of Bagsakan Center for local farm produce | -No additional revenue<br>-Absence of place to wholesale farm produce, forces the producers to market their products elsewhere        | Establishment of Bagsakan Center                           |
| Absence of slaughter house                        | -Slaughtered animals are unhygienic and not safe for consumption.<br>-No additional revenue<br>-Limited number of slaughtered animals | Acquisition of lot for the construction of slaughter house |
| Absence of fish market                            | -No additional revenue<br>-Absence of place to wholesale fishery products, forces the producers to market their products elsewhere    | Establishment of fish market                               |
| Non completion of public market structures        | Limited investors   | Completion of public market structures                     |
| Identification of additional commercial sites     | Increase investors  | Review investment code                                     |



## INDUSTRY SUB-SECTOR

### Profile and Analysis of the Existing Situation

Anilao is primarily a farming and fishing community. There are few industrial establishments that are engaged in manufacturing. Some of the home industries are cut flower growing, shrimp paste (ginamos-hipon) making, dried fish making where their capital ranges from Php 1,000.00 to Php 5,000.00.

Many of the households are also engaged in livestock and poultry production which are done in the backyards. However there are large scale poultry farms that operate in the municipality.

Presence of rice mills are observable in the municipality, considering the vast riceland which rank second in terms of area. Bakery, hollow blocks manufacturing and furniture making and ice plant are also some of the industries engaged by some Anilaonons.

Based on the 2017 records provided by the Municipal Treasurer’s Office, there are about 9 types of industrial establishments existing in the municipality which are classified either light industry (L1) or medium industry (L2). See Table IN-1 for the inventory of the existing industrial establishment by intensity.

So far, there is no industry that may cause hazardous or pollutive effect in the environment and the population. Medium industries like poultry and piggeries are ensured that mitigating measures should be installed in order to prevent pollution in their surroundings.





Figure IN-1. Industries Facilities Map

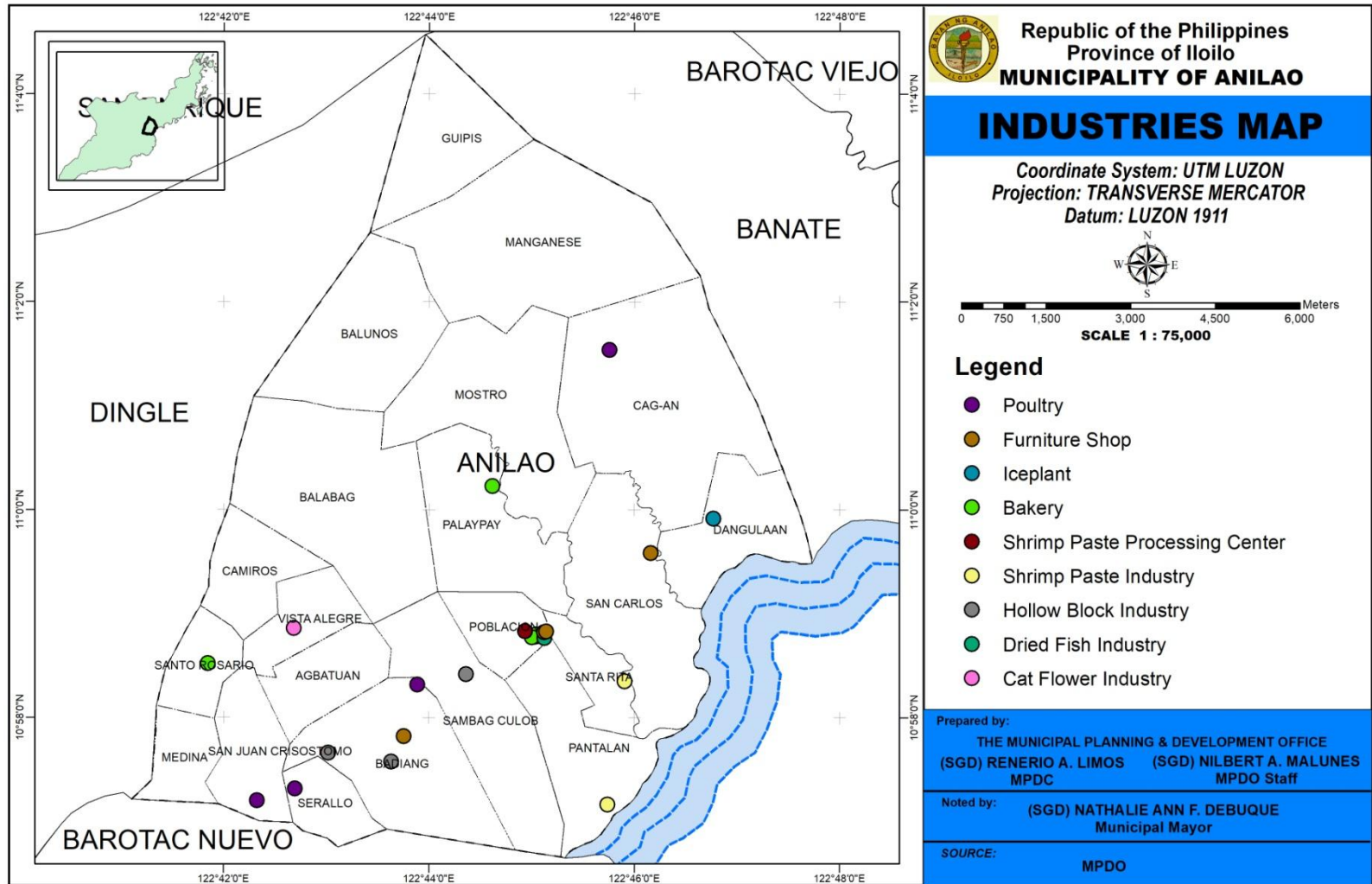


Table IN-1. Inventory of Existing Industrial Establishment by Manufacturing/Industrial Process; Raw Material Input; Production and Markets, 2016

| Name of Industry        | Brgy.   | Type of Industry (Light, Medium, Heavy) | #  | Year Established | Area             | Raw Material                 |                                      | Production            |                 |            | Product Market |                 | Hazard Susceptibility (H/M/L) |    |    |
|-------------------------|---|---|----|------------------|------------------|------------------------------|--------------------------------------|-----------------------|-----------------|------------|----------------|-----------------|-------------------------------|----|----|
|                         |   |   |    |                  |                  | Material                     | Source                               | Product               | Volume          | Value      | Loca l         | Exp ort (other) | Fl                            | Ln | Su |
| Hollow blocks Making    | Sambag Culob and Badiang                              | Light (I1)                              | 3  | 1996             | 3,300 sq. meters | Sand and Gravel              | Suage River                          | Hollow blocks         | 700 blocks/day  | 1.5M       | √              |                 | L                             |    |    |
| Shrimp Paste Processing | Poblacion, Pantalan and Sta. Rita                     | Light (I1)                              | 20 | 2005             | 620 m2           | Shrimp, Garlic, Acetes, Salt | Banate Bay                           | Shrimp Paste          | 5 tons/season   | 500,000    | √              |                 | L                             |    |    |
| Cut flower Industry     | Vista Alegre and Agbatuan                             | Light (I1)                              | 10 | 1986             | 15000 m2         | Cut Flowers                  | Vista Alegre and Agbatuan            | Cut Flower            | 200 dozen/month | 120,000.00 | √              |                 | L                             |    |    |
| Bakery                  | Sto. Rosario, Poblacion, Sta.Rita and Palaypay        | Light (I1)                              | 7  | 1998             | 700 m2           | Flour, Sugar and additives   | Distributor                          | Bread                 | 5000 packs/day  | 4.0M       | √              |                 | L                             |    |    |
| Furniture Making        | Pantalan, Dangula-an, Poblacion and Badiang           | Light (I1)                              | 5  | 1992             | 1000 m2          | Wood                         | Municipality of Anilao               | Furniture             | 40 items/month  | 7.2M       | √              |                 | L                             |    |    |
| Rice Mill               | Dangula-an, San Carlos, Agbatuan and Camiros          | Light (I1)                              | 6  | 1998             | 6000 m2          | Palay                        | Municipality of Anilao               | Rice                  | 60 sacks/day    | 1.5M       | √              |                 | L                             |    |    |
| Dried Fish Processing   | Poblacion, Pantalan and Sta. Rita                     | Light (I1)                              | 5  | 1990             | 100 m2           | Bangus                       | Municipality of Anilao/Fish Terminal | Dried Bangos (Lamayo) | 50 kilos/month  | 1.8M       | √              |                 | L                             |    |    |
| Poultry and Piggery     | Cag-an, Sambag Culob, Serallo and San Juan Crisostomo | Medium (I2)                             | 4  | 2014             | 190,000 m2       | broiler and hog              | Supplier                             | Meat                  | 50 kilos/month  | 56.0M      | √              |                 | L                             |    |    |
| Ice Plant               | Dangula-an  | Light (I1)                              | 1  | 1986             | 10,000 m2        | Water                        | Deep Well                            | Ice                   | 200 block day   | 97.0M      | √              |                 | L                             |    |    |

Source: MPDO

Legend:

Fl-Flood

Ln-Landslide

Su-Stormsurge

Table IN-1 shows that most of the industries in Anilao are medium to light industries. Most are agro-industrial based with local raw materials available within the municipality. Generally, these industries have low level of susceptibility to flooding.



**Table IN-2. Local Revenue on Industrial Establishment**

| Year | Revenue    | Increase/ Decrease | Employment | Increase/ Decrease |
|------|------------|--------------------|------------|--------------------|
| 2012 | 0          |                    | 0          |                    |
| 2013 | 0          | -                  | 0          | -                  |
| 2014 | 115,000.00 | -                  | 110        | -                  |
| 2015 | 130,000.00 | 8.85               | 150        | 7.33               |
| 2016 | 170,000.00 | 7.64               | 164        | 9.14               |

Source: MPDO/Treasurer’s Office

Table IN-2 shows the significant increase in revenues from industrial businesses mostly from Poultry and piggery and ice plant. These are some of the stable industries in the municipality. Poultry and piggeries are categorized as medium while the ice plant is a light industry that greatly contributes to the income of the municipality.

**Table IN-3. Inventory of Local Policies Relating to Industrial Development, Year 2017 and 2018**

| P/P   | Barangay           | Budget | Implementing Agency | Sources of Fund | Time Frame |
|---|--------------------|--------|---------------------|-----------------|------------|
| 1. Installation of eBPLS                            | Whole municipality |        | LGU                 | Local Funds     | Whole Year |
| 2. Updating of Local Incentives and Investment Code | Whole municipality |        | LGU                 | Local Funds     | Whole Year |
| 3. Updating of Revenue Code                         | Whole municipality |        | LGU                 | Local Funds     | Whole Year |
| 4. Regulation on Poultry and Piggery                | Whole municipality |        | LGU                 | Local Funds     | Whole Year |
| 5. Implementation of Environment Code               | Whole municipality |        | LGU                 | Local Funds     | Whole Year |

Source: MTO/SB Office, Anilao



**Table IN-4. Historical Data on Industrial Areas**

| Year | Industrial Establishments |                   | Area Covered |                   | Employment |                   | Revenue |                   |
|------|---------------------------|-------------------|--------------|-------------------|------------|-------------------|---------|-------------------|
|      | Quantity                  | Increase/Decrease | Area (ha)    | Increase/Decrease | Quantity   | Increase/Decrease | Amount  | Increase/Decrease |
| 2014 | 48                        | 0                 | 110          | 0                 | 110        | 0                 | 115 M   | 0                 |
| 2015 | 50                        | -2                | 150          | -40               | 150        | -40               | 130 M   | 8.85              |
| 2016 | 61                        | -11               | 164          | -14               | 164        | -14               | 170 M   | 7.64              |
|      |                           |                   |              |                   |            |                   |         |                   |

Source: MPDO/Treasurer’s Office

Table IN-4 shows the increasing trend in the quantity and area of industrial establishments from year 2014 to year 2016. Employment also increases showing positive improvement in the business sector.

**Susceptibility Industries to Hazards**

Industries like poultry farm (Odojan Poultry Farm) located in Sambag Culob has moderate susceptibility to landslide. The rest of the identified industries have low susceptibility to landslide as shown in Table CDRA-17.

Triple N Furniture shop located in Barangay Pantalan has high susceptibility to flood and JCPS Furniture shop located in Barangay San Carlos has moderate susceptibility to flood. The rest as shown in Table CDRA-18 has low susceptibility.

Figure CDRA 13-14 shows the level of susceptibility of industries affected by flood and landslide respectively.



**Table IN-5. Existing Economic Service Facilities Susceptibility to Landslide**

| Type        | High Susceptibility Area |                 | Moderate Susceptibility Area |                      | Low Susceptibility Area |                              |
|-------------|--------------------------|-----------------|------------------------------|----------------------|-------------------------|------------------------------|
|             | Barangay                 | Registered Name | Barangay                     | Registered Name      | Barangay                | Registered Name              |
| Industries  |                          |                 | Sambag Culob                 | Odtojan Poultry Farm | Sambag Culob            | Odtojan Poultry Farm         |
|             |                          |                 |                              |                      | Cag-an                  | JCPC Poultry Kings           |
|             |                          |                 |                              |                      | Dangula-an              | San Pedro Ice Plant          |
|             |                          |                 |                              |                      | San Carlos              | Jeires Enterprises           |
|             |                          |                 |                              |                      | Badiang                 | J III & MD Lumber Furniture  |
|             |                          |                 |                              |                      | Poblacion               | Bombatzu                     |
|             |                          |                 |                              |                      | Poblacion               | The Original Furniture       |
| Banks       |                          |                 |                              |                      | Poblacion               | Anilao Rural Bank            |
| Gas Station |                          |                 |                              |                      | Poblacion               | Golden Flow Fuel Enterprises |

Source: CDRA 2017

**Table IN-6. Existing Economic Service Facilities Susceptibility to Flood**

| Type       | High Susceptibility Area |                    | Moderate Susceptibility Area |                 | Low Susceptibility Area |                            |
|------------|--------------------------|--------------------|------------------------------|-----------------|-------------------------|----------------------------|
|            | Barangay                 | Registered Name    | Barangay                     | Registered Name | Barangay                | Registered Name            |
| Industries | Pantalan                 | Triple N Furniture | San Carlos                   | JCPS Furniture  | San Juan Crisostomo     | Pilador Poultry Farm       |
|            |                          |                    |                              |                 | Serallo                 | Marilou Solas Poultry Farm |
|            |                          |                    |                              |                 | Cag-an                  | JCPC Poultry Kings         |
|            |                          |                    |                              |                 | San Carlos              | Jeires Enterprises         |

Source: CDRA 2017



### Current and Projected Needs

The Municipality of Anilao has a great potential in industrial development being a coastal town. It is 40kms away from the city in an hour travel time. It is also accessible to Dumangas port via Barotac Nuevo where some of the Cargo Trucks from Negros with the route going to Central Iloilo and Capiz and Aklan provinces pass through via Badiang Dingle provincial road which is newly concreted.

Anilao has an efficient road network which is undertaking widening. The power is provided by ILECO III and the level III Water System is supplied by Anilao Water District. There are 3 cell sites serving the communication network namely: globe, smart and sun. Despite the mentioned opportunities however there are limitations to the program because potential areas are mostly agricultural where conversion to other uses is prohibited under AO 20. As per standard industry requirement of 23.145 hectares the municipality has 21.67 has proposed 3.19 hectares of industrial area. In addition to the investment need there are proposals from some inventors to put up industries here in Anilao which will bring the projected industrial area need to approximately five (5) hectares.



Figure IN-2. Industries Expose to Flooding

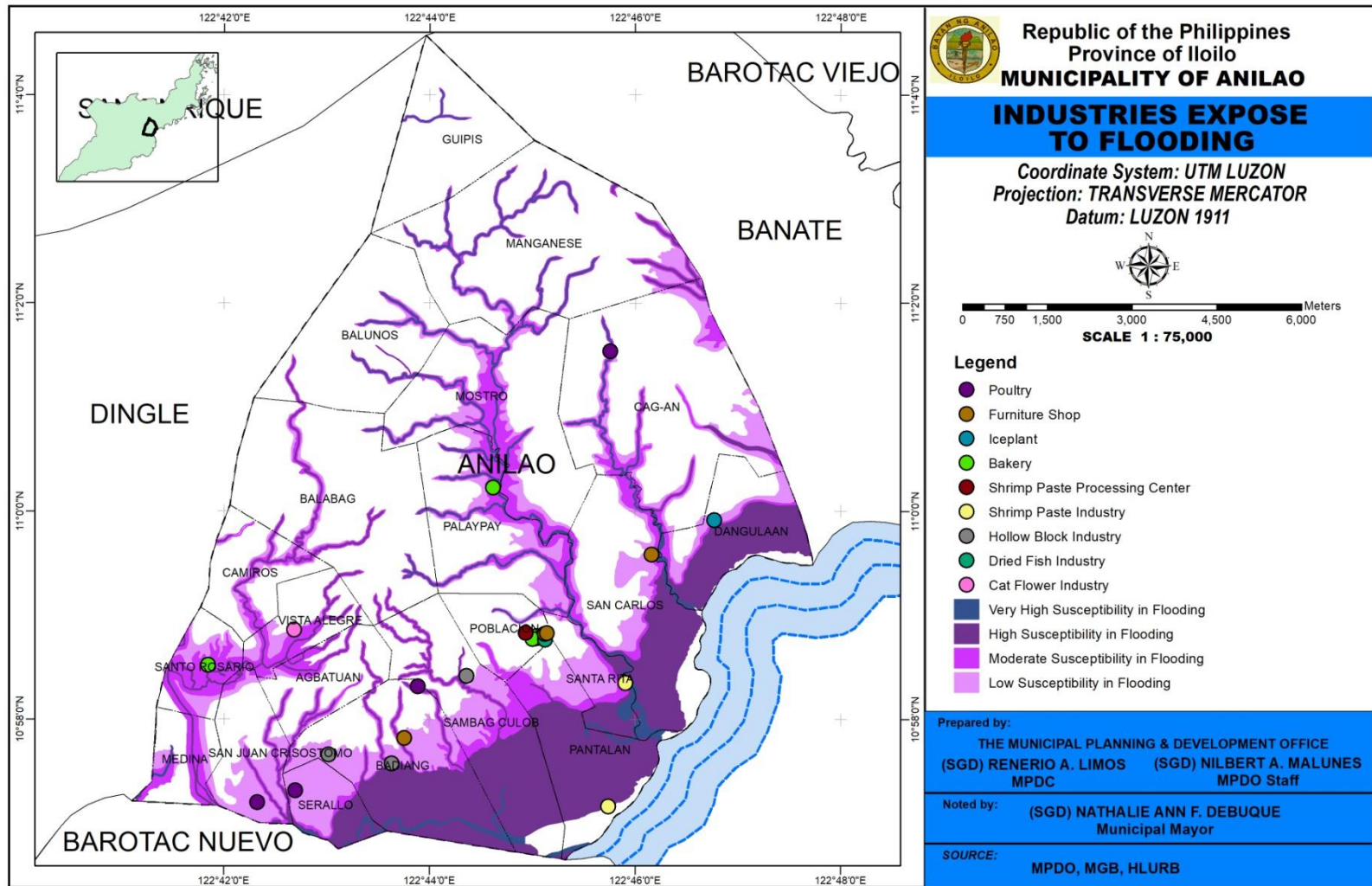




Figure IN-3. Industries Expose to Landslide

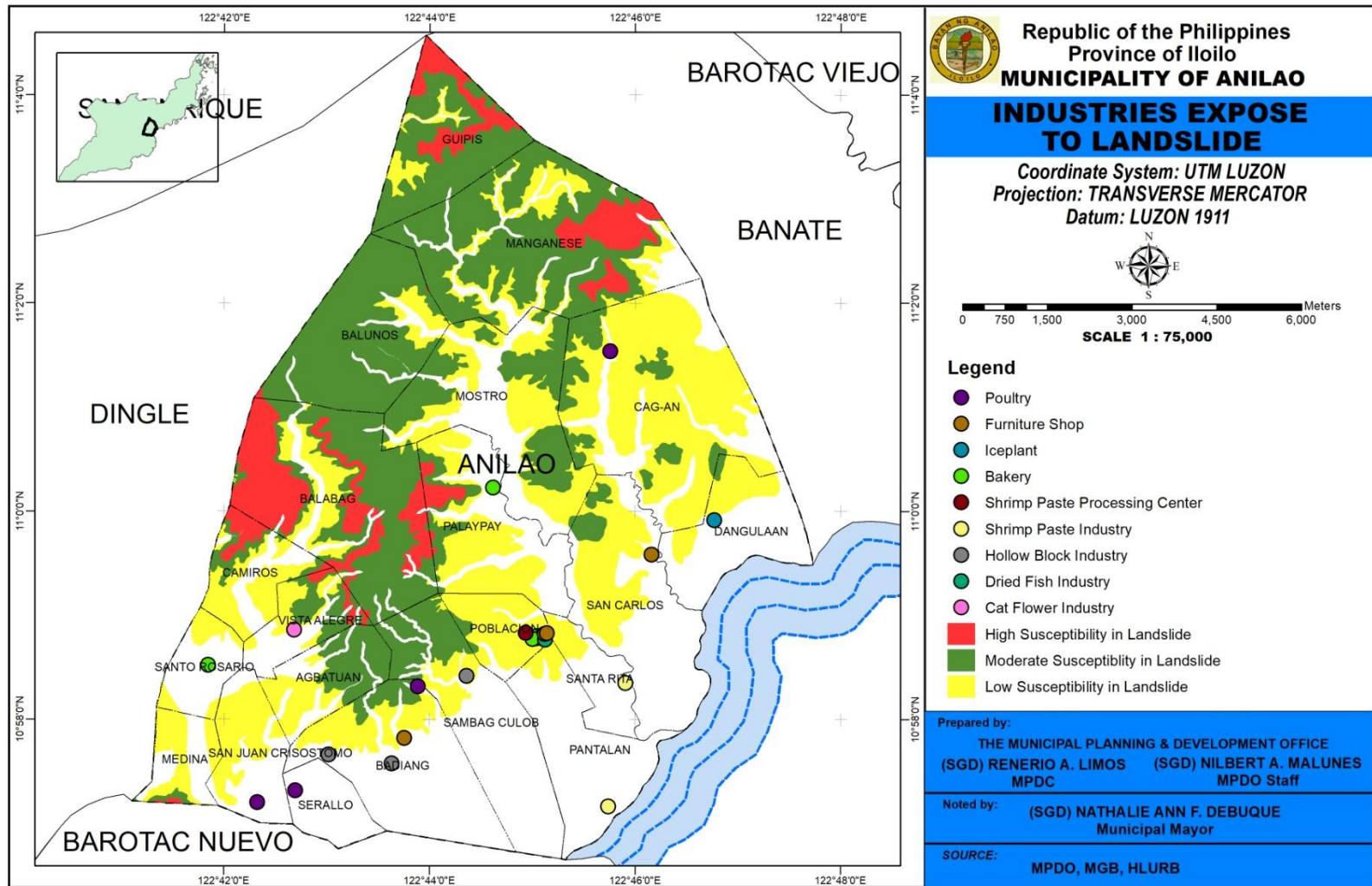
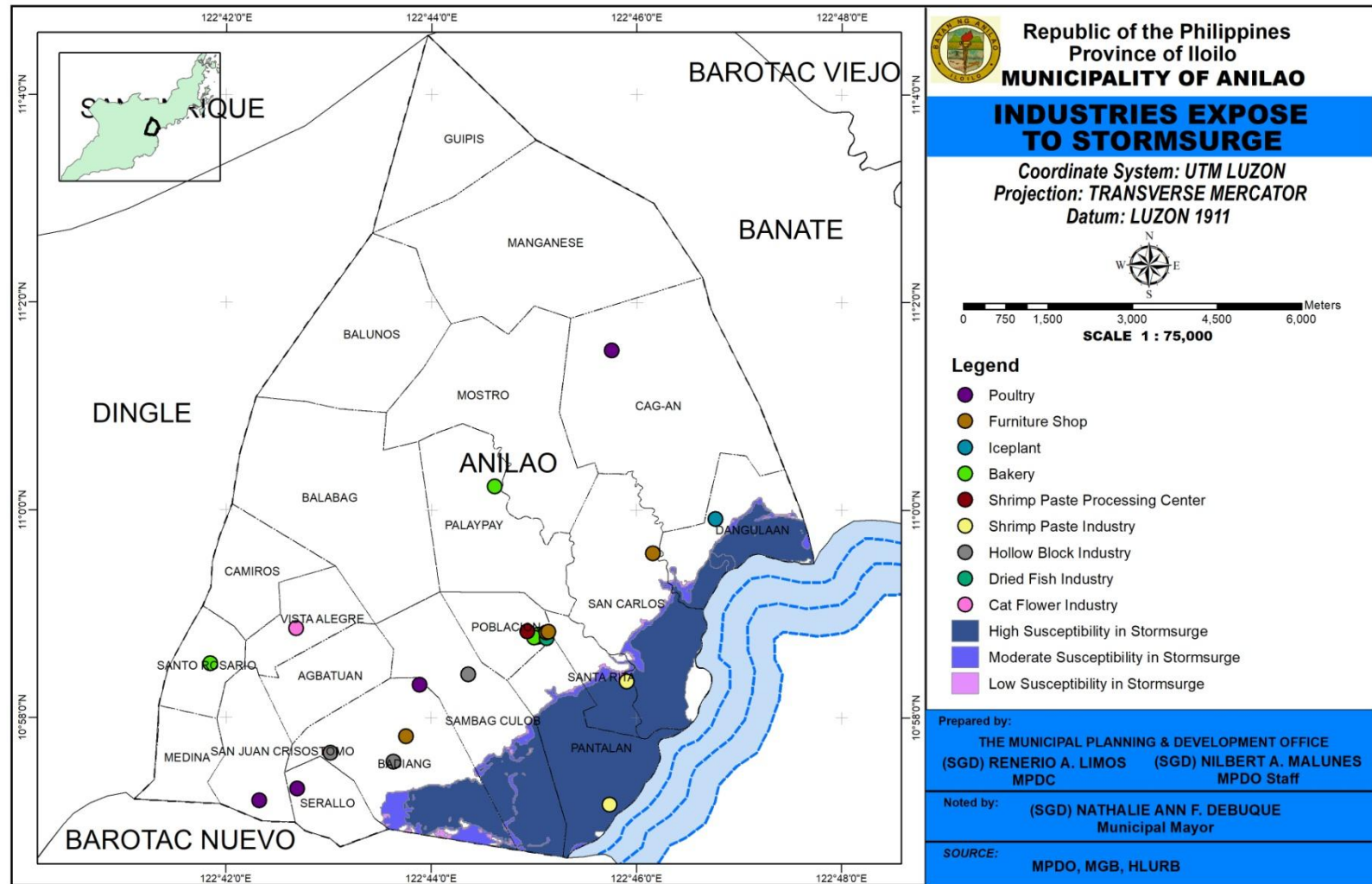


Figure IN-4. Industries Expose to Stormsurge



**Industry Sector Analysis Matrix**

| Technical Findings/Observation                              | Implication (Effect)                                   | Policy Option/Intervention   |
|---|--|--|
| Limited site for industrial development                     | Growth and development of the municipality is hampered | Identification of suitable sites in consultation with land owners of the municipality.           |
| Absence of investment forum for potential investors         | Less opportunity for economic growth                   | Create the Local Economic Investment Council and Local Economic Investment Point Officer (LEIPO) |
| Lack of capital financing for industry generation/expansion | Limited industry expansion or opportunity              | Encourage investors to provide financial assistance or grants to industries.                     |
| Some Industries have no permits                             | Decrease of income                                     | Intensify of unlicensed.   |



## TOURISM SUB-SECTOR

### Profile and Analysis of the Existing Situation

Anilao is located 40 kilometres North of Iloilo City. More than 10 thousand hectares of land provide the municipality with natural resources that maybe a cause of envy for other towns in the Province of Iloilo. After all, not a lot of fourth class municipalities in the province and in the country can boast of manganese and basalt deposits in the area.

### Tourism Potentials

#### Banaag Festival

Every last week of October, the Anilaonons celebrate Banaag Festival. Streets are filled with blazing light from torches and neon ornaments worn by dancers as they frolic along with the jolly banging of the drums.

Banaag Festival is a celebration of life, spirit, and creativity with the showcasing of different tribal performances taming, spinning, and shaping fire. It is a celebration of the Anilaonons' bravery as they fought for freedom and independence.

Banaag Festival literally means "Festival of Lights". It is held in commemoration of the town's wondrous history, which every Anilaonon on a journey to fiery battles for freedom and independence, the struggle to live in a nourishing community that strives to maintain its values while aiming progress, and keeping the fire of hope alive as it looks forward to a future of success for its people.

This festivity means more than just a time for merrymaking for the Anilaonons. In fact, it can be traced way back to Moro piracy which began in 1779 and continued into 1780's. To defend from further damage brought by the Moros, the Anilaonons built a watchtower made of stone at what is presently called Baluarte. Sentinels were put on this tower to serve as protection by day and night.

The festival becomes famous when it was adjudged as one of the best tourism event of the Philippines last 2014 by the Association of Tourism Officers of the Philippines and Department of Tourism. In the year 2017 it was hailed as the Best Tourism Event vesting other municipal festivals in the country and last 2018 it was awarded again as Best Tourism Event as Commemorative to historical event.

Another goal of the festival is to awaken the sense of concern for the welfare of Anilao, that each of the social groups will find the roles/importance in community building through participation in the activities in the barangay.



The festival does not only focus on the socio-cultural and economic aspect, but also receive strong support from religious organizations and the Roman Catholic Church, through its parish church and pastoral officers participated through an activity innovated to add color and spectacle to the celebration- the Parade of Saints.

The first and longest torch parade in the province of Iloilo was held during the Opening of the festival. More than 5,000 participants coming from the different sectors participated in the evening where torches carried by Anilaonons lighted the streets to signal the start of the opening ceremony. Orientations and workshops were held to continuously improve the celebration.

The ordinance coming from the Legislative Department of the Municipality of Anilao serves as a strong material that the festival will last until the next generation. The academe, through the District of Anilao, Division of Iloilo, included local history and culture in their Social Studies subject in elementary and high school to achieve sense of pride and leave a sense of responsibility, understanding, and valuing the significance of the celebration and events.

Official songs of the Banaag Festival are also taught to students and pupils through their Music and Social Studies classes to better achieve these goals. The songs are the Anilao One Song, One Dance and *Dali KamoDayonsaAnilao*.

#### **Anilao Annual Patronal Fiesta**

Every 22<sup>nd</sup> of May the town celebrates its Patronal fiesta in honour of St. Rita of Cascia. Anilaonons generally love fiestas and celebrations because these are part of their culture. Anilaonons are also generally fond of good food during fiestas. There are countless delicious dishes that Anilaonons could cook. This is the reason why Anilaonons celebrate fiesta to honor the Patron Saint Sta. Rita de Casia for the blessings she is bestowing to the people of Anilao.

The Municipality of Anilao envisions of becoming the premiere festival destination of the Province of Iloilo. Community participation is encouraged to help in the development of culture and distribution of economic benefits to the greater members of the community. The strategy of the local government unit aims at positioning Anilao as a model of cultural excellence benefiting from the town's unique celebration, having the unique display of festivity in the province supported by a distinctive eco-tourism site with rich marine bio-diversity and accommodating people all of which are firm blocks for tourism development.

There is a great scope for promoting tourism particularly in the province due to the uniqueness of the festivities in Anilao and rapidly emerging sites in the northern part of Iloilo province. Anilao also with its location, quality human resources, peace and stability has all the ingredients in place to play a key role in the regional development as an emerging cultural market in Iloilo.

The local government aims to address several related policy related issues that are affecting the industry such as, (a) the creation of a simple tax regime (b) simplification of the licensing procedures for tourism investors and related establishments (c) unification of the regulatory environment and creating a single authority for tourism promotion, (d) creating opportunities for local shopping specifically Anilaonon products and crafts, (e) creation of tourist “One Stop Shop” for possible



investors and related establishments, (f) streamlining the process of alienating government land for tourism development projects and above all (g) environmentally friendly, rural concept for community base tourism development.

To compete with other municipalities and meet the demands of tourist, the service standards must match the global expectations. At the same time it is important to preserve the environment and culture and promote clean rural communities. It must also be ensured that the maximum benefit of tourism is passed on to the community and economic growth and is supported through domestic value creation.

At present, there is a resort (Villa Riza) located in Barangay Camiros. Though unregistered with the municipality, it is already receiving guests. This is an inland resort covering an area of 0.35 hectares (see Table TO-1). Table TO-2 shows the Accessibility of Existing Tourism Establishments in the municipality.

**Table TO-1. Inventory of Tourism Establishments, Year 2017**

| Name of Tourist Attraction | Brgy.   | Area (ha) | Type of Tourism Product and Services | Description   | No. of Visitors | Accommodation |              | Name of Owner | Hazard Susceptibility (H/M/L) |    |
|----------------------------|---------|-----------|--------------------------------------|---------------|-----------------|---------------|--------------|---------------|-------------------------------|----|
|                            |         |           |                                      |               |                 | Type          | No. of Rooms |               | FI                            | Ln |
| Villa Riza*                | Camiros | 0.35Ha    | Resort                               | Inland Resort | No data         | resort        | 2            | Riza Amaguin  |                               | L  |

Source: MPDO, Mayor's Office

Legend: Physical Condition: F- Fair, G- Good, O-Operational

Hazard Susceptibility: L-Low M- Moderate H- High

**Table TO-2. Accessibility of Existing Tourism Establishment and Tourist Attraction, Year 2017**

| Name of Tourism Establishment | Means of Transportation Available | Distance from Nearest Airport (km) | Distance from Nearest Seaport (km) | Distance from National Highway (km) | Access Road   |            | Accessibility |
|-------------------------------|-----------------------------------|------------------------------------|------------------------------------|-------------------------------------|---------------|------------|---------------|
|                               |                                   |                                    |                                    |                                     | Unpaved       | Condition  |               |
| Villa Riza Inland Resort *    | Land                              | 55 cm                              | 23.8km                             | 4.48km                              | Gravel, earth | Rough road | 1             |

Source: MPDO, Mayor's Office

\* - Unregistered establishment

**Legend:** Accessibility - 1 - accessible whole year round by ordinary vehicle





Table TO-3. Cultural and Tourism Activities/Festivals

| Activity                   | Frequency of Activity | Duration of Activity |
|----------------------------|-----------------------|----------------------|
| Patronal Fiesta            | Annually              | 5 Days               |
| Banaag Festival            | Annually              | 31 Days              |
| Anilao Baseball Tournament | Annually              | 5-10 days            |

Source: Tourism Office, MPDO

Figure TO-1. is a Tourism Facilities Map showing the existing and potential tourism sites of the municipality. There were already initiatives in the inventory of the sites however; there is a need for an depth tourism mapping of these sites.

**Other Potential Tourist Attractions**

**Scenes and Structures**

Anilao has some sceneries to offer to tourists who wants to experience an eco-tourism adventure. Located in Barangay Balunos, Anilao, Iloilo is Mt. Manyakiya which is believe to be a mountain of haven of myths and folklores. Mt. Manyakiya is 10 kilometres away from the town center ideal for stargazing and hiking. The barangay officials of Balunos serve as site guides to hikers upon proper registration. The mountain is best visited during lent season. As of the present, there are no available tourism establishment in the area. If a tourist is planning to do overnight within the range they are encouraged to bring camping tents and secure permission from authorities for their safety.

Mountain scenery is Mt. Hamugnaw dubbed as the cold mountain of Anilao and is believed to be the highest peak in the municipality at 409 meters above sea level. Mt. Hamugnaw offers a trail to hikers. A huge stone structure welcomes the visitor after an hour trek. One can have a glimpse of the coastal area and low land barangays on top of Mt. Hamugnaw which is 13 kilometres away from the town center.

Anilao’s mountain ranges are ideal for eco-sports adventure enthusiasts who love to explore and ride AUV bikes. This was also the reason why “Huganas sa Banas” was organized. This is an eco-sports motorbike racing competition that involves obstacles and hurdles among the participants and adventures wanting to experience a trail of Anilao’s mountain ranges. Trail site is located in Sitio Caban Caban at Barangay Cag-an, Anilao, Iloilo.





Alongside, with the mountains, there is the Patugpahan Plateau that is a potential camp site buyable for campers/backpackers and those who would like to experience star gazing activity.

### **Caves**

There are three identified caves in the municipality which are Canada Cave, located at Barangay Balunos, Palaypay Cave in Barangay Palaypay and Medina Cave in Barangay Medina. As of the present time exploration is still on going to record natural resources present within the caves.

### **Waterfalls**

Darangalan Falls is located at Barangay Balabag, Anilao, Iloilo. The falls has its water drizzling onto the rock. The bliss-pool at the bottom of the waterfall is varnish clear and is believed to be a haven of nymphs and fairies.

Agtambo Falls is an hour ride from the Poblacion located at Sitio Agtambo, Barangay Balunos, Anilao, Iloilo. The waterfall is a gateway for those who wanted to experience a river trek from Balunos to Mostro. Natives living in near the sites believes that elves and spirit of the local variety usually cavorts and gambol in this pristine waterfall hide-away.

Boyboyan Waterfalls in Brgy. Palaypay is a 30 - minute walk from the barangay center and is considered as the tallest in the municipality. Some inhabitants narrates that sweethearts who visit this place surely wound up before the altar.

Like the famous Mambukal Falls of Negros Occidental Boyboyan has also 7 small falls. The waters was thundering down into the pool like a gigantic water spout. The rest of the pool was as clear as cellophane, enabling visitors to see down into the rocks. Fronds of forest green plants waved gently surrounding the scenery.

### **Coastal Marine Site**

Barangay Dangula-an in Anilao is considered the diving mecca of the 4<sup>th</sup> Congressional District in the Province of Iloilo, because of its unique man-made coral garden that became an interest for marine researchers. Diving and snorkelling is experienced in Barangay Dangula-an, where the *Anilao Coral Garden is located* about three kilometres from the shoreline. This is a declared Marine Sanctuary that holds hundreds of concrete artificial reefs arranged in clusters underwater where coral fragments were transplanted last 2005. Now, the garden has proven growth of corals and now teeming with various pelagic fishes which is normally barren during the past. But the aactivities surrounding this are should be regulated.The coastal area is located in north east shore of the municipality. It has a spectacle that can charm visitors because of its rich resources found underwater. Aside from research, photographers are also attracted because of the sprawling coral gardens and critters



like the krill perfect for underwater photography. If you get lucky you can encounter a pawikan (sea turtle) that visits the area because the coastal area has lots of fishes for their food.

The site is also adjacent to the sea grass and brown mussel reserve area. Growth of mangroves wildly grown and recently added with planted ones borders the coastal areas of the coastal barangays.

Make-shift bamboo rafts are available for site seeing, diving, snorkelling and plainly swimming in this area. One can also rent a boat for kayaking and visit the diving site. There is nothing much to do for ordinary excursionists in the coastal area but for adventure enthusiasts, there are lots of nature challenged activities like oyster harvesting, fishing, coral transplanting, mangrove tree planting, mangrove walk or simple shell gleaning. One could later savour their harvest that goes with the free therapeutic sea breeze.

#### **Fortress of the Historic Past**

“Simboryo” located in Sitio Taruc, Brgy. Poblacion is a testament of Anilao’s industrial heritage. The old stone chimney still stands in its original site. Ruins of the stone tower used during pre-war were found in Barangay Pantalan which used to warm the Anilaonons of the invaders attacking the area.

#### **Saint Rita of Cascia Parish Church**

The old church was renovated last 2010 that houses the image of the town’s patron saint. The new face of the church can accommodate 95% of the town’s populace which are mostly Roman Catholics. The church is ideal for wedding events and other religious activities because of its modern feel decorated with ornaments and religious artifacts.

See Table TO-4 for potential tourist attractions in the locality.



**Table TO-4. Potential Tourist Attraction in the Locality**

| Barangay Potential Attraction | Within Forest Land     | Within the Forest Land Area (ha) | Within A & D Lands (ha) | Hazard Susceptibility (H/M/L) |    |    |
|-------------------------------|------------------------|----------------------------------|-------------------------|-------------------------------|----|----|
|                               |                        |                                  |                         | FI                            | Ln | Su |
| Manganese                     | Mt. Hamugnaw           |                                  |                         |                               | H  |    |
| Balunos                       | Mt. Manyakiya          |                                  |                         |                               | M  |    |
| Dangulaan                     | Coral Garden           |                                  |                         |                               |    |    |
| Balunos                       | Darangkalan Falls      |                                  |                         | H                             |    |    |
| Palaypay                      | Boyboyan Falls         |                                  |                         | VH                            |    |    |
| Balunos                       | Century Old Tree       |                                  |                         |                               | M  |    |
| San Carlos                    | Baringan Beach         |                                  |                         | H                             |    | H  |
| San Carlos/Dangulaan          | Mangroves              |                                  |                         | H                             |    | H  |
| Balunos                       | Agtambo Falls          |                                  |                         |                               | M  |    |
| Poblacion                     | Simboryo (old Chimney) |                                  |                         |                               | L  |    |
| Palaypay                      | Sta.Ana Cave           |                                  |                         |                               | H  |    |
| Balunos                       | Canada Cave            |                                  |                         |                               | M  |    |
| Medina                        | Medina Cave            |                                  |                         |                               | L  |    |

Source: MPDO, Tourism Office

Legend: Physical Condition: F- Fair, G- Good, O-Operational  
 Hazard Susceptibility: L-Low, M- Moderate, H- High

**Current and Projected Needs**

At present, there is no tourism establishment in the municipality duly registered with the Department of Tourism. However, there is an inland resort named “Villa Riza” in Barangay Camiros that accepts small guests but not on a regular basis. It was noted that a number of guests were on home stays in some coastal barangays. This was introduced to some locales during the visit of some Japanese students from Hiroshima University. However, there is much to be done in order to improve.



Figure TO-1. Tourism Map

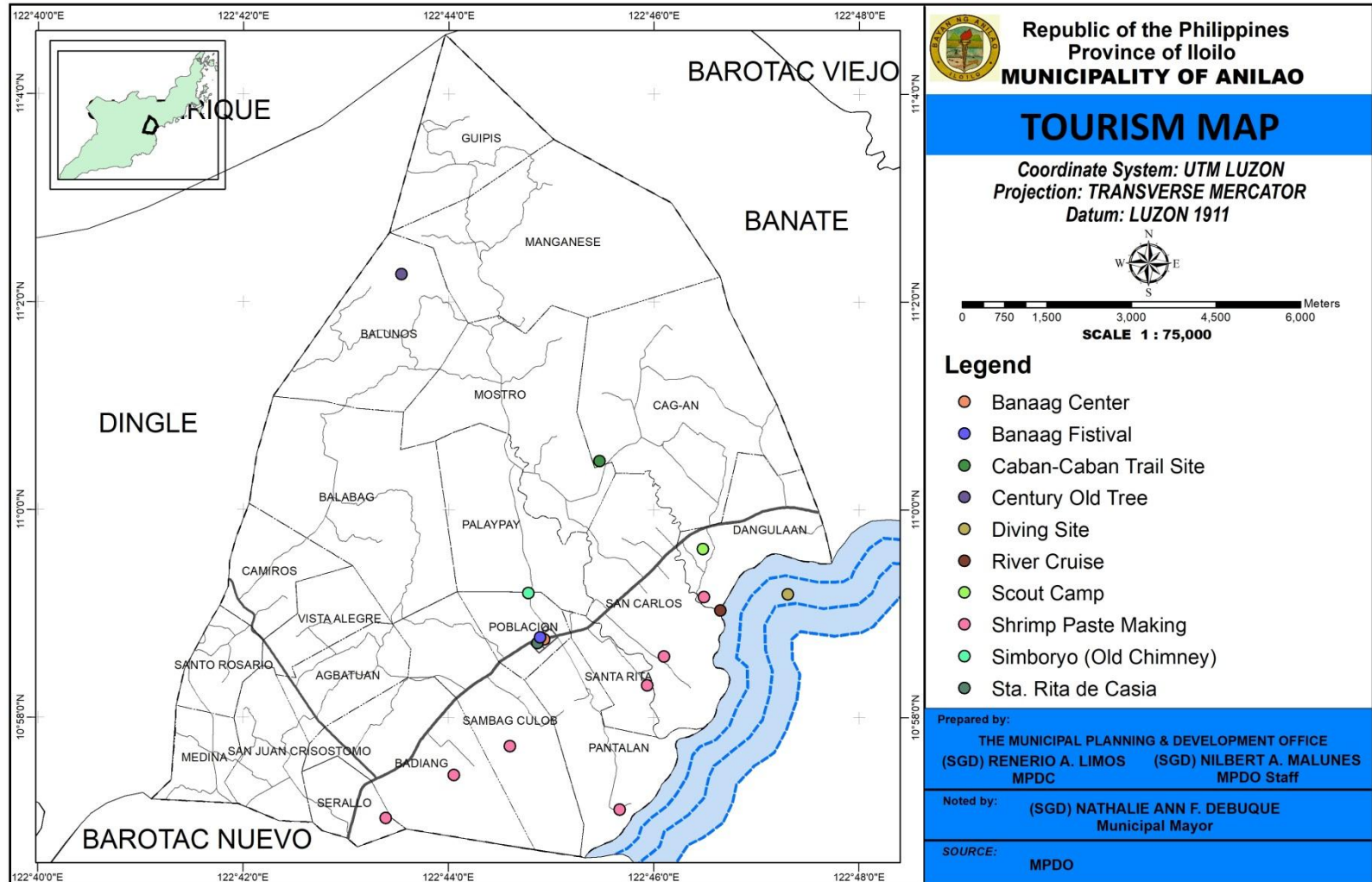


Figure TO-2. Eco - Tourism Map

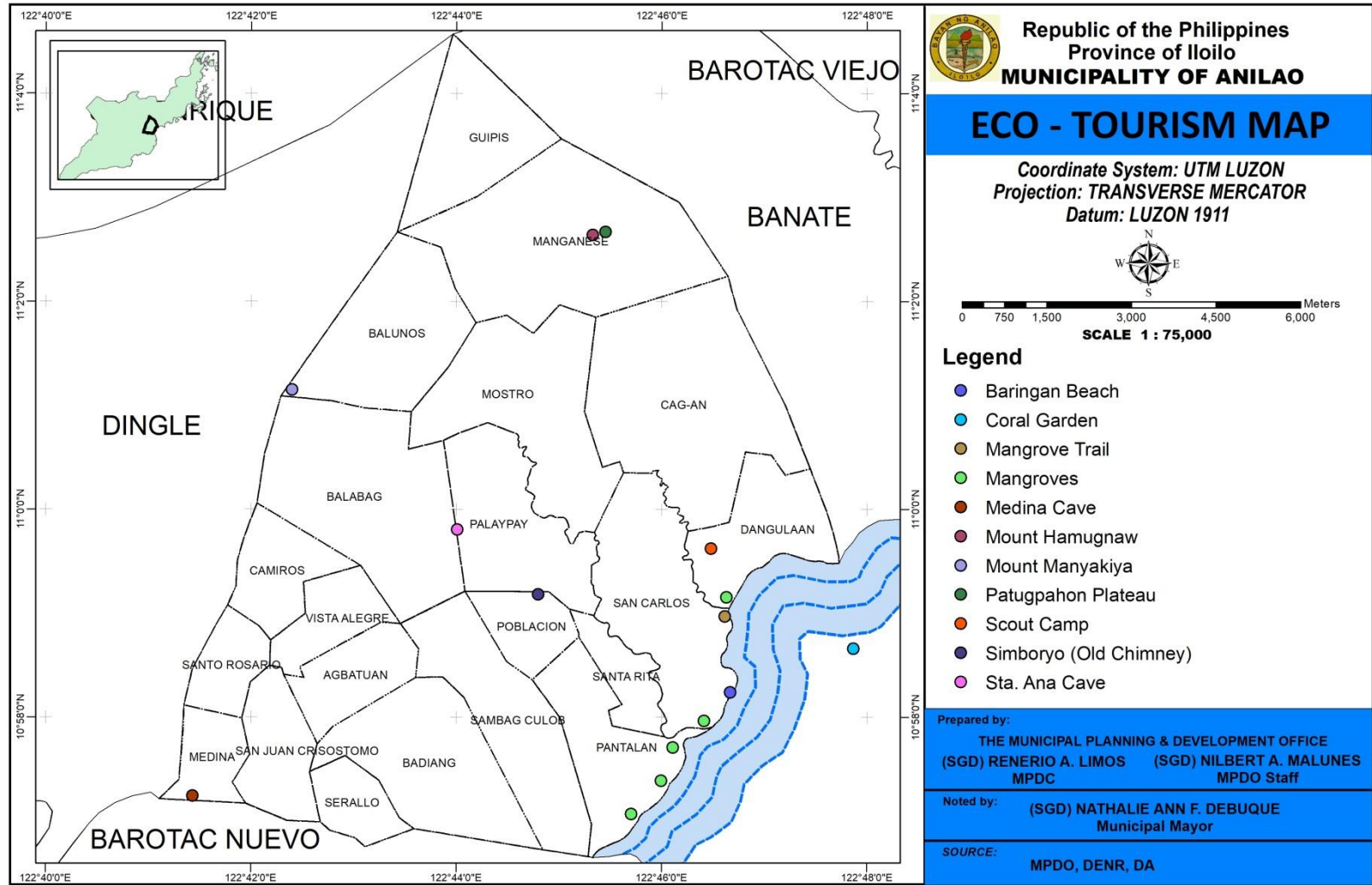




Figure TO-3. Tourism Facilities Exposure to Flooding

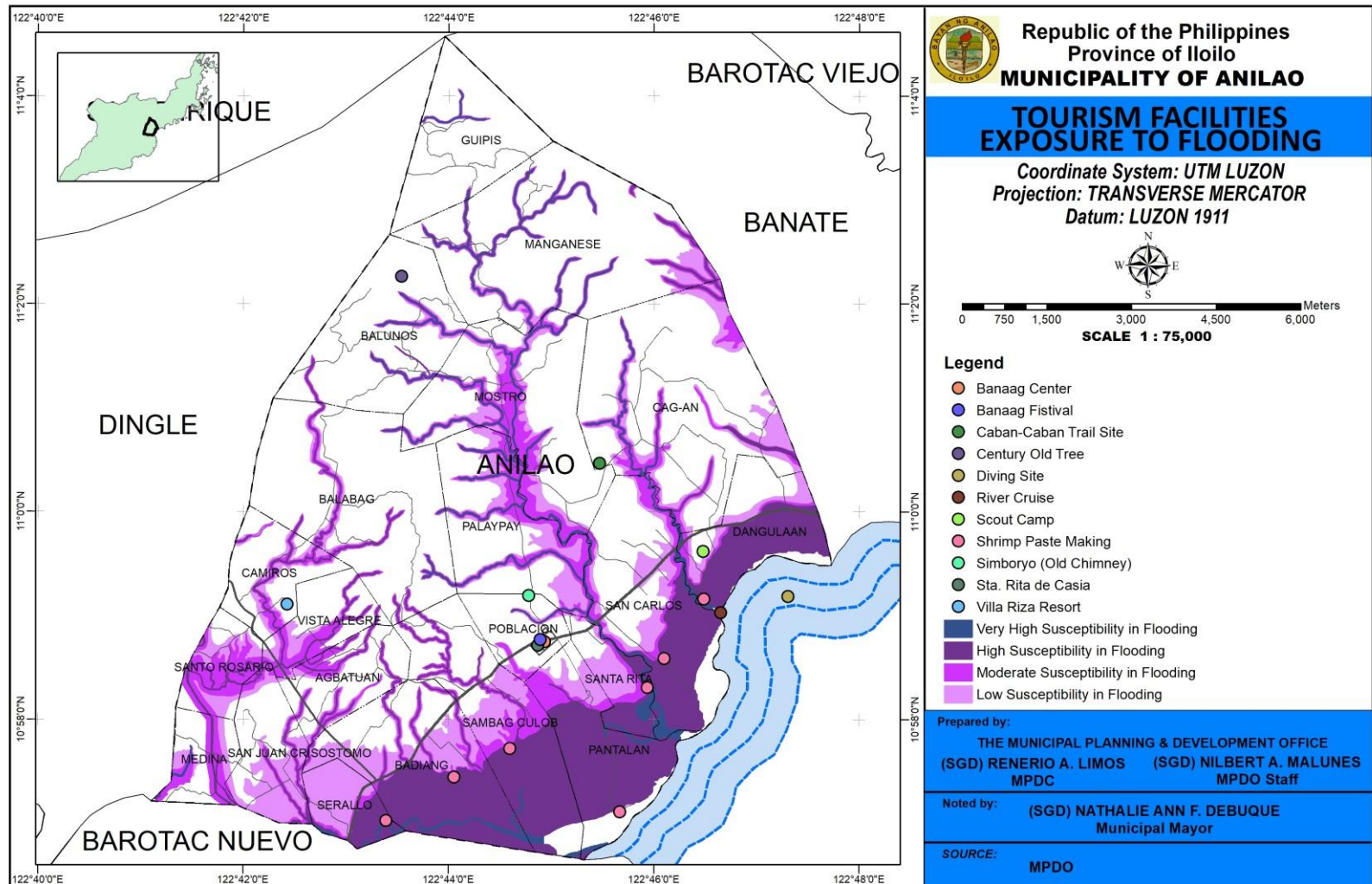
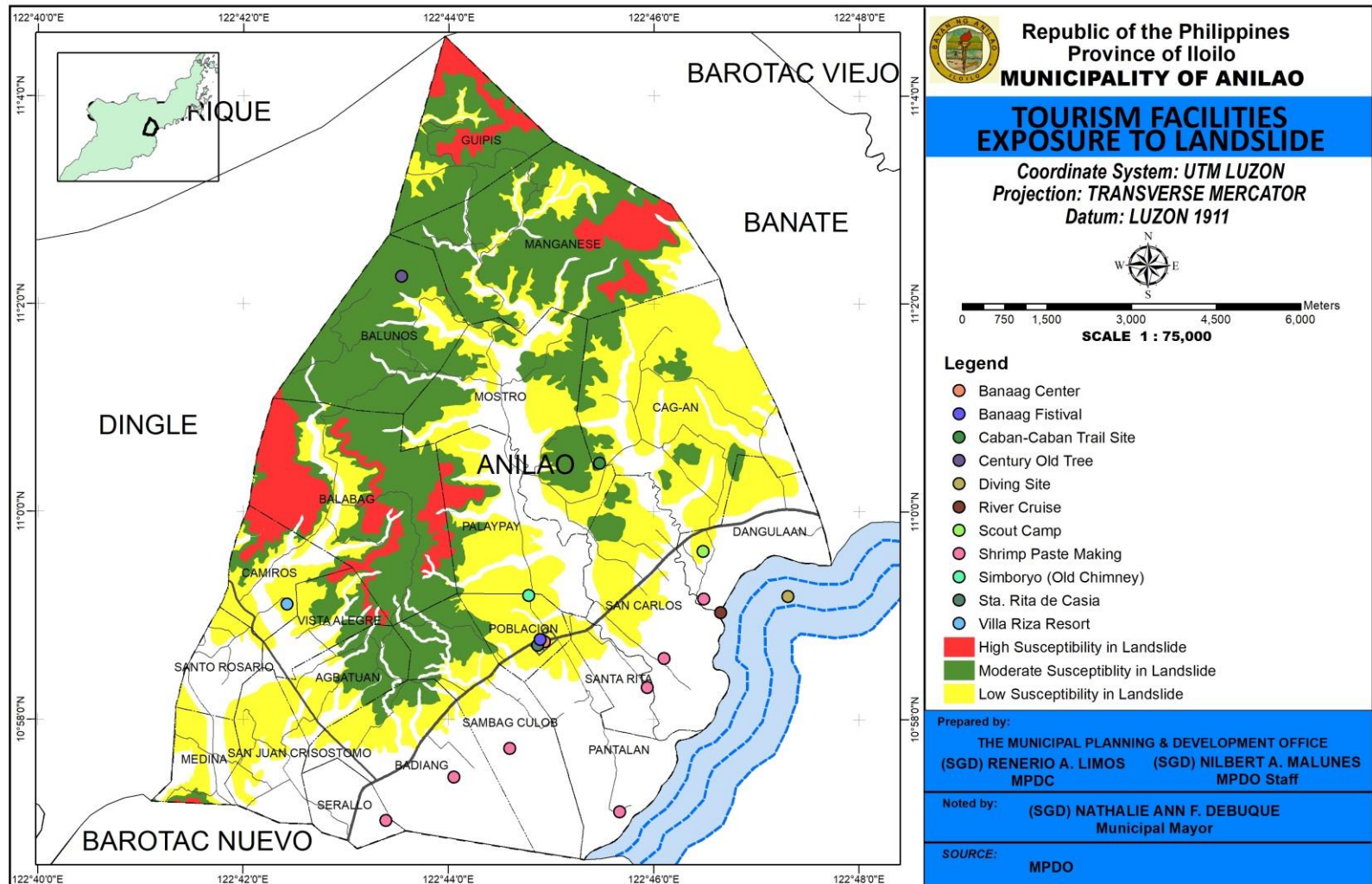


Figure TO-4. Tourism Facilities Exposure to Landslide





**Tourism Areas Susceptibility and Risk to Hazard**

Based on Figure TO-4, tourism attraction potentials for opening to tourists needs to be mapped and policies should be crafted to their sustainability. Potential tourism areas located near coastal areas are susceptible to coastal flooding and storm surge. The same is true in areas near rivers and creeks.

Tourism areas near mountain hills are susceptible to landslides.



Figure TO-5. Tourism Facilities Exposure to Stormsurge

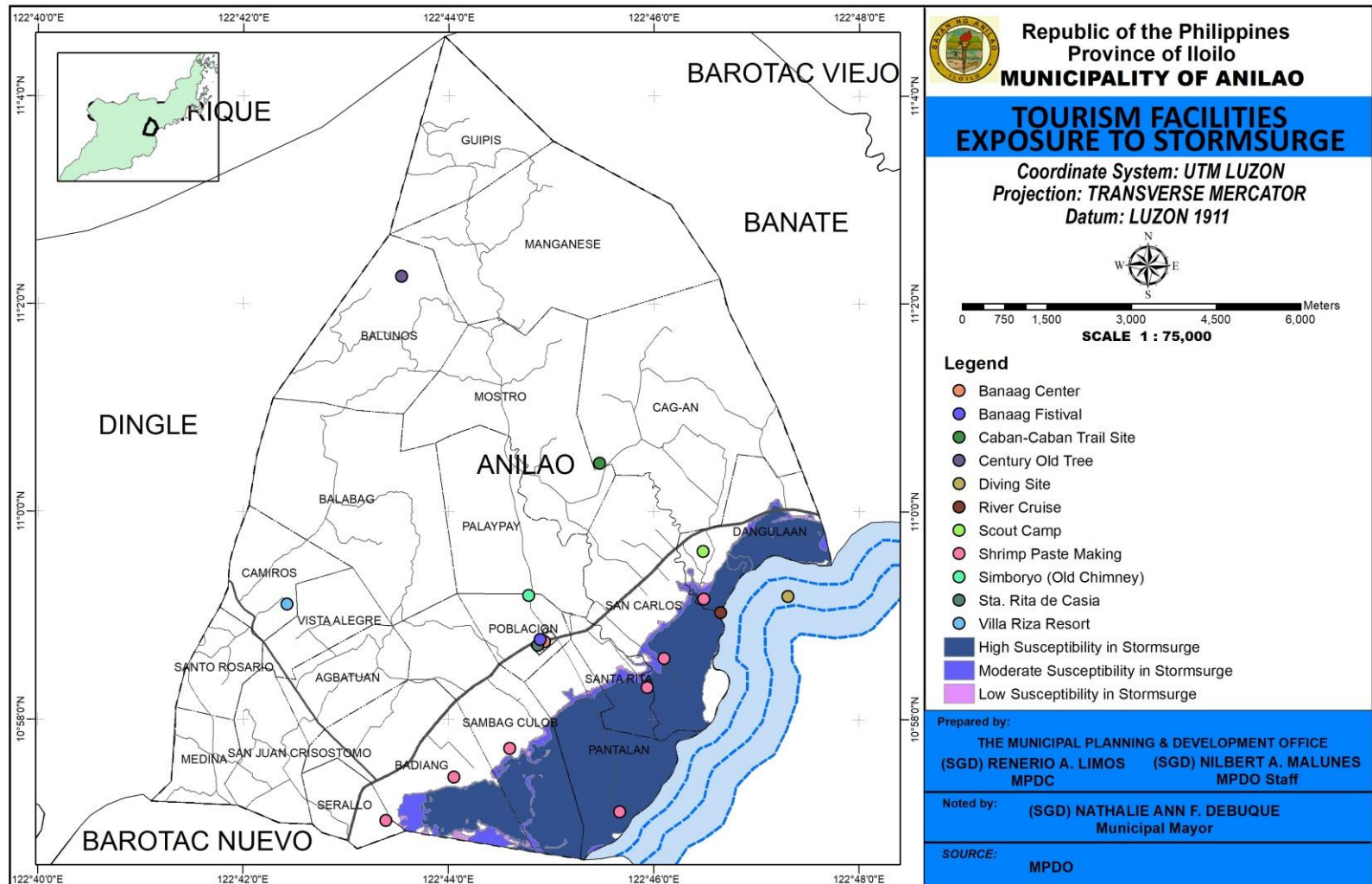


Figure TO-6. Eco-Tourism Facilities Exposure to Flooding

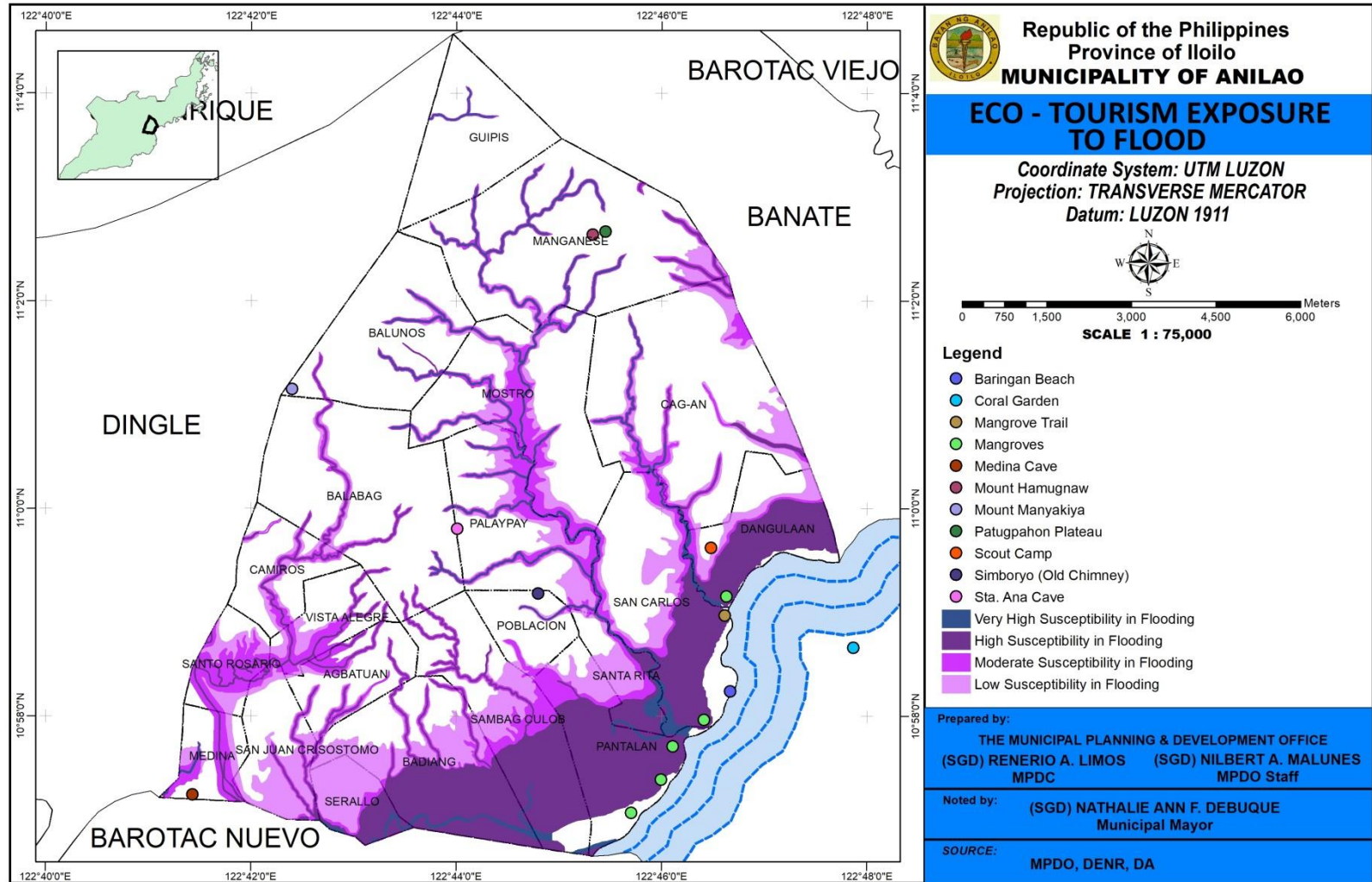


Figure TO-7. Eco-Tourism Facilities Exposure to Landslide

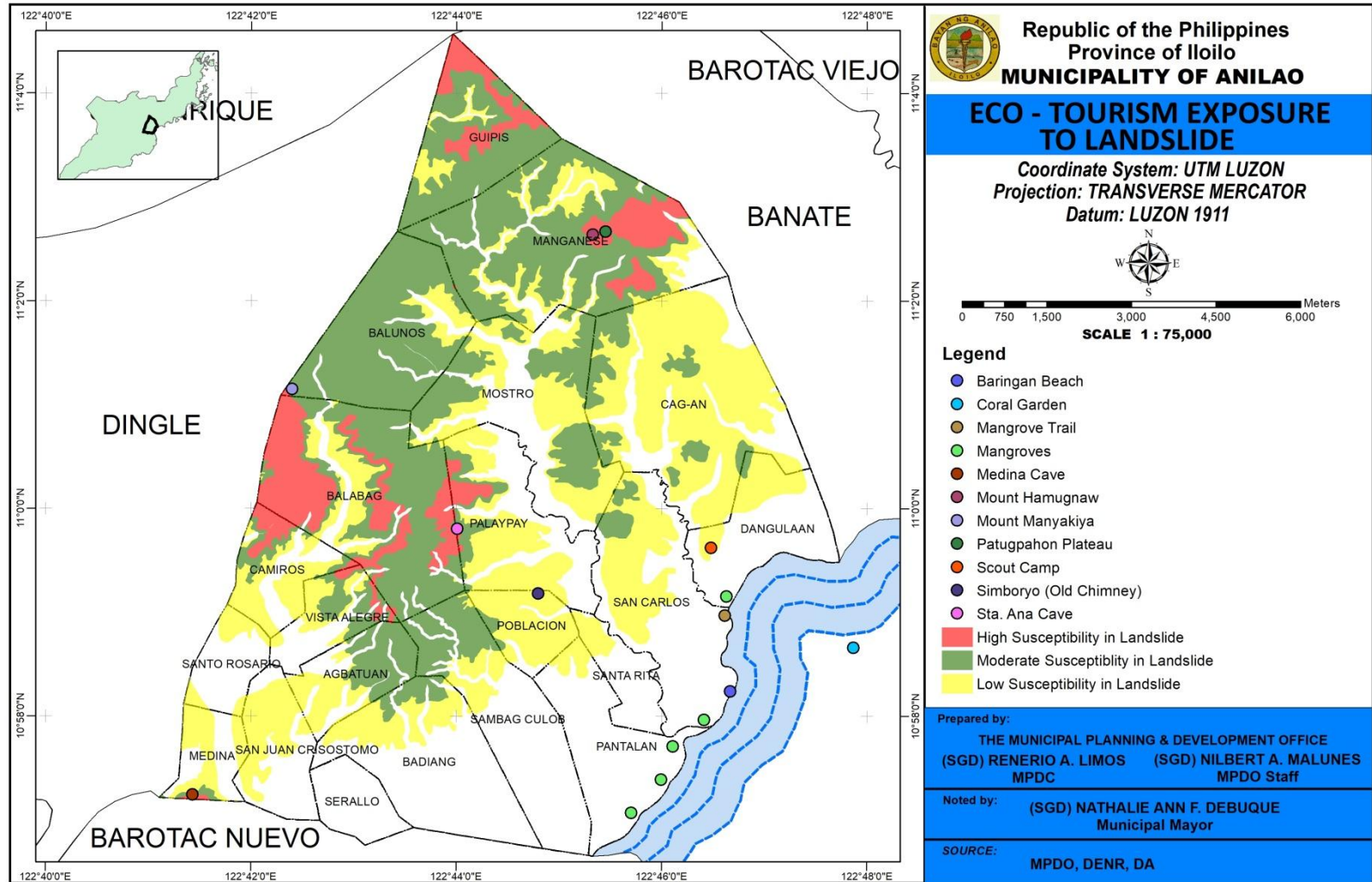
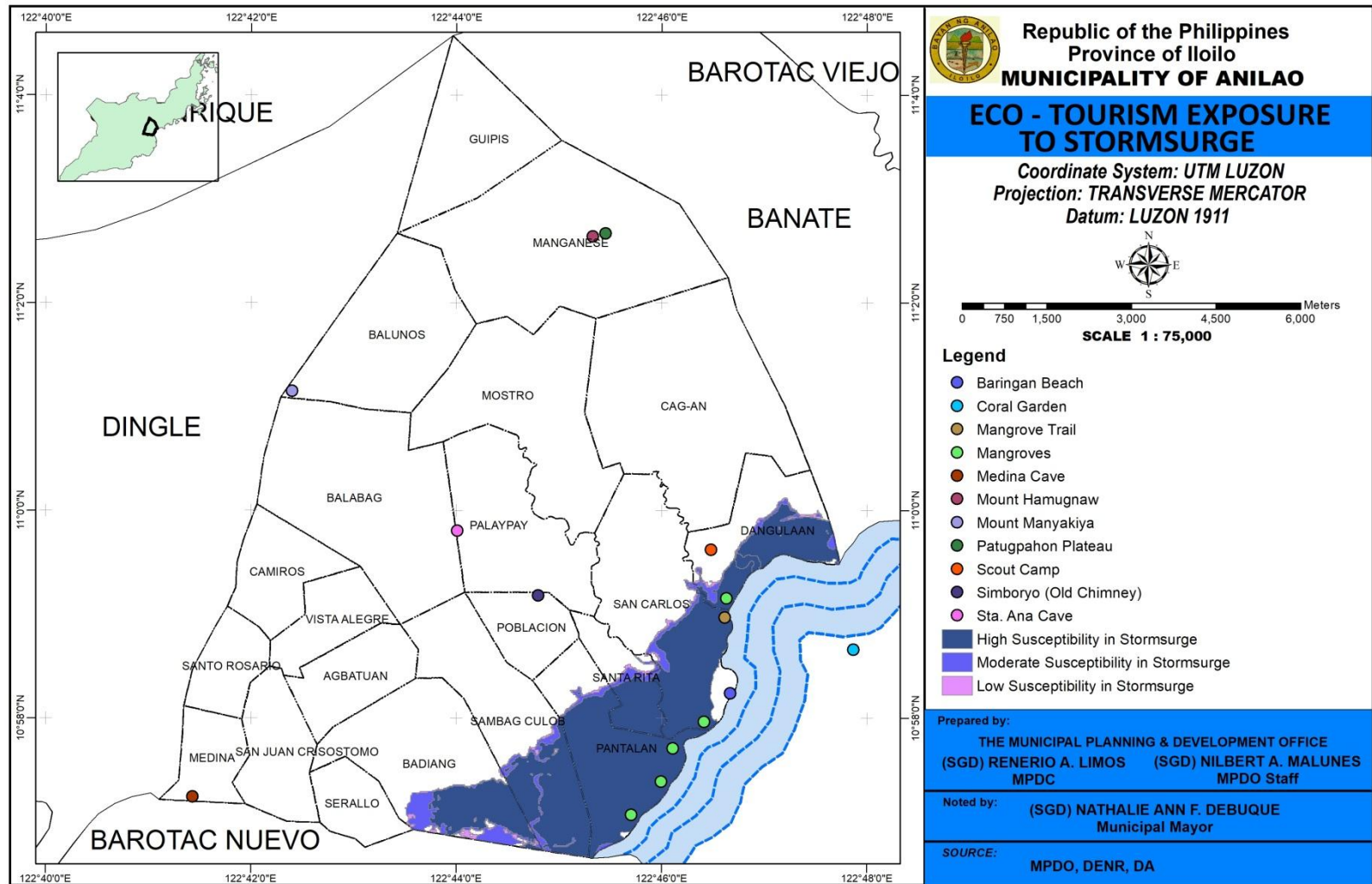




Figure TO-8. Eco-Tourism Facilities Exposure to Stormsurge



Tourism Sector Analysis

| Technical Findings/<br>Observations  | Implications/Effects   | Recommended Interventions, Policies, PPAS's   |
|--|--|---|
| No available records of Tourist Arrival  | Decrease of revenue for the municipality related to Tourism  | <ul style="list-style-type: none"> <li>-Intensify promotion campaign with in municipality and outside the area</li> <li>-Develop other amenities/attractions/activities that will be buyable to local and international tourist</li> <li>-Creation of Barangay Tourism Council and strengthening of Municipal Culture and Arts Council</li> <li>-Conduct Cultural mapping activities</li> </ul> |
| Lack of sense of pride of place<br>No comprehensive programs or plan and budget to boost tourism in the town | Community is not aware of the historical value of their town | <ul style="list-style-type: none"> <li>-Allocate budget for gallery expansion</li> <li>-Coordinate with TIEZA and other agencies for available projects beneficial to the municipality</li> <li>-Create comprehensive program related to tourism</li> </ul>   |
| Nature-based eco-tourism areas are prove to hazards  | Destruction of ecosystem Disruption of activities            | <ul style="list-style-type: none"> <li>-Detailed tourism planning needed</li> <li>-Awareness activities on hazards in Anilao Tourism mapping</li> </ul>   |



## CHAPTER VII – INFRASTRUCTURE AND UTILITIES SECTOR

### TRANSPORTATION SUB-SECTOR

#### Profile and Analysis of the Existing Situation

Transportation infrastructures are the routes to the development and ancillaries for the free flow of people, goods, information and commerce. These four things are necessary in the daily routine and every periodic activities of the populace.

#### Road System

The Municipality of Anilao is located 40 km north of Iloilo City. It has a total road length of 129.099 kilometers. This is classified into national, provincial, municipal and barangay roads. The road right of way measures 20m for the provincial, 30m for national road and 10m for municipal and barangay roads.

The national road stretches 10.83 km from boundary of the Municipalities of Barotac Nuevo and Banate, from Brgy. Serallo to Brgy. Dangula-an of this municipality. The national road has already been rehabilitated from asphalt to cement road.

The provincial road has a total length of 4.55 km from junction national road at Brgy. Badiang to Brgy. Camiros leading to adjacent of Municipalities of Dingle and San Enrique.

The municipal road and municipal streets that are in the Poblacion area has a total road length of 3.039 km of which 68.28% are concrete while the rest have earth and gravel surfaces.

The barangay road has a total length of 110.68 km connecting all the 21 barangays to the Poblacion area. Majority of these roads have earth and gravel surface while 6.92% are concrete. Priority allocation with an average of not less than P3M out of 20% Development Fund is intended for the maintenance and rehabilitation of roads annually. Out of the BUB programs of the National Government, portions of the roads which are hardly passable are given priority for concreting, particularly on the mountainous Barangays of Balunos, Guipis, Managanese, Balabag and Mostro.





Figure TR-1. Road Network Map of Anilao

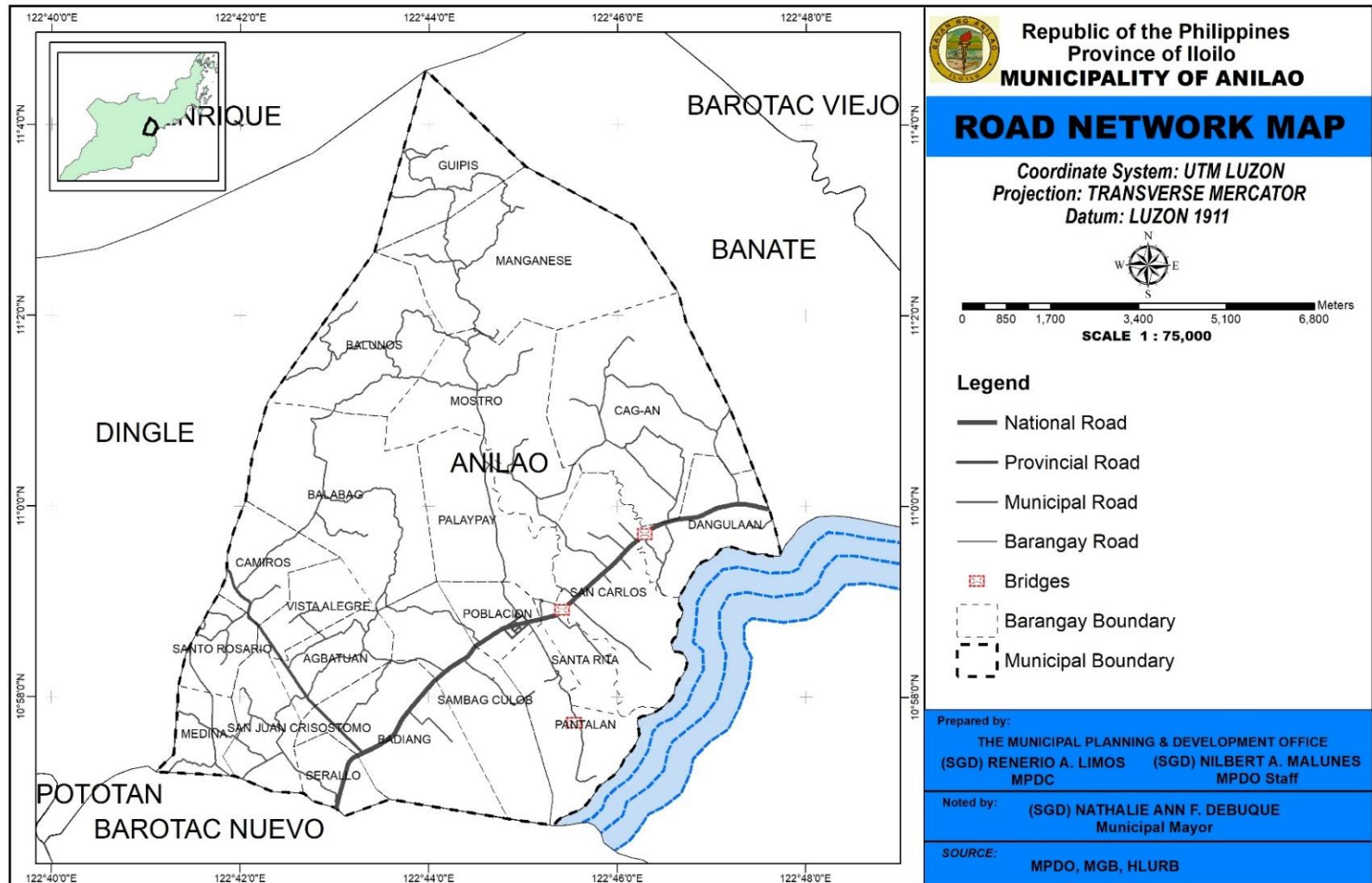


Table TR-1. Inventory of roads by System Classification and type of Pavement, CY 2017

| Roads by system Classification | Road surface |                   |        |       |                    |        |       |      |        |       |      | Hazard Susceptibility (H/M/L) |    |    |
|--------------------------------|--------------|-------------------|--------|-------|--------------------|--------|-------|------|--------|-------|------|-------------------------------|----|----|
|                                | Right of Way | Total Length (km) | Cement |       |                    | Gravel |       |      | Earth  |       |      | FI                            | Ln | Su |
|                                |              |                   | L (km) | %     | Physical Condition | L (km) | %     | C    | km     | %     | C    |                               |    |    |
| National                       | 30m          | 10.83             | 10.83  | 100   | good               |        |       |      |        |       |      | √                             | √  |    |
| Provincial                     | 20m          | 4.55              | 4.55   | 100   | good               |        |       |      |        |       |      | √                             | √  |    |
| Municipal                      | 10m          | 3.039             | 2.075  | 68.28 | good               | 0.797  | 26.23 | poor | 0.167  | 5.50  | poor |                               | √  |    |
| Barangay                       | 10m          | 110.68            | 7.66   | 6.92  | good               | 49.62  | 44.83 | good | 53.40  | 48.25 | poor | √                             | √  | √  |
| Total                          |              | 129.099           | 25.115 |       |                    | 50.417 |       |      | 53.567 |       |      |                               |    |    |

Source: MEO/MPDO

Legend: C: Physical Condition

Good= acceptable/ serviceable

Poor= needs improvement

### Bridges

The municipality has only three (3) reinforced concrete bridges. Two (2) are located along the National Road going to Barangay San Carlos with a length of 40 meters and the other one is along Barangay Dangula-an with the length of 14 meters with load limits of more or less 15 tons. These serve as the main route of the northbound vehicles. There is one (1) barangay bridge situated in Barangay Pantalan with length of 14.20 meters which leads to the fishpond and coastal areas of the municipality. This bridge is beneficial to the economy of the municipality.

There is a proposal by the DPWH to expand or widen both sides of the bridges at brgy. San Carlos and Dangula-an in preparation for a four (4) lane national road.



Table TR-2. INVENTORY OF BRIDGES/FOOTBRIDGES by Locations, Type, Capacity and Condition 2017

| LOCATION               | CLASSIFICATION  | TYPE       | LENGTH (M) | CAPACITY (TONS)      | CONDITION | Hazard Susceptibility (H/M/L) |    |    |
|------------------------|-----------------|------------|------------|----------------------|-----------|-------------------------------|----|----|
|                        |                 |            |            |                      |           | FI                            | Ln | Su |
| San Carlos             | National Bridge | Reinforced | 40         | More or less 15 tons | good      | √                             |    |    |
| Dangula-an             | National Bridge | Reinforced | 14         | More or less 15 tons | good      | √                             |    |    |
| Pantalan               | Barangay Bridge | Reinforced | 14.2       | More or less 10 tons | good      | √                             |    |    |
| Proper I Sambag Culob  | Foot Bridge     | Steel      | 12         |                      | good      | √                             |    |    |
| Proper II Sambag Culob | Foot Bridge     | Steel      | 12         |                      | good      | √                             |    |    |
| Baidan Sambag Culob    | Foot Bridge     | Steel      | 12         |                      | good      | √                             |    |    |
| Sta. Rita              | Foot Bridge     | Steel      | 36         |                      | poor      | √                             |    | √  |
| Pantalan               | Foot Bridge     | Steel      | 15         |                      | good      | √                             |    | √  |
| Hda. Rica, Badiang     | Foot Bridge     | Steel      | 12         |                      | good      | √                             |    |    |
| Managanese             | Foot Bridge     | Steel      | 15         |                      | good      | √                             |    |    |
| Mostro                 | Foot Bridge     | Steel      | 15         |                      | good      | √                             |    |    |
| Balabag                | Foot Bridge     | Steel      | 15         |                      | good      | √                             |    |    |

Source: MEO/MPDO

**Foot Bridges**

There are nine (9) steel foot bridges located in seven (7) barangays of the municipality. Three (3) are located in Brgy. Sambag Culob, One (1) in each Barangay of Pantalan, Sta. Rita, Badiang, Manganese, Mostro and Balabag. Some of these bridges are funded out of the 20% Development Fund of the municipality. The foot bridge in Barangay Sta. Rita is scheduled for immediate rehabilitation to be funded out of National Aid Fund while those in Barangays Balabag,



Mostro and Manganese were constructed under the KALAHI Program. These foot bridges serve as access way during flood caused by heavy rains which rendered small streams and river impassable to local residents.

Table TR-3. Inventory of Bridges by Location, Type, Capacity and Condition, Year 2017

| Bridge Name       | Barangay   | Year Constructed | Type     | Length (m) | Width (m) | Load Capacity (Tons) | Physical Condition | Hazard Susceptibility (H/M/L) |    |    |
|-------------------|------------|------------------|----------|------------|-----------|----------------------|--------------------|-------------------------------|----|----|
|                   |            |                  |          |            |           |                      |                    | Fl                            | Ln | Su |
| Anilao Bridge     | San Carlos | No data          | Concrete | 40         | 6.1       | 15                   | Good               | H                             |    |    |
| Pantalan Bridge   | Pantalan   | No data          | Concrete | 14.2       | 4         | 10                   | Good               | H                             |    | H  |
| Dangula-an Bridge | Dangula-an | No data          | Concrete | 14         | 6.1       | 15                   | Good               | H                             |    |    |

Source: MEO/MPDO

**Ancillary Road Facilities**

Anilao has several ancillary road facilities that helped promote safety and proper information for the pedestrian and traveling public. These consist of informative or directional lines to guide motorists, pedestrian lanes, concrete sidewalks, waiting sheds and streetlights.

Eleven (11) pedestrian lanes are provided along the national road by the Department of Public Works and Highways, particularly in School Zones and populated areas. Informative signs were also provided by the local government to indicate municipal and barangay boundaries from Brgy. Serallo to Brgy. Dangula-an.

Concrete sidewalk was constructed along the national road from junction of Brgy. Pantalan Road Section to Anilao Central Elementary School for the safety of school children usually routing the area.

Waiting sheds are also provided along the main road sections for travellers coupled with the provision of streetlights. There are 28 waiting sheds along national roads stretching from Barangay Serallo to Barangay Dangula-an and 2 Units along the provincial road situated at Barangay Agbatuan and Badiang. Recently about 22 units of street lights are under rehabilitation/upgrading along the national road from Barangay Sambag Culob, Poblacion, Sta. Rita and San Carlos. Nine (9) solar type streetlights were already constructed along the service road of the new Anilao Public market. Further rehabilitation of streetlights along the National and Municipal streets is one of the top priorities of the LGU for the coming years. Barangays San Carlos, Sta. Rita, Sambag Culob, Poblacion, Mostro, Palaypay and



Dangula-an are also proposing for the construction of Solar Street lights to be funded by the KALAHI Program while Barangays Pantalan and Camiros are to be funded by the Local Development Fund by the municipality.

Pedestrian lanes are under the maintenance of the Department of Public Works and Highways. Waitingsheds and streetlights are maintained by respective barangays along the national and provincial roads.

### Public Land Transportation

Transportation in the area consists of jeepneys, buses and other various public utility vehicles. Many commuters going to the city and adjacent towns and provinces are being catered by a Transport Company. For short distances within the locality, tricycle, motorcycle, pedicabs are most commonly used.

Transport of farm produce, such as vegetables, rice, corn, poultry, sugarcane and fishery products are also served by locally available haulers. Table below shows the 2017 inventory of public land transportation vehicles by type of services.

Table TR-4 shows the various ancillary Facilities like pedestrian crossing, side walks, waiting sheds, street lights and road signages.

Table TR-5 shows the list of public utility vehicles in the municipality. Most of these are tricycles and pedicabs.



Table TR-4. Inventory of Ancillary Road Facilities, CY 2017

| Type of Auxilliary Facilities  | Along National Road                     |            |                    | Along Provincial Road   |          |                    |
|--------------------------------|---|------------|--------------------|-------------------------|----------|--------------------|
|                                | Location                                | Quantity   | Physical Condition | Location                | Quantity | Physical Condition |
| Pedestrian Crossing            | Anilao Central Elementary School (ACES) | 1          | Fair               |                         |          |                    |
|                                | Municipal Bldg.                         | 2          | Fair               |                         |          |                    |
|                                | Anilao Public Market                    | 1          | Fair               |                         |          |                    |
|                                | Anilao National High School             | 1          | Fair               |                         |          |                    |
|                                | Dangula-an                              | 2          | Fair               |                         |          |                    |
|                                | San Carlos                              | 2          | Fair               |                         |          |                    |
|                                | Sambag Culob                            | 1          | Fair               |                         |          |                    |
|                                | Badiang                                 | 1          | Fair               |                         |          |                    |
| Side walk                      | Poblacion Crossing Pantalan to ACES     | 200 meters | Good               |                         |          |                    |
| Waiting shed                   | Brgy. Serallo                           | 2          | Good               | Agbatuan                | 1        | Good               |
|                                | Badiang                                 | 5          | Good               | Badiang                 | 1        | Good               |
|                                | Anilao NHS                              | 2          | Good               |                         |          |                    |
|                                | Sambag Culob                            | 2          | Good               |                         |          |                    |
|                                | Anilao CES                              | 1          | Good               |                         |          |                    |
|                                | Poblacion                               | 7          | Good               |                         |          |                    |
|                                | Sta. Rita                               | 1          | Good               |                         |          |                    |
|                                | San Carlos                              | 4          | Good               |                         |          |                    |
|                                | Dangula-an                              | 4          | Good               |                         |          |                    |
| Streetlights                   | Poblacion                               | 22         | Poor               |                         |          |                    |
|                                | Public Market                           | 9          | Good               |                         |          |                    |
|                                | Badiang                                 | 10         | Fair               |                         |          |                    |
|                                | Sambag Culob                            | 8          | Fair               |                         |          |                    |
|                                | San Carlos                              | 8          | Fair               |                         |          |                    |
|                                | Dangula-an                              | 10         | Fair               |                         |          |                    |
| Road signage (boundary marker) | Municipal Boundary                      | 2          | Good               | Vista Alegre -- Camiros | 1        |                    |
|                                | Serallo-Badiang                         | 1          | Good               |                         |          |                    |
|                                | Badiang                                 | 1          | Good               |                         |          |                    |
|                                | Badiang-Sambag Culob                    | 1          |                    |                         |          |                    |
|                                | Sambag Culob - Poblacion                | 1          | Good               |                         |          |                    |
|                                | Poblacion – Sta. Rita                   | 1          |                    |                         |          |                    |
|                                | Sta. Rita – San Carlos                  | 1          |                    |                         |          |                    |
|                                | San Carlos – Dangula-an                 | 1          | Good               |                         |          |                    |

Source: MEO/MPDO



**Table TR-5 Inventory of Public Land Transportation Vehicles by Type Services, CY 2017**

| Types of Public Utility Vehicles | Registered in the Municipality |                    |  |
|----------------------------------|--------------------------------|--------------------|--|
|                                  | Total No.                      | Route/ Destination |  |
|                                  |                                | Barangay           | Municipality                                 |
| Tricycle                         | 38                             | -                  | Barangay to Barangay                         |
| Pedicab                          | 20                             | Poblacion          | Barangay Poblacion to Sta. Rita and Pantalan |
| Jeepneys                         | none                           | -                  |  |
|                                  |                                |                    |  |

Source: Municipal Treasury

**Road Accidents**

Table TR-6 presents the road accidents from 2016 to 2018, as reported by the Philippine National Police in Anilao. Records show that year 2018 every year Barangay Poblacion had the most number of recorded accidents. Barangay Badiang and San Carlos had the second and third most number of road accidents respectively. This is no surprise as these areas are one of the busiest in terms of traffic because they are located in commercial areas and along the national highways.





Table TR-6. Road Accidents by Nature, Location and Frequency

| Nature                    | Barangay      | 2016      | 2017      | 2018      |
|---------------------------|---------------|-----------|-----------|-----------|
| RIR to Physical Injury    | Agbatuan      | 0         | 2         | 5         |
| RIR to Damage to Property | Badiang       | 4         | 10        | 15        |
| RIR to Physical Injury    |               | 4         | 9         | 6         |
| RIR to HOMICIDE           | CAG-AN        | 1         | 0         | 0         |
| RIR to DAMAGE TO PROPERTY | Camiros       | 0         | 1         | 1         |
| RIR to PHYSICAL INJURY    |               | 0         | 1         | 0         |
| RIR to HOMICIDE           |               | 0         | 0         | 1         |
| RIR to DAMAGE TO PROPERTY | Dangula-an    | 2         | 5         | 3         |
| RIR to PHYSICAL INJURY    |               | 3         | 3         | 6         |
| RIR to DAMAGE TO PROPERTY | Mostro        | 1         | 0         | 0         |
| RIR to PHYSICAL INJURY    | Palaypay      | 0         | 2         | 1         |
| RIR to DAMAGE TO PROPERTY | Poblacion     | 8         | 2         | 12        |
| RIR to PHYSICAL INJURY    |               | 11        | 16        | 13        |
| RIR to HOMICIDE           |               | 0         | 1         | 0         |
| RIR to DAMAGE TO PROPERTY | Sambag Culob  | 1         | 3         | 3         |
| RIR to PHYSICAL INJURY    |               | 4         | 8         | 5         |
| RIR to DAMAGE TO PROPERTY | San Carlos    | 3         | 5         | 5         |
| RIR to HOMICIDE           |               | 0         | 0         | 1         |
| RIR to PHYSICAL INJURY    |               | 4         | 4         | 3         |
| RIR to PHYSICAL INJURY    | San Juan      | 0         | 0         | 1         |
| RIR to DAMAGE TO PROPERTY | Santa Rita    | 1         | 3         | 1         |
| RIR to PHYSICAL INJURY    |               | 0         | 1         | 0         |
| RIR to DAMAGE TO PROPERTY | Serallo       | 2         | 1         | 3         |
| RIR to PHYSICAL INJURY    |               | 4         | 0         | 1         |
| RIR to HOMICIDE           |               | 1         | 0         | 0         |
| RIR to DAMAGE TO PROPERTY | Vista Allegre | 0         | 0         | 1         |
| RIR to PHYSICAL INJURY    |               | 0         | 0         | 1         |
| <b>TOTAL</b>              |               | <b>54</b> | <b>77</b> | <b>88</b> |

Source: Anilao PNP

Legend: RIR - Reckless Imprudence Resulting



### Risk and Susceptibility of Roads and Bridges to Hazards

Based on the hazard susceptibility maps attached (Figure TR-2), portions of the national roads especially those situated along the bridges in Barangay Badiang, Dangulaan, Sambag Culob, San Carlos and Sta. Rita are high to very high susceptibility to flood. Likewise, provincial roads along the bridges in Barangay Vista Alegre, Badiang and Agbatuan are also high susceptibility to flood. Almost all barangay roads have high to very susceptibility to flood especially roads near the bridges. Figure TR-3 shows the location of roads with high risk.

Landslide susceptibility of national, provincial and municipal roads is low. However, some portions of barangay roads of Balabag, Guipis and Camiros are high susceptible to landslide. Residents along identified areas high susceptible to this type of hazard must be relocated (Figure TR-4).

All barangay roads in coasta barangays (Pantalan, Dangulaan, San Carlos, Sta Rita and Sambag Culob).

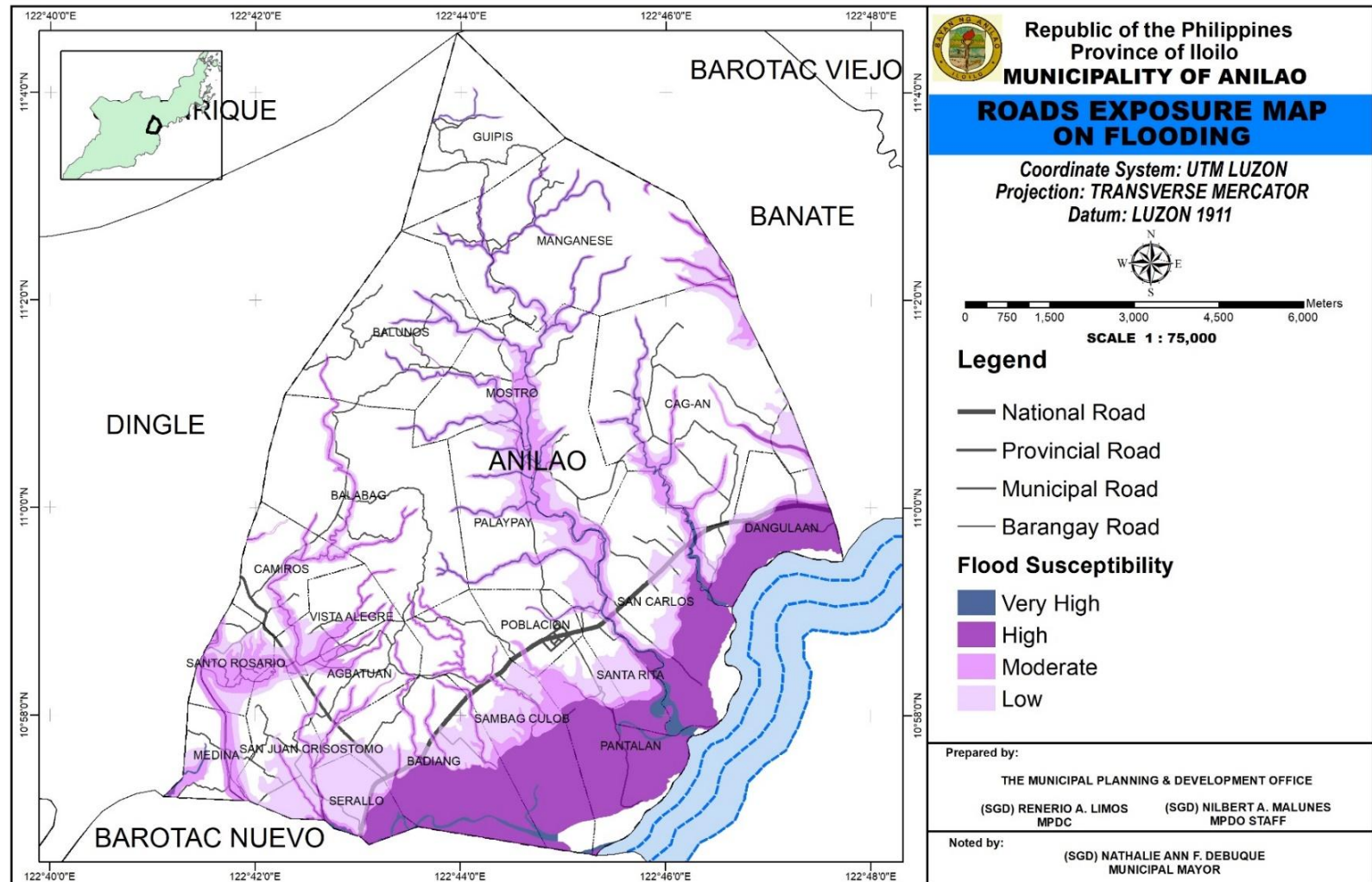
The Municipality has a total road length of 129.099 kilometers. Results of the CDRA show that a total of 11.8919 kilometers (10%) are affected by flooding. Of these 3.8 kilometers of barangay road located in Barangay Camiros, Dangula-an, Mostro and Palaypay are at high risk to flood Figure TR-3). These areas are located near rivers and streams, mostly gravel and constructed in 1980.

A section of 305.04 meters along the National Highway located in Barangay Badiang, Dangula-an, Sambag Culo and San Carlos have moderate risk to flooding. A 303.25 meters provincial road section located in Barangay Agbatuan, Badiang and Vista Alegre have also moderate risk to flooding. A 64.07 meters of municipal road section located in Barangay Poblacion has moderate risk to flood. Location of roads with risks to flooding is shown in Figure TR-3.

All of the municipal road, provincial road and the national highway in Anilao have low risk to landslide based on the CDRA Report (Figure TR-5). Meanwhile, a portion of barangay road with a length of 963.15 meters located in Barangay Balabag and Guipis are found to have high risk in landslide. Moderate risk are road sections in 11 barangays namely, Agbatuan, Badiang, Balabag, Balunos, Cag-an, Camiros, guipis, Manganes, Mostro, Poblacion and Sambag Culob have moderate risk to landslide. The total affected road length is 31.618 meters.



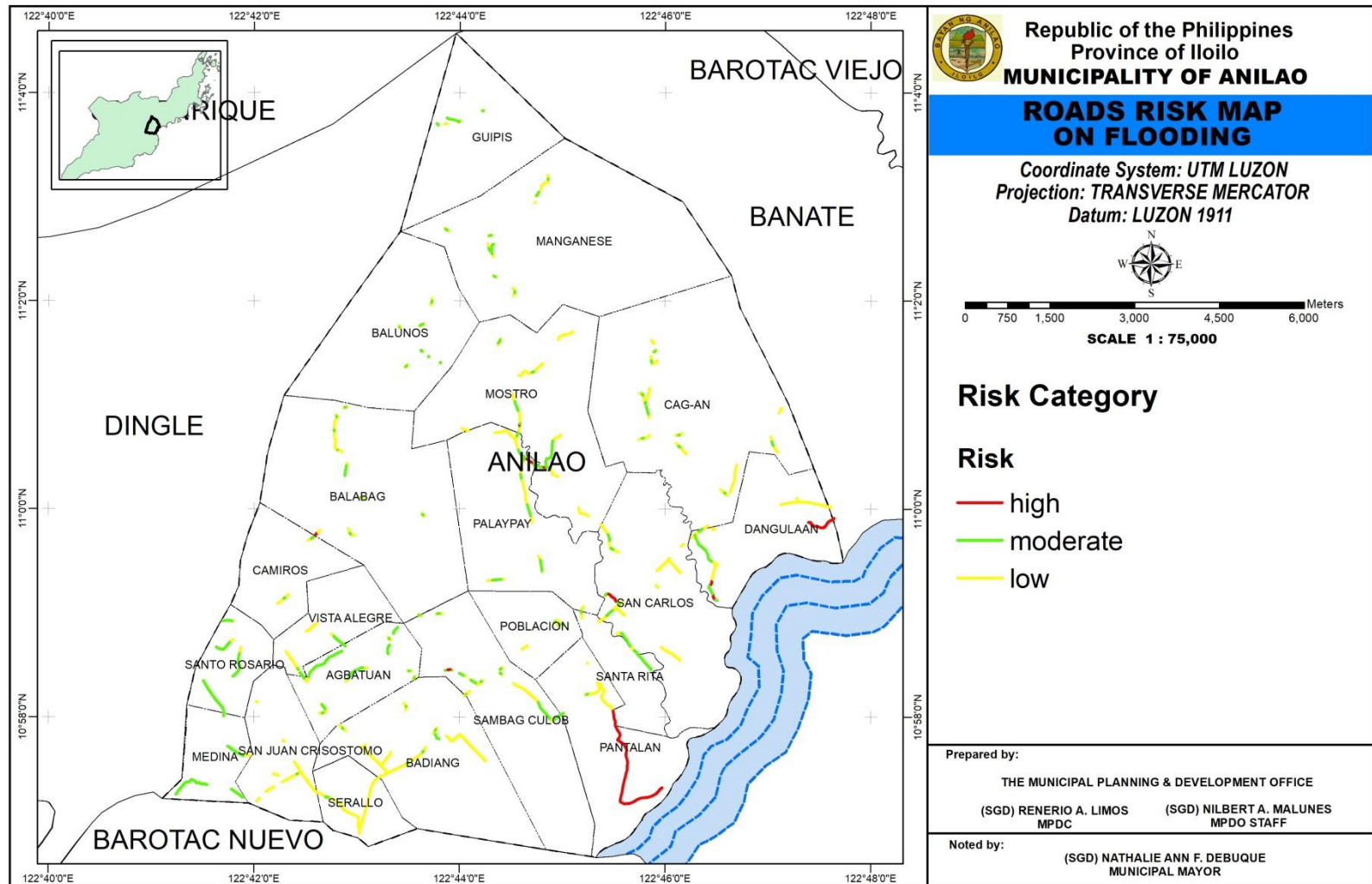
Figure TR-2. Exposure Map of Roads to Flooding



Source: MPDO



Figure TR-3. Roads Risk Map on Flooding

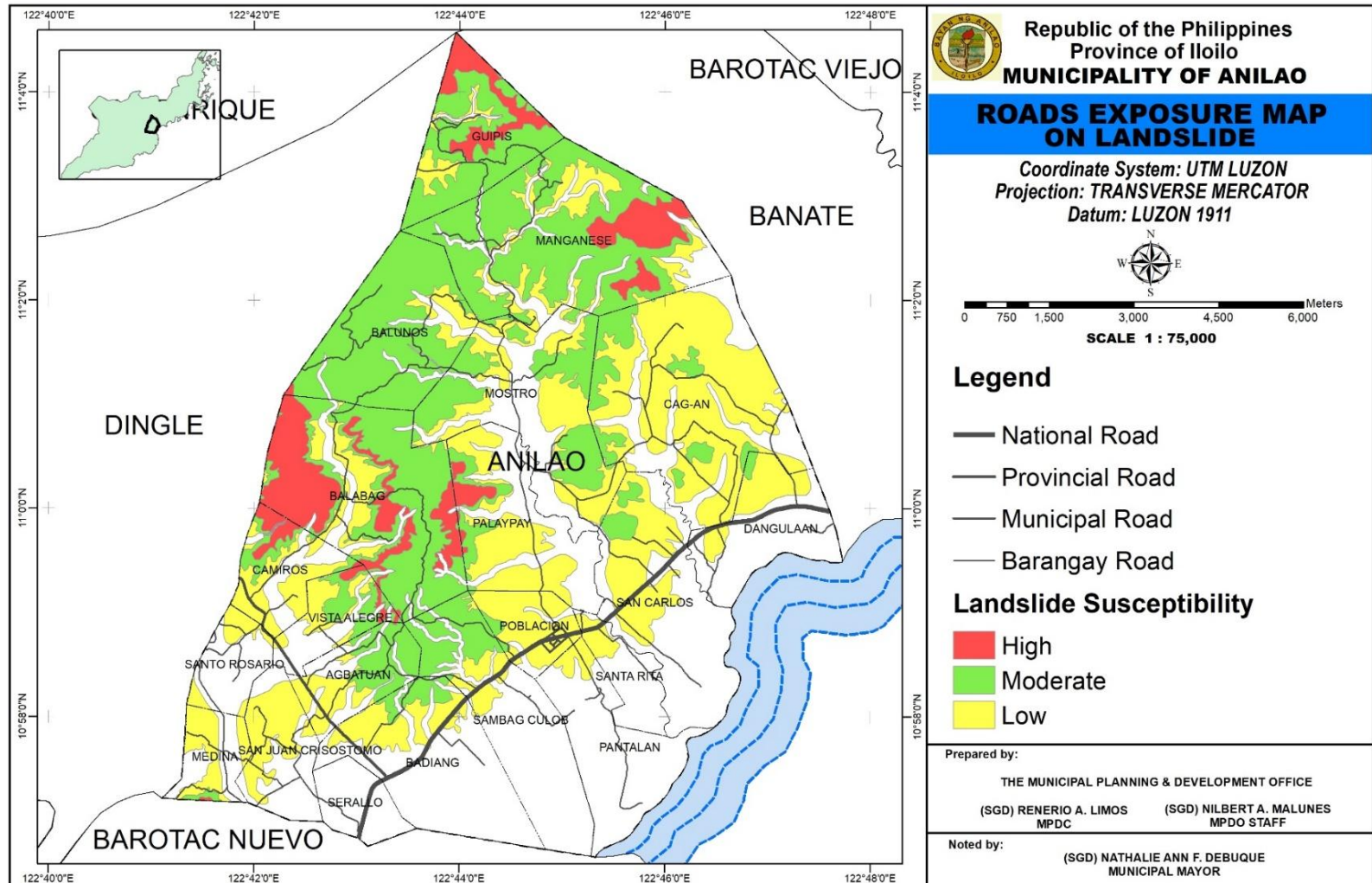


Source: MPDO





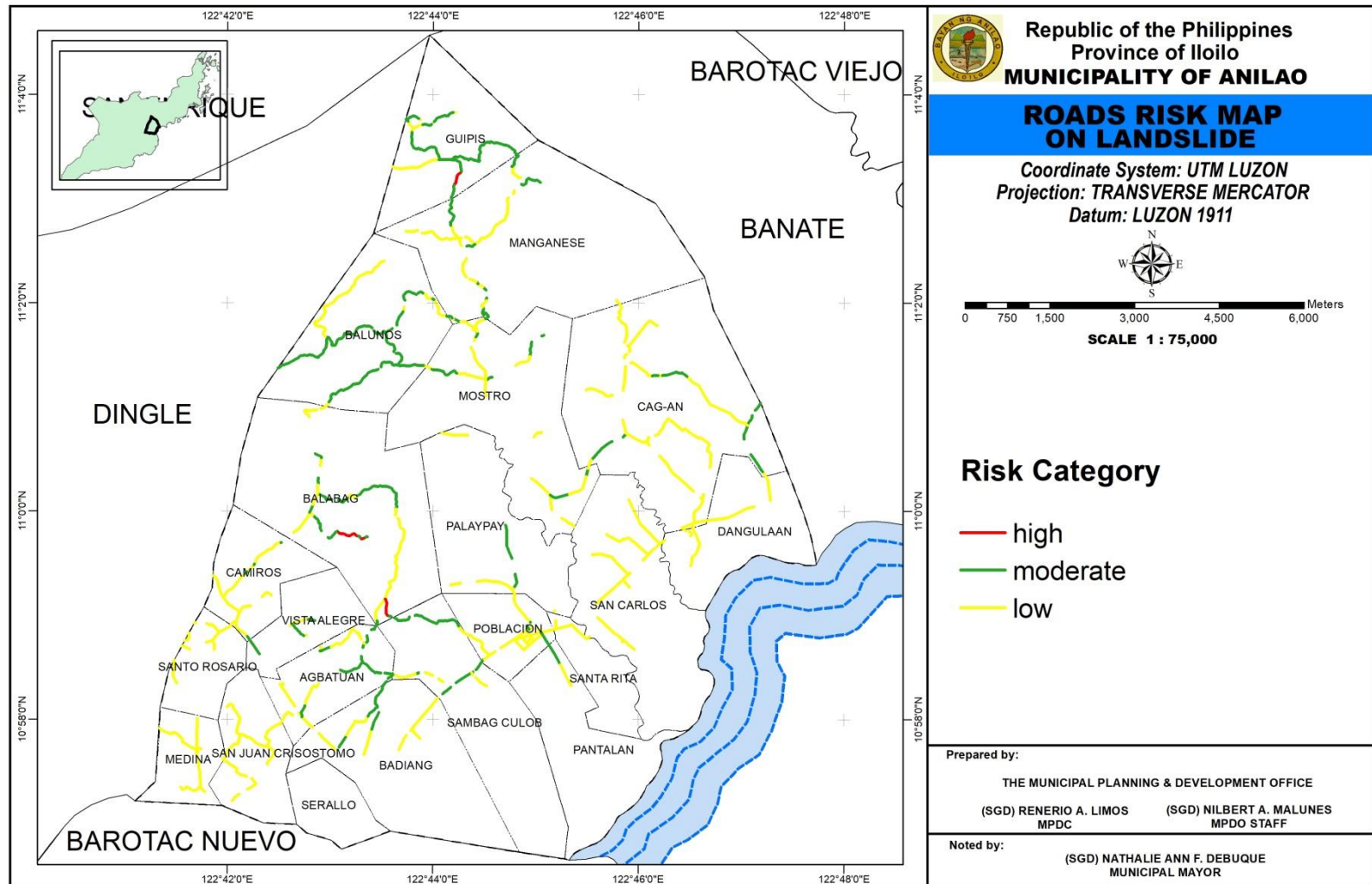
Figure TR-4. Exposure Map of Roads to Landslide



Source: MPDO



Figure TR-5. Roads Risk Map on Landslide



Source: MPDO



**Current and Projected Needs**

**Urban / Rural Road Requirement**

The Municipality of Anilao has a total urban (Poblacion) population of 2,022 based in the 2015 PSA data. As per the standard urban road requirement of 2.40 kilometer per/1000 population, Anilao still needs an additional 0.425 kilometers of urban road network, to reach the total required length of 4.849 km considering the total existing urban road is only 4.424 km. with the project urban population of 2,930 by 2026, the municipality will need an additional of 2.16 kilometers roads.

Based on the standard of 1.5 kilometers per 100 hectares of arable lands rural road requirement, the municipality has adequate road up to end of the planning period.

There is also a proposal to construct additional concrete road section connecting the municipal street going to Barangay Pantalan perpendicular to the new market site with the width of five (5) meters and parallel to Sto. Niño Street of Brgy.Poblacion.

The existing 3.039 km of Municipal Street and 110.68 km of barangay roads of the municipality has been given priority for annual maintenance/rehabilitation with the acquisition of heavy equipments, 1 road grader, 1 payloader and 3 dumptrucks.





**Transportation Sector Analysis Matrix**

| Technical Findings/observation   | Implication (effect)  | Policy Option/Intervention  |
|--|---|---|
| Lack of funds for rehabilitation of farm to market road particularly road concreting   | Slow transportation of farm products specially on bad weather condition                                     | Request funding from national government agencies                     |
| Proper plan or strategy to reduce traffic / vehicular accidents  | Frequent accidents along the national road  | Provision and proper additional road signages and traffic signs       |
| Need of additional 2.585 km of urban road within the planning period. Also, a need to concrete all urban roads and the rehabilitation of dilapidated existing concrete roads   | Congested streets specially during Municipal special events where traffic rerouting usually needed          | Allocation of funds from the national and local government sources    |
| Portions of national, provincial and barangay roads especially near the bridges/culverts in Barangays Badiang, Dangula-an, Sambag Culob, San Carlos, Sta Rita, Agbatuan, Vista Alegre and Balunos have high to very high susceptibility to flood | Danger to lives and properties of the residents along affected bridges/culverts                             | Retrofitting of bridges/culverts along these flood susceptible areas. |
| Portions of Barangays Balabag and Guipis roads have high susceptibility to landslide   | Danger to lives of residents in affected roads  | Rehabilitation of roads along these landslide susceptible areas       |
| Pantalan Bridge is high susceptible to storm surge and flood   | Danger in the lives of motorist and travelers   | Bridge retrofitting   |
| Barangay roads in Guipis and Balabag are high risk to flooding   | Danger in the lives of residents along these barangays mre especially if used as roads to evacuation center | LGU to provide alternative road in cases of emergency                 |



## WATER UTILITIES SUB-SECTOR

### Profile and Analysis of the Existing Situation

Most of the households in the urban area of Anilao is supplied by the Anilao Water District, level III water system. The main source of potable water is located within the premises of Anilao Central Elementary School. Its source is more or less 70m deep with a 5 HP pump, collected in two units 35cm capacity elevated concrete water tank. Its distribution lines from the source runs along the national road going to barangays Poblacion, Sambag Culob, Badiang, Serallo, Pantalan, San Carlos and Dangula-an. It has its own standby generator set within its pump house station, with its main office at San Marcelino Street, Poblacion.

It has its own management under LWUA, a manager, 2 clerk, 3 utilities with own operating expenses. At present another Water Supply Development is under construction utilizing the existing source at Buay-buay, Brgy. Mostro, funded out of the 2014 and 2015 BUB Program of the DILG, the construction cost is estimated at Five Million Seven Hundred Thousand Pesos (Php 5,700,000.00), wherein the system is a level II project with a 25 cm, water tank and provide 10 tap stands servicing Mostro National High School, Mostro Elementary School, Palaypay Elementary School, Mostro Proper and Sitio Lopez.

Another source is at Barangay Camiros which is a spring, water is stored in a concrete tank and a PVC pipelines by gravity is used to service the Barangays of Camiros, Sto. Rosario and Vista Alegre. Last source developed by the Anilao Water District is a deep well located at Sitio Hda. Rica at Brgy. Badiang with a pump capacity of 1 HP. Elevated steel water tank was constructed and its line of distribution is servicing portion of Brgy. Badiang.

Connection is processed by an application at the AWD office. After which is AWD Staff will make a survey, evaluation and will require the applicant on the necessary materials needed for service connection.

Records of Anilao Water District in 2017 shows that there are 885 residential connections with an average water consumption of 77.89 cubic meter/day. This is followed by commercial consumers with 22 connections and an average water consumption of 191.57 cubic meters/day. There are twelve (12) Barangays served by this water system.

The minimum monthly water rate is P158.00 for 10 cm and an additional cost of P17.20 per cu.m in excess or fraction thereof.

Aside from Level III water system existing in the municipality, there are level II and level I source of water supply utilized by different households in the municipality.



Based on the 2015 data shown in table below, 5723 households depend on level I water system. These 275 households have shallow wells, 2,725 deep wells and 335 improved spring. Some of these level II water source are situated in landslide prone area. In level II water system (commercial)

As reflected in Table WS-3, there are three (3) barangays that utilizes the water system namely: Barangays Pantalan, Sambag Culob and Serallo. The source of level II water system comes from spring.

The usual problem is the insufficient water supply for domestic, commercial and public use, particularly during summer time. It is noted that since the water district has been operational for the past 24 years, the probability of water source exhaustion is very much noticeable, coupled with the impending climate change.



Figure WS-1. Water Facilities Map

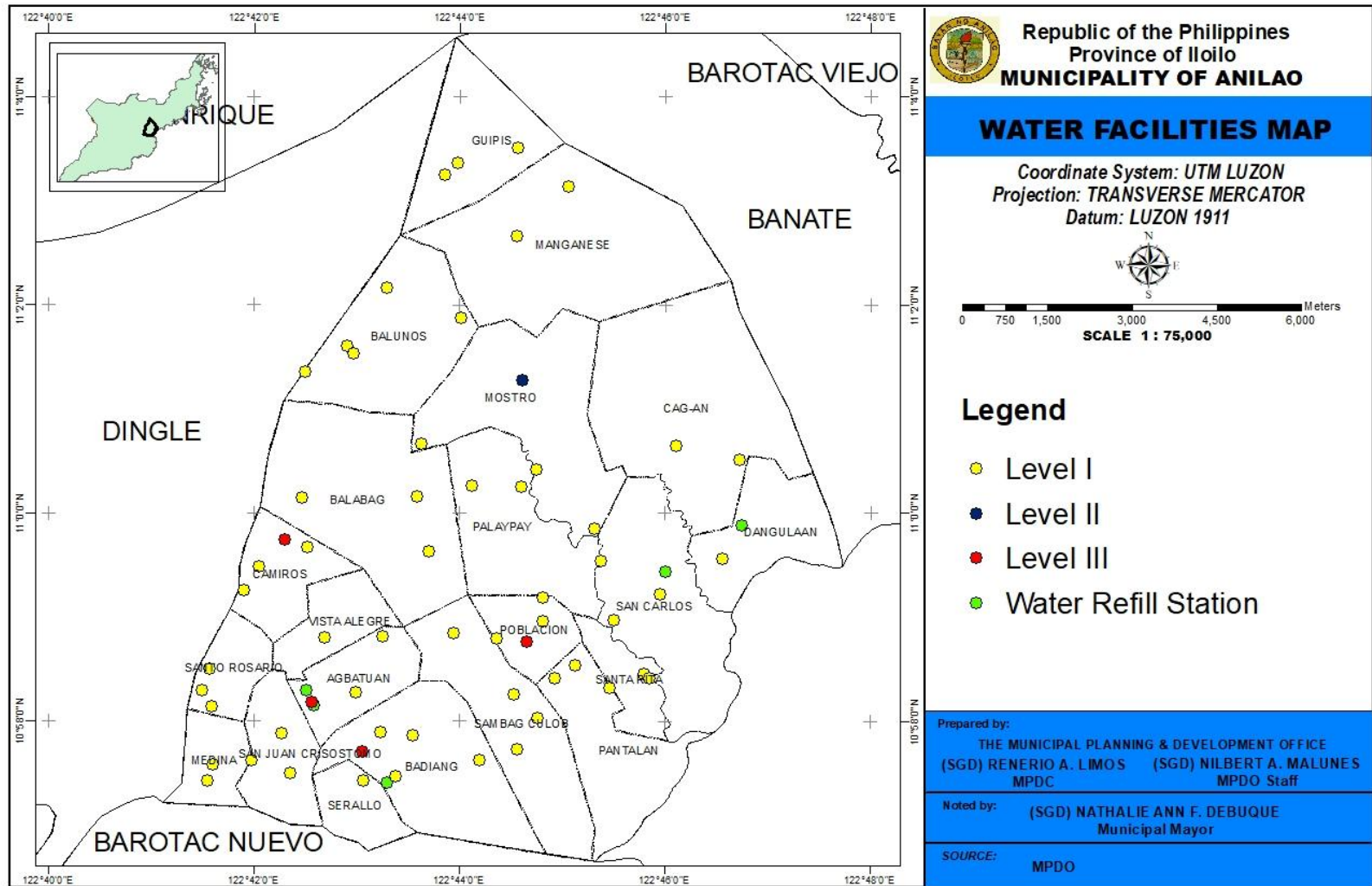


Table WS-1. Level I Water Supply System by Type and Number of Population Served, Year 2015

| Barangay               | No. of Household | Shallow Well |            |      | Deep Well    |              |    | Improved Spring |            |    | Hazard Susceptibility (H/M/L) |    |    |
|------------------------|------------------|--------------|------------|------|--------------|--------------|----|-----------------|------------|----|-------------------------------|----|----|
|                        |                  | No.          | HH Served  |      | No.          | HH Served    |    | No.             | HH Served  |    | FI                            | Ln | Su |
|                        |                  |              | No.        | %    |              | No.          | %  |                 | No.        | %  |                               |    |    |
| 1. AGBATUAN            | 173              | 13           | 13         | 7.50 | 83           | 83           | 48 | 33              | 33         | 19 | M                             | M  |    |
| 2.BADIANG              | 430              | 34           | 34         | 8    | 332          | 332          | 77 | 2               | 2          | 0  | M                             | L  | L  |
| 3.BALABAG              | 239              | 2            | 2          | 1    | 79           | 79           | 33 | 101             | 101        | 42 | M                             | M  |    |
| 4.BALUNOS              | 236              | 1            | 1          | 0    | 5            | 5            | 2  | -               | -          | 0  | L                             | M  |    |
| 5.CAG-AN               | 327              | -            | -          | 0    | 278          | 278          | 85 | -               | -          | 0  | L                             | M  |    |
| 6.CAMIROS              | 333              | 56           | 56         | 17   | 97           | 97           | 29 | 6               | 6          | 2  | L                             | M  |    |
| 7.DANGULA-AN           | 409              |              |            | 0    | 256          | 256          | 63 | 1               | 1          | 0  | M                             | L  | L  |
| 8.GUIPIS               | 108              | 57           | 57         | 53   | 24           | 24           | 22 | 1               | 1          | 0  | L                             | M  |    |
| 9.MANGANESE            | 154              | -            | -          | 0    | 18           | 18           | 12 | 22              | 22         | 14 | L                             | M  |    |
| 10.MEDINA              | 211              | -            | -          | 0    | 196          | 196          | 93 | -               | -          | 0  | L                             | L  |    |
| 11.MOSTRO              | 347              | 65           | 65         | 19   | 133          | 133          | 38 | 62              | 62         | 18 | M                             | L  |    |
| 12.PALAYPAY            | 252              | -            | -          | 0    | 170          | 170          | 67 | 14              | 14         | 6  | M                             | L  |    |
| 13.PANTALAN            | 215              | 1            | 1          | 0    | 23           | 23           | 11 | -               | -          | 0  | M                             | L  | L  |
| 14.POBLACION           | 460              | 18           | 18         | 4    | 127          | 127          | 28 | 17              | 17         | 4  | M                             | L  |    |
| 15.SAMBAG CULOB        | 427              | 10           | 10         | 2    | 216          | 216          | 51 | 9               | 9          | 2  | M                             | L  | L  |
| 16.SAN CARLOS          | 482              | 6            | 6          | 1    | 310          | 310          | 64 | -               | -          | 0  | M                             | L  | L  |
| 17.SAN JUAN CRISOSTOMO | 194              | 10           | 10         | 5    | 159          | 159          | 82 | -               | -          | 0  | M                             | L  |    |
| 18. SERALLO            | 146              | 2            | 2          | 1    | 41           | 41           | -  | 67              | 67         | 46 | M                             | L  | L  |
| 19.STA. RITA           | 256              | -            | -          | 0    | 98           | 98           | 38 | -               | -          | 0  | M                             | L  | L  |
| 20.STO. ROSARIO        | 184              | -            | -          | 0    | 80           | 80           | 43 | -               | -          | 0  | M                             | L  |    |
| 21.VISTA ALEGRE        | 140              | -            | -          | 0    | 98           | 98           | 70 | -               | -          | 0  | M                             | L  |    |
| <b>Total</b>           | <b>5,723</b>     | <b>275</b>   | <b>275</b> |      | <b>2,823</b> | <b>2,725</b> |    | <b>335</b>      | <b>335</b> |    |                               |    |    |

Source: MPDO

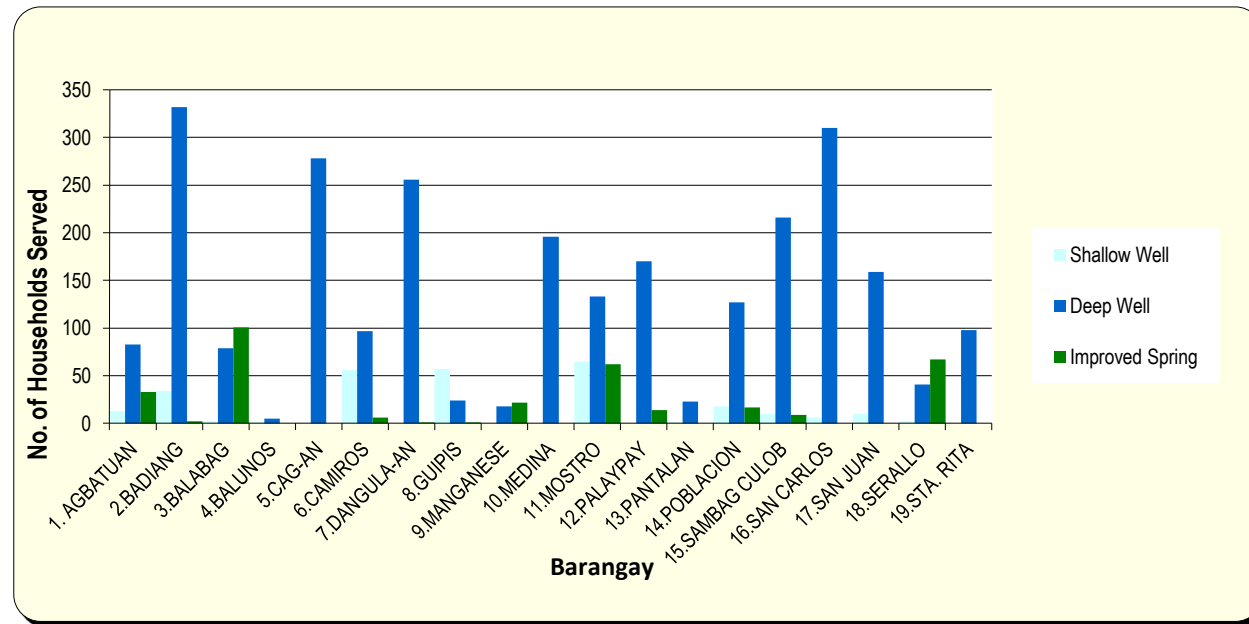
Legend: FI-Flood

Ln-Landslide

Su-Stormsurge



Graph WS-1. Level I Water Supply System by Type and Number of Population Served, Year 2015



Source: MPDO

Table WS-2. Water Sources of Level II Water Supply System

| Water Source | Barangay     | Physical Condition | Hazard Susceptibility (H/M/L) |    |    |
|--------------|--------------|--------------------|-------------------------------|----|----|
|              |              |                    | Fl                            | Ln | Su |
| Spring       | Pantalan     | Fair               | M                             |    |    |
|              | Sambag Culob | Fair               | H                             |    |    |
|              | Serallo      | Fair               | L                             | L  |    |

Source: Anilao Water District

Legend: FL – Flood

Ln – Landslide

Su – Storm Surge

L – low

M – Moderate

H – High



**Table WS-3. Level II Water Supply System by Type and Number of Population Served, 2015**

| Pump ID/<br>Name | Barangay        | Year<br>Constructed | Pump<br>Capacity | Water<br>Source | No. of<br>Communal<br>Faucets | Barangays<br>Served | No. of HH<br>Served | Physical<br>Condition | Hazard Susceptibility<br>(H/M/L) |    |    |
|------------------|-----------------|---------------------|------------------|-----------------|-------------------------------|---------------------|---------------------|-----------------------|----------------------------------|----|----|
|                  |                 |                     |                  |                 |                               |                     |                     |                       | Fl                               | Ln | Su |
|                  | Pantalan        |                     |                  | Spring          |                               | Pantalan            | 215                 | Fair                  | M                                |    |    |
|                  | Sambag<br>Culob |                     |                  | Spring          |                               | Sambag<br>Culob     | 427                 | Fair                  | H                                |    |    |
|                  | Serallo         |                     |                  | Spring          |                               | Serallo             | 146                 | Fair                  | L                                | L  |    |

Source: Anilao Water District

Legend: FL – Flood Ln – Landslide

Su – Storm Surge

L – low

M – Moderate

H - High

**Table WS-4. Level III – Local Waterworks System by Type and Number of Consumers and Average Water Consumption, Year 2017**

| Name of Barangays Served   | Type of Consumer      |                           |                       |                           |
|--|-----------------------|---------------------------|-----------------------|---------------------------|
|  | Residential           |                           | Commercial/Government |                           |
|  | No. of<br>Connections | Ave. Water<br>Consumption | No. of<br>Connections | Ave. Water<br>Consumption |
| Pantalan, Culob  | 273                   | 15.94                     | 3                     | 16                        |
| Culob Hiway, Balagon, Badiang, Serallo,<br>Agbatuan, Vista Alegre & San Juan<br>Crisostomo | 142                   | 15.74                     | 5                     | 18.8                      |
| Poblacion  | 104                   | 17.86                     | 3                     | 100.33                    |
| Sta. Rita, San Carlos, Dangula-an  | 217                   | 10.05                     | 2                     | 0                         |
| Poblacion  | 149                   | 18.3                      | 9                     | 56.44                     |
| <b>TOTAL</b>   | <b>885.00</b>         | <b>77.89</b>              | <b>22.00</b>          | <b>191.57</b>             |

Source: Local Water District





### Current and Projected Needs

Water shortage in the Municipality of Anilao is one of the priority needs of the LGU. Although, most of the barangays utilized other water sources such as shallow wells, deep wells and shallow wells but this is not enough considering the increasing demand of population most especially in the urban areas where businesses are situated. Moreover, water supply are greatly affected during summer months. In view of these, a need for LGU to find alternative water sources is a big challenge.

At present, Anilao Water District is serving a total of 885 households representing 14.57% of the total households in the municipality. Based on the standard level III water system of 100 liters per capita per day. The present water need of the households is 267,010 liters per day. Anilao Water District does not have the capacity to provide enough water supplies to their constituents. Even consumers in their service area have inadequate or intermittent supply.

Anilao Water District is planning to expand water services to other barangays but one of their problems is the source of water supply. There is a need for the local government to enhance level II water projects to be able to more barangays water districts also need to address the inadequacy of water supply for residential and commercial consumers. Moreover, with climate change and hazards, issues on water supply will likely to be affected. As per flood susceptibility maps shown below, identified Level I and Level II water sources in Barangays Mostro and Palaypay have very high susceptibility to flooding. Level III coverage in Barangay Agbatuan has also high susceptibility to flooding. Likewise, 2 level I sources in Barangay Sta. Rita and Sto. Rosario has high susceptibility to flooding. Other barangays have level I and level II water that are moderate to low susceptibility. Also, landslide susceptibility map showed level I and II water sources as moderate and other sources such as refilling stations have low susceptibility. For storm surge affected areas, only Barangay Pantalan have low susceptibility. Water sources that have susceptibility to hazards are a priority for intervention.

### Risk and Susceptibility of Water Sources and Facilities to Hazards

As to hazard susceptibility of these water sources as shown in the susceptibility map presented below, there are level I, II and III sources that have low, moderate and high susceptibility to flooding (Figure WS-2). Level I and Level II in Barangay Mostro and Palaypay classified as having high susceptibility to flooding.

Level III coverage in Barangay Agbatuan has also high susceptibility to flooding. Likewise, Level I sources in Barangays Sta. Rita, Palaypay and Sto. Rosario have high susceptibility to flooding. Other barangays have level I and level II water that are moderate to low susceptibility. As to landslide, susceptibility of level I and II water sources are only moderate and some refilling stations have low susceptibility. For storm surge affected areas, only Barangay Pantalan have low susceptibility. Figure WS-3 shows the level of landslide susceptibility of water sources in Anilao. Figure WS-4 shows the storm surge susceptibility of water sources in Anilao which is high along the coastal areas. However risk is low in all Level I, II and III.



Figure WS-2. Water Facilities Exposure to Flood

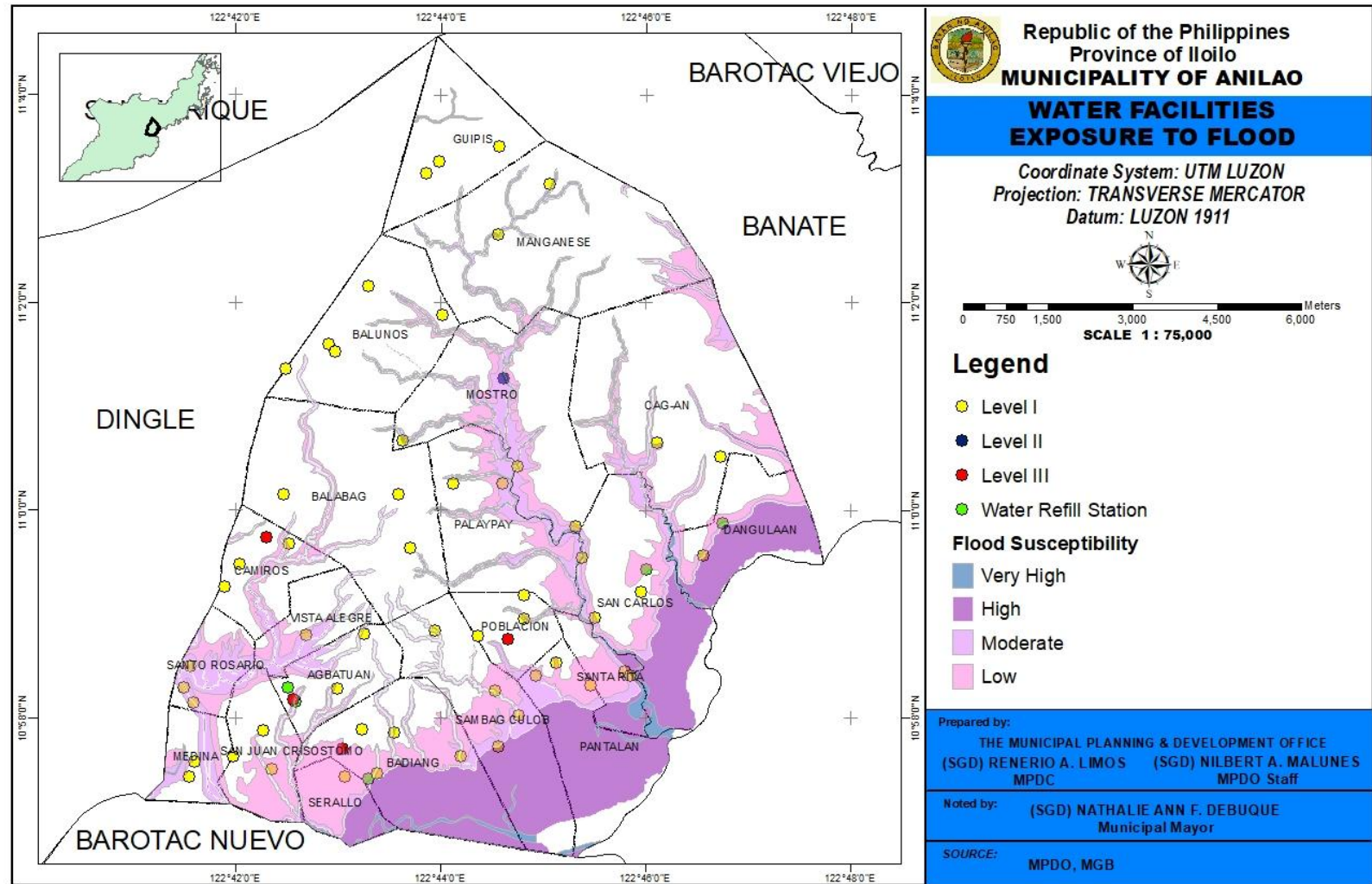


Figure WS-3. Water Facilities Exposure to Landslide

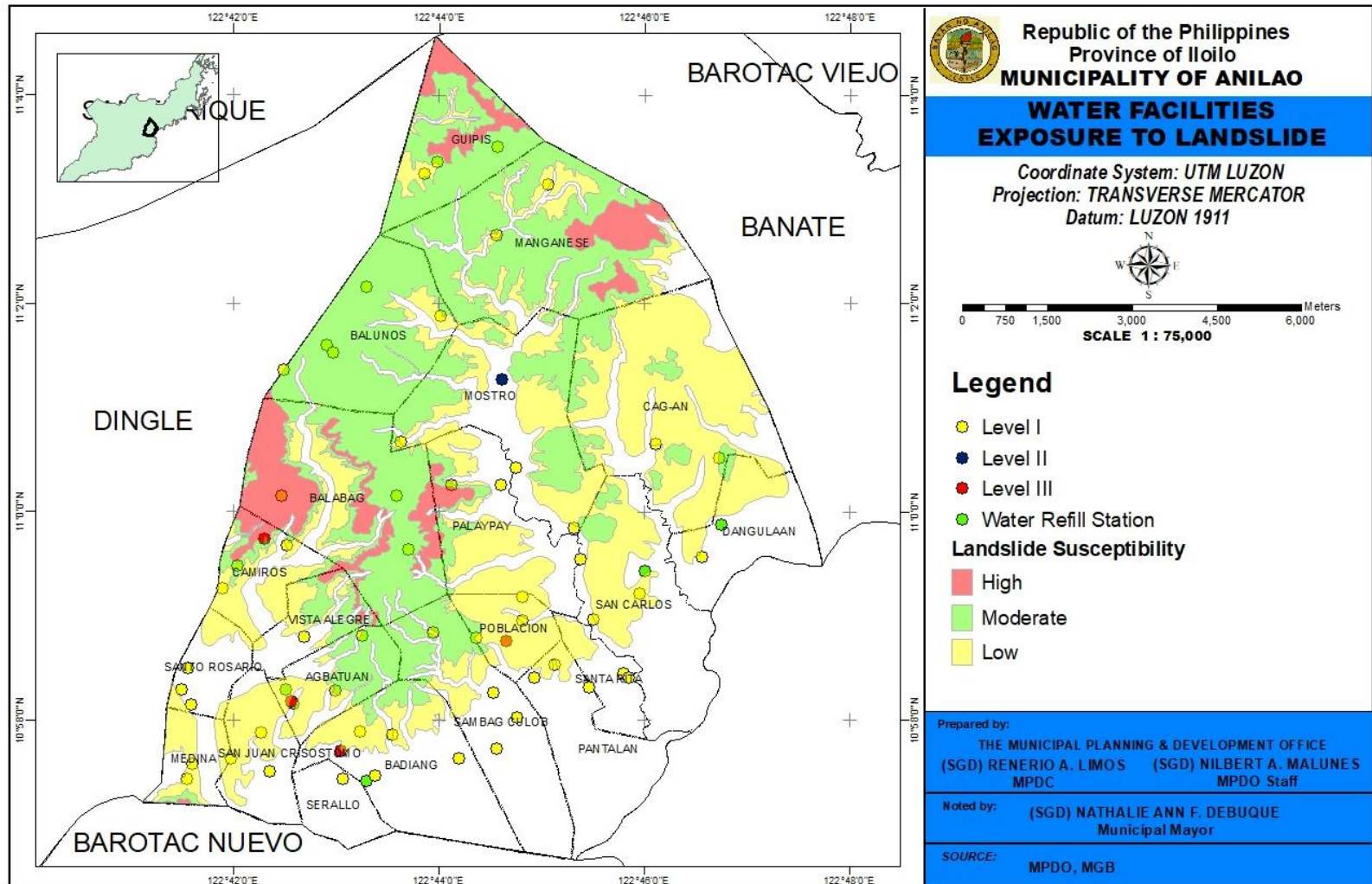
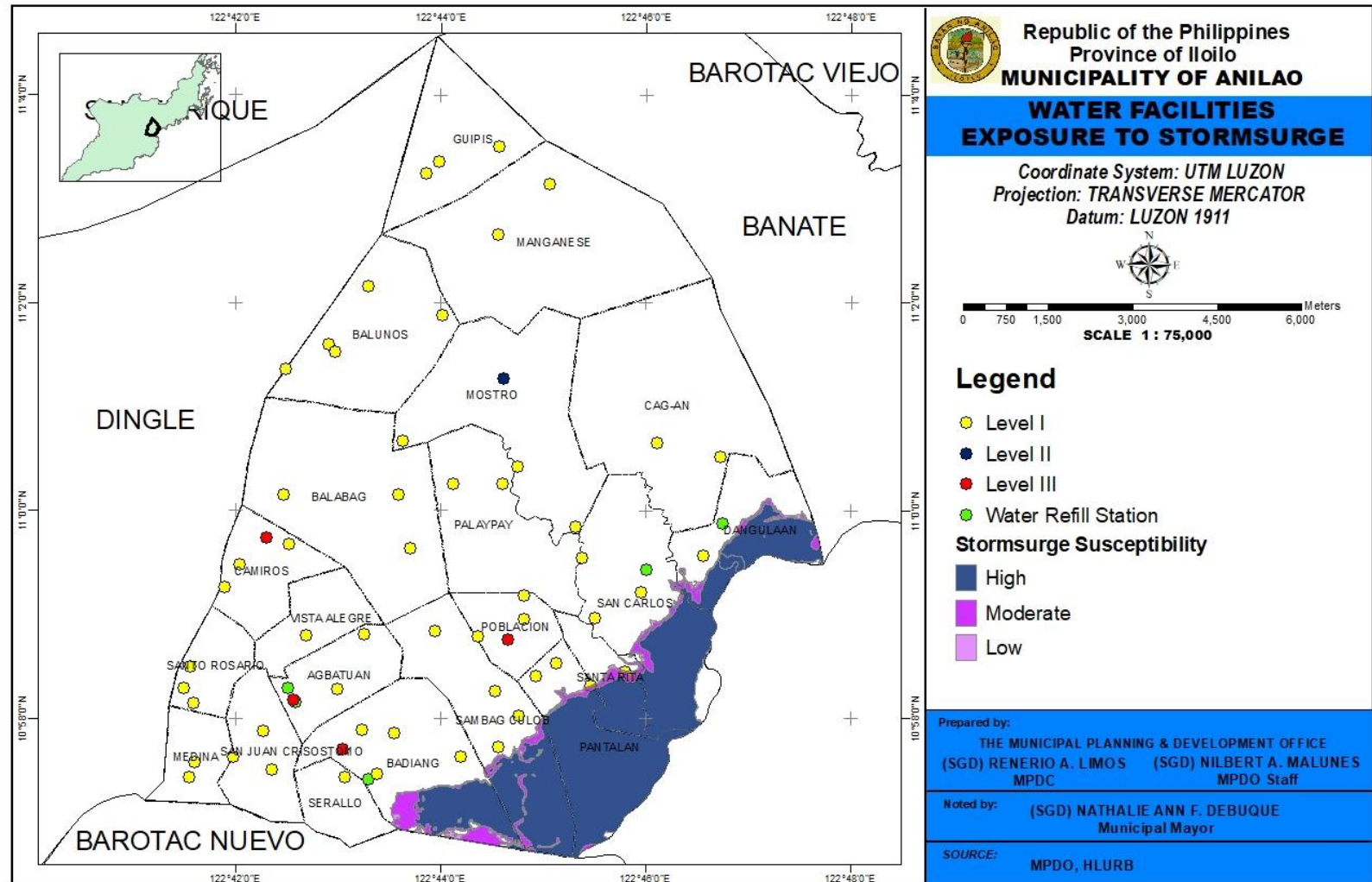




Figure WS-4. Water Facilities Exposure to Stormsurge



**Water Utilities Analysis Matrix**

| <i>Technical Findings/ Observations</i>   | <i>Implications<br/>(Effects)</i>                                       | <i>Policy Options/ Recommendations</i>   |
|---|---|--|
| Intermittent water supply provided by Anilao Water District   | Insufficient water supply to consumers                                  | <ul style="list-style-type: none"> <li>• Development of another water source to augment the existing water system through LWUA or other National Agencies</li> <li>• LGU to advocate rain water harvesting technology</li> </ul> |
| Level I and Level II water sources in Barangays Mostro and Palaypay are susceptible to very high flooding | Water supply of residents along these identified barangays are affected | <ul style="list-style-type: none"> <li>• Provision of alternative water sources to include rain water harvesting</li> <li>• Advocacy on the efficient use of water by the populace</li> </ul>                                    |



## POWER SUB-SECTOR

### Profile and Analysis of Existing Situation

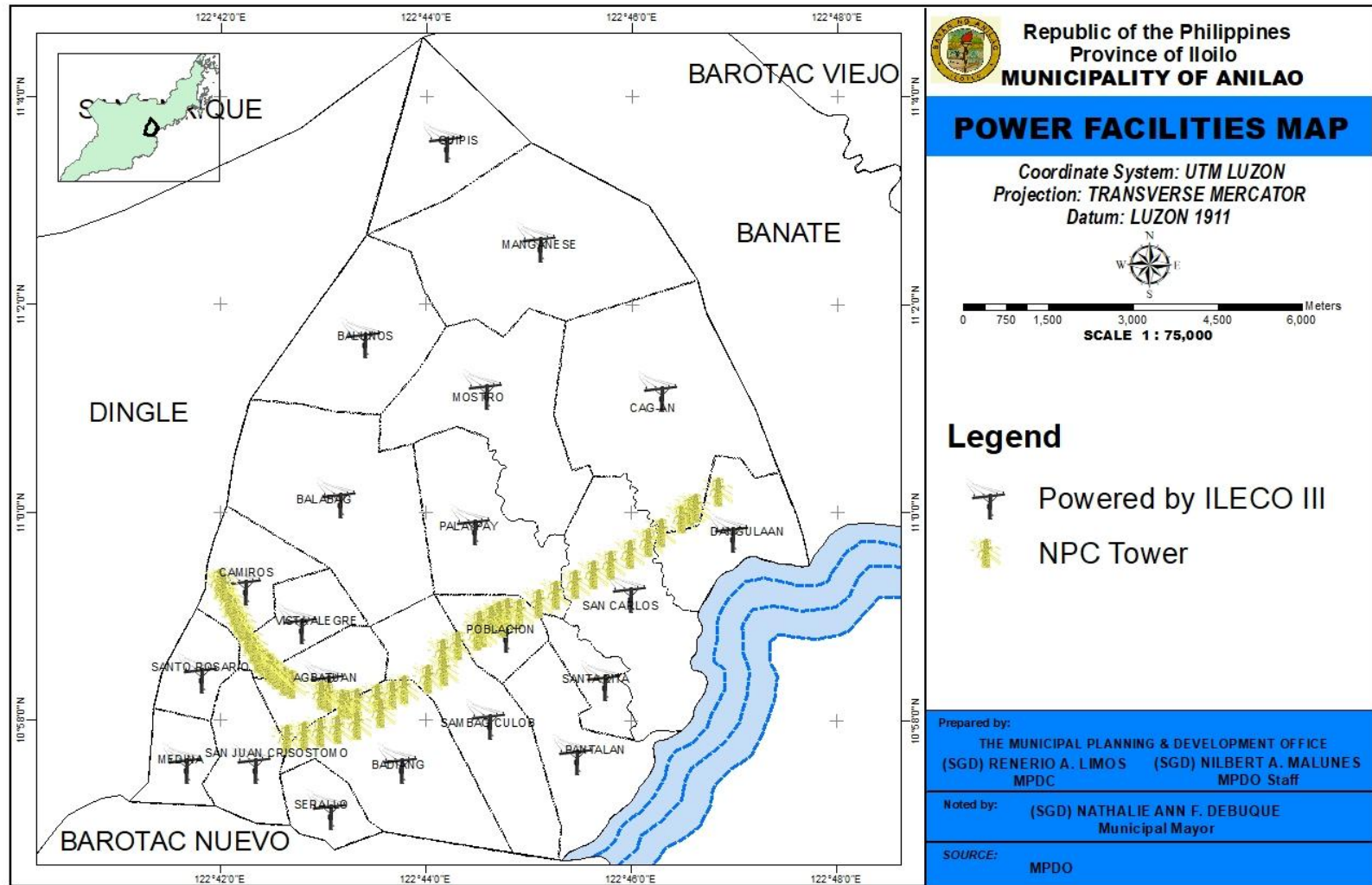
Electric Power Supply in Anilao is provided by Iloilo Electric Cooperative III (ILECO III). It is one of two towns of the 4th District of Iloilo Province which generates its source from the cooperative. ILECO III was established last September 26, 1986 as a non-stock /non-profit electric cooperative registered under the National Electrification Administration. Its source comes from Geothermal in Pau-pinon, Negros Oriental owned by Panay Development Corp. Its main office is located at Barangay Preciosa, Sara North of Iloilo Province. It has Sub-stations situated at Barangay Natividad Barotac Viejo. It has a generating capacity of 10 MVA.

In 2016, all of the 21 barangays have power supply except for Sitio Aglay-ao of Barangay Guipis, which is located in the mountainous area of the municipality. Based on the data provided by ILECO III in 2016, 4,322 households 73.73% of the total 5,862 total households are already energized. Table PS-1 below shows an increase in the number of households served with electricity from 2014 up to 2016.

Power service provision is twenty four (24) hours a day except during bad weather conditions, scheduled maintenance work and unpredictable power interruptions. Notices on scheduled brown-outs are usually informed by the cooperative to their consumers. Users of electricity are classified by type of connections as domestic, commercial, industrial, public buildings, public street lights and others.



Figure PS-1. Power Facilities Map





**Table PS-1. Households Served with Electricity for the Past Three (3) Years**

| YEAR | POTENTIAL NO. OF HOUSEHOLD | SERVED |        | UNSERVED |     |
|------|----------------------------|--------|--------|----------|-----|
|      |                            | NO.    | %      | NO.      | %   |
| 2014 | 5,862                      | 3,545  | 60.47% | 2,317    | 65% |
| 2015 | 6,581                      | 4,114  | 70.18% | 1,748    | 42% |
| 2016 | 6,638                      | 4,322  | 73.73% | 1,540    | 36% |

Source: Iloilo III Electric Cooperative, INC. Sara, Iloilo

Table PS-2, reveals an increase in the number of residential connections from 3,024 in 2014 to 3,885 in 2016. The same situation holds through with the kilowatt power consumption.

**Table PS-2. Number of Connections by Type of Users & Average Consumption(Kwh/Mo.) from Year 2014-2016**

| TYPE OF CONSUMERS | 2014               |                   |               | 2015               |                   |               | 2016               |                   |               |
|-------------------|--------------------|-------------------|---------------|--------------------|-------------------|---------------|--------------------|-------------------|---------------|
|                   | NO. OF CONNECTIONS | Kwh               | %             | NO. OF CONNECTIONS | Kwh               | %             | NO. OF CONNECTIONS | Kwh               | %             |
| Residential       | 3,024              | 173,904.06        | 61.22%        | 3,541              | 198,204.54        | 66.14%        | 3,885              | 247,730.33        | 63.75%        |
| Commercial        | 30                 | 20,952.33         | 7.38%         | 29                 | 21,146.83         | 7.06%         | 28                 | 26,845.58         | 6.91%         |
| Industrial        | 3                  | 74,057.83         | 26.07%        | 3                  | 61,195.33         | 20.42%        | 4                  | 89,718.89         | 23.09%        |
| Public Buildings  | 33                 | 12,961            | 4.56%         | 35                 | 16678.83          | 5.57%         | 41                 | 20,948.23         | 5.39%         |
| Street Lights     | 7                  | 2,185.08          | 0.77%         | 7                  | 2,468.83          | 0.82%         | 9                  | 3,794.83          | 0.98%         |
| <b>TOTAL</b>      | <b>3,097</b>       | <b>284,060.31</b> | <b>100.0%</b> | <b>3,615</b>       | <b>299,692.71</b> | <b>100.0%</b> | <b>3,967</b>       | <b>388,626.69</b> | <b>100.0%</b> |

Source: Iloilo III Electric Cooperative, INC. Sara, Iloilo



**Current and Projected Needs**

Table PS-3A shows the future need of the municipality for electricity in the next ten years. The data are classified according to type of connection or category of user. As the population increases so thus power requirement. Likewise, businesses and industries locating in the municipality will need more electricity. The main problem in the use of electrical power is the frequent brown out sometime lasting for a day. This will caused damaged to electrical appliances at home and lessen work outputs in offices and unlearned lessons in the classrooms. Moreover, power supply is becoming expensive, alternative power supply which is renewable is suggested as another option for cheap power source in the municipality specifically for domestic use, which is considered based on the data available as the highest consumer of power.

**Table PS-3. Projected Number of Connections by Type of Users & Average Consumption (KwH/Mo.) 2017-2021**

| TYPE OF CONSUMERS | 2017       |       | 2018       |       | 2019       |       | 2020       |       | 2021       |       |
|-------------------|------------|-------|------------|-------|------------|-------|------------|-------|------------|-------|
|                   | KwH        | %     | KwH        | %     | KwH        | %     | KwH        | %     | KwH        | %     |
| Residential       | 269,562.39 | 63.64 | 293,769.10 | 63.64 | 320,149.56 | 63.63 | 348,898.99 | 63.63 | 380,230.62 | 63.63 |
| Commercial        | 29,261.68  | 6.91  | 31,895.23  | 6.91  | 34,765.80  | 6.91  | 37,894.72  | 6.91  | 41,305.25  | 6.91  |
| Industrial        | 97,761.8   | 23.08 | 106,560    | 23.08 | 116,150.80 | 23.09 | 126,604.37 | 23.01 | 137,998.76 | 23.09 |
| Public Buildings  | 22,833.57  | 5.39  | 24,888.59  | 5.39  | 27,128.56  | 5.39  | 29,570.13  | 5.39  | 32,231.44  | 5.39  |
| Street Lights     | 4,136.36   | 0.98  | 4,508.64   | 0.98  | 4,914.42   | 0.98  | 5,356.72   | 0.98  | 5,838.57   | 0.98  |
| <b>TOTAL</b>      | 423,555.81 | 100   | 461,621.91 | 100   | 503,109.13 | 100   | 503,109.13 | 100   | 597,604.39 | 100   |

Source: ILECO III



Table PS-3A. Projected Number of Connections by Type of Users & Average Consumption (KwH/Mo) 2022-2026

| TYPE OF CONSUMERS | 2022              |            | 2023              |            | 2024              |            | 2025              |            | 2026              |            |
|-------------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|-------------------|------------|
|                   | KwH               | %          | KwH               | %          | KwH               | %          | KwH               | %          | KwH               | %          |
| Residential       | 414,375.33        | 63.63      | 451,586.23        | 64.73      | 492,138.67        | 64.73      | 536,332.72        | 63.63      | 584,495.40        | 63.73      |
| Commercial        | 45,014.46         | 6.91       | 49,056.76         | 6.91       | 53,467.06         | 7.03       | 58,262.75         | 6.91       | 63,494.96         | 7.03       |
| Industrial        | 150,391.05        | 23.09      | 151,773.17        | 23.08      | 165,402.99        | 21.76      | 180,256.18        | 23.01      | 196,443.18        | 21.76      |
| Public Buildings  | 35,125.82         | 5.39       | 38,280.12         | 5.39       | 41,717.48         | 5.49       | 45,463.71         | 5.39       | 49,546.35         | 5.49       |
| Street Lights     | 6,362.87          | 0.98       | 6,934.26          | 0.98       | 7,556.96          | 0.99       | 8,235.58          | 0.98       | 8,975.14          | 0.99       |
| <b>TOTAL</b>      | <b>651,269.26</b> | <b>100</b> | <b>697,630.54</b> | <b>100</b> | <b>760,278.16</b> | <b>100</b> | <b>828,551.14</b> | <b>100</b> | <b>902,955.03</b> | <b>100</b> |

Source: ILECO III

**Susceptibility and Risk of Power Sources and Facilities to Hazards**

As shown in the Figure PS-2 below, the tower of NPC situated in Barangays Camiros and Vista Alegre are moderately susceptible to flooding while other facilities have low susceptibility. Ileco power facilities situated in Barangays Pantalan and Dangulaan have also high susceptibility to flooding.

For landslide as per Figure PS-3, almost all power facilities by NPC and Ileco have low susceptibility while susceptibility of power facilities to storm surge shows that Barangays Pantalan, Dangula-an and Sta. Rita have high exposure (Figure PS-4). Risk to all hazards is low.



Figure PS-2. Power Facilities Exposure to Flood

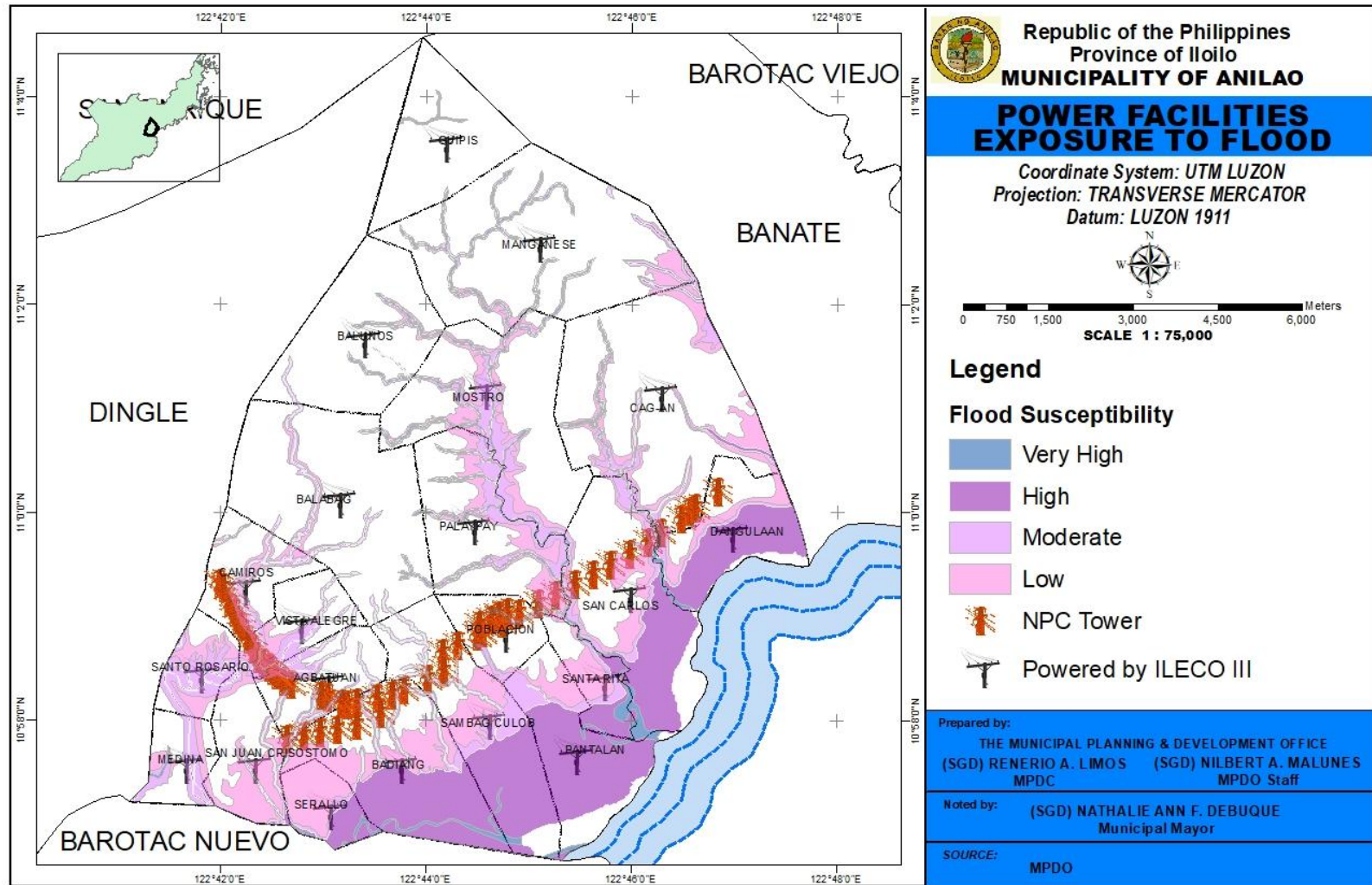


Figure PS-3. Power Facilities Exposure to Landslide

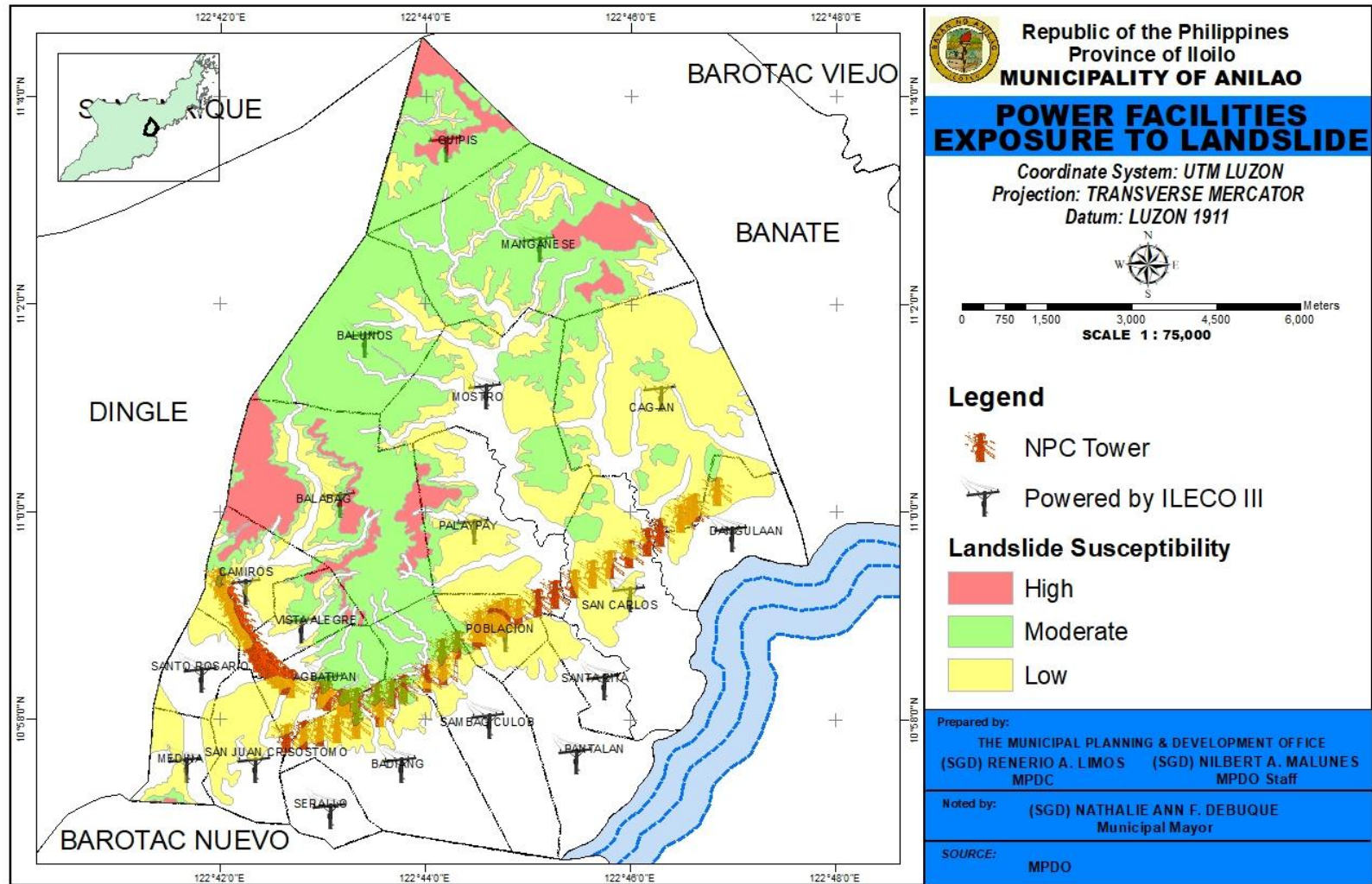
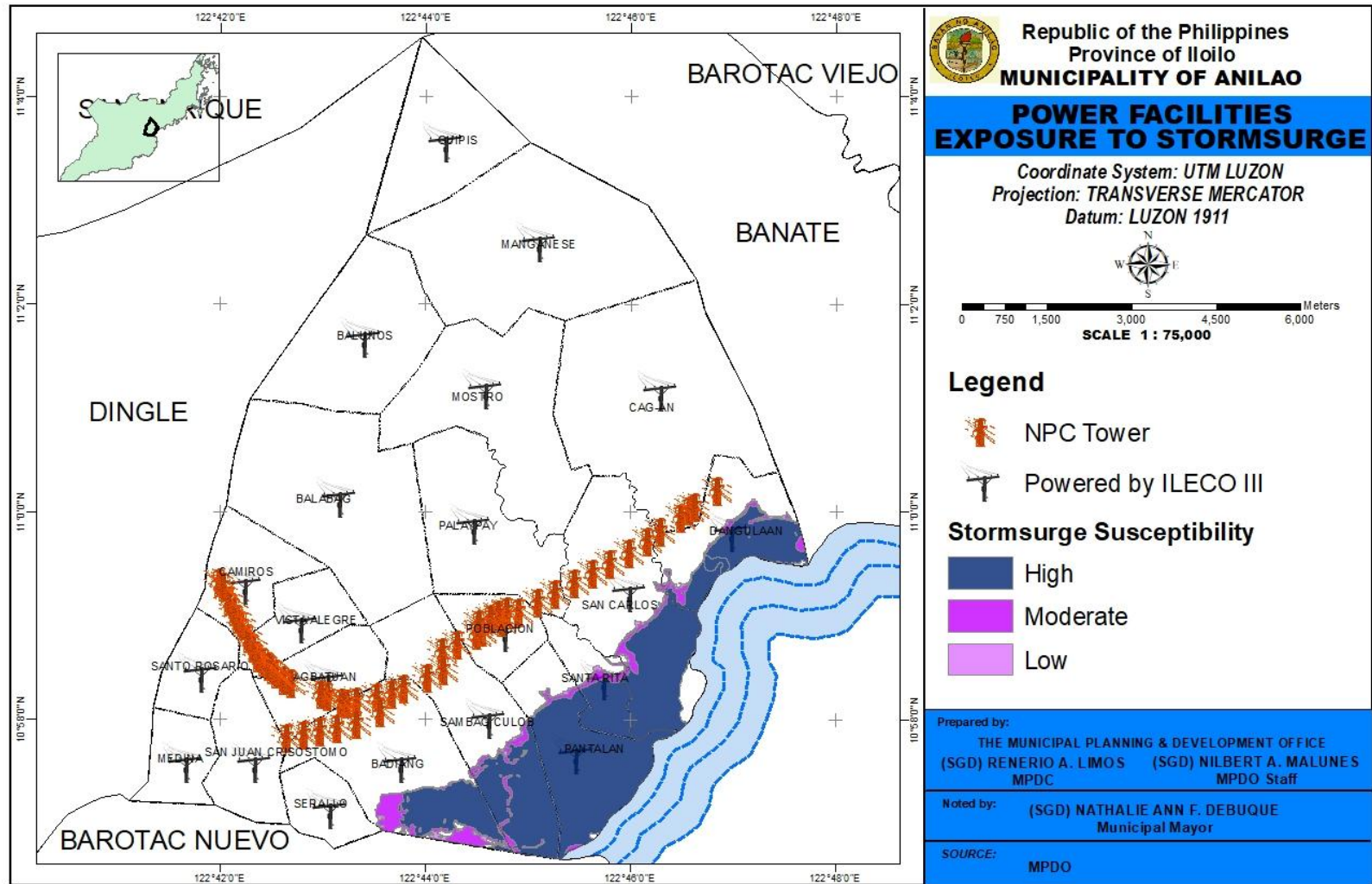




Figure PS-4. Power Facilities Exposure to Stormsrge





**Power Sector Analysis Matrix**

| Technical Findings/Observation  | Implication (effect)   | Policy Option/Intervention  |
|---|--|---|
| Frequent brownouts  | Damage to appliances, office equipment, delay on office works, disturbance on school activities, economic business and recreations | More effective control of brown-outs by ILECO III and proper advance notices  |
| Extension/ installation of Electrical System to identified Sitio of Brgy. Guipis  | Attainment of electricity for domestic use as enjoyed by majority of residents   | ILECO III power supply line provision   |
| Cost of power supply becoming more expensive  | Increase of electrical bills of households, business and industries  | Alternative power supply such as the solar should be tried as alternative power source                              |
| Provision of Generator Set with enough capacity for public building and plaza   | Continuous operation of office works, cultural and social activities   | LGU to procure generator set  |
| Started the construction of solar powered street lights along the national road and public market area (23 units)   | Reduction of electric bill of the Local Government Unit  | Further rehabilitation and conversion of electric powered street lights to Solar Powered lights including barangays |
| <p>NPC Tower in Barangays Camiros and Vista Alegre have moderate susceptible to flooding while</p> <p>ILECO power facilities in Barangays Dangula-an and Pantalan have high susceptibility to flooding</p> <p>Ileco facilities in Barangays Pantalan, Dangula-an and Sta Rita have high susceptibility to storm surge</p> | Disruption of power supply   | Provision of renewable power supply   |



## INFORMATION AND COMMUNICATION SUB-SECTOR

### Profile and Analysis of the Existing Situation

The efficiency of local government in delivery of services depends much on the development of communication and information technology. As a democratic country with the different layer of bureaucracy, top to bottom communication and information is very essential. In this aspect, the Municipality of Anilao has established special facilities and services to promote efficient communication and information.

### Communication Services and Facilities

Table IC-1 shows type of services, year constructed, area occupied, barangay served, its ownership and hazard susceptibility. These services include postal services, telephone services provider, cell sites network, public calling stations, broadcast and television network (radio, television, cable). The Philippine Corporation (PhilPost Corp.) with the office at Brgy. Poblacion. At present, it has one (1) personnel that cater its service in the community. This includes letter transmittal, payment of bills, transmittal of money orders, checks and packages usually coming from abroad. In several places there are cell sites that serve the people who use mobile phone for communication and information. The service is provided by Smart, Sun Cellular and Globe Telecom. All these are owned by private individuals and companies. Broadcast and television network also provide communication and information services to the people of Anilao. These services are provided by different networks. The latest additional of communication is the cable service. These are owned by cable companies like Dream Cable, GSAT, Signal, ABS-CBN TV Plus and Sky Cable. They provide special programs which cannot be seen in the ordinary television network. The television is considered as one of the most important technologies for information and communication. Daily programs include news items useful in informing the public of new laws, ordinances, happenings and basic information related to governance. This is beside other programs like soap operas, entertainments and informative pieces that affect quality of living. Also programs of the different bureaus like education, agriculture, science, culture advances in technology are considered daily occurrence on TV.

Lately, social networking sites like facebook, instagram, tweeter, skype increases the volume of social networking through internet technology. In Anilao there are four (4) internet cafes that are located in Barangay Poblacion and Barangay Badiang respectively that serve internet need of the people. Many students benefit from the use of internet in their research work and other academic assignments.

Despite of those advantages, there is a negative impact of internet use. Usually students and pupils even in their young age miss their classes just to internet café to play online games or even watch videos or any materials not suited for their age. As a deterrent to the bad influence of the internet, the DepEd has issued a regulation that no student or pupil should be admitted to the computer shops during class hours.



In addition, handheld radios is presently one of the fastest and accessible mode of communication especially in various barangays municipal wide. One repeater located at Barangay Balunos maintained by the Municipal Disaster Risk Reduction and Management Council (MDRRMC) was being linked to accommodate the service needed.

Crimes, vehicular accidents and other untoward incidents as well as disaster or calamities activities/ concerns are easily attended through this two-way communication. By the year 2014 there are thirt nine (39) units of handheld radios being operated throughout the municipality.

Table IC-1. Communications Services Facilities, 2015

| Type  | Area Occupied (ha) | Barangay                  | Ownership |         | Hazard Susceptibility (H/M/L) |    |    |
|---|--------------------|---------------------------|-----------|---------|-------------------------------|----|----|
|   |                    |                           | Public    | Private | FI                            | Ln | Su |
| Postal Services   |                    | Anilao Public Market      | x         |         |                               |    |    |
| Telephone Service Provider                                  |                    | Poblacion                 |           | x       |                               |    |    |
| Cell Sites Network  |                    | Poblacion                 |           | x       |                               |    |    |
| Broadcast and Television Network (radio, television, cable) |                    | Municipal Wide            |           | x       |                               |    |    |
| Others:<br>Handheld radios                                  |                    | Repeater at Brgy. Balunos | x         |         |                               | x  |    |

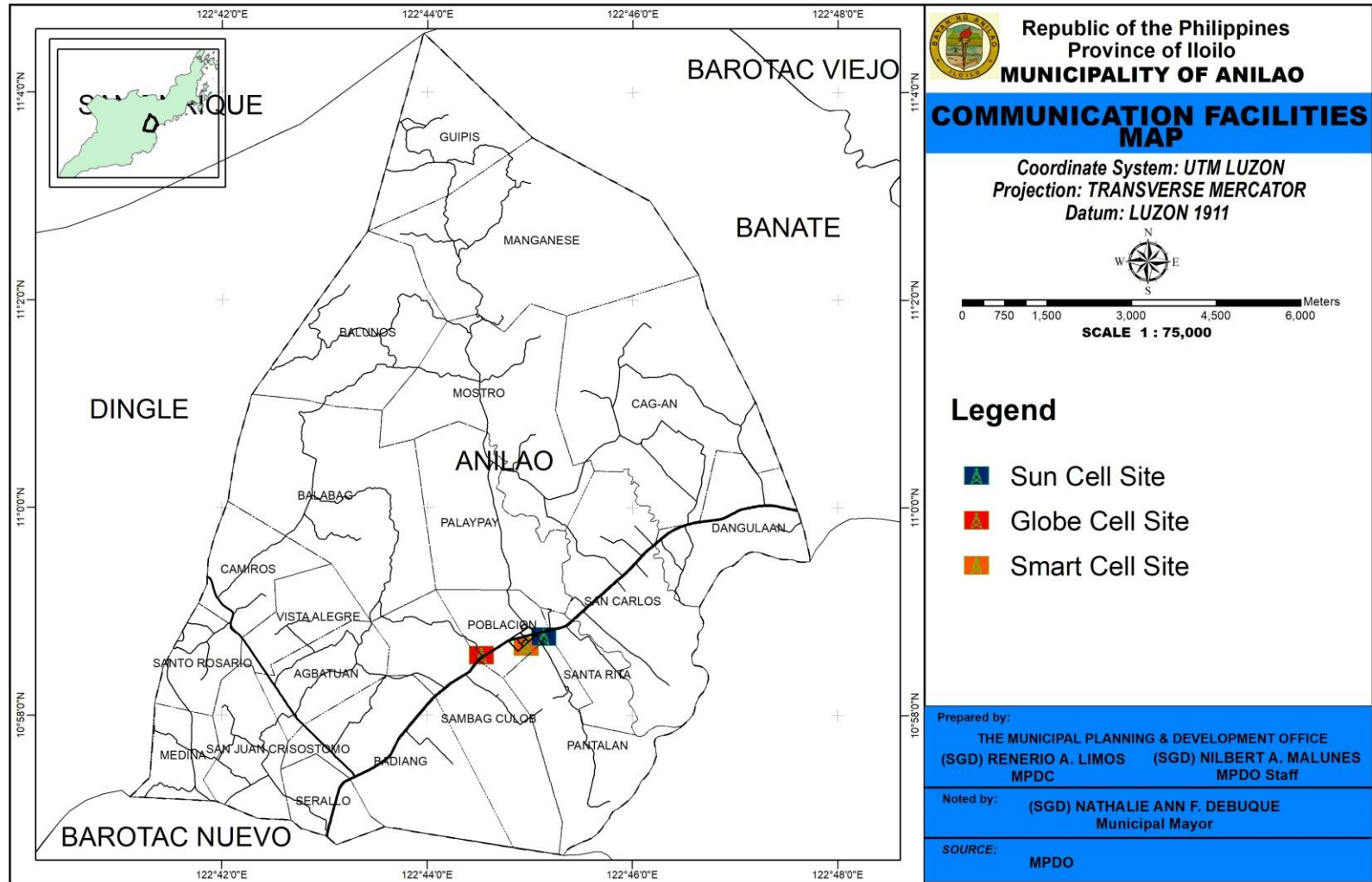
Source: MPDO

\*Radio stations, television stations, cable TV

Legend: FI-Flooding      Ln-Landslide      Su-Stormsurge



Figure IC-1. Communication Facilities Map



**Type of Print Available**

Before the onset of technology or even at present, print media existed. Historically, they came before the electronic media was invented. In the municipality of Anilao, there are four (4) print media outlets in the Poblacion. Print media consist of different types: the broadsheet, tabloid and magazine. The cost of paper and printing process has been increasing. Broadsheets are seldom bought. People resort to tabloid which is cheaper but contains the important news reports for the day including local, national and international news. In Anilao they cost only twelve (12) pesos much more cheaper that broadsheet which cost twenty two (22) pesos. But most of people now use their personal computers instead of print media. While the Magazines are sold once a month. They contain feature not included in the newspapers. However, they are also expensive except when included in the dailies like the Philippine Daily Inquirer and Manila Bulletin. All of these print media are used in all Barangays or the service municipal wide.

In age of technology, the role of the library will soon be least of importance in the future. Electronic technology has reduced the space for depositing books in the library. There will be few readers in school libraries because they prefer to use the convenient, versatile and comprehensive services offered by electronic technology.

**Table IC-2. Types of Print Media Available, 2015**

| Type of Print Media | Location          | Area Coverage  | Circulation |          |           |
|---------------------|-------------------|----------------|-------------|----------|-----------|
|                     |                   |                | Number      | Type     | Frequency |
| Broadsheet          | Poblacion         | Municipal Wide |             | National | Daily     |
| Tabloid             | Poblacion/Badiang | Municipal Wide |             | National | Daily     |
| Tabloid             | Poblacion         | Municipal Wide |             | Local    | Daily     |
| Magazine            | Poblacion         | Municipal Wide |             | National | Monthly   |

Source: Primary Survey

\*Location of newspaper stands, distribution outlet



Table IC-3. Cell Site Network, Year 2015

| Location  | Area Occupied (ha) | Antenna Height | Data Installed    | Catchment Radius (km) | Onwer                         |
|-----------|--------------------|----------------|-------------------|-----------------------|-------------------------------|
| Poblacion | 300 sq. meters     |                | No data available | No data available     | Smart Telecommunication, Inc. |
| Poblacion | 256 sq. meters     |                | No data available | No data available     | Sun Cellular                  |
| Poblacion | 400 sq. meters     |                | No data available | No data available     | Globe Telecom                 |

Source: MPDO

**Current and Projected Needs**

With the presence of these new technologies, almost ninety (90) percent of households own a cellular phone, thus making information and communications easy and effortless. Based on the standard, one letter carries per 5,000 populations. At present, there is only one (1) letter carrier that serves the population of 28,684. The Municipality needs five (5) letter carriers to cater the needs of the community.

Furthermore, expansion of telecommunication to rural barangays as well as expansion of internet services in all barangays and encouragement of wireless internet connections to the different barangays with no access to internet connection is needed.

Additional unit of handheld radios and its maintenance will be needed as well as its base radio and repeater.

Strict implementation of DepEd order on non-admission of pupils and students to internet shops during class hours and local ordinance shall be strictly implemented.

**Suceptibility and Risk of Communication and Information Facilities to Hazards**

In relation to hazard susceptibility of communication facilities shown below, cell sites of Smart, Sun and Globe are not susceptible to flooding as well as storm surge likewise, landslide exposure map shows a low susceptibility to the hazard. Figures IC-2 and 3 shows the level of susceptibility of these facilities to flood and landslides





Figure IC-2. Communication Facilities Map showing Exposure to Flooding

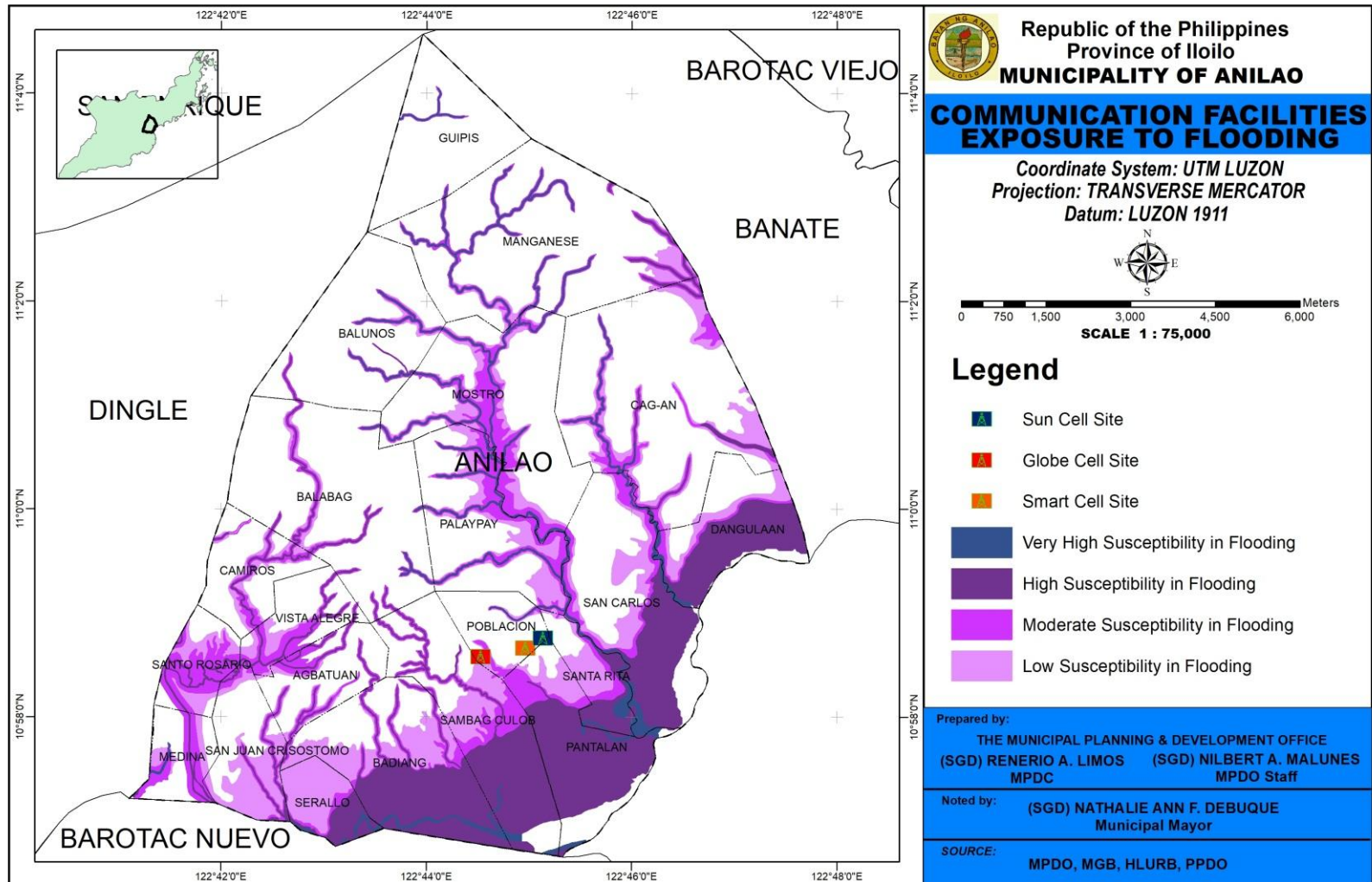


Figure IC-3. Communication Facilities Map showing Exposure to Landslide

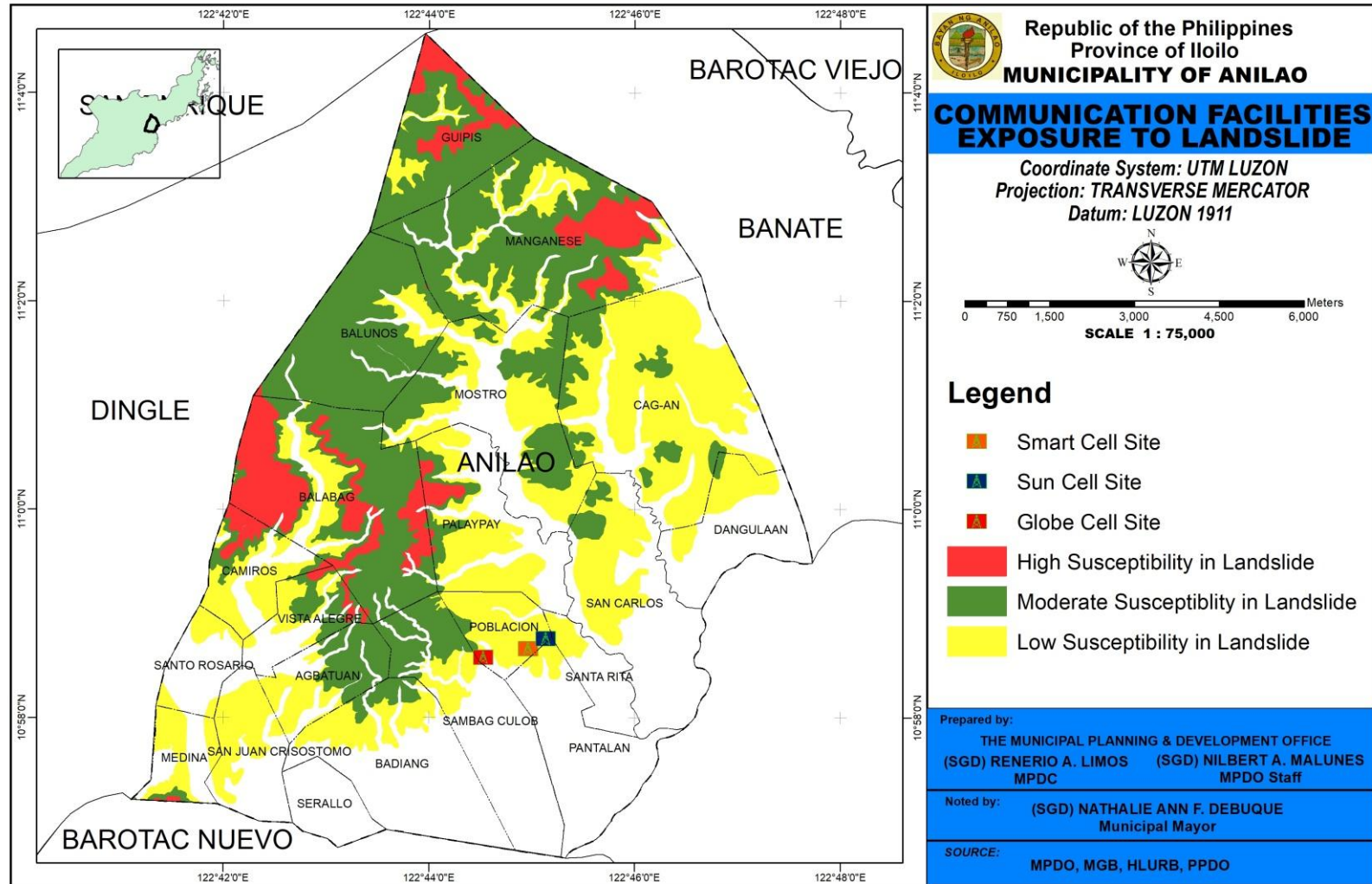


Table IC-4. Inventory of Handheld Radios Municipal-Wide, 2015

| Name of Barangay        | No. of Handheld Radios | Remarks     |
|-------------------------|------------------------|-------------|
| 1. Agbatuan             | 10                     | Serviceable |
| 2. Badiang              | 10                     | Serviceable |
| 3. Balabag              | 10                     | Serviceable |
| 4. Balunos              | 10                     | Serviceable |
| 5. Cag-an               | 10                     | Serviceable |
| 6. Camiros              | 10                     | Serviceable |
| 7. Dangula-an           | 10                     | Serviceable |
| 8. Guipis               | 10                     | Serviceable |
| 9. Manganese            | 10                     | Serviceable |
| 10. Medina              | 10                     | Serviceable |
| 11. Mostro              | 10                     | Serviceable |
| 12. Palaypay            | 10                     | Serviceable |
| 13. Pantalan            | 10                     | Serviceable |
| 14. Poblacion           | 10                     | Serviceable |
| 15. Sambag Culob        | 10                     | Serviceable |
| 16. San Carlos          | 10                     | Serviceable |
| 17. San Juan Crisostomo | 10                     | Serviceable |
| 18. Sta. Rita           | 10                     | Serviceable |
| 19. Sto. Rosario        | 10                     | Serviceable |
| 20. Serallo             | 10                     | Serviceable |
| 21. Vista Alegre        | 10                     | Serviceable |
| 22. Mayor' s Office     | 3                      | Serviceable |
| 23. PNP                 | 3                      | Serviceable |
| 24. MDRRMC              | 3                      | Serviceable |

Source: Mayor's Office/MPDO



**Information and Communication Sector Analysis Matrix**

| Technical Findings/ Observations  | Implications (Effects)   | Recommended Interventions   |
|---|--|---|
| Installation of Internet services in all barangays  | Fast and accurate information to officers of the barangay especially during calamities and emergencies | Quick response to communication from the head office especially during critical situation   |
| Lack of telecommunication connection to some rural barangay   | Slow response to important calls and especially during emergencies                                     | Extension of telecommunication services to rural barangays  |
| Many pupils and students go to computer shops to play online games and watch videos/movies not suited for their age | Low performance of pupils and students and lack of discipline  | Strict implementation of DepEd order on non-admission of pupils and students to internet shops during class hours<br>Local ordinance will be strictly implemented |



**SOLID WASTE MANAGEMENT SUB-SECTOR**

**Profile and Analysis of the Existing Situation**

The Municipality maintains an eco-SWM park facility in a 0.1340 hectare area located at Sitio Balagon, Badiang, Anilao. The old controlled dumpsite was closed and converted into a park. Residual wastes are being stored in the temporary containment area waiting to be disposed to a sanitary landfill under a MOA with LGU Passi City which currently being processed. Please see General Land Use Map 2017.

The potential waste generation as to the current state is computed at 4,193.840 tons per day based on the Waste Analysis and Characterization Survey conducted in February 2015.

**Table SO-1. Waste Analysis and Characterizing Survey, 2015**

| WASTE COMPOSITION         |           |         |                             |         |             |         |           |        |         |         |
|---------------------------|-----------|---------|-----------------------------|---------|-------------|---------|-----------|--------|---------|---------|
| Waste Source              | TOTAL     | % Share | Waste Composition (kgs/day) |         |             |         |           |        | Special |         |
|                           |           |         | Biodegradable               |         | Recyclables |         | Residuals |        |         |         |
| Households                | 604.332   | 14.41%  | 368.745                     | 17.38%  | 361.290     | 47.36%  | 78.224    | 6.050% | 3.976   | 24.31%  |
| Institutions              | 28.518    | 0.68%   | 15.488                      | 0.73%   | 10.680      | 1.40%   | 6.723     | 0.52%  | 0.263   | 1.610%  |
| Market                    | 1,670.406 | 39.83%  | 868.821                     | 40.95%  | 206.582     | 27.08%  | 522.098   | 40.38% | 6.050   | 36.99%  |
| Commercial Establishments | 1,890.583 | 45.08%  | 868.821                     | 40.95%  | 184.307     | 24.16%  | 685.916   | 53.05% | 6.066   | 37.09%  |
| Total                     | 4,193.840 | 100%    | 2,121.664                   | 100.01% | 762.859     | 100.00% | 1,292.961 | 100%   | 16.356  | 100.00% |
| Percent Share             |           |         | 50.59%                      |         | 18.19%      |         | 30.83%    |        | 0.39%   |         |

Source:MAO/MENRO



There are issues of non-compliance to RA 9003 of the many who refuses to understand the great problem of climate change, however this will serve as challenge to be addressed. Massive IECs is being implemented not only to the heads of the family but also to school children. Implementation of penal provisions for violators has to be enforced by the municipality.

Solid waste sources are domestic, commercial areas, institutions, hospitals or health facilities, and public market. Domestic source are residentials/households in the municipality. Commercial sources are commercial establishments such as public market, sari-sari stores, and restaurants. Institutional source are schools, government offices and other offices.

Wastes coming from these sources include residuals, recyclables, and special wastes. These residual wastes are stored in the Municipal Residual Containment Facility waiting for final disposal to a sanitary landfill.

Wastes from the Rural Health Unit of the municipality is stored or disposed to a special vault located at the RHU vicinity.

**Table SO-2. Solid Waste Generation by Source, Year 2017**

| Source                  | Types of waste                        | Volume of solid waste generated (tons/day) | Volume of solid waste collected (tons/day) | Disposal methods/ treatment facilities | Disposal site                 |
|-------------------------|---------------------------------------|--|--|--|-------------------------------|
| Domestic                | residuals<br>/recyclables<br>/special | 0.604                                      | 0.1812                                     | Temporary storage                      | Residual containment facility |
| Commercial/Institutions | residuals<br>/recyclables<br>/special | 1.89058                                    | 0.567                                      | Temporary storage                      | Residual containment facility |
| Hospital                | special                               | 0.09                                       | none                                       | septic vault                           | RHU area                      |
| Others                  |                                       |  |  |  |                               |

Source: Municipal Records





**Solid Waste and Wastewater Facilities**

The municipality operates an ecological park, Materials Recovery Facility, Composting, and Residual Containment Facility in a 0.1340 hectare private lot located in Barangay Badiang by virtue of a Deed of usufruct with the land owner.

Residual waste collection is catered on the urban areas like the Poblacion and Badiang three times per week. Other barangays are catered upon request only due to amount of wastes to be collected. As of this date, all barangays have their own Materials Recovery Facility.

A biodegradable shredder machine and a vermi composting facility are stationed at the Office of the Municipal Agriculture for processing of composting materials into organic fertilizer. The Municipality has no sanitary landfill and plans to dispose its wastes to a cluster sanitary landfill at Passi City through a MOA.

Commercial poultry has its own waste water treatment facility compliance to DENR guidelines for the issuance of ECC.

There is no wastewater treatment facility for households and commercial area present in the municipality. Households construct their own septic tanks for waste water.

**Sector and Institutional Structure**

A Solid Waste Management Board was created with the Municipal Mayor as the Chairperson. Its members are composed of representatives of accredited Civil Society Organizations, Municipal Officials, and Department Heads. The Board serves as the policy making body and implementation is done by the designated personnel on solid waste management. The board was reorganized last January 2017 upon the change of administration.

The Municipality of Anilao organized the Ecological Solid Waste Management Board by virtue of the Executive Order No.005 Series of 2005 dated December 7, 2005. The Local Chief Executive, Honorable Joel A. Debuque chaired the Board and Hon. Lyka Joy Debuque as Vice Chairman, with eighteen (18) members coming from the different sectors of the community. Then, in 2014, former Mayor Hon. Ma. Teresa F. Debuque issued Executive Order No. 18-2014 reconstituting the Municipal Solid Waste Management Board chaired by Mayor Debuque and co-chaired by Mrs. Maricel Rodriguez with 19 members. At present, Executive Order No. 2017-07 created the Board chaired by Hon. Nathalie Ann F. Debuque superseded previous EO.

Barangay Solid Waste Committee was also organized in all barangays. It is composed of Barangay Officials, and representatives from Civil Society Organizations, education, youth and even religious organizations.



A 10-year Solid Waste Management Plan was submitted to the National Solid Waste Council for review and approval for implementation.

The municipality has an ordinance on SWM and an Environment Code but need to be updated. The current Municipal Officials are reviewing said laws for revision.

### **System and Technique of Collection**

Municipal collectors, the Solid Waste Action Team (SWAT), collect residual wastes in urban areas. In commercial areas all kinds of wastes are for segregated collection. Wastes are collected three times per week (Monday, Wednesday and Friday) using one (1) unit dump truck. People are encouraged to segregate wastes for collection and a "No Segregation, No Collection" policy is being enforced.

Special wastes from the health center/birthing facility are managed by the sanitary inspector. This facility has its own vault for infectious wastes or health care wastes.

The funeral parlors embalming procedures are done outside the municipality.

### **Collection**

Garbage bins had been provided and situated in strategic areas in the municipality as collection points to final disposal site. Collection of garbage is scheduled every Monday, Wednesday and Friday. Garbage which is not properly segregated will not be collected. All garbage collectors are provided with boots, gloves and long sleeved shirts as protective gears for their protection.

Solid Waste Action Team (SWAT) are trained how to manage, classify, sort and collect garbage and its transfers. Specific schedule for collection of waste in a specific area in the community shall be posted in conspicuous places in order that the community will be aware of the collection and transfer. In the same manner, the route schedule of the collection equipment or the dump truck shall also be posted. Included as coverage areas of collection are public market, segregate at source, "*No segregation, No collection Policy*" shall be strictly followed.

The collection of solid wastes is within Barangay Poblacion. There are two equipment, dump truck and pay loader, utilized in collection and transfer of these wastes. Five garbage collectors, a driver and operator are attending to collection operations and 23 sets of garbage bins are available and placed in designated areas along the streets and public market area.



The solid waste disposal site is accommodating an average of one (1) truck three times a week. The schedule of collection of residential, market and other commercial wastes is during Mondays, Wednesdays, and Fridays. Special wastes and other pathological wastes generated in the rural health centers are very minimal that the municipal sanitary inspector manages its proper disposal.

There are approximately 300 households directly benefited by the collection system. There are almost 127 business and commercial establishments within the Poblacion. The average estimated volume of solid waste generated for Barangay Poblacion is 0.1494 kg per capita per day or 3.99 cubic meters. Most of the solid wastes generated are plastics, diapers, twigs street sweepings, debris, etc. The MRF and Composting Facilities provided are designed to receive, sort, process and store compostable and recyclable materials efficiently. The residual wastes shall then be transferred to a long-term disposal facility.

The office municipality shall make sure all equipment used for the collection and transport of solid wastes shall be provided with garbage jingle to notify the residents of approaching collection equipment. The lyrics of the jingle are educational. It encourages the people to value health and practice cleanliness and proper way of disposal.

Local scavengers are encouraged but shall be required to get necessary health permits because of their engagement in hazardous works.

Households and business establishments are required to provide their own waste receptacles/containers. It must be color-coded approved by the MESWD. The collection shall be from point source to the collection of dump truck and shall be assisted by the SWAT. For other wastes such as street sweeping debris, canals debris and others not clearly specified, the barangays shall take charged for the provision of color-coded receptacles/containers to be placed in selected collection points for temporary storage of solid wastes while awaiting collection and transfer to processing sites or the final disposal area. It is also recommended that barangays shall maintain the operation of their Material Recovery Facility.

There is no available sanitary waste collector truck. Dump trucks are utilized for collection of solid waste. The transport of collected garbage is directly delivered to the residual containment area in Sitio Balagon, Barangay Badiang.

Collection and transfer of garbage in barangays is the responsibility of the sangguniang barangay thru the Barangay Ecological Solid Waste Management Committee shall formulate their plans and strategy of ensuring 100% collection efficiency in their respective barangays. The wastes collected in barangays are primarily composed of disposable diapers, plastics, and other non-biodegradable waste products. The volume of garbage collected three times a week averages to 8,100.18 kilograms per day.



Table SO- 3. Methods of Solid Waste Disposal/Treatment, Year 2017

| Methods   | Quantity (Total municipal solid waste generated) | No. of household served | Agency Responsible   |
|---|--|-------------------------|----------------------|
| 1. Collected and disposed to:                   |  |                         |                      |
| - Temporary Residual Containment (storage) area | 1309.317   | 502                     | MLGU                 |
| 2. Composting                                   | 1670.0 mt  | none                    | MLGU                 |
| 3. Recycling                                    | 762.59   | 502                     | ambulant junk buyers |

Source:MAO

Residual Wastes are being deposited in the Residual Containment Area at Brgy. Badiang, Anilao, Iloilo for storage until the final disposal at Sanitary Landfill at Passi City is completed and operational.

In barangay level, Material Recovery Facilities and segregation bins are constructed to segregate wastes from households before it is being collected by the municipality.

**Current and Projected Needs**

As per mandate, we are collecting residual wastes on Poblacion area, public market and educational institutions 3 times per week. Mostly of the residuals are plastics in form are further mandated segregated to: 1) dry and clean non-bio to fuel “waste to energy projects” for temporary containment, and 2) wet and contaminated non-bio wastes for landfill.

Low density plastics are being brought to Villar Sipag Foundation to be recycled into plastic school chairs that are being distributed to public schools for free.

Adoption of Trash in a Bottle Technology is also implemented in schools and barangay LGUs as mandated under Municipal Ordinance No. 2018-06.



Based on the conduct of Waste Characterization Study (WACS), 68.78 percent of the waste generated by the municipality is compostable and only 18.19% is recyclable. This is due to the fact that households are practicing segregation at source and most of recyclables are already sold to the ambulant junk buyers. Most of the biodegradable waste generated comes from the public market and commercial establishments. Commercial establishments includes sari-sari store, restaurants and carinderias.

**Table SO-4. Quantity of waste generated (disposed + diverted)**

| Waste Composition                  | KG/DAY         | % SHARE    |
|------------------------------------|----------------|------------|
| Waste diverted (Bio + Recyclables) | 2884.52        | 68.78      |
| Waste Disposed                     | 1309.32        | 31.22      |
| <b>TOTAL</b>                       | <b>4193.84</b> | <b>100</b> |

**Table SO-5. Projection of Quantity of waste generated based on population projections**

| Year                                 | 2017      | 2018      | 2019      | 2020      | 2021      | 2022      | 2023      | 2024     | 2025     | 2026     |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|----------|----------|
| Population Projection                | 29956     | 30613     | 31285     | 31971     | 32673     | 33389     | 34122     | 34870    | 35635    | 36417    |
| Waste Generation Projection (ton/yr) | 1530.7516 | 1564.3243 | 1598.6635 | 1633.7181 | 1669.5903 | 1706.1779 | 1743.6342 | 1781.857 | 1820.949 | 1860.909 |

\*Total waste generation divided by total population=waste generation per capita (4022.26/28,684=0.14)

\*Waste generation projection ton/yr =population projection x waste generation per capita/day x 365/1000 (WGP=29956 x 0.14 x 365/1000)



Table SO-6. Waste Characterization Survey Results, 2015

| Year<br>2017         | Waste Gen/<br>Capital/day<br>based on<br>WACS<br>(kg/d) | Projected<br>Population | Daily Waste<br>Gen based<br>on<br>Population<br>(kg/d) | Target<br>Waste<br>Diversion<br>% | Weight<br>to be<br>Diverted<br>(kg/d) | Target<br>Waste<br>Disposal<br>(%) | Weight<br>to be<br>Disposed<br>(kg/d) | WACS (kgs/day) |                      |
|----------------------|---|-------------------------|--|-----------------------------------|---------------------------------------|------------------------------------|---------------------------------------|----------------|----------------------|
|                      |   |                         |  |                                   |                                       |                                    |                                       | Bio<br>50.59%  | Recyclable<br>18.19% |
| 2017 (Based<br>Year) | 0.14  | 29,956                  | 4193.84  | 50.00%                            | 2092.62                               | 50.00%                             | 2096.92                               | 1677.54        | 419.38               |
| 2018                 | 0.14  | 30,613                  | 4285.82  | 55.00%                            | 2357.20                               | 45.00%                             | 1928.62                               | 1928.62        | 428.58               |
| 2019                 | 0.14  | 31,285                  | 4379.9   | 55.00%                            | 2408.95                               | 45.00%                             | 1970.96                               | 1970.96        | 437.99               |
| 2020                 | 0.14  | 31,971                  | 4475.94  | 58.00%                            | 2596.05                               | 42.00%                             | 1879.89                               | 2014.17        | 581.87               |
| 2021                 | 0.14  | 32,673                  | 4574.22  | 60.00%                            | 2744.53                               | 40.00%                             | 1829.69                               | 2149.88        | 594.65               |
| 2022                 | 0.14  | 33,389                  | 4674.46  | 60.00%                            | 2804.68                               | 40.00%                             | 1869.78                               | 2197           | 607.68               |
| 2023                 | 0.14  | 34,122                  | 4777.08  | 65.00%                            | 3105.1                                | 35.00%                             | 1671.98                               | 2388.54        | 716.56               |
| 2024                 | 0.14  | 34,870                  | 4881.8   | 65.00%                            | 3173.17                               | 35.00%                             | 1708.63                               | 2440.9         | 732.27               |
| 2025                 | 0.14  | 35,635                  | 4988.9   | 68.78%                            | 3431.37                               | 31.22%                             | 1557.53                               | 2523.88        | 907.48               |
| 2026                 | 0.14  | 36,417                  | 5098.38  | 70.00%                            | 3568.87                               | 30.00%                             | 1529.51                               | 2579.27        | 92.40                |

Source: ESWM Plan, Anilao

Based on our WACS, 42.84% of the generated waste is residual waste. Mostly of this residual waste are low density plastics like sando bags, sachets, wrappers that has still the potential for diversion into an alternative technology or can be processed into plastic chairs, eco bricks, eco blocks, decorative planks. The LGU will coordinate with the Villar Foundation for possible processing of residual plastics (low density) into plastic chairs.

As to the above scenario, the current and projected needs are as follows:

1. Intensive IEC on waste to energy classification of residual wastes
2. Maximum composting mandate for biodegradables
3. Construction and maintenance of Residual Containment structure for waste to energy non-biodegradables.





4. Intensive IEC on waste management to all stakeholders.
5. Implementation of SWM plans in all barangays of the municipality.
6. Purchase of parcel of land by the Municipality for waste containment.
7. Purchase of shredding machine for plastics and biodegradables.
8. Purchase of pulverizing machine for bottles.
9. Intensive campaign on recycling activities.
10. Revision and updating of Municipal Ordinance on Solid Waste Management.
11. Implementation of plans and ordinances.
12. Final disposal to Passi City Sanitary Landfill.

#### **Susceptibility and Risk to Hazards**

There is no risk to the Residual Containment Area (RCA) located in Barangay Badiang. This is where residual wastes are temporarily stored.



Figure SO-1. Ecological Solid Waste Facilities Map

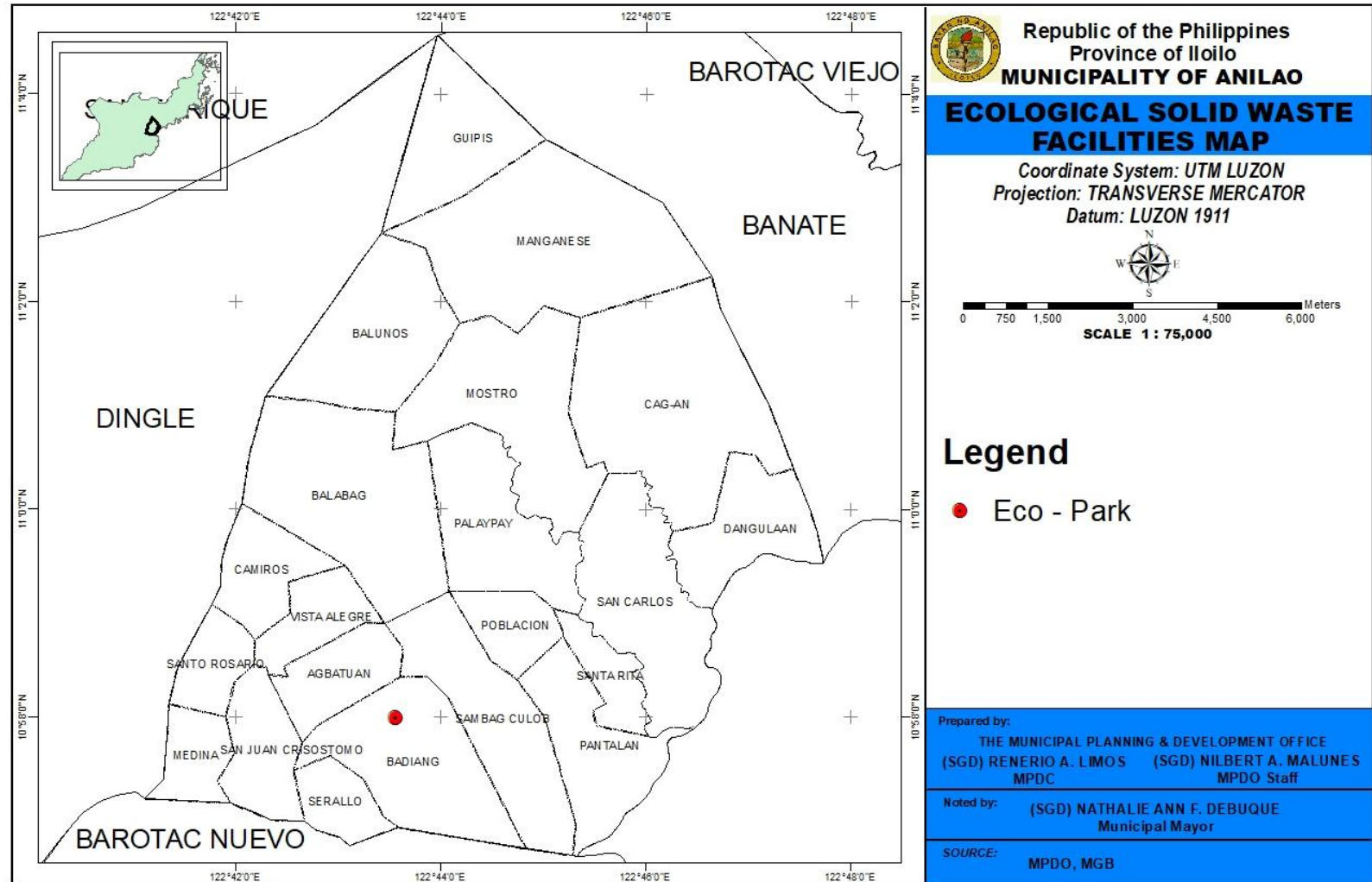
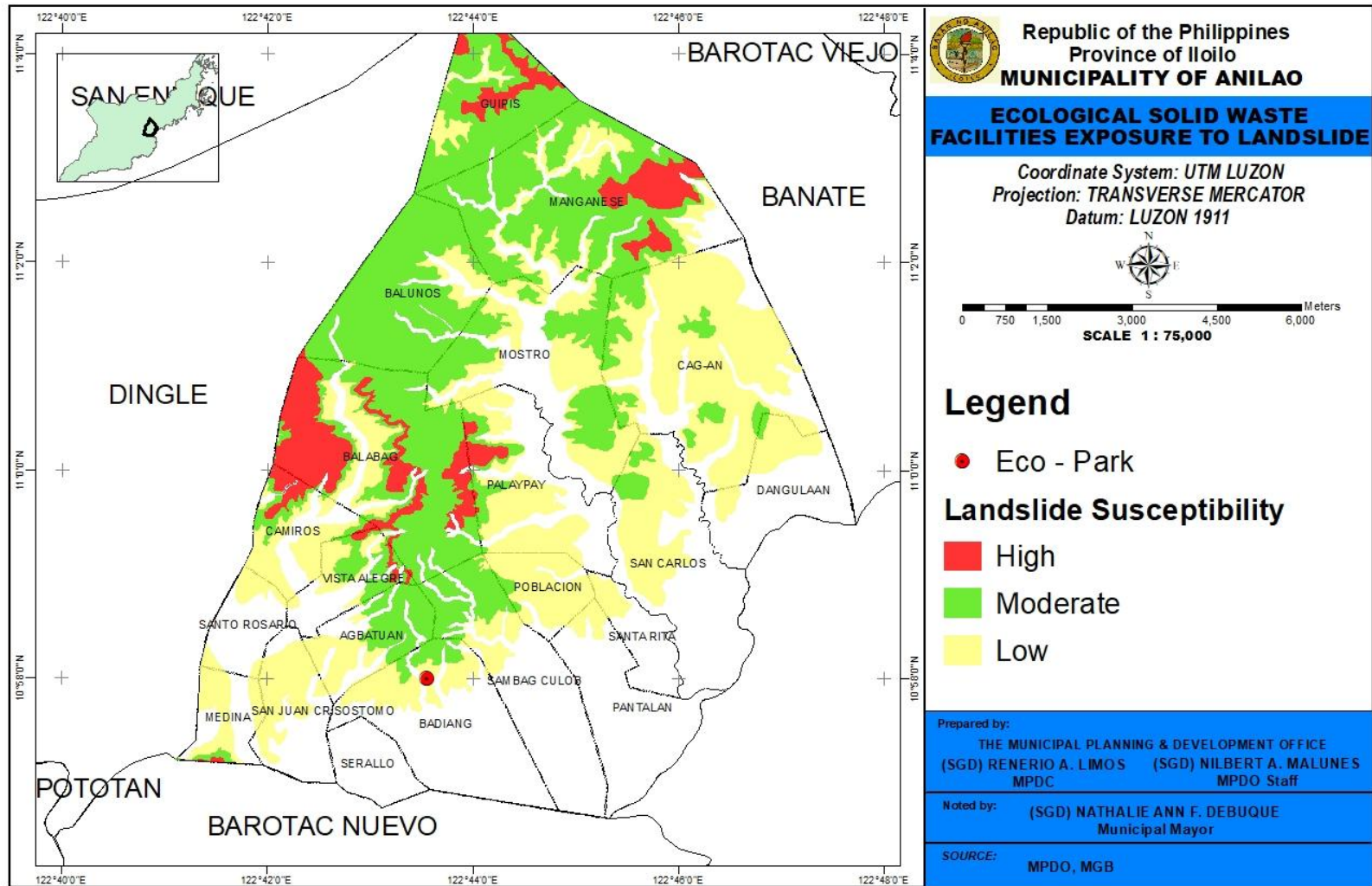


Figure SO-2. Ecological Solid Waste Facilities Exposure to Landslide



**Solid Waste Management Sectoral Analysis Matrix**

| Technical Findings / Observations  | Cause(s)   | Implication(s) / Effects  | Recommended Interventions (Policy Options, PPAs)   |
|--|--|---|--|
| Increased amount of Ecological Wastes  | Increased Number of Population                           | -Increased Number of Incidence of Human Diseases                          | - Proper Management of Ecological Solid Wastes   |
|  |  |   | Updating of Municipal Comprehensive Solid Waste Ordinance.   |
|  |  |   | Implementation of 10-yr Solid Waste Management Plan.   |
| Lacking of Municipal Owned Final Waste Disposal facility                                 | No Municipal owned lot for final waste disposal          | Inability to construct permanent structures for final disposal of wastes. | Usufruct with a private lot owner'   |
|  |  |   | Procure possible lot for final waste disposal.   |
|  |  |   | - ESWM Clustering with neighboring municipalities  |
|  |  |   | - MOA with nearest Sanitary Landfill   |
| Laxity in the implementation of Comprehensive Municipal Solid Waste Ordinance provisions | Lack of personnel  | Unimplemented provisions of the Municipal Ordinance                       | Designate a focal person to focus only on ESWM   |
|  |  |   | - Revised Municipal Ordinance on Ecological Solid Wastes   |
|  |  |   | - Implementation of garbage fees to residential areas included in waste collection.                |
|  |  |   | - Creation of MENRO Office with staff  |
| Lack awareness of locals people  | - Non-compliance of Segregation at source                | Increased amount of mixed wastes collected                                | Conduct of IECs to all barangays and institutions.   |
|  |  | Health problems   | - Full Implementation of waste Segregation at source and composting                                |
|  |  |   | - Implementation of 10-year ESWM Plan  |
| Insufficient facilities for collection of wastes.  | No permanent vehicle designated to waste collection only | Uncollected wastes in some areas.   | - Improvement of engineering services / procurement or detailing permanent garbage truck           |
|  | insufficient facility and manpower                       |   |  |
| Insufficient funds for SWM   | Less operations and maintenance                          | Uncollected wastes  | - Provision of additional funds for ESWM MOOE  |
|  |  | Improper handling of wastes   | Submission of project proposals for financial assistance to Municipal and other concerned agencies |



**Chapter VII - CLIMATE CHANGE ADAPTATION AND DISASTER RISK REDUCTION AND MANAGEMENT**

The integration of CCA-DRRM in the CLUP seeks to ensure that the direction of spatial and sectoral development addresses current and future risks and vulnerabilities, ensure that future development do not increase the risks and vulnerabilities of people and property, promote individual and community and environmental resiliency and appropriate management of ecosystems to support and achieve sustainable development (HLURB, 2014).

Disaster risk reduction (DRR) and climate change adaptation (CCA) are critical elements of sustainable development. If they are not successfully addressed, they will continue to undermine human development and impede progress towards meeting the Millennium Development Goals (MDGs)

The goal to come up with a disaster resilient and climate change adaptive CLUP has been a national mandate for all local governments. With the advent of series of disasters that hit the country, the Municipality of Anilao pursues to address the impending impact of these disasters to its people, their properties and the environment where they live.

Climate and disaster risk assessment (CDRA) was utilized to identify the level of risks and exposure of the various sectors in Anilao related to climate hazards and other potential impacts of climate change. Hazard and climate change information were consolidated and organized to better understand the characteristics of these hazards that will have a major impact on the lives of Anilaonon.



**Brief Profile and Analysis of the Existing Situation**

**Climate and Disaster Risk Assessment (CDRA)**

Because of the country’s vulnerability and susceptibility to natural hazards, more and more devastating disasters are now being experienced. This situation is further aggravated by threats like climate change and meteorologically-induced hazards have intensified resulting to increased deaths and economic devastation. To address to these concerns, local government units are mandated under RA 10121 and RA 9729 to mainstream disaster risk reduction and climate change adaptation into the Comprehensive Land Use Plan and Zoning ordinance.

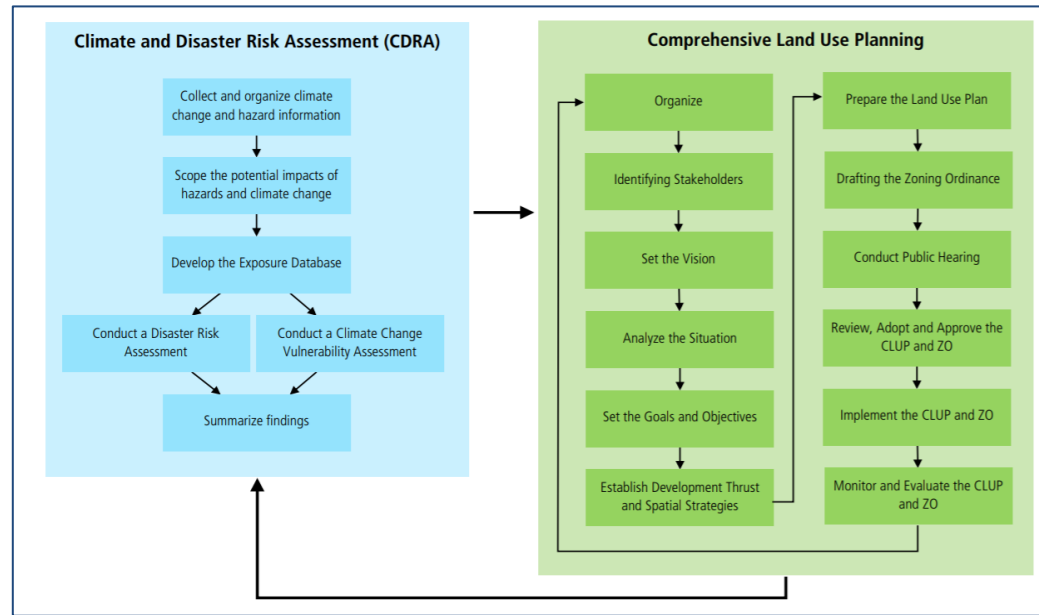
The mainstreaming framework involves two processes: first, the conduct of climate and disaster risk assessment (CDRA) and second, the result of CDRA is mainstreamed in various steps of CLUP formulation process.

The mainstreaming framework in the CLUP Guidebook, *Supplemental Guidelines on Mainstreaming CDRA in to the Comprehensive Land Use Plan (CLUP)* was used in integrating DRR and CCA in the formulation of the sectoral plans that made up the Volume III of the CLUP of Anilao. Below is the framework.





Figure DRA-1. Mainstreaming Framework for CDRA into the CLUP



Source: Supplemental Guidelines on Mainstreaming Disaster Risk Reduction and Climate Change in the Comprehensive Land Use Plan

This framework gave the planners a better understanding of the hazards and climate changes, identify the priority decision areas and development challenges. The framework will also help the planners identify the development goals, objectives and targets and make informed decisions to effectively address risks and vulnerabilities.

In the case of the municipality of Anilao, CDRA was used as a tool to develop data base on the five exposed elements like population, critical points facilities, urban areas, natural resource-based areas and lifeline infrastructure facilities. Data from the result of CBMS and hazard map from MGB (Mines and Geosciences Bureau) were the basis for extracting susceptibility and risk of the five elements.

For disaster risk assessment (DRA), the nature and extent of risk brought about by potential hazards are analyzed and evaluated as well as the existing conditions of vulnerability which could potentially harm exposed people, property, services, livelihood and environment. Results of the risk assessment are presented

in the risk maps indicating the levels of risk (e.g. high, moderate, low) for every hazards. Knowing the level of risk level will help planners determine what decision areas and policies that should be pursued to address the risk issues.

For climate change vulnerability (CVA), Climate Impact Chain Analysis and susceptibility maps and tables are presented in this discussion. Data from PAGASA were obtained specifically on climate change projections and assessed to determine their contribution on exacerbating potential hazards. A workshop was conducted; using the AR 5 scenario, the potential biophysical effects of climate change on agriculture, coastal, urban use, and forest ecosystem were determined.

### Basic Concepts/Steps of Climate and Disaster Risk Assessment (CDRA)

Risk Assessment - is a process which involves identifying the nature and behavior of the hazards the municipality is exposed to: identifying what elements are at risk to these hazards and why they are at risk; estimation of potential damages and losses as a result of hazard event and evaluation of risk levels to determine the possible strategies to manage or reduce the risk. Climate change is considered through its impact (particularly its effect on the frequency and magnitude) on climate hazards such as floods, rain induced landslide and droughts.

#### Climate Change Vulnerability Assessment (CCVA)

Vulnerability assessment is a process of examining the degree to which a system is susceptible to, unable to cope with adverse effects of climate change. It involves determining the nature and degree to which a system is exposed to climate variations (exposure), the degree to which it is adversely affected or beneficially (sensitivity) and the ability of the system to adjust to climate change (adaptive capacity).

#### Steps of CDRA

- 1. Collect and organize climate change and hazard information** – involves the gathering of climate change information and characterizing hazards that may affect the locality. The objective is to understand the various future climate scenario by analysing various climate change scenarios, to characterize the natural hazards that may affect the locality/barangay and understand the previous disasters and severely affected elements. This step produced a local climate change scenario, an inventory of natural hazards and their characteristics, a compilation of historical disaster damage and a barangay level hazard inventory matrix. Hazard maps were finalized indicating the
- 2. Scope the potential impacts of hazards and climate change** – identifying key areas or sectors that may be affected by climate change and natural hazards and determining likely impacts (direct and indirect);
- 3. Develop the exposure database** – gathering baseline map and attribute data on exposure, vulnerability sensitivity and adaptive capacity as basis for the Climate Change Vulnerability Assessment (CCVA) and Disaster Risk Assessment (DRA).
- 4. Conduct a climate change vulnerability assessment** – identification of vulnerable areas and sectors by analysing exposure, sensitivity and adaptive capacity to the various climate stimuli.



5. **Conduct a DRA** – identification of risk areas by analysing hazard, exposure and vulnerability.
6. **Summarize findings** –identification of priority decision areas/sectors based on the combined level of risks and vulnerabilities, identification of risk management options, climate change adaptation and mitigation options

#### **Hazard Profile of the Municipality**

Majority of the barangays in the Municipality of Anilao are prone to flooding as seen in Table DRA-1 which was taken from the Mines and Geosciences Bureau geohazard assessment mapping conducted last November 20-21, 2013. The presence of both lowland, upland and coastal ecosystem contributed to the complexity of natural process which also expose raises their exposure to natural hazards and risks.

The exposure of the five exposed elements to different hazards was also aggravated with the presence of rivers and creeks traversing the upland to lowland areas. Majority of the barangays in Anilao are exposed to flood and landslide, while the seven (7) coastal barangays are exposed to storm surge.

Table DRA-1 shows the level (VH – very high, H – high, M – moderate and L – low) susceptibility of all barangays to flood, landslide and storm surge.

Like many coastal municipalities in the Philippines, the Municipality of Anilao is frequently visited by typhoons. The strongest typhoons that hit the municipality are Typhoon Frank in 2008 and the recent Typhoon Yolanda in 2013; these typhoons paralyzed the business operations and livelihood of the majority of the residents of Anilao for 1-2 weeks. 20-30 percent of the total houses of the 21 barangays were totally damaged and other infrastructures were partially damaged. The agricultural production was devastated that put the farmers into miserable condition.



Table DRA-1. Hazards in the Municipality

| BARANGAY            | Flood |   |   |    | Landslide |   |   | Stormsurge |   |   |
|---------------------|-------|---|---|----|-----------|---|---|------------|---|---|
|                     | L     | M | H | VH | L         | M | H | L          | M | H |
| AGBATUAN            | √     | √ | √ |    | √         | √ | √ |            |   |   |
| BDIANG              | √     | √ | √ | √  | √         | √ |   | √          | √ | √ |
| BALABAG             | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| BALUNOS             | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| CAG-AN              | √     | √ | √ | √  | √         | √ |   |            |   |   |
| CAMIROS             | √     | √ | √ |    | √         | √ | √ |            |   |   |
| DANGULAAN           | √     | √ | √ | √  | √         | √ |   | √          | √ | √ |
| GUIPIS              |       | √ | √ | √  | √         | √ | √ |            |   |   |
| MANGANESE           | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| MEDINA              | √     | √ | √ | √  | √         | √ |   |            |   |   |
| MOSTRO              | √     | √ | √ | √  | √         | √ |   |            |   |   |
| PALAYPAY            | √     | √ | √ | √  | √         | √ | √ |            |   |   |
| PANTALAN            | √     | √ | √ | √  | √         |   |   | √          | √ | √ |
| POBLACION           | √     | √ | √ | √  | √         | √ |   |            |   |   |
| SAMBAG CULOB        | √     | √ | √ | √  | √         | √ | √ | √          | √ | √ |
| SAN CARLOS          | √     | √ | √ | √  | √         | √ |   | √          | √ | √ |
| SAN JUAN CRISOSTOMO | √     | √ | √ |    | √         |   |   |            |   |   |
| SANTA RITA          | √     | √ | √ | √  | √         |   |   | √          | √ | √ |
| SANTO ROSARIO       | √     | √ | √ |    | √         |   |   |            |   |   |
| SERALLO             | √     | √ | √ | √  |           |   |   | √          | √ |   |
| VISTA ALEGRE        |       |   |   |    | √         | √ | √ |            |   |   |

Source: MGB Legend: L- Low M – Moderate H – High VH – Very High

**Potentially Affected Population to Flood**

Most flooding in the Municipality of Anilao occurs in floodplain areas. These are natural water storage areas containing rivers or creeks that flow continuously or intermittently. The easy access to water and the rich diversity of the flood plains have always attracted human settlements and with the increasing human intervention in the upstream catchment, the downstream consequences and exposure increases. Flood prone areas and areas near rivers and creeks are located in Barangays Pantalan, Sta. Rita, Dangula-an, San Carlos, Badiang, Serallo, Balunos, Guipis, Cag-an, Medina, Sto. Rosario, Palaypay, Poblacion, Agbatuan, Manganese and Sambag Culob.



Based on the results of CDRA, fourteen (14) barangays with 137 families and a total affected population of 603 are exposed to very high susceptibility to flood. These are barangays situated along the coastal areas or have the presence of bodies of waters within their boundaries. A total of 474 households with a population of 2,086 in 20 barangays (except Guipis and Balunos) are exposed to high susceptibility to flood. A total of 1,099 households with a population of 4,836 are exposed to moderate exposure to flood in all the 21 barangays (see *Figure DRA-3. Population Exposure to Flood*).

In summary, CDRA results also shows that at least two (2) percent of the total population have very high susceptibility to flood, eight (8) percent have high susceptibility and 17% have moderate susceptibility. The rest of the affected population have low susceptibility to flood.

Data presented in Table DRA-6. are the summary of potentially affected population to flood in the 21 barangays and their corresponding level of susceptibility. Figure DRA-2 shows the location of flood susceptibility levels in the municipality.



Table DRA-2. Potentially Affected Population to Flood

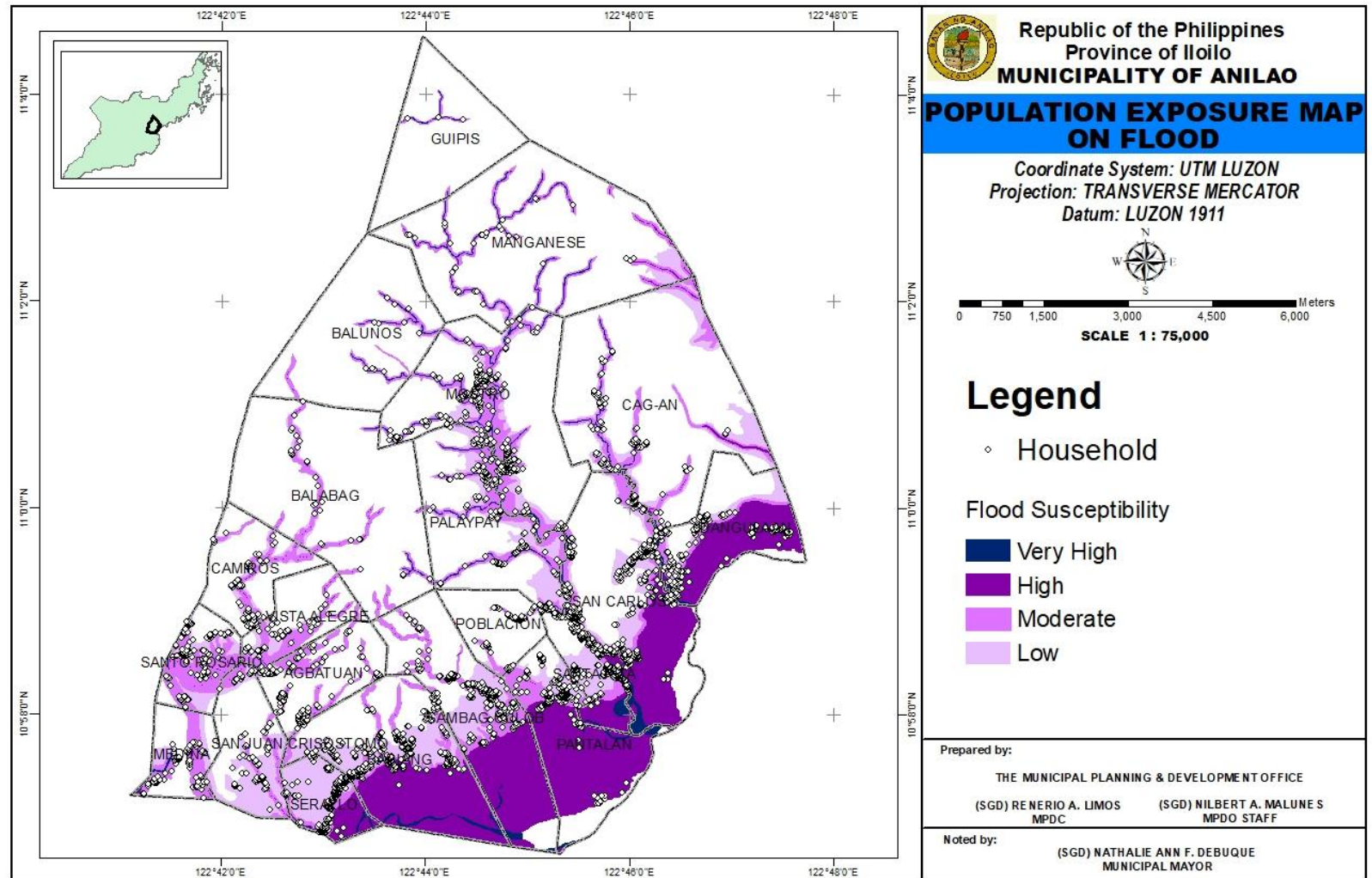
| Barangay            | Very High Susceptibility |            | High Susceptibility |            | Moderate Susceptibility |             | Low Susceptibility |             |
|---------------------|--------------------------|------------|---------------------|------------|-------------------------|-------------|--------------------|-------------|
|                     | No. of Persons           | No. of HH  | No. of Persons      | No. of HH  | No. of Persons          | No. of HH   | No. of Persons     | No. of HH   |
| Agbatuan            | 0                        | 0          | 84                  | 19         | 216                     | 49          | 185                | 42          |
| Badiang             | 0                        | 0          | 273                 | 62         | 431                     | 98          | 849                | 193         |
| Balabag             | 4                        | 1          | 13                  | 3          | 53                      | 12          | 62                 | 14          |
| Balunos             | 4                        | 1          | 35                  | 8          | 13                      | 3           | 53                 | 12          |
| Cag-an              | 9                        | 2          | 35                  | 8          | 246                     | 56          | 211                | 48          |
| Camiros             | 0                        | 0          | 26                  | 6          | 110                     | 25          | 176                | 40          |
| Sambag Culob        | 0                        | 0          | 101                 | 23         | 585                     | 133         | 453                | 103         |
| Dangula-an          | 57                       | 13         | 339                 | 77         | 88                      | 20          | 308                | 70          |
| Guipis              | 4                        | 1          | 9                   | 2          | 0                       | 0           | 0                  | 0           |
| Manganese           | 53                       | 12         | 31                  | 7          | 48                      | 11          | 18                 | 4           |
| Medina              | 4                        | 1          | 13                  | 3          | 264                     | 60          | 53                 | 12          |
| Mostro              | 84                       | 19         | 84                  | 19         | 590                     | 134         | 374                | 85          |
| Palaypay            | 119                      | 27         | 66                  | 15         | 374                     | 85          | 238                | 54          |
| Pantalan            | 4                        | 1          | 304                 | 69         | 92                      | 21          | 405                | 92          |
| Poblacion           | 26                       | 6          | 31                  | 7          | 53                      | 12          | 119                | 27          |
| San Carlos          | 180                      | 41         | 317                 | 72         | 480                     | 109         | 594                | 135         |
| San Juan Crisostomo | 0                        | 0          | 9                   | 2          | 128                     | 29          | 238                | 54          |
| Santa Rita          | 48                       | 11         | 268                 | 61         | 427                     | 97          | 365                | 83          |
| Santo Rosario       | 0                        | 0          | 40                  | 9          | 339                     | 77          | 273                | 62          |
| Serallo             | 4                        | 1          | 44                  | 10         | 154                     | 35          | 876                | 199         |
| Vista Alegre        | 0                        | 0          | 9                   | 2          | 114                     | 26          | 167                | 38          |
| <b>Total</b>        | <b>603</b>               | <b>137</b> | <b>2086</b>         | <b>474</b> | <b>4836</b>             | <b>1092</b> | <b>5975</b>        | <b>1358</b> |

Source: CBMS 2017





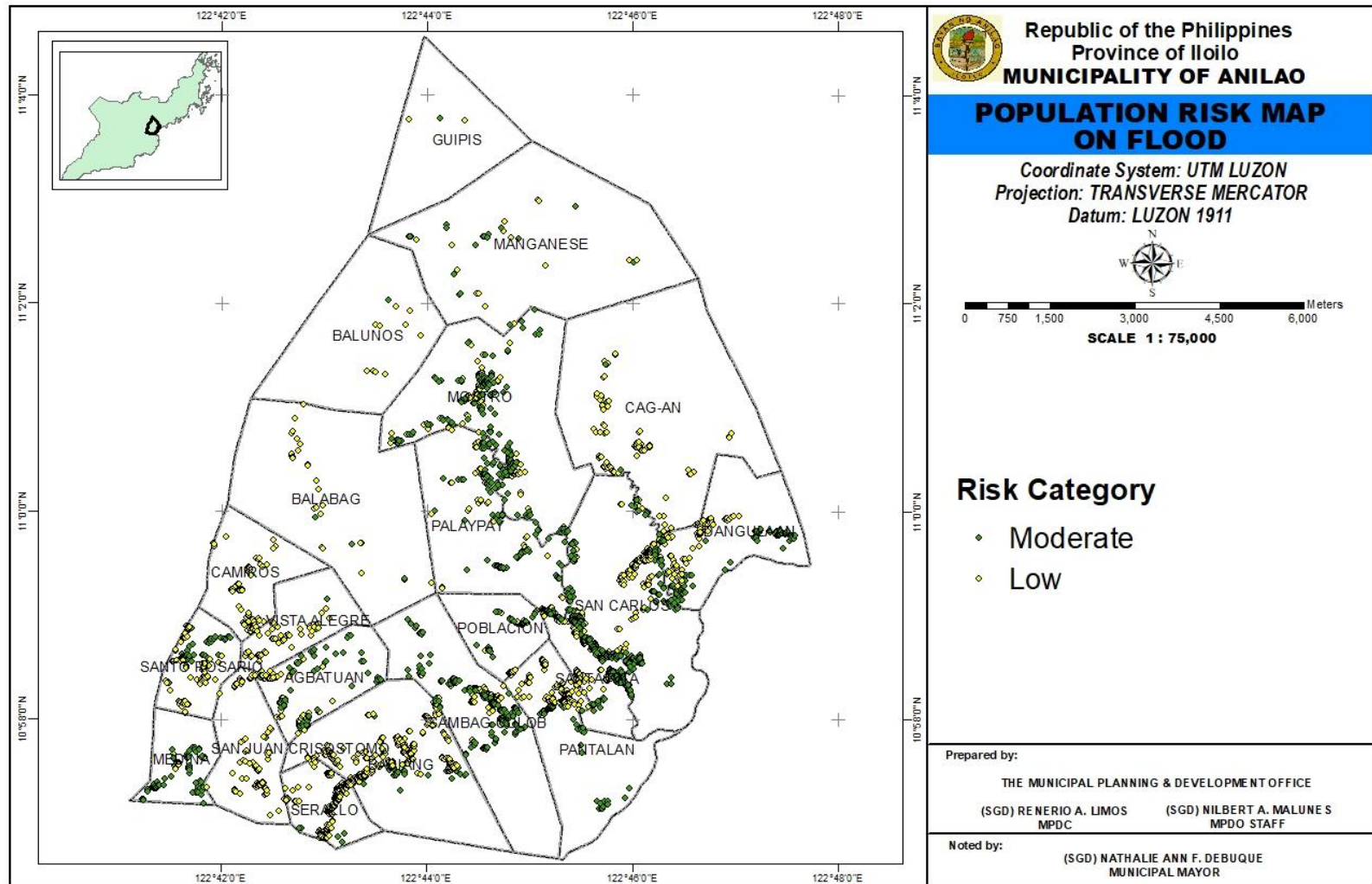
Figure DRA-2. Population Exposure Map to Flood



Source: MPDO



Figure DRA-3. Population Risk Map on Flood



Source: MPDO



**Potentially Affected Population to Landslide**

Table DRA-3 shows that a total of 3,103 households (about 49.5% of the total household population in Anilao) are exposed to landslide in the Municipality of Anilao. It also shows that 29 households (or 5% of the total household population) are highly susceptible to landslide having a total 128 affected population. At least 870 households or 14% of the total household population 3,828 population are exposed to moderate susceptibility to landslide. While 2,204 households (or 35% of the total household population) affecting 9,698 persons are exposed to low susceptibility to landslide. Figure DRA-4 also shows the location of households and their level of susceptibility to landslide in the municipality. Figure DRA-5 shows the risk level of population to landslide.

**Table DRA-3. Potential Affected Population in Landslide Areas**

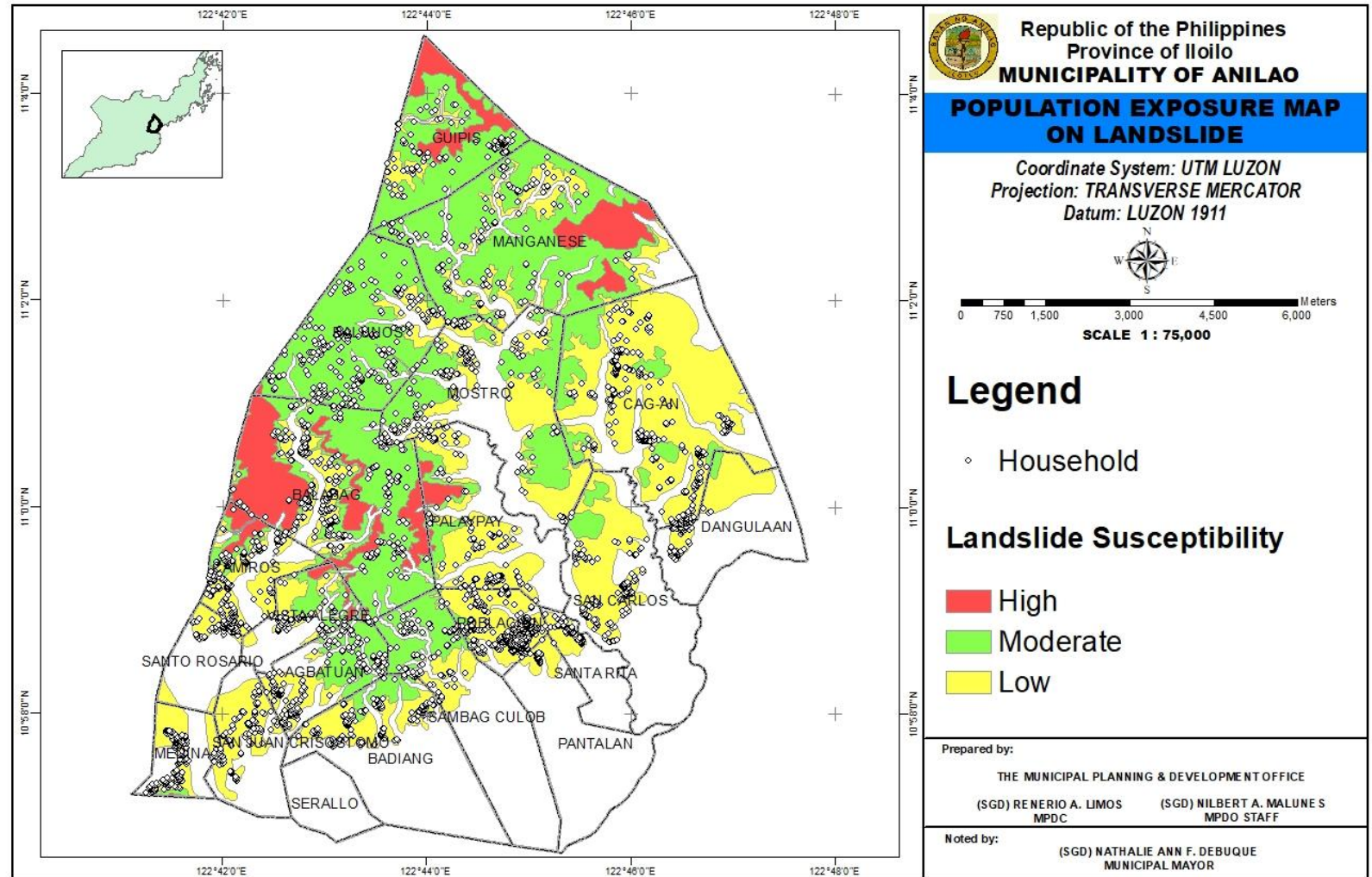
| Barangay            | High Susceptibility |           | Moderate Susceptibility |            | Low Susceptibility |             |
|---------------------|---------------------|-----------|-------------------------|------------|--------------------|-------------|
|                     | No. of Persons      | No. of HH | No. of Persons          | No. of HH  | No. of Persons     | No. of HH   |
| AGBATUAN            | 0                   | 0         | 352                     | 80         | 484                | 110         |
| BADIANG             | 0                   | 0         | 84                      | 19         | 585                | 133         |
| BALABAG             | 70                  | 16        | 620                     | 141        | 568                | 129         |
| BALUNOS             | 0                   | 0         | 946                     | 215        | 132                | 30          |
| CAG-AN              | 0                   | 0         | 40                      | 9          | 1395               | 317         |
| CAMIROS             | 35                  | 8         | 180                     | 41         | 660                | 150         |
| DANGULAAN           | 0                   | 0         | 0                       | 0          | 264                | 60          |
| GUIPIS              | 18                  | 4         | 400                     | 91         | 84                 | 19          |
| MANGANESE           | 0                   | 0         | 400                     | 91         | 238                | 54          |
| MEDINA              | 0                   | 0         | 18                      | 4          | 660                | 150         |
| MOSTRO              | 0                   | 0         | 295                     | 67         | 519                | 118         |
| PALAYPAY            | 0                   | 0         | 48                      | 11         | 554                | 126         |
| PANTALAN            | 0                   | 0         | 0                       | 0          | 106                | 24          |
| POBLACION           | 0                   | 0         | 66                      | 15         | 1443               | 328         |
| SAMBAG CULOB        | 0                   | 0         | 290                     | 66         | 119                | 27          |
| SAN CARLOS          | 0                   | 0         | 4                       | 1          | 598                | 136         |
| SAN JUAN CRISOSTOMO | 0                   | 0         | 0                       | 0          | 475                | 108         |
| SANTA RITA          | 0                   | 0         | 0                       | 0          | 348                | 79          |
| SANTO ROSARIO       | 0                   | 0         | 0                       | 0          | 277                | 63          |
| VISTA ALEGRE        | 4                   | 1         | 84                      | 19         | 189                | 43          |
| <b>Total</b>        | <b>128</b>          | <b>29</b> | <b>3828</b>             | <b>870</b> | <b>9698</b>        | <b>2204</b> |

Source: CBMS 2017





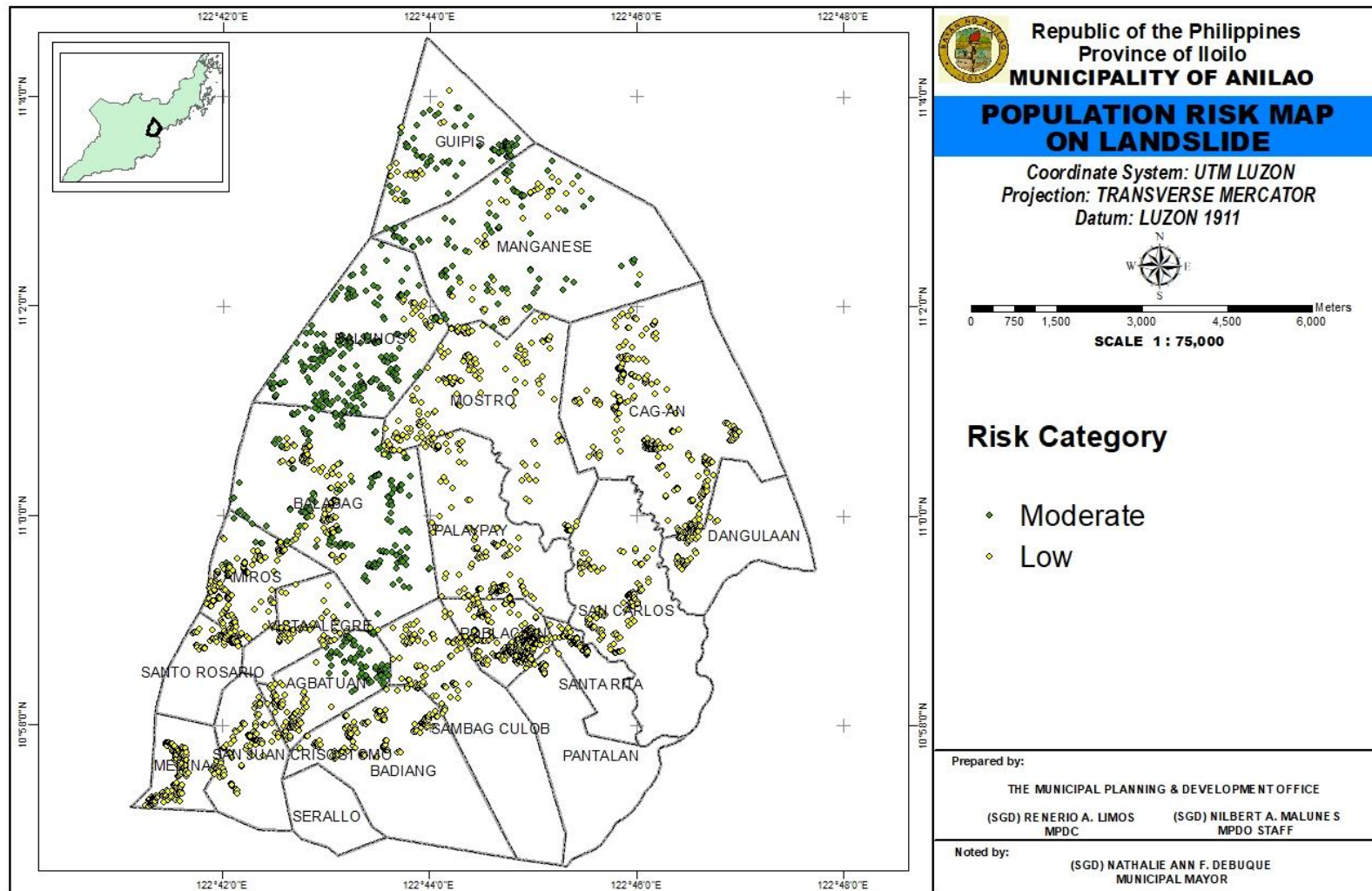
Figure DRA-4. Population Exposure Map on Landslide



Source:MPDO



Figure DRA-5. Population Risk Map on Landslide



Source:MPDO



**Potentially Affected Population in Storm Surge Areas**

The five (5) coastal barangays of Anilao is highly susceptible to storm surge with a total of 425 (6.8%) affected households. These are areas near rivers, creeks and exposed to the sea. A total of 219 households with a population of 964 are highly susceptibility to storm surge. These are in Barangays Dangulaan, Pantalan, Sambag Culob, San Carlos and Sta. Rita (see Table DRA-4).

One hundred six (106) households with a population of 466 are moderately susceptible to storm surge and the rest 100 households have low susceptibility. Figure CDRA-6. also shows the location of different levels of susceptibility in terms of storm surge and Figure DRA-7 shows the risk level of barangays to stormsurge.

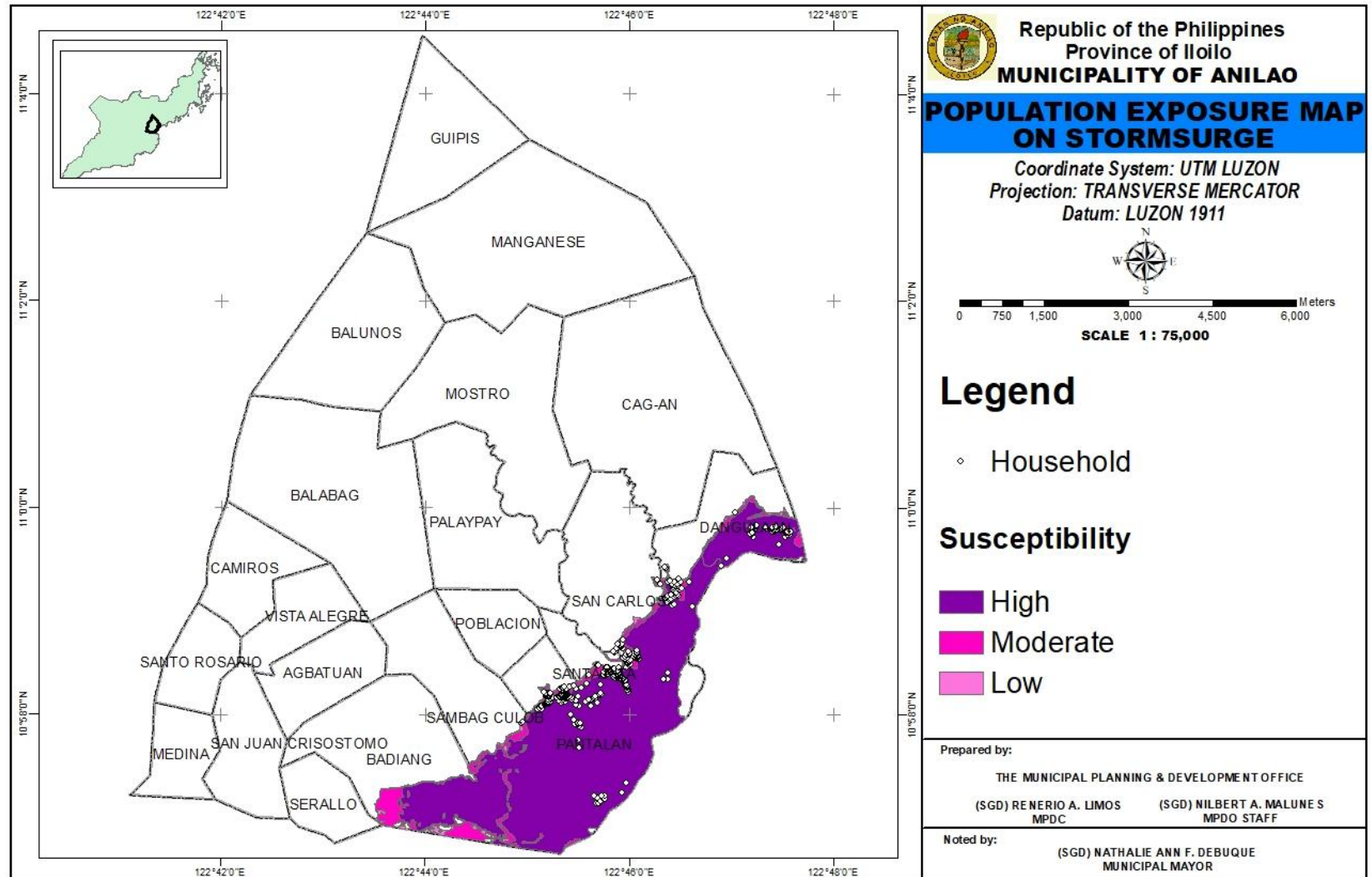
**Table DRA-4. Potentially Affected Population in Storm Surge Areas**

| Barangay     | High Susceptibility |            | Moderate Susceptibility |            | Low Susceptibility |            |
|--------------|---------------------|------------|-------------------------|------------|--------------------|------------|
|              | No. of Persons      | No. of HH  | No. of Persons          | No. of HH  | No. of Persons     | No. of HH  |
| Dangula-an   | 22                  | 5          | 75                      | 17         | 233                | 53         |
| Pantalan     | 515                 | 117        | 114                     | 26         | 57                 | 13         |
| Sambag Culob | 0                   | 0          | 9                       | 2          | 0                  | 0          |
| San Carlos   | 194                 | 44         | 145                     | 33         | 13                 | 3          |
| Santa Rita   | 233                 | 53         | 123                     | 28         | 136                | 31         |
| <b>Total</b> | <b>964</b>          | <b>219</b> | <b>466</b>              | <b>106</b> | <b>439</b>         | <b>100</b> |

Source: CBMS, 2017



Figure DRA-6. Population Exposure Map on Stormsurge

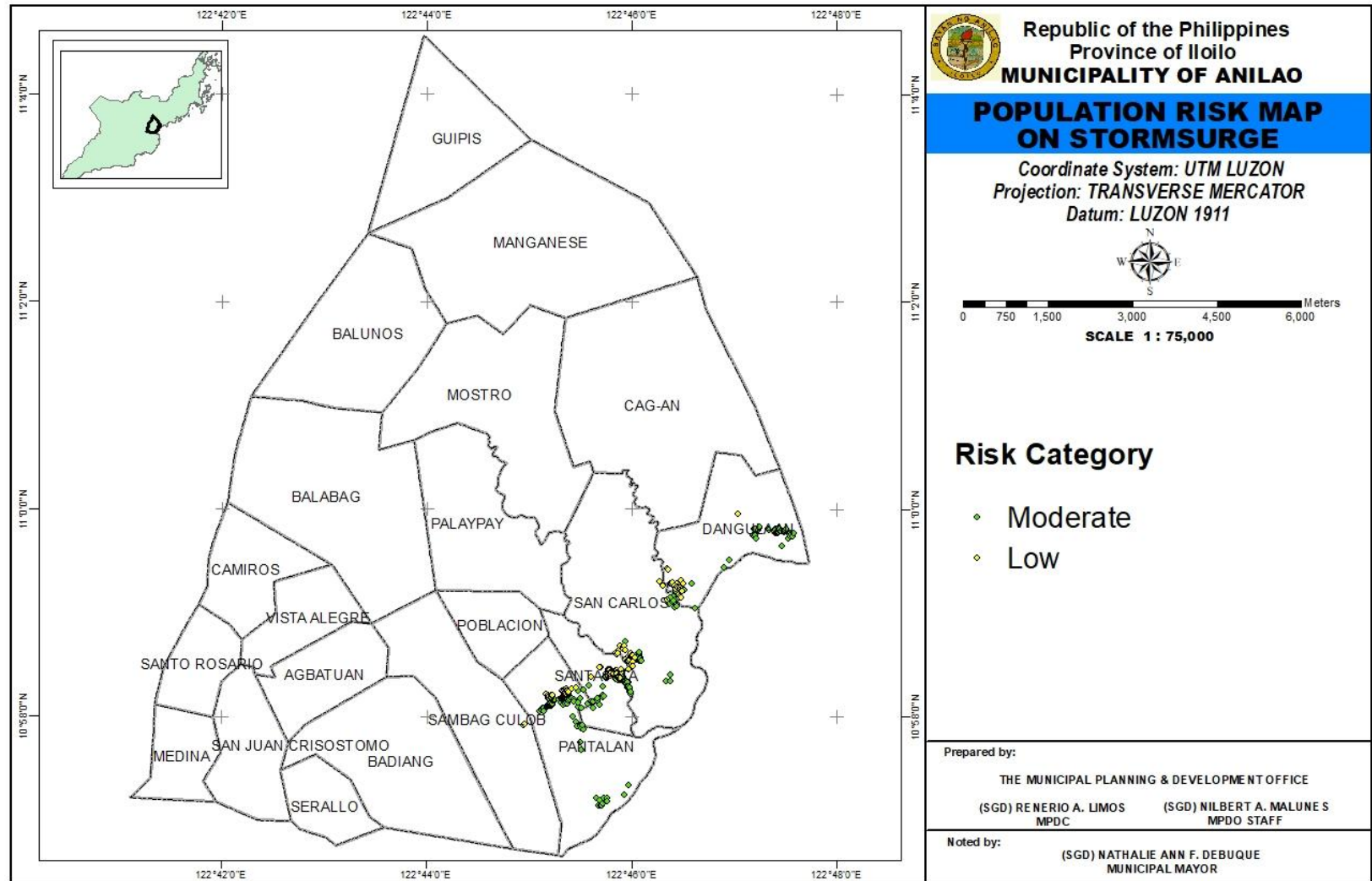


Source: MPDO





Figure DRA – 7. Population Risk Map on Stormsurge



Source: MPDO



Potentially Affected Natural Resource-Based Areas to Flood

Susceptibility of Agricultural Areas to Hazards

For agricultural crops, fishponds has very high susceptibility to flood with total affected area of 22.61 hectares located in Barangays Badiang, Dangulaan, Pantalan, Sambag Culob, San Carlos, Sta. Rita and Serallo. Sugarcane areas has also very high susceptibility to flood located in Barangay Cag-an Dangulaan, Manganese, Mostro, Palaypay, Poblacion San Carlos and Serallo with a total affected area of 22.494 hectares. Rice areas has also very high susceptibility to flood in areas located in Barangay Balabag, Balunos, Cag-an, Dangulaan, Guipis, Manganese, Medina, Mostro, Palaypay, San Carlos and Serallo with a total affected area of 17.48 hectares. See Table DRA-5.

Areas with high susceptibility to landslide are mango plantation with 10.0 hectares located in Barangay Balabag and Vista Alegre, sugarcane areas located in Barangay Agbatuan, Balabag, Camiros, Palaypay and Vista Alegre with total affected area of 4.22 hectares and 2.6 hectares of rice areas located in Balabag, Balunos and Camiros The data is also shown in Table DRA-6 with low susceptibility to landslide. Figures DRA10 shows the location of different levels of susceptibility while Figure DRA-11 shows the risk level to landslide.

Figures DRA-8 and 9 shows the level of susceptibility of natural resource-based areas to flood and landslide. Likewise, Figures DRA-8 and 9 also shows the susceptibility of the fishponds in the water use exposure map, both flood, landslide and stormsurge.

Table DRA-5. Existing Agricultural Areas Susceptibility to Flood

| Commodity/<br>Crop | Very High Susceptibility Area |            | High Susceptibility Area |            | Moderate Susceptibility Area |            | Low Susceptibility Area |            |         |
|--------------------|-------------------------------|------------|--------------------------|------------|------------------------------|------------|-------------------------|------------|---------|
|                    | Barangay                      | Area (ha)  | Barangay                 | Area (ha)  | Barangay                     | Area (ha)  | Barangay                | Area (ha)  |         |
| Sugar<br>cane      |                               |            | Agbatuan                 | 3.5275     | Agbatuan                     | 20.9598    | Agbatuan                | 10.7772    |         |
|                    |                               |            | Badiang                  | 6.0351     | Badiang                      | 12.79      | Badiang                 | 104.0711   |         |
|                    |                               |            | Balabag                  | 1.7966     | Balabag                      | 5.6744     | Balabag                 | 6.5558     |         |
|                    |                               | Cag-an     | 1.8861                   | Cag-an     | 5.7565                       | Cag-an     | 24.8025                 | Cag-an     | 45.3293 |
|                    |                               |            |                          | Camiros    | 1.9290                       | Camiros    | 8.4865                  | Camiros    | 15.5942 |
|                    |                               | Dangula-an | 0.646                    | Dangula-an | 0.1798                       | Dangula-an | 1.5975                  | Dangula-an | 6.4249  |
|                    |                               | Manganese  | 2.9655                   | Manganese  | 3.3165                       | Manganese  | 8.7446                  | Manganese  | 23.3004 |
|                    |                               |            |                          | Medina     | 0.0676                       | Medina     | 3.4125                  | Medina     | 3.7711  |
|                    |                               | Mostro     | 8.0411                   | Mostro     | 4.5343                       | Mostro     | 57.5357                 | Mostro     | 38.3448 |
|                    |                               | Palaypay   | 6.1398                   | Palaypay   | 3.8561                       | Palaypay   | 42.0273                 | Palaypay   | 81.8421 |



|              |              |                |                     |                 |                     |                 |                     |                 |
|--------------|--------------|----------------|---------------------|-----------------|---------------------|-----------------|---------------------|-----------------|
|              |              |                | Pantalan            | 0.4225          | Pantalan            | 5.5105          | Pantalan            | 15.1859         |
|              | Poblacion    | 0.1344         | Poblacion           | 0.1575          | Poblacion           | 3.2074          | Poblacion           | 5.3503          |
|              |              |                | Sambag Culob        | 2.5123          | Sambag Culob        | 16.5778         | Sambag Culob        | 64.8388         |
|              | San Carlos   | 2.4355         | San Carlos          | 1.037           | San Carlos          | 16.8311         | San Carlos          | 20.9384         |
|              |              |                | San Juan Crisostomo | 1.1167          | San Juan Crisostomo | 5.3945          | San Juan Crisostomo | 81.7948         |
|              |              |                | Sta. Rita           | 4.2774          | Sta. Rita           | 2.4286          | Sta. Rita           | 9.2897          |
|              |              |                | Sto. Rosario        | 0.015           | Sto. Rosario        | 3.2669          | Sto. Rosario        | 12.8867         |
|              | Serallo      | 0.246          | Serallo             | 1.264           | Serallo             | 5.8629          | Serallo             | 70.3666         |
|              |              |                | Vista Alegre        | 1.3075          | Vista Alegre        | 11.9886         | Vista Alegre        | 4.6619          |
|              | <b>Total</b> | <b>22.4944</b> |                     | <b>43.1089</b>  |                     | <b>257.0991</b> |                     | <b>621.3240</b> |
| <b>Rice</b>  |              |                | Agbatuan            | 1.2496          | Agbatuan            | 8.3837          | Agbatuan            | 2.8519          |
|              |              |                | Badiang             | 10.5765         | Badiang             | 2.7315          | Badiang             | 0.3447          |
|              | Balabag      | 0.0742         | Balabag             | 1.8324          | Balabag             | 4.8024          | Balabag             | 8.083           |
|              | Balunos      | 1.7653         | Balunos             | 1.1984          | Balunos             | 3.9277          | Balunos             | 3.0797          |
|              | Cag-an       | 2.1983         | Cag-an              | 6.108           | Cag-an              | 14.2254         | Cag-an              | 27.0083         |
|              |              |                | Camiros             | 0.788           | Camiros             | 3.3828          | Camiros             | 5.7841          |
|              | Dangula-an   | 0.0164         | Dangula-an          | 29.3328         | Dangula-an          | 5.7697          | Dangula-an          | 8.3132          |
|              | Guipis       | 1.0029         |                     |                 | Guipis              | 1.5802          |                     |                 |
|              | Manganese    | 2.975          | Manganese           | 1.7891          | Manganese           | 5.6589          | Manganese           | 1.7211          |
|              | Medina       | 2.9906         | Medina              | 2.1937          | Medina              | 33.7074         | Medina              | 17.5316         |
|              | Mostro       | 3.2108         | Mostro              | 2.1717          | Mostro              | 19.7216         | Mostro              | 21.7878         |
|              | Palaypay     | 1.378          | Palaypay            | 0.969           | Palaypay            | 13.0948         | Palaypay            | 11.4655         |
|              |              |                | Pantalan            | 0.17            | Pantalan            | 8.0267          | Pantalan            | 13.2335         |
|              |              |                | Sambag Culob        | 2.0934          | Sambag Culob        | 19.3404         | Sambag Culob        | 0.8454          |
|              | San Carlos   | 1.7479         | San Carlos          | 34.9348         | San Carlos          | 18.1658         | San Carlos          | 48.1842         |
|              |              |                | San Juan Crisostomo | 1.353           | San Juan Crisostomo | 7.7001          | San Juan Crisostomo | 5.9264          |
|              |              |                | Sta. Rita           | 0.0582          | Sta. Rita           | 4.6206          | Sta. Rita           | 33.8612         |
|              |              |                | Sto. Rosario        | 4.9277          | Sto. Rosario        | 58.8191         | Sto. Rosario        | 18.845          |
|              | Serallo      | 0.103          | Serallo             | 2.3573          | Serallo             | 0.8194          | Serallo             | 5.4546          |
|              |              |                | Vista Alegre        | 1.0686          | Vista Alegre        | 17.3039         | Vista Alegre        | 17.4038         |
|              | <b>Total</b> | <b>17.4624</b> |                     | <b>105.1722</b> |                     | <b>251.7821</b> |                     | <b>251.725</b>  |
| <b>Mango</b> |              |                | Balabag             | 1.9626          | Balabag             | 5.2468          |                     |                 |

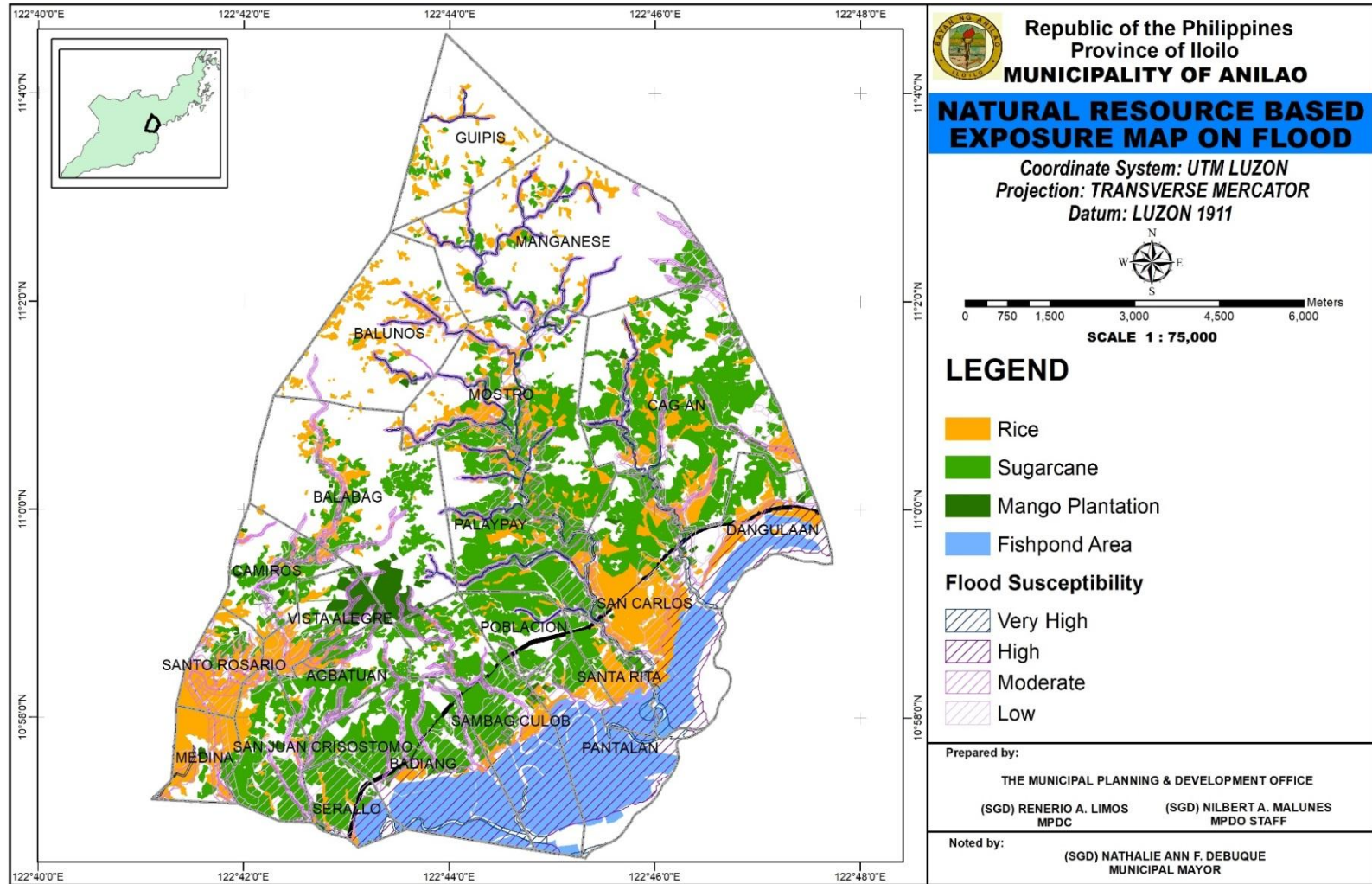


|                   |              |                |              |                 |              |                |              |               |
|-------------------|--------------|----------------|--------------|-----------------|--------------|----------------|--------------|---------------|
| <b>Plantation</b> |              |                |              |                 |              |                |              |               |
|                   | Balunos      | 0.323          | Balunos      | 0.1991          | Balunos      | 0.7963         |              |               |
|                   | Cag-an       | 0.4084         | Cag-an       | 0.282           | Cag-an       | 0.9918         | Cag-an       | 1.2196        |
|                   | Dangula-an   | 0.21           | Dangula-an   | 0.0369          | Dangula-an   | 0.6788         | Dangula-an   | 2.1672        |
|                   |              |                |              |                 | Pantalan     | 1.7905         | Pantalan     | 0.0606        |
|                   |              |                | Sambag Culob | 0.2651          | Sambag Culob | 2.1793         | Sambag Culob | 1.2927        |
|                   |              |                |              |                 |              |                | Serallo      | 1.3488        |
|                   |              |                | Vista Alegre | 3.4412          | Sambag Culob | 6.8517         | Sambag Culob | 0.2723        |
|                   |              | <b>0.9414</b>  |              | <b>6.1869</b>   |              | <b>18.5352</b> |              | <b>6.3612</b> |
| <b>Fishpond</b>   | Badiang      | 1.9716         | Badiang      | 204.3889        | Badiang      | 0.0113         |              |               |
|                   | Dangula-an   | 0.5334         | Dangula-an   | 72.4599         |              |                |              |               |
|                   | Pantalan     | 2.3603         | Pantalan     | 241.0626        | Pantalan     | 2.5363         |              |               |
|                   | Sambag Culob | 1.3285         | Sambag Culob | 180.8914        | Sambag Culob | 0.0083         |              |               |
|                   | San Carlos   | 9.7741         | San Carlos   | 111.9788        |              |                |              |               |
|                   | Sta. Rita    | 6.3332         | Sta. Rita    | 36.458          | Sta. Rita    | 6.421          | Sta. Rita    | 0.893         |
|                   | Serallo      | 0.3156         | Serallo      | 32.5751         | Serallo      | 0.0032         |              |               |
| <b>Total</b>      |              | <b>22.6167</b> |              | <b>879.8147</b> |              | <b>8.9801</b>  |              | <b>0.8930</b> |

Source: CDRA 2018



Figure DRA-8. Natural Resource-Based Exposure Map to Flood

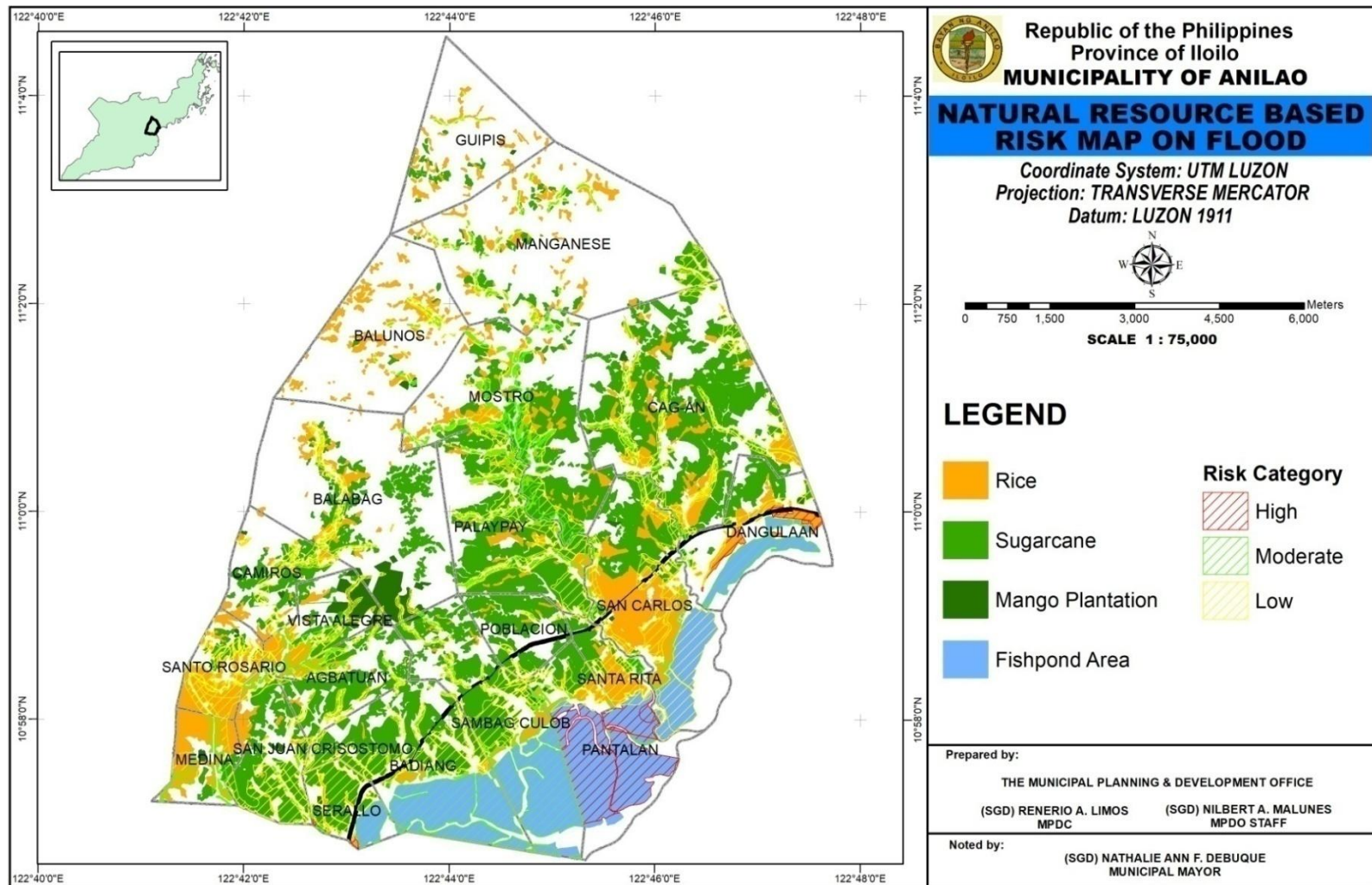


Source:MPDO





Figure DRA-9. Natural Resource-Based Risk Map on Flood



Source:MPDO





**Table DRA-6. Existing Agricultural Areas Susceptibility to Landslide**

| Crop             | High Susceptibility Area |               | Moderate Susceptibility Area |              | Low Susceptibility Area |              |                  |
|------------------|--------------------------|---------------|------------------------------|--------------|-------------------------|--------------|------------------|
|                  | Barangay                 | Area (ha)     | Barangay                     | Area (ha)    | Barangay                | Area (ha)    |                  |
| <b>Sugarcane</b> | Agbatuan                 | 0.0008        | Agbatuan                     | 46.5962      | Agbatuan                | 53.5962      |                  |
|                  |                          |               | Badiang                      | 20.2468      | Badiang                 | 86.9981      |                  |
|                  | Balabag                  | 2.8266        | Balabag                      | 69.7445      | Balabag                 | 35.0683      |                  |
|                  |                          |               | Balunos                      | 2.9750       | Balunos                 | 0.7911       |                  |
|                  |                          |               | Cag-an                       | 16.6392      | Cag-an                  | 380.3411     |                  |
|                  | Camiros                  | 0.3144        | Camiros                      | 4.6373       | Camiros                 | 46.0006      |                  |
|                  |                          |               | Dangula-an                   | 0.1395       | Dangula-an              | 45.3213      |                  |
|                  |                          |               | Guipis                       | 8.1526       | Guipis                  | 6.5874       |                  |
|                  |                          |               | Manganese                    | 23.9991      | Manganese               | 21.1873      |                  |
|                  |                          |               | Medina                       | 1.3058       | Medina                  | 8.0743       |                  |
|                  |                          |               | Mostro                       | 39.0456      | Mostro                  | 131.6439     |                  |
|                  | Palaypay                 | 0.4104        | Palaypay                     | 13.1808      | Palaypay                | 166.4286     |                  |
|                  |                          |               | Pobacion                     | 1.2435       | Pobacion                | 100.0599     |                  |
|                  |                          |               | Sambag Culob                 | 51.4587      | Sambag Culob            | 44.3826      |                  |
|                  |                          |               | San Carlos                   | 11.5938      | San Carlos              | 85.3304      |                  |
|                  |                          |               |                              |              | San Juan Crisostomo     | 68.8789      |                  |
|                  |                          |               |                              |              | Sta. Rita               | 22.6784      |                  |
|                  |                          |               |                              |              | Sto. Rosario            | 5.5176       |                  |
|                  |                          | Vista Alegre  | 0.6693                       | Vista Alegre | 6.1659                  | Vista Alegre | 16.5900          |
|                  | <b>Total</b>             |               | <b>4.2215</b>                |              | <b>317.1243</b>         |              | <b>1325.4760</b> |
| <b>Rice</b>      |                          |               | Agbatuan                     | 0.8335       | Agbatuan                | 2.1394       |                  |
|                  |                          |               |                              |              | Badiang                 | 0.5988       |                  |
|                  | Balabag                  | <b>1.5638</b> | Balabag                      | 4.7263       | Balabag                 | 22.5479      |                  |
|                  | Balunos                  | <b>0.3078</b> | Balunos                      | 53.2502      | Balunos                 | 10.9003      |                  |



|                             |         |               |              |                |                        |                 |
|-----------------------------|---------|---------------|--------------|----------------|------------------------|-----------------|
|                             |         |               | Cag-an       | 0.0585         | Cag-an                 | 62.0834         |
|                             | Camiros | <b>0.8164</b> | Camiros      | 0.2133         | Camiros                | 13.615          |
|                             |         |               |              |                | Dangula-an             | 6.7037          |
|                             |         |               | Guipis       | 16.4098        | Guipis                 | 11.3586         |
|                             |         |               | Manganese    | 33.0727        | Manganese              | 20.9047         |
|                             |         |               | Medina       | 0.1924         | Medina                 | 50.6303         |
|                             |         |               | Mostro       | 6.5247         | Mostro                 | 42.1223         |
|                             |         |               | Palaypay     | 0.0062         | Palaypay               | 18.5238         |
|                             |         |               |              |                | Pantalan               | 0.3451          |
|                             |         |               |              |                | Poblacion              | 2.9569          |
|                             |         |               | Sambag Culob | 2.3065         | Sambag Culob           | 0.0793          |
|                             |         |               |              |                | San Juan<br>Crisostomo | 18.2148         |
|                             |         |               |              |                | Sta. Rita              | 2.4904          |
|                             |         |               |              |                | Sto. Rosario           | 23.1916         |
|                             |         |               | Vista Alegre | 0.0026         | Vista Alegre           | 11.4734         |
|                             |         | <b>2.688</b>  |              | <b>58.5149</b> |                        | <b>202.2912</b> |
| <b>Mango<br/>Plantation</b> | Balabag | 2.3666        | Balabag      | 46.1715        | Balabag                | 0.3023          |
|                             |         |               | Balunos      | 2.1304         |                        |                 |
|                             |         |               | Cag-an       | 0.1073         | Cag-an                 | 2.2767          |
|                             |         |               | Camiros      | 0.0561         | Camiros                | 3.2718          |
|                             |         |               |              |                | Dangula-an             | 0.2277          |
|                             |         |               | Guipis       | 0.4594         |                        |                 |
|                             |         |               |              |                | Medina                 | 2.1802          |
|                             |         |               | Sambag Culob | 2.754          |                        |                 |
|                             |         |               | San Carlos   | 1.4316         | San Carlos             | 0.4807          |
|                             |         |               |              |                | San Juan<br>Crisostomo | 2.342           |
|                             |         |               |              |                | Sto. Rosario           | 0.7957          |

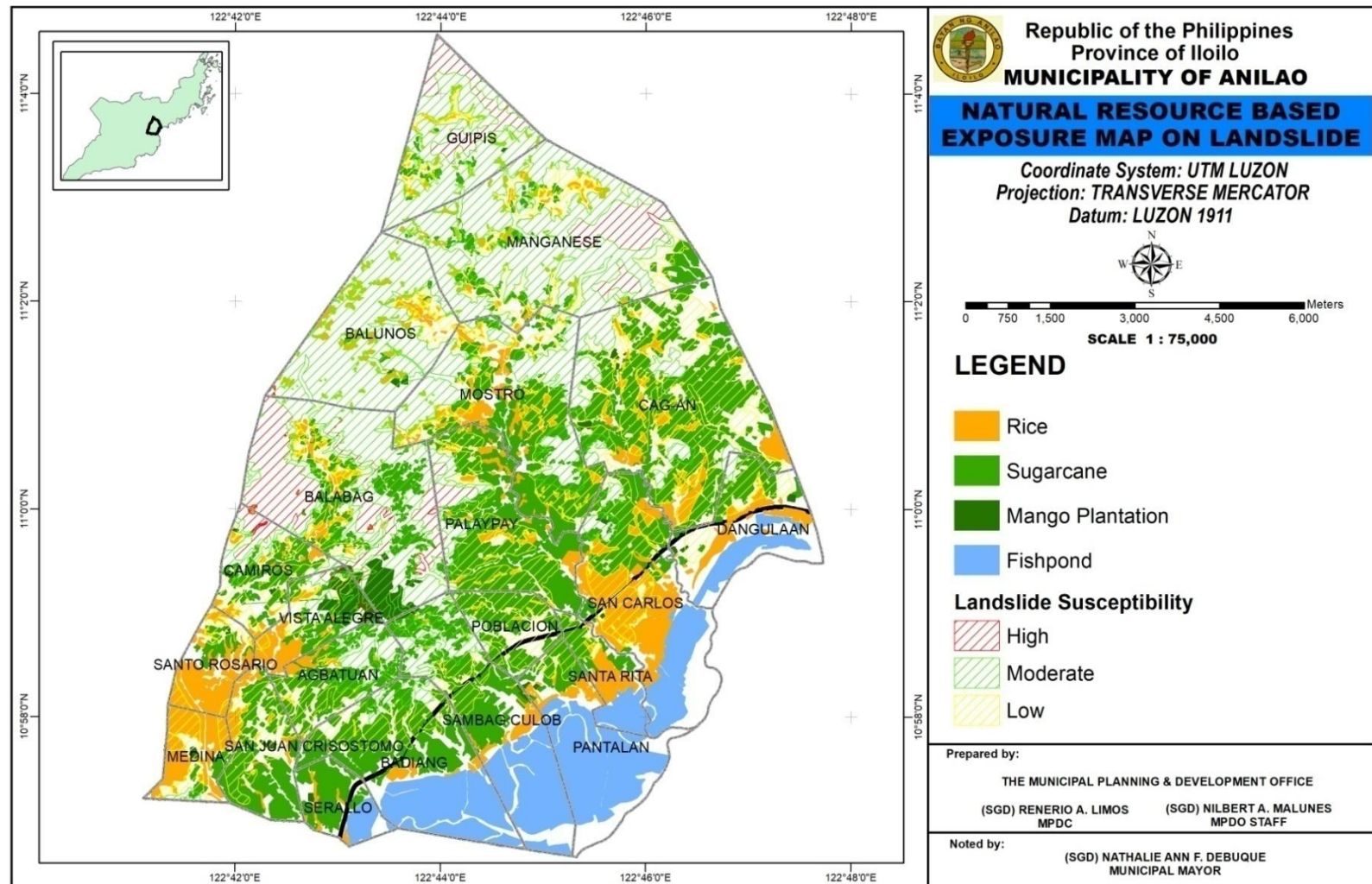


|              |              |                |              |                |              |                |
|--------------|--------------|----------------|--------------|----------------|--------------|----------------|
|              | Vista Alegre | 8.3997         | Vista Alegre | 23.6234        | Vista Alegre | 7.1096         |
| <b>Total</b> |              | <b>10.7663</b> |              | <b>76.7337</b> |              | <b>18.9867</b> |

Source: CDRA 2018



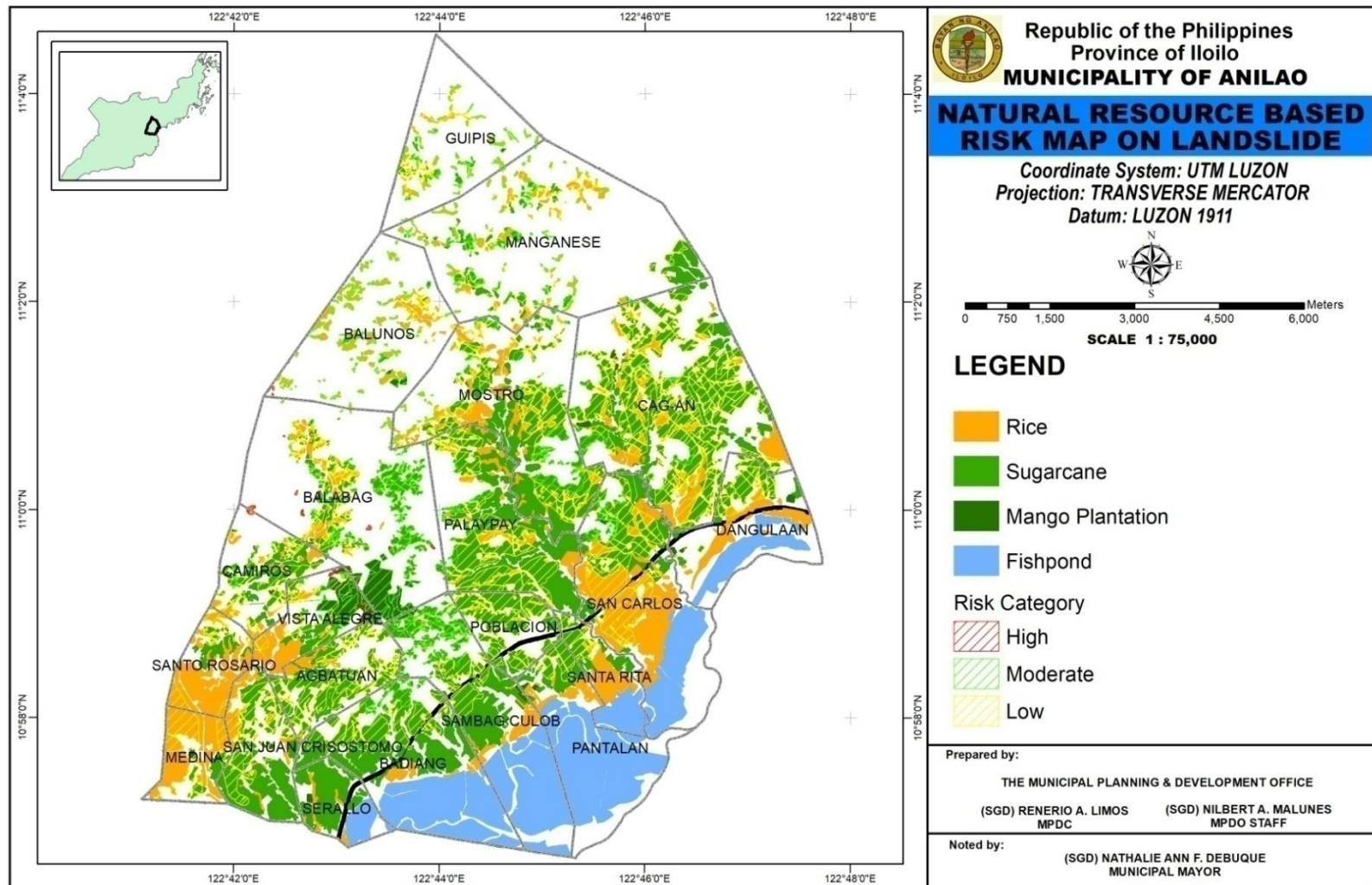
Figure DRA-10. Natural Resource-Based Exposure Map on Landslide



Source:MPDO



Figure DRA-11. Natural Resource Based Risk Map on Landslide



Source:MPDO



**Susceptibility of Industries to Hazards**

Industries like poultry farm (Odtojan Poultry Farm) located in Sambag Culob has moderate susceptibility to landslide. The rest of the identified industries have low susceptibility to landslide as shown in Table DRA-7.

Triple N Furniture shop located in Barangay Pantalan has high susceptibility to flood and JCPS Furniture shop located in Barangay San Carlos has moderate susceptibility to flood. The rest as shown in Table DRA-8 has low susceptibility.

Figure DRA 12 – 13 shows the level of susceptibility of industries affected by flood and landslide respectively while Figure DRA-14 shows the location of risk level of flood and landslide.

**Table DRA-7. Existing Economic Service Facilities Susceptibility to Landslide**

| Type        | High Susceptibility Area |                 | Moderate Susceptibility Area |                      | Low Susceptibility Area |                              |
|-------------|--------------------------|-----------------|------------------------------|----------------------|-------------------------|------------------------------|
|             | Barangay                 | Registered Name | Barangay                     | Registered Name      | Barangay                | Registered Name              |
| Industries  |                          |                 | Sambag Culob                 | Odtojan Poultry Farm | Sambag Culob            | Odtojan Poultry Farm         |
|             |                          |                 |                              |                      | Cag-an                  | JCPC Poultry Kings           |
|             |                          |                 |                              |                      | Dangula-an              | San Pedro Ice Plant          |
|             |                          |                 |                              |                      | San Carlos              | Jeires Enterprises           |
|             |                          |                 |                              |                      | Badiang                 | J III & MD Lumber Furniture  |
|             |                          |                 |                              |                      | Poblacion               | Bombatzu                     |
|             |                          |                 |                              |                      | Poblacion               | The Original Furniture       |
| Banks       |                          |                 |                              |                      | Poblacion               | Anilao Rural Bank            |
| Gas Station |                          |                 |                              |                      | Poblacion               | Golden Flow Fuel Enterprises |

Source: CDRA 2017





**Table DRA-8. Existing Economic Service Facilities Susceptibility to Flood**

| Type              | High Susceptibility Area |                    | Moderate Susceptibility Area |                 | Low Susceptibility Area |                            |
|-------------------|--------------------------|--------------------|------------------------------|-----------------|-------------------------|----------------------------|
|                   | Barangay                 | Registered Name    | Barangay                     | Registered Name | Barangay                | Registered Name            |
| <b>Industries</b> | Pantalan                 | Triple N Furniture | San Carlos                   | JCPS Furniture  | San Juan Crisostomo     | Pilador Poultry Farm       |
|                   |                          |                    |                              |                 | Serallo                 | Marilou Solas Poultry Farm |
|                   |                          |                    |                              |                 | Cag-an                  | JCPC Poultry Kings         |
|                   |                          |                    |                              |                 | San Carlos              | Jeires Enterprises         |

Source: CDRA 2017



Figure DRA-12. Industries Expose to Flooding

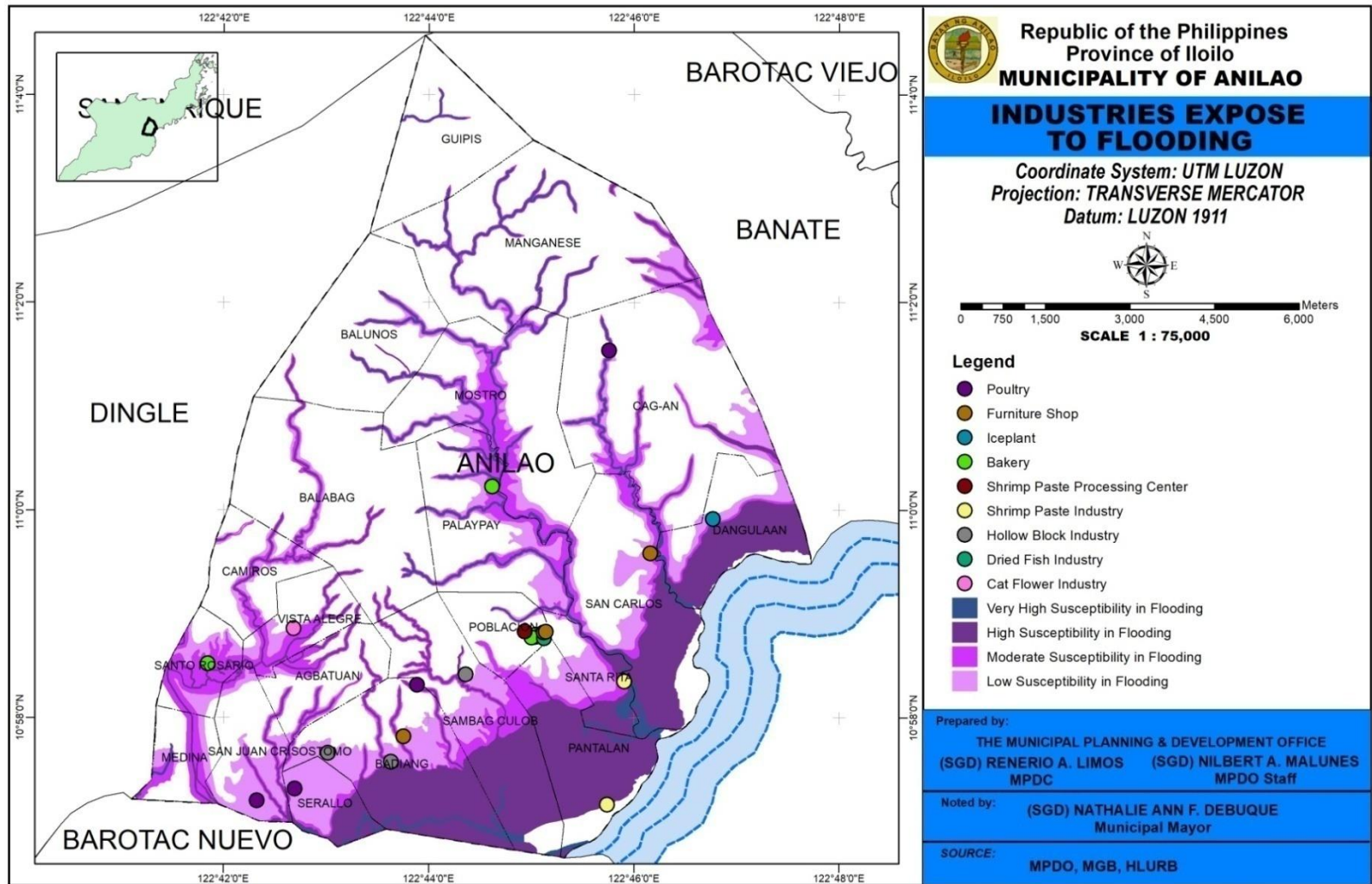


Table DRA-13. Industries Expose to Landslide

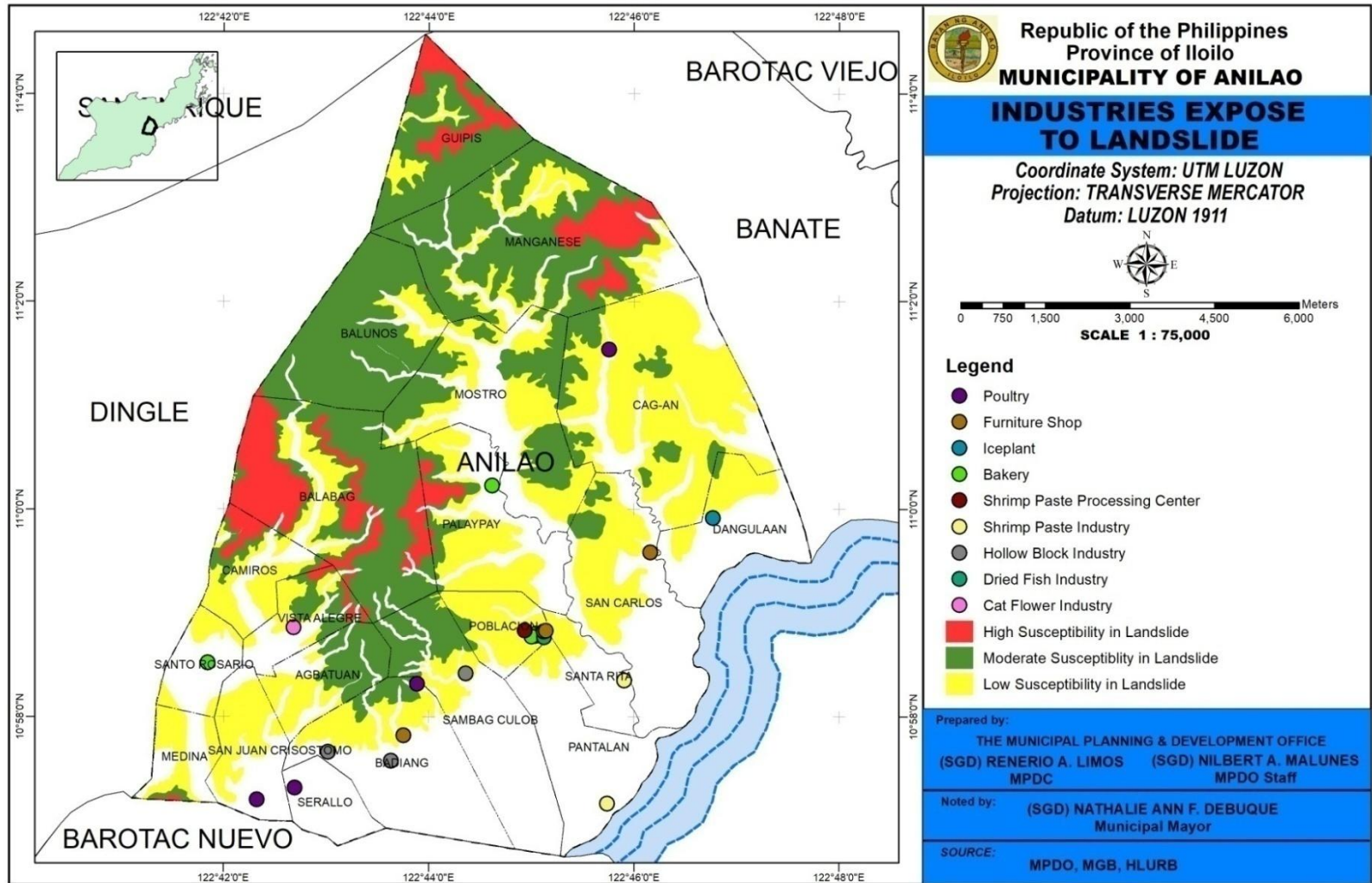
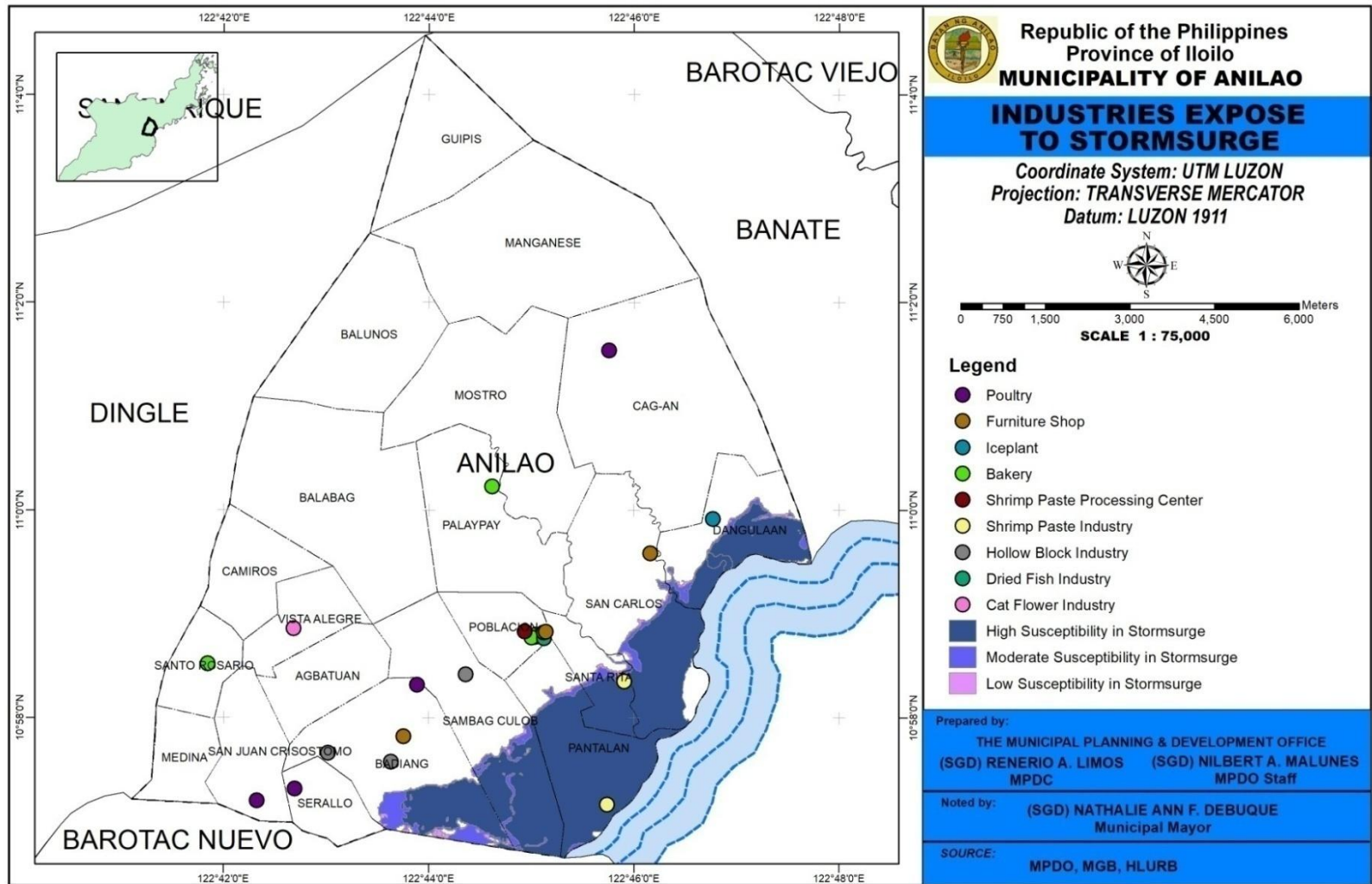


Table DRA-14. Industries Expose to Stormsurge





**Susceptibility of Social Service Facilities to Flood**

The Arandilla Memorial Elementary in Barangay Sta. Rita is identified with high susceptibility to flooding (Table DRA-14). Day care centers located in Barangay Vista Alegre, Palaypay and Mostro have moderate susceptibility. Health centers located in Barangay Badiang and Palaypay have also moderate susceptibility. The rest shown on Table DRA-15 have low susceptibility to flooding. Figure DRA-11 shows the susceptibility level of social service facilities in the Critical Facilities Exposure Map to flood.

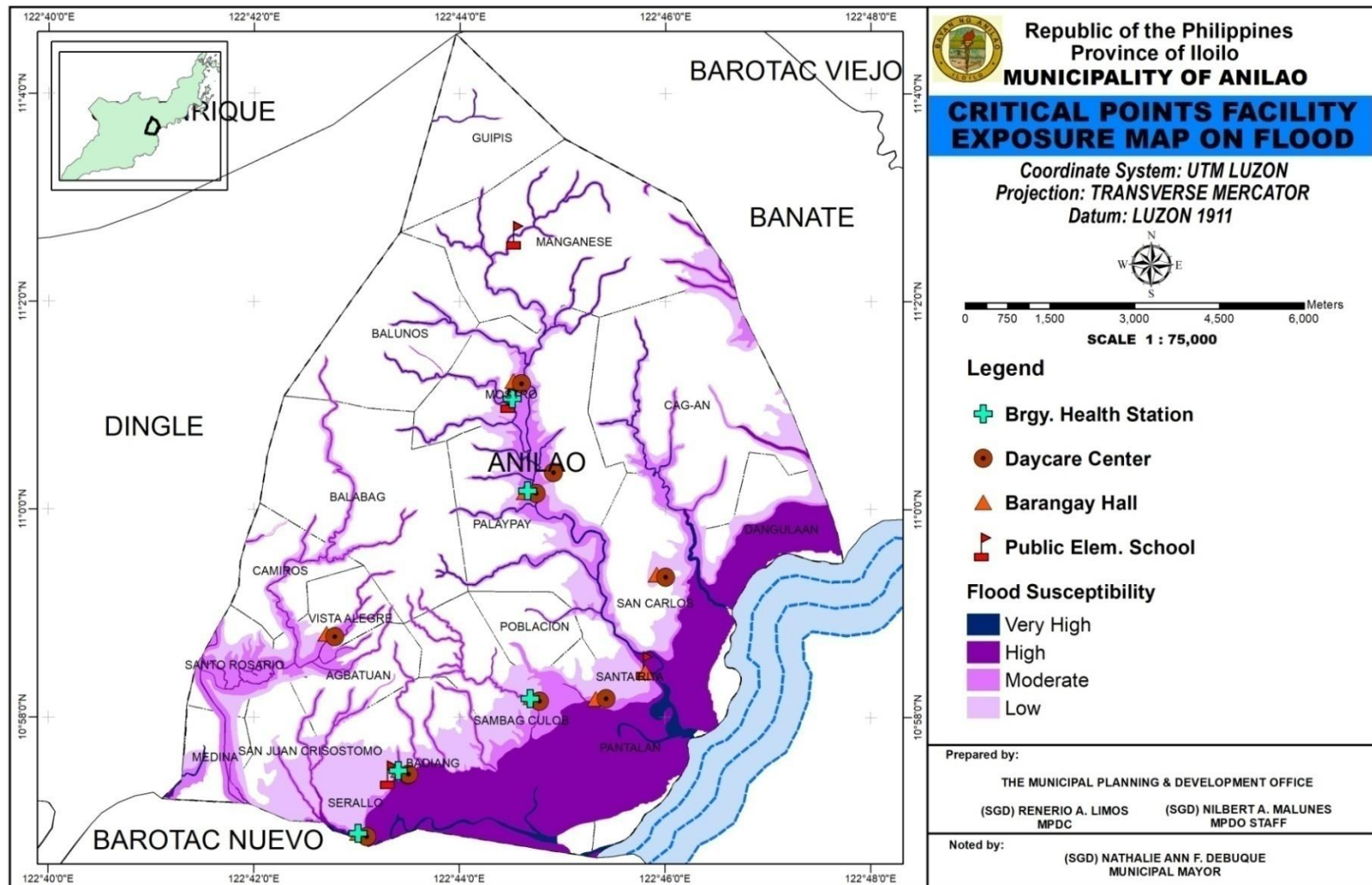
**Table DRA-9. Existing Social Service Facilities Potentially Affected by Flood**

| Facilities             | High Susceptibility Area |                       | Moderate Susceptibility Area |                              | Low Susceptibility Area |                              |
|------------------------|--------------------------|-----------------------|------------------------------|------------------------------|-------------------------|------------------------------|
|                        | Barangay                 | List Names            | Barangay                     | List Names                   | Barangay                | List Names                   |
| <b>Schools</b>         | Sta. Rita                | Arandilla Memorial ES | Manganese                    | Manganese ES                 | Badiang                 | Br. Jose M. Facultad ES      |
|                        |                          |                       |                              |                              | Mostro                  | Mostro ES                    |
| <b>Day Care Center</b> |                          |                       | Vista Alegre                 | Vista Alegre Day Care Center | Serallo                 | Serallo Day Care Center      |
|                        |                          |                       | Palaypay                     | Palaypay Care Center         | Badiang                 | Badiang Day Care Center 1    |
|                        |                          |                       | Mostro                       | Mostro Day Care Center       | Badiang                 | Badiang Day Care Center 2    |
|                        |                          |                       |                              |                              | Sambag Culob            | Sambag Culob Day Care Center |
|                        |                          |                       |                              |                              | Pantalan                | Pantalan Day Care Center     |
|                        |                          |                       |                              |                              | San Carlos              | San Carlos day Care Center   |
|                        |                          |                       |                              |                              | Mostro                  | Lopez Day Care center        |
| <b>Health Centers</b>  |                          |                       | Badiang                      | Badiang Health Station       | Serallo                 | Serallo Health Station       |
|                        |                          |                       | Palaypay                     | Palaypay Health Station      | Sambag Culob            | Sambag Culob Health Station  |
|                        |                          |                       |                              |                              | Mostro                  | Mostro Health Station        |

Source: CDRA 2018



Figure DRA-15. Critical Points Facility Exposure Map on Flood

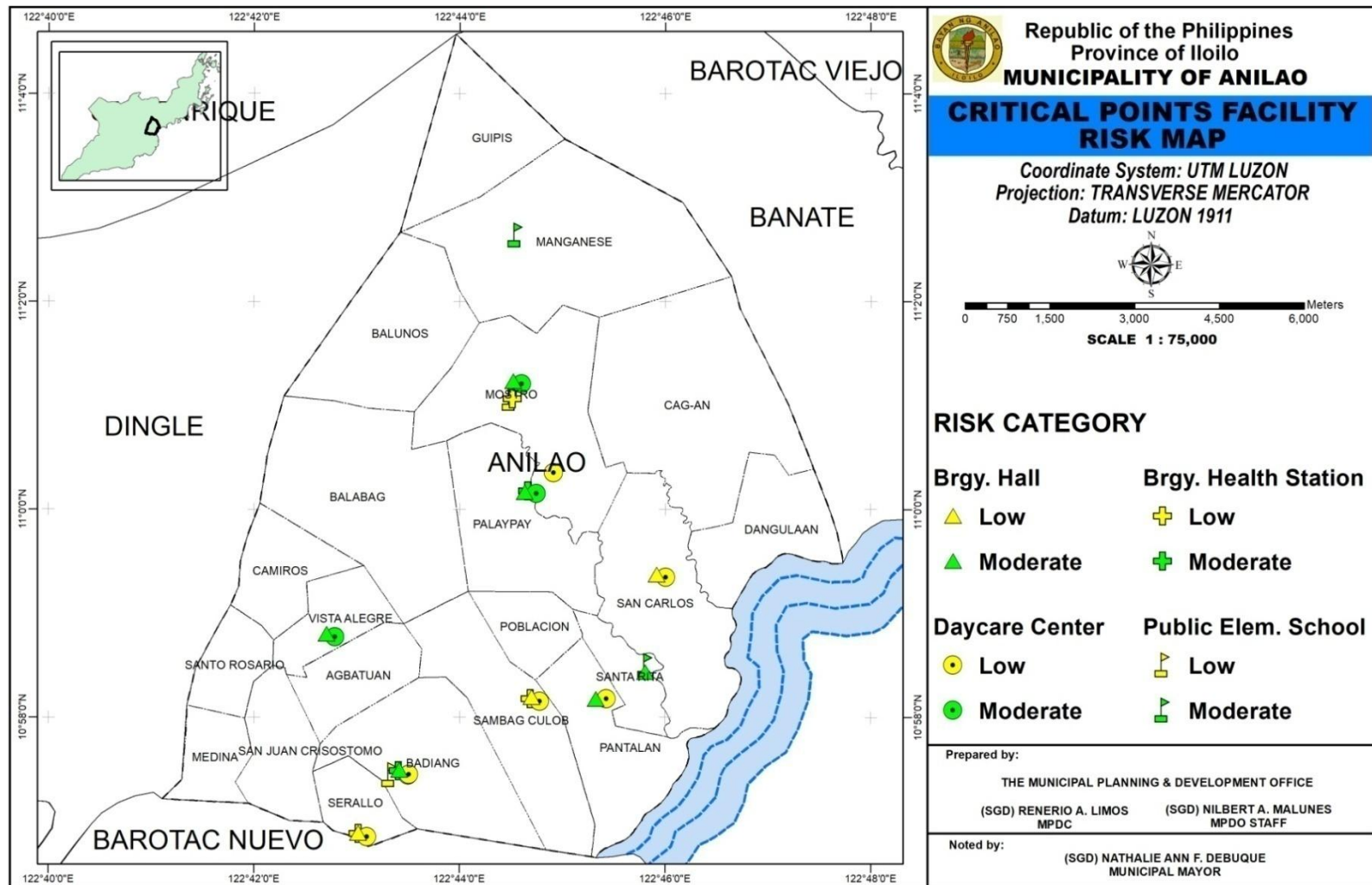


Source: MPDO





Figure DRA-16. Critical Points Facility Risk Map on Flood



Source: MPDO



**Susceptibility of Social Service Facilities to Landslide**

Table DRA-16 also shows the existing social service facilities susceptibility to landslide. Elementary school located in Barangay Medina, Aglay-ao in Balabag, Palaypay and Balunos have moderate susceptibility to landslide. Day care centers and health centers located in Barangay Balabag has moderate susceptibility and also the health center in Barangay Balunos. The rest of the social service facilities have low susceptibility to landslide. Figure DRA-11-12 shows the susceptibility level of social service facilities in the Critical Facilities Exposure Map.

**Table DRA-10. Existing Social Service Facilities Susceptibility to Landslide**

| Facility                | Moderate Susceptibility Area |                          | Low Susceptibility Area |                                     |
|-------------------------|------------------------------|--------------------------|-------------------------|-------------------------------------|
|                         | Barangay                     | List Names               | Barangay                | List Names                          |
| <b>Schools</b>          | Medina                       | Medina ES                | San Juan Crisostomo     | Santiago Arandilla MS               |
|                         | Balabag                      | Aglay-ao Primary School  | Agbatuan                | Agbatuan ES                         |
|                         | Palaypay                     | Palaypay ES              | Poblacion               | Anilao Central ES                   |
|                         | Balunos                      | Balunos ES               | Camiros                 | Camiros ES                          |
|                         |                              |                          | San Carlos              | San Carlos ES                       |
|                         |                              |                          | Dangula-an              | Dangula-an ES                       |
|                         |                              |                          | Balabag                 | Balabag ES                          |
|                         |                              |                          | Cag-an                  | Cag-an Primary School               |
|                         |                              |                          | Cag-an                  | Apurillo Memorial ES                |
|                         |                              |                          | Guipis                  | Guipis ES                           |
| <b>Day Care Centers</b> | Balabag                      | Aglay-ao Day Care Center | Medina                  | Medina Day Care Center              |
|                         | Balabag                      | Balabag Day Care Center  | San Juan Crisostomo     | San Juan Crisostomo Day Care Center |
|                         |                              |                          | Agbatuan                | Agbatuan Day Care Center            |
|                         |                              |                          | Sta. Rita               | Sta. Rita Day Care Center           |
|                         |                              |                          | Sto. Rosario            | Sto. Rosario Day Care Center        |
|                         |                              |                          | Poblacion               | Poblacion Day Care Center           |
|                         |                              |                          | Camiros                 | Camiros Day Care Center             |
|                         |                              |                          | Dangula-an              | Dangula-an Day Care Center          |
|                         |                              |                          | Cag-an                  | Cag-an Day Care Center              |
|                         |                              |                          | Manganese               | Manganese Day Care Center           |
| <b>Health Centers</b>   |                              |                          | Guipis                  | Guipis Day Care Center              |
|                         |                              |                          | Poblacion               | Anilao RHU                          |

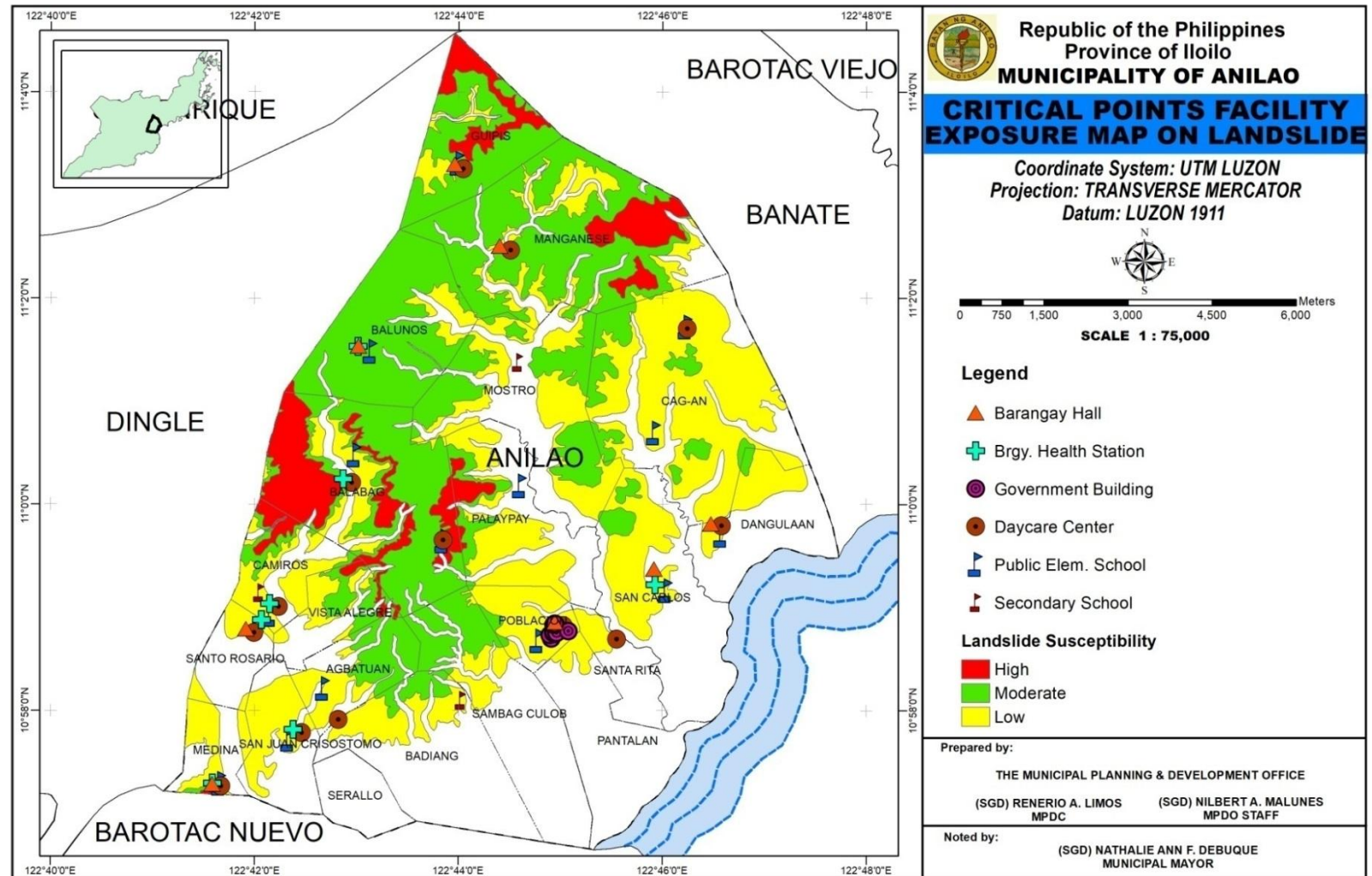


|                                |         |                     |   |
|--------------------------------|---------|---------------------|---|
|                                |         | Poblacion           | Birth Facility                            |
|                                | Balabag | Medina              | Medina Health Center                      |
|                                | Balunos | San Juan Crisostomo | Sn. Juan Crisostomo Health Center         |
|                                |         | Sto. Rosario        | Sto. Rosario Health Center                |
|                                |         | Camiro              | Camiro Health Center                      |
|                                |         | San Carlos          | San Carlos Health Center                  |
| <b>Social Welfare Facility</b> |         | Badiang             | Teen Center                               |
|                                |         | Poblacion           | Balay Dalangpan                           |
|                                |         | Poblacion           | Drug Rehabilitation Center                |
| <b>Police, Fire and Jail</b>   |         | Poblacion           | Anilao Municipal Police Station           |
|                                |         | Poblacion           | Anilao BFP                                |
| <b>Government Offices</b>      |         | Poblacion           | Municipal Planning and Development Office |
|                                |         | Poblacion           | Municipal Executive Building              |
|                                |         | Poblacion           | Municipal Legislative Building            |
|                                |         | Poblacion           | Senior Citizen's Building                 |
|                                |         | Poblacion           | Banaag Center                             |
|                                |         | Poblacion           | Liga Hall                                 |
|                                |         | Poblacion           | Shrimp Paste Processing Center            |
|                                |         | Poblacion           | DA Building                               |
| <b>Dumpsite</b>                |         | Badiang             | Municipal Dumpsite                        |

Source: CDRA Results 2018



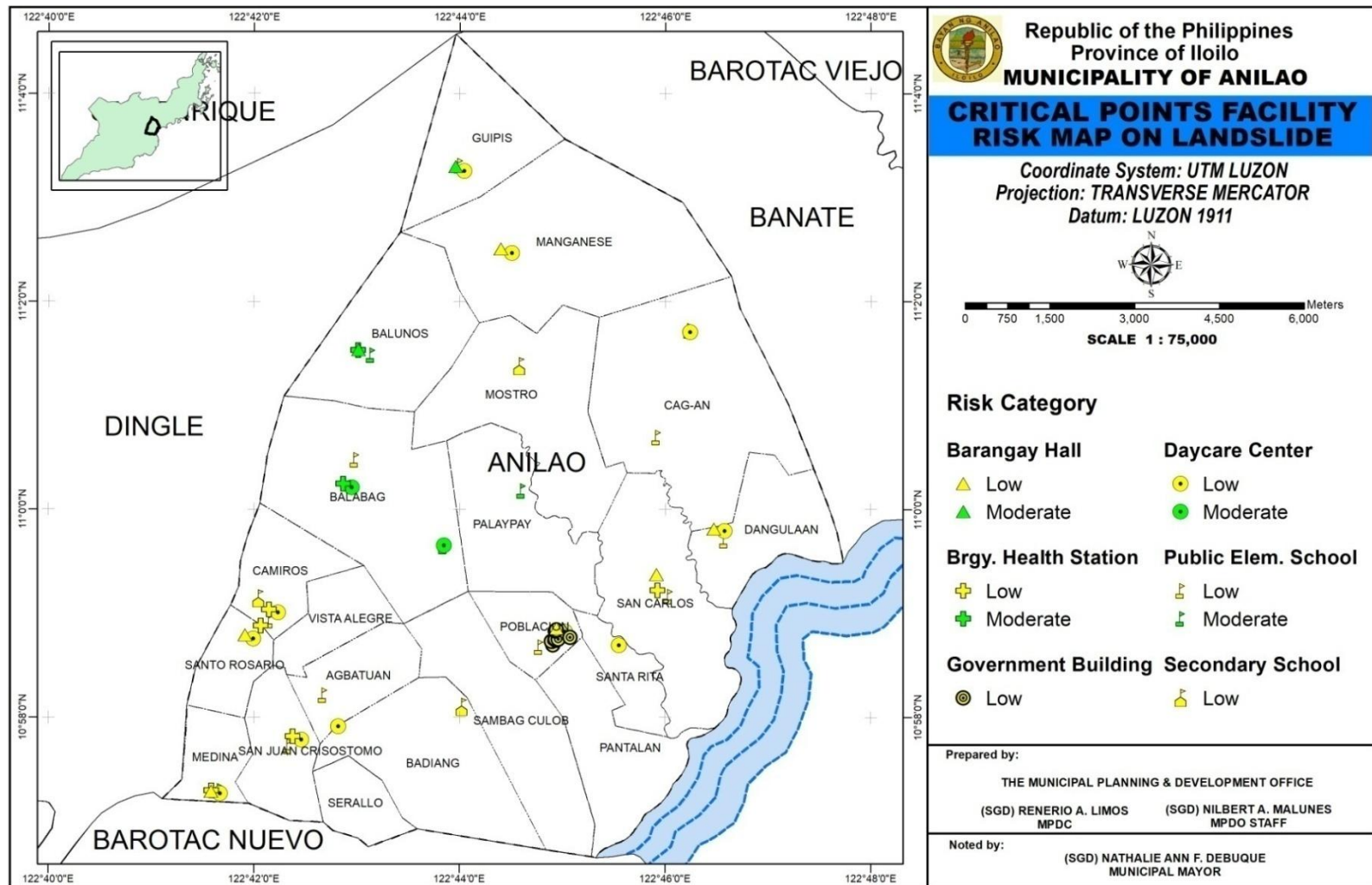
Figure DRA-17. Critical Points Facility Exposure on Landslide



Source: MPDO



Figure DRA-18. Critical Points Facility Risk Map on Landslide



Source: MPDO





**Road Susceptibility to Flood**

At least 3.5 kilometers of barangay roads are exposed to high risk to flooding located in Barangay Camiros, Dangulaan, Mostro, Palaypay, Pantalan, Sambag Culob and San Carlos (see CRDA Report).

At least 11.8 kilometers of roads sections in the 21 barangays has moderate risk to flood. The rest of the roads have moderate risk to flooding.

Figures CDRA-19 shows the location for each level of susceptibility of roads to flood.

**Table DRA-11. ROADS AND BRIDGES SUSCEPTIBILITY TO FLOOD**

| Very High Susceptibility Area |                                 | High Susceptibility Area     |  | Moderate Susceptibility Area |  | Low Susceptibility Area      |  |
|-------------------------------|---------------------------------|------------------------------|--|------------------------------|--|------------------------------|--|
| Location                      | Name of Facility                | Location                     | Name of Facility                           | Location                     | Name of Facility                           | Location                     | Name of Facility                           |
| <b>Roads</b>                  |                                 |                              |  |                              |  |                              |  |
| Mangane se                    | Manganese-Agluy-a Road          | Manganese                    | Manganese-Agluy-a Road                     | Manganese                    | Manganese-Agluy-a Road                     | San Juan Crisostomo          | San Juan Crisostomo Road                   |
| Sta. Rita                     | Sta. Rita-Baybay Road           | Pantalan                     | Poblacion-Pantalan Baybay Road             | Pantalan                     | Poblacion-Pantalan Baybay Road             | Pantalan                     | Poblacion-Pantalan Baybay Road             |
| Mangane se                    | Manganese-Guipis Road           | San Juan Crisostomo-Agbatuan | JPR to Agbatuan Road - San Juan Crisostomo | San Juan Crisostomo-Agbatuan | JPR to Agbatuan Road - San Juan Crisostomo | San Juan Crisostomo-Agbatuan | JPR to Agbatuan Road - San Juan Crisostomo |
| Mangane se                    | Manganese-Guipis Road           | Agbatuan-Vista Alegre        | JPR to Agbatuan-Vista Alegre Road          | San Juan Crisostomo-Agbatuan | JPR to Agbatuan Road - San Juan Crisostomo | San Juan Crisostomo-Agbatuan | JPR to Agbatuan Road - San Juan Crisostomo |
| Cag-an                        | Cag-an-Mostro Road              | Agbatuan-Vista Alegre        | JPR to Agbatuan-Vista Alegre Road          | Agbatuan-Vista Alegre        | JPR to Agbatuan-Vista Alegre Road          | Agbatuan-Vista Alegre        | JPR to Agbatuan-Vista Alegre Road          |
| Palaypay                      | Sitio Lopez-Luawan Road         | San Carlos                   | JNR to Ilawod Road                         | Agbatuan-Vista Alegre        | JPR to Agbatuan-Vista Alegre Road          | Badiang                      | JNR to Bungsod Road                        |
| Palaypay                      | Palaypay-Sitio Lopez Road       | Sta. Rita                    | Sta. Rita-Baybay Road                      | Badiang                      | JNR to Bungsod Road                        | San Carlos                   | JNR to Ilawod Road                         |
| Poblacio n-Palaypay           | Poblacion-Palaypay- Mostro Road | Manganese                    | Manganese- Guipis Road                     | San Carlos                   | JNR to Ilawod Road                         | Sta. Rita                    | Sta. Rita-Baybay Road                      |
| Poblacio                      | Poblacion-                      | Manganese                    | Manganese- Guipis                          | Sta. Rita                    | Sta. Rita-Baybay                           | San Carlos-                  | JNR to San Carlos-                         |





|            |   |                     |   |                     |   |                       |  |
|------------|---|---------------------|---|---------------------|---|-----------------------|--|
| n-Palaypay | Palaypay Road                           |                     | Road                                    |                     | Road                                    | Palaypay              | Sitio Lopez Road                               |
| San Carlos | Iloilo East Coast Road National Highway | Cag-an              | Cag-an-Mostro Road                      | San Carlos-Palaypay | JNR to San Carlos-Sitio Lopez Road      | San Carlos-Palaypay   | JNR to San Carlos-Sitio Lopez Road             |
| Balunos    | Sitio Anilao Kayu                       | Serallo             | Iloilo East Coast Road National Highway | San Carlos-Palaypay | JNR to San Carlos-Sitio Lopez Road      | Badiang               | JNR to Badiang-Camiros                         |
| Dangula-an | Iloilo East Coast Road National Highway | Palaypay            | Sitio Lopez-Luawan Road                 | Badiang             | JNR to Badiang-Camiros                  | Sambag Culob- Badiang | JNR to Sambag Culob-Sitio Bairan Road          |
| Dangula-an | JNR to Dangula-an-Baybay Road           | Palaypay            | Palaypay-Sitio Lopez Road               | Badiang             | JNR to Badiang-Camiros                  | San Carlos            | JNR to San Carlos-San Carlos Elem. School Road |
| Dangula-an | JNR to Dangula-an-Baybay Road           | Balabag             | JNR to Poblacion-Culob- Balabag Road    | Sambag Culob        | Sambag Culob Road                       | Mostro                | Poblacion- Palaypay-Mostro Road                |
| Mostro     | Proper-Agpandan Road                    | Balabag             | Balabag-Sitio Aglay-ao Road             | Mostro              | Poblacion- Palaypay-Mostro Road         | Manganese             | Manganese- Guipis Road                         |
| Cag-an     | Proper-Caban-Caban Road                 | Balabag             | Balabag Road                            | Manganese           | Manganese- Guipis Road                  | Manganese             | Manganese- Guipis Road                         |
| Manganese  | Manganese-Proper Road                   | Poblacion-Palaypay  | Poblacion- Palaypay-Mostro Road         | Manganese           | Manganese- Guipis Road                  | Cag-an                | Cag-an-Mostro Road                             |
| San Carlos | JNR to San Carlos-Suba Road             | Poblacion-Palaypay  | Poblacion- Palaypay Road                | Cag-an              | Cag-an-Mostro Road                      | Serallo               | Iloilo East Coast Road National Highway        |
| Balunos    | Balunos-Manganese Road                  | Badiang             | Iloilo East Coast Road National Highway | Serallo             | Iloilo East Coast Road National Highway | Badiang               | JNR to Sitio Ubos Road                         |
| Balunos    | Sitio Turingan Road                     | Sambag Culob        | Iloilo East Coast Road National Highway | Badiang             | JNR to Sitio Ubos Road                  | Palaypay              | Sitio Lopez-Luawan Road                        |
| Guipis     | Guipis Road                             | San Carlos          | Iloilo East Coast Road National Highway | Palaypay            | Poblacion- Palaypay-Mostro Road         | Palaypay              | Sitio Lopez Road                               |
| Cag-an     | Cag-an Road                             | San Juan Crisostomo | San Juan Crisostomo-Hda. Lawaan Road    | Palaypay            | Sitio Lopez-Luawan Road                 | Balabag               | JNR to Poblacion-Culob- Balabag Road           |
| Manganese  | Manganese - Guipis Road                 | Medina              | Hda. Lawaan-Medina Road                 | Palaypay            | Sitio Lopez Road                        | Balabag               | Balabag Road                                   |
| Mostro     | Palaypay - Mostro Road                  | Sto. Rosario        | Sto. Rosario Road                       | Palaypay            | Palaypay-Sitio Lopez Road               | Balabag               | Balabag-Sitio Aglay-ao Road                    |



|        |                         |              |   |                     |   |                              |   |
|--------|-------------------------|--------------|---|---------------------|---|------------------------------|---|
| Mostro | Mostro Road             | Sto. Rosario | Sto. Rosario Road                       | Palaypay            | Palaypay-Sitio Lopez Road               | Balabag                      | Balabag-Balunos Road                        |
| Mostro | Mostro Road             | Medina       | Medina Road                             | Balabag             | JNR to Poblacion-Culob- Balabag Road    | Poblacion-Palaypay           | Poblacion- Palaypay-Mostro Road             |
| Mostro | Mostro - Manganese Road | Camiros      | JPR to Camiros Road                     | Balabag             | JNR to Poblacion-Culob- Balabag Road    | Poblacion-Palaypay           | Poblacion- Palaypay Road                    |
| Mostro | Mostro - Manganese Road | Agbatuan     | JNR to Badiang-Camiros                  | Balabag             | Balabag-Sitio Aglay-ao Road             | Badiang                      | Iloilo East Coast Road National Highway     |
|        |                         | Agbatuan     | JNR to Badiang-Camiros                  | Balabag             | Balabag Road                            | Sambag Culob                 | Iloilo East Coast Road National Highway     |
|        |                         | Balunos      | Sitio Anilao Kayu                       | Poblacion-Palaypay  | Poblacion- Palaypay-Mostro Road         | Sambag Culob                 | Iloilo East Coast Road National Highway     |
|        |                         | Dangula-an   | Iloilo East Coast Road National Highway | Poblacion-Palaypay  | Poblacion- Palaypay Road                | Poblacion                    | Iloilo East Coast Road National Highway     |
|        |                         | Dangula-an   | JNR to Dangula-an-Baybay Road           | Badiang             | Iloilo East Coast Road National Highway | Sta. Rita                    | Iloilo East Coast Road National Highway     |
|        |                         | Dangula-an   | JNR to Dangulaan-Baybay Road            | Sambag Culob        | Iloilo East Coast Road National Highway | San Carlos                   | Iloilo East Coast Road National Highway     |
|        |                         | Sto. Rosario | Kadkad Road                             | Poblacion           | Iloilo East Coast Road National Highway | San Carlos                   | Iloilo East Coast Road National Highway     |
|        |                         | Mostro       | Proper-Agpandan Road                    | San Carlos          | Iloilo East Coast Road National Highway | Serallo- San Juan Crisostomo | Serallo- San Juan Crisostomo- Agbatuan Road |
|        |                         | Dangula-an   | Bat-os Road                             | San Juan Crisostomo | San Juan Crisostomo-Hda. Lawaan Road    | San Juan Crisostomo          | San Juan Crisostomo-Hda. Lawaan Road        |
|        |                         | Dangula-an   | JNR to Dangula-an-Cag-an Road           | Medina              | Hda. Lawaan-Medina Road                 | San Juan Crisostomo          | San Juan Crisostomo-Medina Road             |
|        |                         | Cag-an       | Cag-an-Dugwakan Road                    | Medina              | Medina Road                             | Medina                       | Hda. Lawaan-Medina Road                     |
|        |                         | Cag-an       | Proper-Caban-Caban Road                 | Sto. Rosario        | Sto. Rosario Road                       | Camiros                      | JPR to Camiros Road                         |
|        |                         | Manganese    | Manganese-Proper Road                   | Medina              | Medina Road                             | Sto. Rosario                 | JPR to Sto. Rosario Road                    |
|        |                         | San Carlos   | JNR to San Carlos-Suba Road             | Medina              | Medina Road                             | Sto. Rosario                 | Proper-Irrigation Road                      |



|  |  |              |                                    |              |   |              |   |
|--|--|--------------|------------------------------------|--------------|---|--------------|---|
|  |  | Agbatuan     | Vista Alegre-Aglay-ao Road         | Camiros      | JPR to Camiros Road                     | Agbatuan     | JNR to Badiang-Camiros                  |
|  |  | Agbatuan     | South Bairan Agbatuan Road         | Sto. Rosario | JPR to Sto. Rosario Road                | Agbatuan     | JNR to Badiang-Camiros                  |
|  |  | Badiang      | JPR to Badiang-Bairan Road         | Sto. Rosario | Proper-Irrigation Road                  | Dangula-an   | Iloilo East Coast Road National Highway |
|  |  | Badiang      | JPR to Badiang-Sambag Culob Road   | Sto. Rosario | Sto. Rosario Road                       | San Carlos   | JNR to Trenas Hill Road                 |
|  |  | Balunos      | Balunos-Manganese Road             | Agbatuan     | JNR to Badiang-Camiros                  | Dangula-an   | JNR to Dangula-an-Baybay Road           |
|  |  | Balunos      | Proper-Manyakiya Road              | Agbatuan     | JNR to Badiang-Camiros                  | Dangula-an   | JNR to Dangulaan-Baybay Road            |
|  |  | Balunos      | Sitio Turingan Road                | Agbatuan     | JNR to Badiang-Camiros                  | Sto. Rosario | Kadkad Road                             |
|  |  | Guipis       | Guipis Proper-Agcarupe Road        | Balunos      | Sitio Anilao Kayu                       | Mostro       | Proper-Agpandan Road                    |
|  |  | Pantalan     | Poblacion-Pantalan Baybay Road     | Dangula-an   | Iloilo East Coast Road National Highway | Dangula-an   | JNR to Dangula-an-Cag-an Road           |
|  |  | Balunos      | Mostro-Balunos Road                | Dangula-an   | Iloilo East Coast Road National Highway | Cag-an       | Cag-an-Dugwakan Road                    |
|  |  | Balabag      | Malublob Road                      | Dangula-an   | JNR to Dangula-an-Baybay Road           | Cag-an       | Proper-Caban-Caban Road                 |
|  |  | Cag-an       | Cag-an Road                        | Dangula-an   | JNR to Dangulaan-Baybay Road            | San Carlos   | JNR to San Carlos-Suba Road             |
|  |  | Manganese    | Manganese - Guipis Road            | Sto. Rosario | Kadkad Road                             | Sta. Rita    | JNR to Sta. Rita-Hda. Joy Road          |
|  |  | Manganese    | Manganese Road                     | Mostro       | Proper-Agpandan Road                    | Vista Alegre | Vista Alegre Road                       |
|  |  | Serallo      | Serallo - San Juan Crisostomo Road | Dangula-an   | JNR to Dangula-an-Cag-an Road           | Badiang      | JPR to Badiang-Bairan Road              |
|  |  | Serallo      | Serallo - San Juan Crisostomo Road | Cag-an       | Cag-an-Dugwakan Road                    | Badiang      | JPR to Badiang-Sambag Culob Road        |
|  |  | Sambag Culob | Sambag Culob - Sitio Aglay-ao Road | Cag-an       | Proper-Caban-Caban Road                 | Balabag      | Malublob Road                           |
|  |  | Sambag Culob | Sambag Culob Road                  | Manganese    | Manganese-Proper                        | Balunos      | Balunos-Manganese                       |



|  |  |              |                             |              | Road                             |              | Road                                |
|--|--|--------------|-----------------------------|--------------|----------------------------------|--------------|-------------------------------------|
|  |  | Camiros      | JPR to Camiros-Balabag Road | San Carlos   | JNR to San Carlos-Suba Road      | Cag-an       | Lampuyang-Proper Road               |
|  |  | Cag-an       | Cag-an Road                 | Sta. Rita    | JNR to Sta. Rita-Hda. Joy Road   | San Carlos   | JNR to San Carlos-Sitio Dalipe Road |
|  |  | Mostro       | Palaypay - Mostro Road      | Agbatuan     | Vista Alegre-Aglay-ao Road       | Palaypay     | Palaypay-Pangurayan Road            |
|  |  | Mostro       | Mostro Road                 | Vista Alegre | Vista Alegre Road                | Pantalan     | Poblacion-Pantalan Baybay Road      |
|  |  | Mostro       | Mostro Road                 | Agbatuan     | South Bairan Agbatuan Road       | Mostro       | Mostro Road                         |
|  |  | Mostro       | Mostro - Manganese Road     | Badiang      | JPR to Badiang-Bairan Road       | Balabag      | Malublob Road                       |
|  |  | Mostro       | Mostro - Manganese Road     | Badiang      | JPR to Badiang-Sambag Culob Road | San Carlos   | JNR-San Carlos Road                 |
|  |  | Mostro       | Mostro - Balunos Road       | Balabag      | Malublob Road                    | Cag-an       | Cag-an Road                         |
|  |  | Vista Alegre | JNR to Badiang-Camiros      | Balunos      | Balunos-Manganese Road           | Cag-an       | Cag-an Road                         |
|  |  |              |                             | Balunos      | Proper-Manyakiya Road            | Cag-an       | Cag-an Road                         |
|  |  |              |                             | Balunos      | Sitio Turingan Road              | Serallo      | Serallo - San Juan Crisostomo Road  |
|  |  |              |                             | Guipis       | Guipis Proper-Agcarupe Road      | Serallo      | Serallo - San Juan Crisostomo Road  |
|  |  |              |                             | Guipis       | Guipis Road                      | Serallo      | Serallo - San Juan Crisostomo Road  |
|  |  |              |                             | Guipis       | Guipis Road                      | Serallo      | Serallo - San Juan Crisostomo Road  |
|  |  |              |                             | Palaypay     | Palaypay-Pangurayan Road         | Serallo      | Serallo - San Juan Crisostomo Road  |
|  |  |              |                             | Pantalan     | Poblacion-Pantalan Baybay Road   | Serallo      | Serallo - San Juan Crisostomo Road  |
|  |  |              |                             | Palyapay     | Palaypay-Sitio Lopez Road        | Sambag Culob | JNR to Sambag Culob Road            |



|  |  |  |  |              |                                    |              |                                  |
|--|--|--|--|--------------|------------------------------------|--------------|----------------------------------|
|  |  |  |  | Balunos      | Mostro-Balunos Road                | Sambag Culob | JNR to Sambag Culob Road         |
|  |  |  |  | Balabag      | Malublob Road                      | Sambag Culob | Sambag Culob Road                |
|  |  |  |  | San Carlos   | JNR-San Carlos Road                | Sambag Culob | Sambag Culob Road                |
|  |  |  |  | Cag-an       | Cag-an Road                        | Badiang      | JPR to Badiang-Sambag Culob Road |
|  |  |  |  | Cag-an       | Cag-an Road                        | Vista Alegre | Vista Alegre Road                |
|  |  |  |  | Cag-an       | Cag-an Road                        | Camiros      | JPR to Camiros-Balabag Road      |
|  |  |  |  | Guipis       | Guipis Road                        | Camiros      | JPR to Camiros-Balabag Road      |
|  |  |  |  | Guipis       | Guipis Road                        | Camiros      | JPR to Camiros-Balabag Road      |
|  |  |  |  | Guipis       | Guipis Road                        | Dangula-an   | JNR to Dangulaan-Baybay Road     |
|  |  |  |  | Guipis       | Guipis Road                        | Dangula-an   | JNR to Dangulaan-Baybay Road     |
|  |  |  |  | Manganese    | Manganese - Guipis Road            | Cag-an       | Cag-an Road                      |
|  |  |  |  | Manganese    | Manganese - Guipis Road            | Mostro       | Mostro Road                      |
|  |  |  |  | Manganese    | Manganese Road                     | Mostro       | Mostro - Manganese Road          |
|  |  |  |  | Serallo      | Serallo - San Juan Crisostomo Road | Mostro       | Mostro- Manganese Road           |
|  |  |  |  | Serallo      | Serallo - San Juan Crisostomo Road | Mostro       | Mostro - Balunos Road            |
|  |  |  |  | Sambag Culob | Sambag Culob - Sitio Aglay-ao Road | Mostro       | Mostro - Balunos Road            |
|  |  |  |  | Balabag      | Sitio Aglay-ao Road                | Vista Alegre | JNR to Badiang-Camiros           |
|  |  |  |  | Sambag Culob | JNR to Sambag Culob Road           | Vista Alegre | JNR to Badiang-Camiros           |
|  |  |  |  | Sambag Culob | Sambag Culob Road                  |              |                                  |



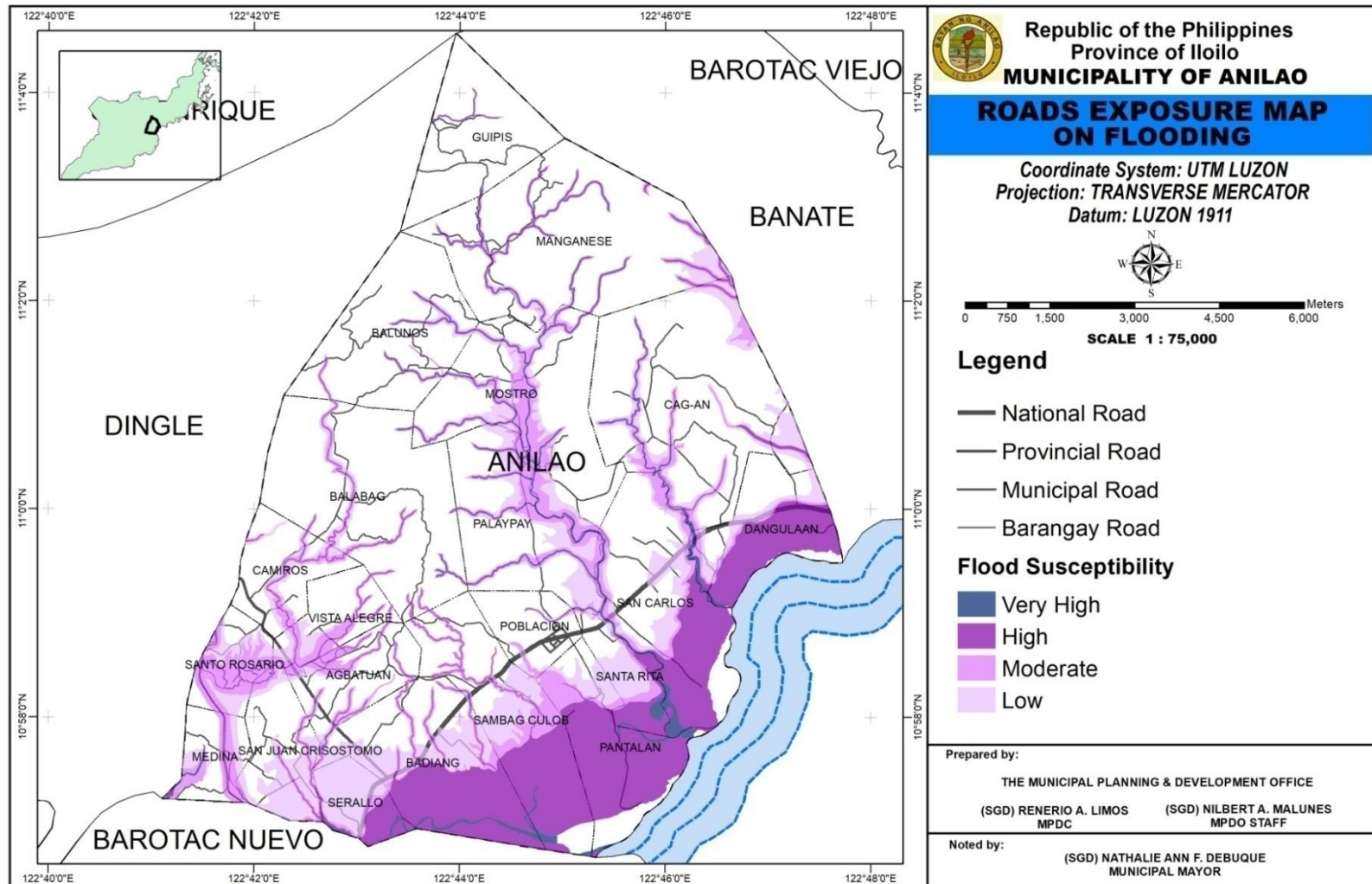
|                |  |            |                   |              |                             |  |  |
|----------------|--|------------|-------------------|--------------|-----------------------------|--|--|
|                |  |            |                   | Vista Alegre | Vista Alegre Road           |  |  |
|                |  |            |                   | Camiros      | JPR to Camiros-Balabag Road |  |  |
|                |  |            |                   | Cag-an       | Cag-an Road                 |  |  |
|                |  |            |                   | Mostro       | Palaypay - Mostro Road      |  |  |
|                |  |            |                   | Mostro       | Palaypay - Mostro Road      |  |  |
|                |  |            |                   | Mostro       | Mostro Road                 |  |  |
|                |  |            |                   | Mostro       | Mostro Road                 |  |  |
|                |  |            |                   | Mostro       | Mostro - Manganese Road     |  |  |
|                |  |            |                   | Mostro       | Mostro- Manganese Road      |  |  |
|                |  |            |                   | Mostro       | Mostro - Manganese Road     |  |  |
|                |  |            |                   | Mostro       | Mostro - Manganese Road     |  |  |
|                |  |            |                   | Mostro       | Mostro - Balunos Road       |  |  |
|                |  |            |                   | Mostro       | Mostro - Balunos Road       |  |  |
|                |  |            |                   | Vista Alegre | JNR to Badiang-Camiros      |  |  |
|                |  |            |                   | Sambag Culob | Sambag Culob Road           |  |  |
|                |  |            |                   | Sambag Culob | Sambag Culob Road           |  |  |
| <b>Bridges</b> |  |            |                   |              |                             |  |  |
|                |  | San Carlos | Anilao Bridge     |              |                             |  |  |
|                |  | Pantalan   | Pantalan Bridge   |              |                             |  |  |
|                |  | Dangula-an | Dangula-an Bridge |              |                             |  |  |

Source: CDRA Results 2018





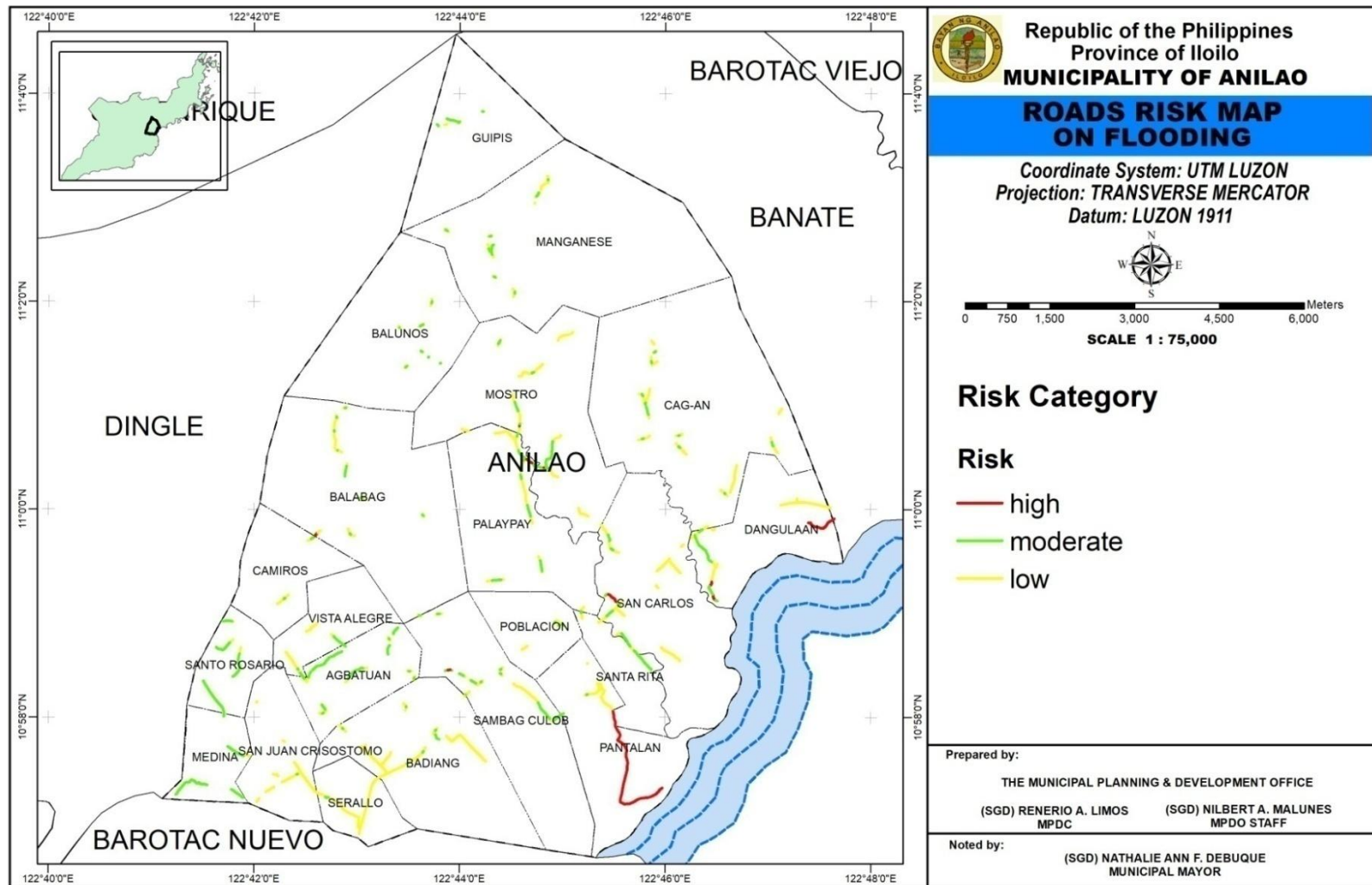
Figure DRA-19. Roads Exposure Map on Flooding



Source: MPDO



Table DRA-20. Roads Risk Map on Flooding



Source: MPDO



**Susceptibility of Roads to Landslide**

A total of 963.15 meters of barangay roads are exposed to high risk to landslide. These are located in Barangay Balunos and Guipis. These roads are mainly made of gravel and in poor condition.

Some portions of barangay road located in Barangays Agbatuan, Balabag, Badiang, Balunos, Cag-an, Camiros, Guipis, Manganese, Mostro, Poblacion and Sambag Culob are exposed to moderate risk to landslide.

Table DRA- and Figure shows the list of roads and their location and level of susceptibility.

**Table DRA-12.ROAD SUSCEPTIBILITY TO LANDSLIDE**

| High Susceptibility Area |                                       | Moderate Susceptibility Area |                                       | Low Susceptibility Area       |  |
|--------------------------|---------------------------------------|------------------------------|---------------------------------------|-------------------------------|--|
| Location                 | Name of Facility                      | Location                     | Name of Facility                      | Location                      | Name of Facility                           |
| Balabag                  | Balabag Road                          | Manganese                    | Manganese-Agluy-a Road                | Manganese                     | Manganese-Agluy-a Road                     |
| Balabag                  | JNR to Poblacion- Culob- Balabag Road | San Carlos- Palaypay         | JNR to San Carlos- Sitio Lopez Road   | San Juan Crisostomo           | San Juan Crisostomo Road                   |
| Balabag                  | Balabag-Sitio Aglay-ao Road           | Sambag Culob- Badiang        | JNR to Sambag Culob-Sitio Bairan Road | San Juan Crisostomo- Agbatuan | JPR to Agbatuan Road - San Juan Crisostomo |
| Guipis                   | Guipis Proper-Agcarupe Road           | Sambag Culob- Badiang        | Sambag Culob-Sitio Bairan Road        | Agbatuan- Vista Alegre        | JPR to Agbatuan- Vista Alegre Road         |
|                          |                                       | Mostro                       | Mostro- Manganese Road                | San Carlos                    | JNR to Ilawod Road                         |
|                          |                                       | Mostro                       | Poblacion- Palaypay- Mostro Road      | Sta. Rita                     | Sta. Rita-Baybay Road                      |
|                          |                                       | Mostro                       | Poblacion- Palaypay- Mostro Road      | San Carlos                    | JNR to San Carlos Road                     |
|                          |                                       | Mostro                       | Poblacion- Palaypay- Mostro Road      | San Carlos- Palaypay          | JNR to San Carlos- Sitio Lopez Road        |
|                          |                                       | Manganese                    | Manganese- Guipis Road                | Badiang                       | JNR to Badiang- Camiros Road               |
|                          |                                       | Manganese                    | Manganese- Guipis Road                | Sambag Culob- Badiang         | JNR to Sambag Culob-Sitio Bairan Road      |
|                          |                                       | Manganese                    | Manganese- Guipis Road                | Poblacion- Pantalan           | JNR to Pantalan Road                       |
|                          |                                       | Balunos                      | Balunos-Manganese Road                | San Carlos                    | JNR to San Carlos Elem. School Road        |
|                          |                                       | Palaypay                     | Sitio Lopez Road                      | Mostro                        | Poblacion- Palaypay- Mostro Road           |
|                          |                                       | Balabag                      | Balabag Road                          | Mostro                        | Poblacion- Palaypay- Mostro Road           |



|  |  |              |                                       |                     |   |
|--|--|--------------|---------------------------------------|---------------------|---|
|  |  | Balabag      | JNR to Poblacion- Culob- Balabag Road | Manganese           | Manganese- Guipsis Road                 |
|  |  | Balabag      | JNR to Poblacion- Culob- Balabag Road | Manganese           | Manganese- Guipsis Road                 |
|  |  | Balabag      | JNR to Poblacion- Culob- Balabag Road | Manganese           | Manganese- Guipsis Road                 |
|  |  | Balabag      | Balabag-Sitio Aglay-ao Road           | Guipsis             | Guipsis-Nazuni Road                     |
|  |  | Balabag      | Balabag-Balunos Road                  | Cag-an              | Cag-an-Mostro Road                      |
|  |  | Balabag      | Balabag Road                          | Sta. Rita           | JNR to Sta. Rita Road                   |
|  |  | Sambag Culob | Bairan Road                           | Palaypay            | Poblacion- Palaypay- Mostro Road        |
|  |  | Medina       | Medina Road                           | Palaypay            | Sitio Lopez Road                        |
|  |  | Agbatuan     | JPR to Agbatuan-Aglay-ao Road         | Guipsis             | Manganese- Guipsis Road                 |
|  |  | Balunos      | Sitio Anilao Kayu                     | Balabag             | JNR to Poblacion- Culob- Balabag Road   |
|  |  | San Carlos   | JNR to Trenas Hill Road               | Balabag             | Balabag Road                            |
|  |  | Mostro       | Proper-Agpandan Road                  | Balabag             | JNR to Poblacion- Culob- Balabag Road   |
|  |  | Mostro       | Mostro-Agtambo Road                   | Balabag             | Balabag-Sitio Aglay-ao Road             |
|  |  | Cag-an       | Fuentes-Cag-an Road                   | Balabag             | Balabag-Balunos Road                    |
|  |  | Agbatuan     | Vista Alegre-Aglay-ao Road            | Poblacion- Palaypay | Poblacion- Palaypay- Mostro Road        |
|  |  | Vista Alegre | Vista Alegre Road                     | Poblacion- Palaypay | Poblacion- Palaypay Road                |
|  |  | Badiang      | Bairan Badiang Road                   | Poblacion           | Sto. Niño St., Poblacion                |
|  |  | Agbatuan     | South Bairan Agbatuan Road            | Poblacion           | Lopez Jaena St., Poblacion              |
|  |  | Badiang      | JPR to Badiang-Bairan Road            | Poblacion           | Malvar St., Poblacion Road              |
|  |  | Badiang      | JPR to Badiang-Sambag Culob Road      | Poblacion           | Rizal St. Road                          |
|  |  | Balabag      | Malublob Road                         | Poblacion           | San Marcelino St. Road                  |
|  |  | Balunos      | Balunos-Manganese Road                | Poblacion           | MH. Del Pilar St. Road                  |
|  |  | Balunos      | Proper-Manyakiya Road                 | Poblacion           | Sta. Ana St., Poblacion                 |
|  |  | Balunos      | Sitio Turingan Road                   | Badiang             | Iloilo East Coast Road National Highway |
|  |  | Guipsis      | Guipsis Proper-Agcarupe Road          | Sambag Culob        | Iloilo East Coast Road National Highway |
|  |  | Guipsis      | Guipsis Road                          | Poblacion           | Iloilo East Coast Road National Highway |
|  |  | Guipsis      | Guipsis Road                          | Sta. Rita           | Iloilo East Coast Road National Highway |
|  |  | Guipsis      | Agluy-a Road                          | San Carlos          | Iloilo East Coast Road National Highway |



|  |  |              |                                     |                     |   |
|--|--|--------------|-------------------------------------|---------------------|---|
|  |  | Balunos      | Mostro-Balunos Road                 | San Juan Crisostomo | San Juan Crisostomo-Hda. Lawaan Road    |
|  |  | Balunos      | Balunos-Proper Road                 | Sto. Rosario        | JNR to Badiang- Camiros Road            |
|  |  | Manganese    | Suyakan Road                        | Camiros             | JNR to Badiang- Camiros Road            |
|  |  | Manganese    | Manganese-Agluy-a Road              | San Juan Crisostomo | San Juan Crisostomo-Medina Road         |
|  |  | Manganese    | Manganese-Agluy-a Road              | Medina              | Hda. Lawaan-Medina Road                 |
|  |  | Manganese    | Manganese-Agluy-a Road              | Medina              | Medina Road                             |
|  |  | Manganese    | Manganese-Agluy-a Road              | Medina              | Medina Road                             |
|  |  | Guipis       | Agluy-a Road                        | San Juan Crisostomo | San Juan Crisostomo Road                |
|  |  | Guipis       | Agluy-a Road                        | Camiros             | JPR to Camiros Road                     |
|  |  | Guipis       | Manganese- Guipis Road              | Sto. Rosario        | JPR to Sto. Rosario Road                |
|  |  | Guipis       | Guipis Road                         | Camiros             | JPR to Camiros-Sto. Rosario Road        |
|  |  | Manganese    | Manganese – Guipis Road             | Sto. Rosario        | Proper-Irrigation Road                  |
|  |  | Guipis       | Guipis Road                         | Agbatuan            | JNR to Badiang- Camiros Road            |
|  |  | Guipis       | Guipis Road                         | Agbatuan            | JNR to Badiang- Camiros Road            |
|  |  | Guipis       | Guipis Road                         | Agbatuan            | JPR to Agbatuan-Aglay-ao Road           |
|  |  | Manganese    | Manganese – Guipis Road             | Mostro              | Mostro-Cag-an road                      |
|  |  | Poblacion    | JNR to Poblacion-Aglay-ao Road      | Dangula-an          | Iloilo East Coast Road National Highway |
|  |  | Poblacion    | JNR to Poblacion-Aglay-ao Road      | San Carlos          | JNR to Trenas Hill Road                 |
|  |  | Sambag Culob | JNR to Poblacion-Aglay-ao Road      | Mostro              | Proper-Agpandan Road                    |
|  |  | Sambag Culob | Sambag Culob to Sitio Aglay-ao Road | Mostro              | Mostro-Agtambo Road                     |
|  |  | Sambag Culob | Sambag Culob – Sitio Aglay-ao Road  | Dangula-an          | JNR to Dangula-an Elem. School Road     |
|  |  | Balabag      | Sitio Aglay-ao Road                 | Dangula-an          | Dangula-an-Camp Site Road               |
|  |  | Balabag      | Balabag Road                        | Dangula-an          | Dangula-an-Camp Site Road               |
|  |  | Balabag      | Balabag Road                        | Dangula-an          | JNR to Dangula-an-Cag-an Road           |
|  |  | Balabag      | Balabag Road                        | Cag-an              | Cag-an-Dugwakan Road                    |
|  |  | Mostro       | Mostro – Balunos Road               | Cag-an              | Fuentes-Cag-an Road                     |
|  |  |              |                                     | Cag-an              | JNR to Dangula-an-Cag-an Road           |
|  |  |              |                                     | Cag-an              | Proper-Caban-Caban Road                 |
|  |  |              |                                     | Manganese           | Manganese-Proper Road                   |
|  |  |              |                                     | Cag-an              | Cag-an-Manganese Road                   |
|  |  |              |                                     | Cag-an              | Cag-an-Apurillo Elem. School Road       |
|  |  |              |                                     | Poblacion           | Poblacion-Kunsaran Road                 |
|  |  |              |                                     | San Carlos          | JNR to San Carlos-Suba Road             |



|  |  |  |  |              |                                     |
|--|--|--|--|--------------|-------------------------------------|
|  |  |  |  | Sta. Rita    | JNR to Sta. Rita-Hda. Joy Road      |
|  |  |  |  | Agbatuan     | Vista Alegre-Aglay-ao Road          |
|  |  |  |  | Vista Alegre | Vista Alegre Road                   |
|  |  |  |  | Badiang      | JPR to Badiang-Bairan Road          |
|  |  |  |  | Badiang      | JPR to Badiang-Sambag Culob Road    |
|  |  |  |  | Balabag      | Malublob Road                       |
|  |  |  |  | Balunos      | Balunos-Manganese Road              |
|  |  |  |  | Guipis       | Guipis Proper-Agcarupe Road         |
|  |  |  |  | Guipis       | Guipis Road                         |
|  |  |  |  | Guipis       | Guipis Road                         |
|  |  |  |  | Cag-an       | Lampuyang-Proper Road               |
|  |  |  |  | San Carlos   | JNR to San Carlos-Sitio Dalipe Road |
|  |  |  |  | Palaypay     | Palaypay-Pangurayan Road            |
|  |  |  |  | Pantalan     | Poblacion-Pantalan Baybay Road      |
|  |  |  |  | Poblacion    | Sta. Rita St. Road                  |
|  |  |  |  | Balabag      | Malublob Road                       |
|  |  |  |  | Poblacion    | JNR to Poblacion-Pantalan Road      |
|  |  |  |  | Manganese    | Suyakan Road                        |
|  |  |  |  | Poblacion    | DA Perimeter Road                   |
|  |  |  |  | Agbatuan     | JPR to Agbatuan – Bairan Road       |
|  |  |  |  | San Carlos   | JNR-San Carlos Road                 |
|  |  |  |  | Manganese    | Manganese-Proper Road               |
|  |  |  |  | Manganese    | Manganese-Proper Road               |
|  |  |  |  | Manganese    | Manganese-Agluy-a Road              |
|  |  |  |  | Cag-an       | Cag-an Road                         |
|  |  |  |  | Cag-an       | Cag-an Road                         |
|  |  |  |  | Cag-an       | Cag-an Road                         |
|  |  |  |  | Cag-an       | Cag-an Road                         |
|  |  |  |  | Guipis       | Guipis Road                         |
|  |  |  |  | Guipis       | Guipis Road                         |
|  |  |  |  | Poblacion    | JNR to Poblacion-Aglay-ao Road      |
|  |  |  |  | Sambag Culob | JNR to Sambag Culob Road            |
|  |  |  |  | Badiang      | JPR to Badiang-Sambag Culob Road    |
|  |  |  |  | Badiang      | JPR to Badiang-Sambag Culob         |

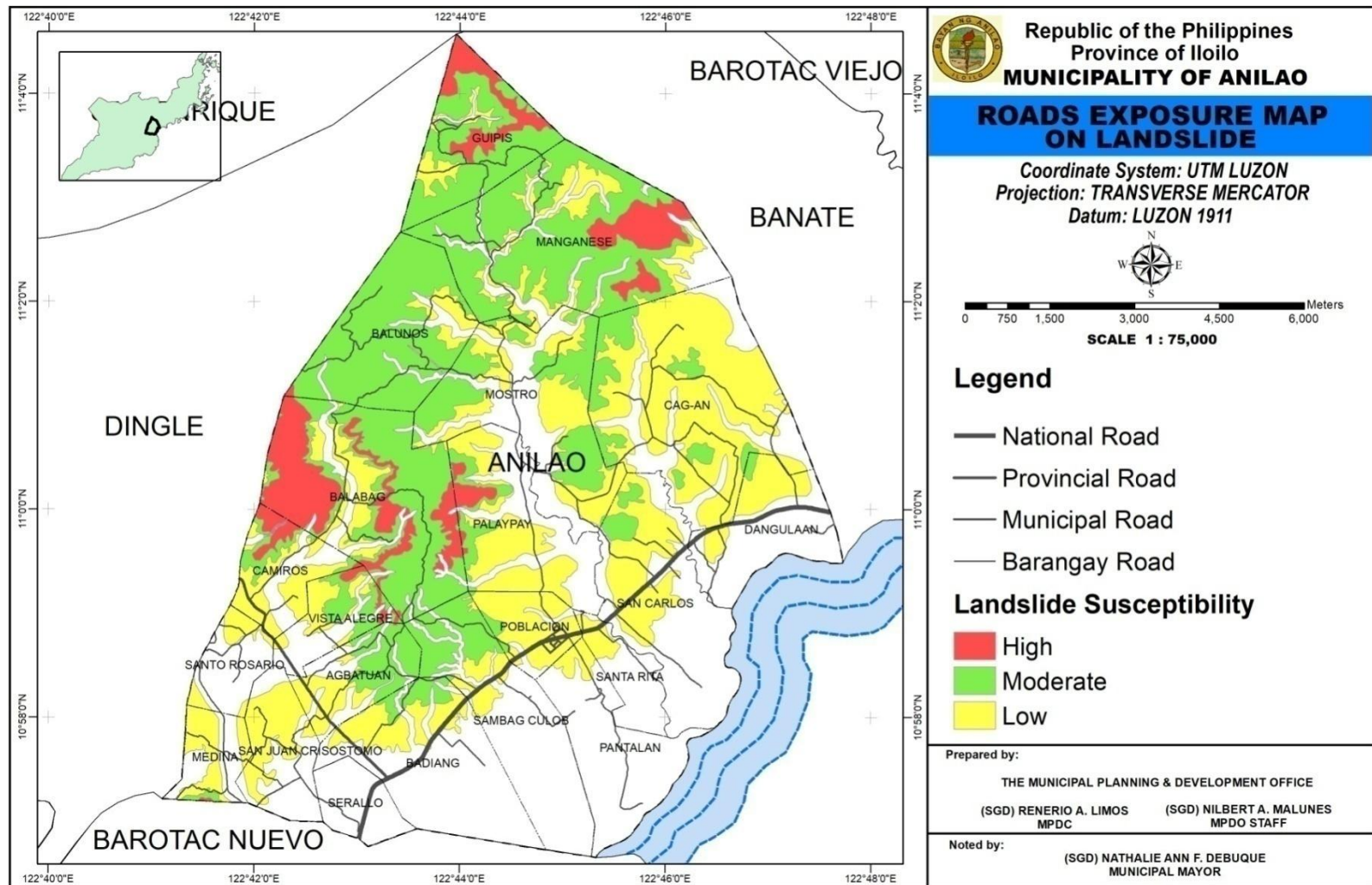




|  |  |  |  |              |                              |
|--|--|--|--|--------------|------------------------------|
|  |  |  |  |              | Road                         |
|  |  |  |  | Vista Alegre | Vista Alegre Road            |
|  |  |  |  | Vista Alegre | Vista Alegre Road            |
|  |  |  |  | Camiros      | JNR to Badiang- Camiros Road |
|  |  |  |  | Camiros      | JNR to Badiang- Camiros Road |
|  |  |  |  | Camiros      | JNR to Badiang- Camiros Road |
|  |  |  |  | Camiros      | JNR to Badiang- Camiros Road |
|  |  |  |  | Camiros      | JNR to Badiang- Camiros Road |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Camiros      | JPR to Camiros-Balabag Road  |
|  |  |  |  | Balabag      | Balabag Road                 |
|  |  |  |  | Balabag      | Balabag Road                 |
|  |  |  |  | Balabag      | Balabag Road                 |
|  |  |  |  | Dangula-an   | JNR to Dangulaan-Baybay Road |
|  |  |  |  | Cag-an       | Cag-an Road                  |
|  |  |  |  | Cag-an       | Cag-an Road                  |
|  |  |  |  | Mostro       | Mostro – Manganese Road      |
|  |  |  |  | Mostro       | Mostro – Manganese Road      |
|  |  |  |  | Mostro       | Mostro- Manganese Road       |
|  |  |  |  | Mostro       | Mostro – Balunos Road        |
|  |  |  |  | Mostro       | Mostro – Balunos Road        |
|  |  |  |  | Mostro       | Mostro – Balunos Road        |
|  |  |  |  | Vista Alegre | JNR to Badiang- Camiros Road |
|  |  |  |  | Guipis       | Guipis-Nazuni Road           |
|  |  |  |  | Guipis       | Guipis Road                  |
|  |  |  |  | Guipis       | Manganese- Guipis Road       |
|  |  |  |  | Guipis       | Guipis Road                  |



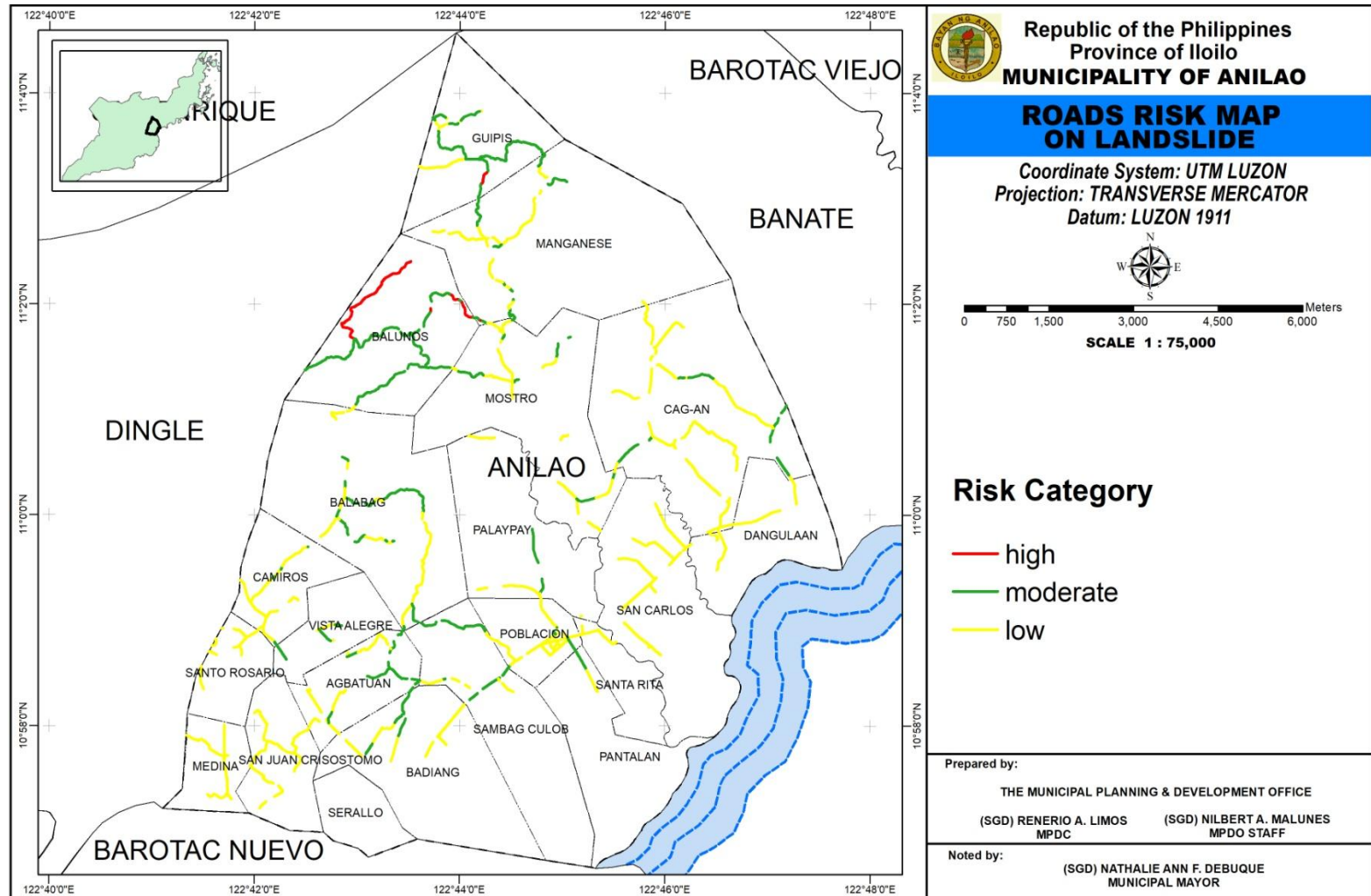
Figure DRA-21. Roads Exposure Map on Landslide



Source: MPDO



Figure DRA-22. Roads Risk Map on Landslide



Source: MPDO



**Potentially Affected Existing Land Uses**

The agriculture area is mostly affected by flood with a total affected area of 2,715.40 hectares, of which 111.79 hectares has a very high susceptibility to flood more than 1 meter high (Table DRA-13). These areas are relatively located in flood prone barangays which are near rivers, creeks and coastline. These areas are mostly planted with rice, mango and sugarcane which have also significantly at high risk (see separate CRDA Report). Subsequently, mangrove areas (21.75 hectares) are at high susceptibility and fishponds (22.62 hectares) at high susceptibility to flood. Forest areas and roads follow in the next highest areas in terms of susceptibility.

**Table DRA-13. Land Uses Susceptibility to Flood**

| Land Use             | Very High Susceptibility Area (ha) | High Susceptibility Area (ha) | Moderate Susceptibility Area (ha) | Low Susceptibility Area (ha) |
|----------------------|------------------------------------|-------------------------------|-----------------------------------|------------------------------|
| Residential Area     | 1.68                               | 17.30                         | 37.20                             | 101.21                       |
| Commercial Area      | 0                                  | 0                             | 0                                 | 0                            |
| Institutional        | 0                                  | 0                             | 0                                 | 0                            |
| Parks and Recreation | 0                                  | 0                             | 0                                 | 0                            |
| Industrial           | 0                                  | 0                             | 0                                 | 0.66                         |
| Agri-Industrial      | 0.07                               | 0.06                          | 0.23                              | 3.95                         |
| Agricultural         | 111.79                             | 393.22                        | 971.88                            | 1238.51                      |
| Forest               | 3.86                               | 8.78                          | 24.77                             | 3.78                         |
| Quarry               | 0                                  | 0                             | 0.20                              | 1.09                         |
| Cemetery             | 0                                  | 0                             | 0                                 | 0                            |
| Mangrove             | 21.76                              | 92.55                         | 0                                 | 0                            |
| Fishpond             | 22.62                              | 879.81                        | 8.98                              | 0.89                         |
| Dumpsite             | 0                                  | 0                             | 0                                 | 0.01                         |
| National Road        | 0.93                               | 10.68                         | 11.11                             | 34.38                        |
| Provincial Road      | 0                                  | 0.47                          | 2.49                              | 8.02                         |
| Municipal Road       | 0                                  | 0                             | 0                                 | 0                            |
| Barangay Road        | 4.64                               | 21.63                         | 42.19                             | 42.29                        |
| <b>Total</b>         | <b>167.35</b>                      | <b>1424.50</b>                | <b>1099.04</b>                    | <b>1434.79</b>               |

Source: CDRA Results 2018



Table DRA-14 shows that a total of 5,126.88 hectares devoted to agriculture are susceptible to landslide. Of which, 2,471.31 hectares have high susceptibility, 2,246.63 have moderate susceptibility and 408.95 hectares have low susceptibility. This was followed by a total of 925.74 hectares of forest lands with 302.93 high susceptibility, 585.66 with moderate susceptibility and 37.15 hectares low susceptibility. Eco-tourism areas are identified with 16.77 hectares high susceptibility to landslide.

Barangay roads have 1.82 hectares with high susceptibility and 81.54 hectares moderate susceptibility to landslide.

**Table DRA-14. Land Uses Susceptibility to Landslide**

| Land Use             | High Susceptibility Area (ha) | Moderate Susceptibility Area (ha) | Low Susceptibility Area (ha) |
|----------------------|-------------------------------|-----------------------------------|------------------------------|
| Residential          |                               | 0.36                              | 170.41                       |
| Commercial           |                               |                                   | 3.32                         |
| Institutional        |                               | 0.30                              | 9.79                         |
| Parks and Recreation |                               |                                   | 1.14                         |
| Agri-Industrial      |                               | 0.08                              | 2.53                         |
| Agricultural         | 2471.31                       | 2246.63                           | 408.95                       |
| Forest               | 302.93                        | 585.66                            | 37.15                        |
| Quarry               |                               | 3.05                              | 2.94                         |
| Cemetery             |                               |                                   | 1.10                         |
| Dumpsite             |                               |                                   | 0.16                         |
| Eco-Tourism          | 16.77                         | 3.96                              | 0.96                         |
| National Road        |                               |                                   | 39.42                        |
| Provincial Road      |                               |                                   | 16.25                        |
| Municipal Road       |                               |                                   | 6.16                         |
| Barangay Road        | 1.82                          | 81.54                             | 122.09                       |
| <b>Total</b>         | <b>2792.82</b>                | <b>2921.59</b>                    | <b>822.34</b>                |

Source: CDRA Results 2018

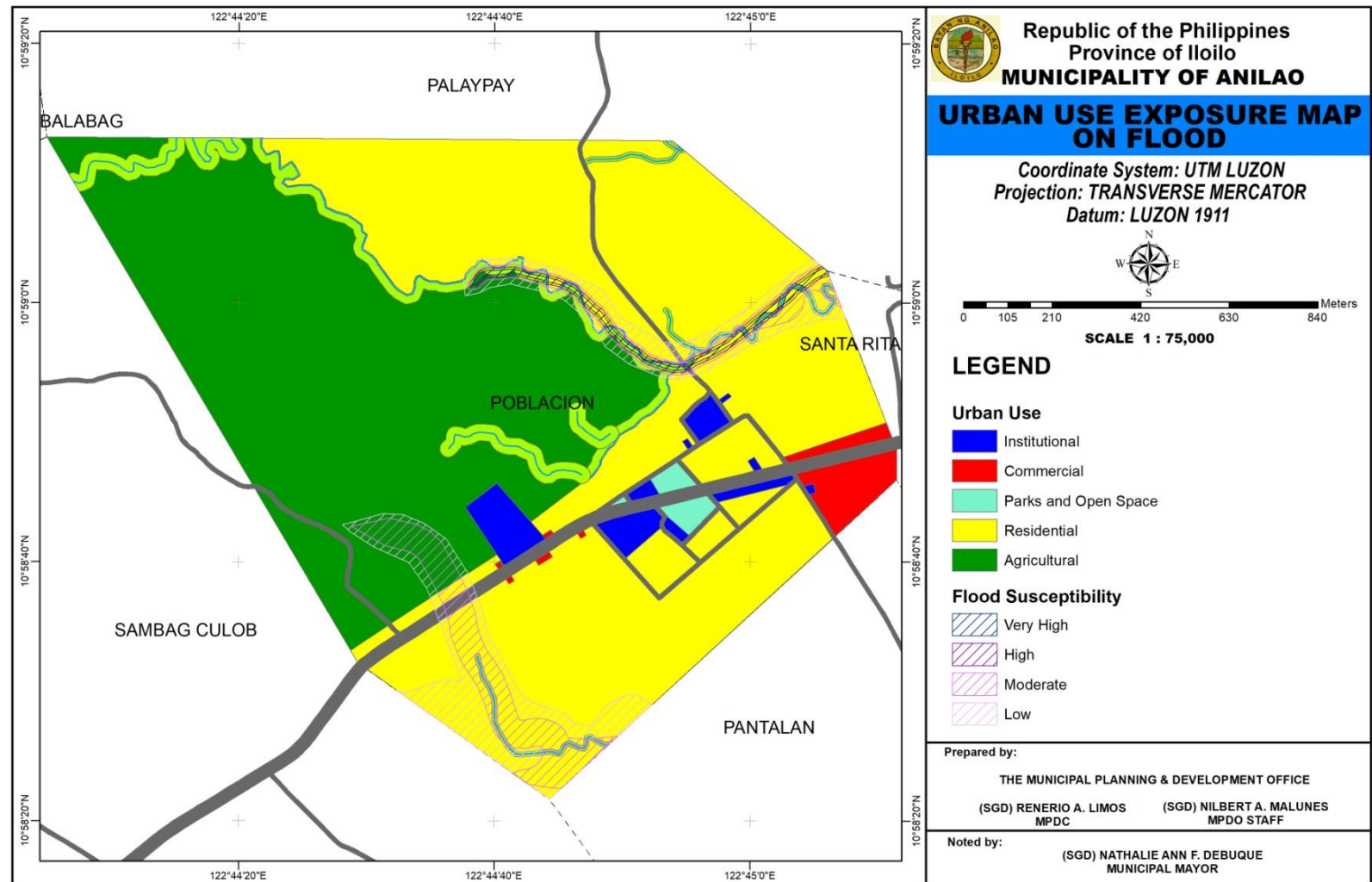
At least 0.5 hectares of residential area in the urban zone is very highly susceptible to flood with flood depth of more than 1 meter and likelihood of occurrence of 3 years and 0.5 hectares of residential area is highly susceptible to flood with flood depth of 1 meter and will occur every 3 years.

There is low susceptibility to landslide in urban areas. Figure DRA- shows the susceptibility of urban areas to flood while Figure DRA- shows the susceptibility level of urban areas to landslide.





Figure DRA-23. Urban Use Exposure Map on Flood

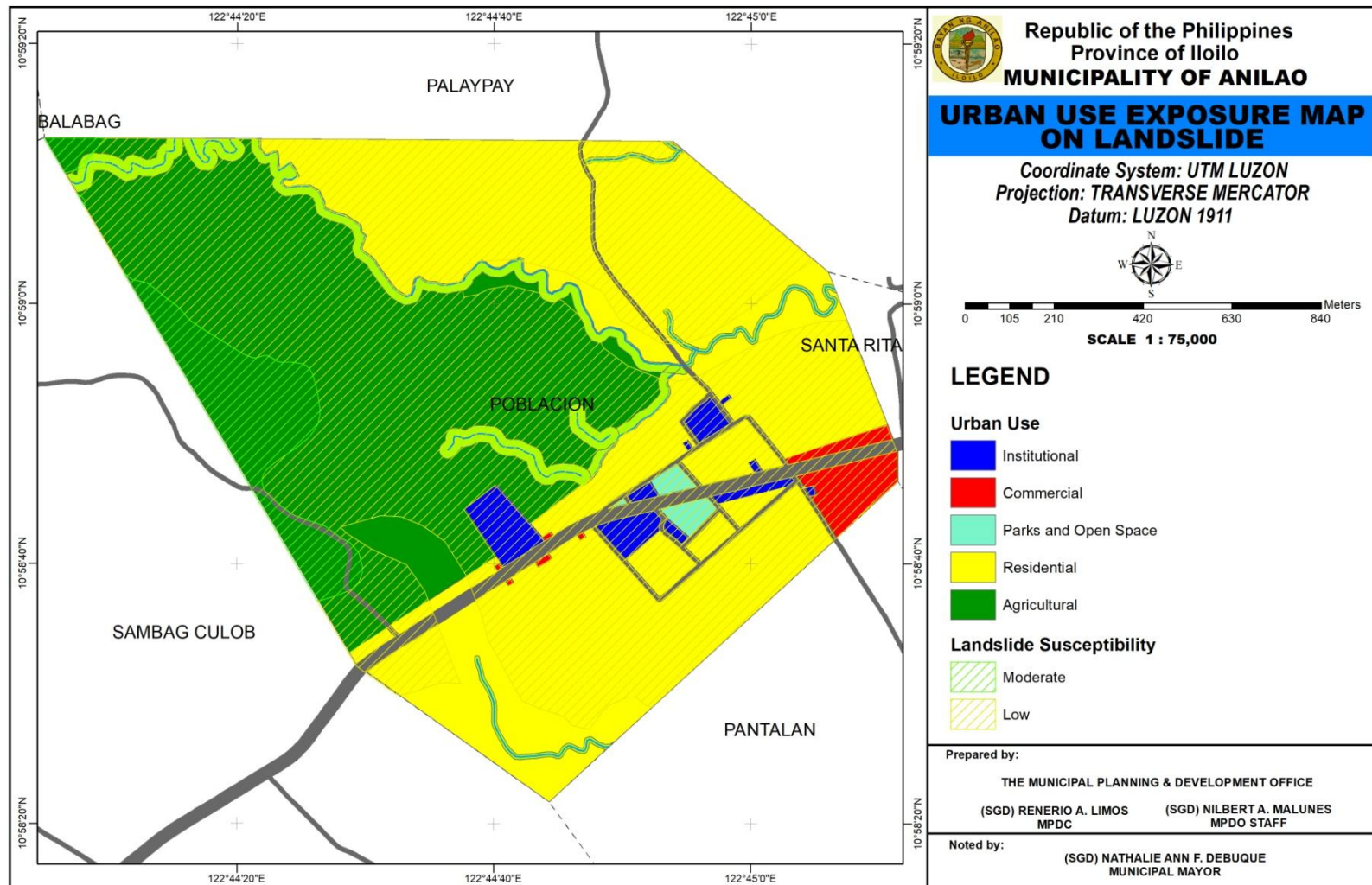


Source: MPDO





Figure DRA-24. Urban Use Exposure Map on Landslide



Source: MPDO



**Local Climate Change Scenario**

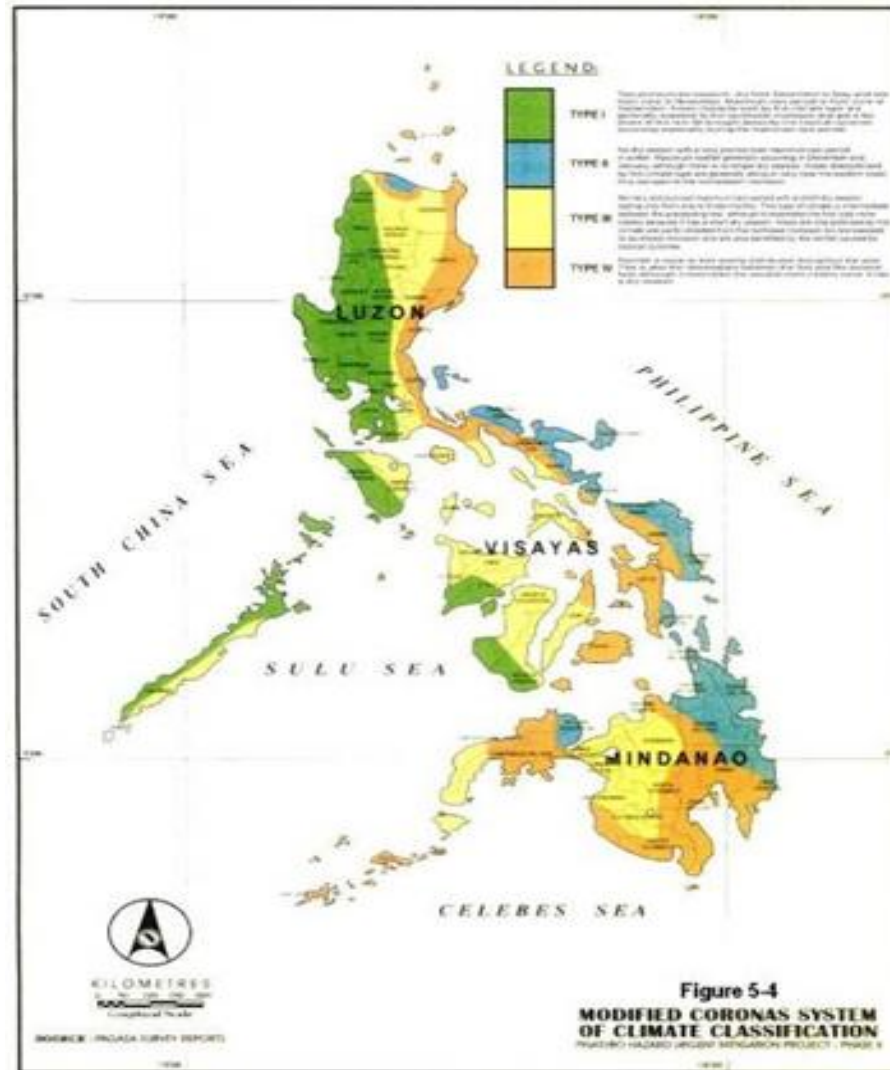
The Municipality of Anilao belongs to Type 3 Climate characterized by no very pronounced maximum rain period with a dry season lasting only from one to three months either during the period from December to February or from March to May.

This type resembles types 1 since it has a short dry season (PAG-ASA).

Figure DRA-24 shows the Climate of Panay Island and Iloilo to include the Municipality of Anilao.



Figure DRA-25. Climate Map of the Philippines



Source: PAGASA



History of Previous Disasters

Table DRA- shows the typhoons that hit the municipality. A total of 868 families were affected by Typhoon Ruby while 1,388 houses were totally damaged by Typhoon Yolanda.

Table DRA-14-A. Typhoons that Affected the Municipality of Anilao

| HAZARD EVENTS AND DESCRIPTION/DATE                  | AFFECTED BARANGAYS | NO. OF CASUALTIES |         |         | NO. OF AFFECTED PERSONS |          | NO. OF HOUSES DAMAGED |           | DAMAGE TO PROPERTIES (Php) |      |          |               |       | SOURCE OF INFORMATION |     |
|---|--------------------|-------------------|---------|---------|-------------------------|----------|-----------------------|-----------|----------------------------|------|----------|---------------|-------|-----------------------|-----|
|   |                    | DEAD              | INJURED | MISSING | PERSONS                 | FAMILIES | TOTALLY               | PARTIALLY | INFRA                      | AGRI | INDUSTRI | PRIVATE/COMM. | TOTAL |                       |     |
| TYPHOON RUBY - 225Kph Signal #1 December 3-10, 2014 | AGBATUAN           | N/A               | N/A     | N/A     | N/A                     | 34       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | BADIANG            | N/A               | N/A     | N/A     | N/A                     | 17       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | BALABAG            | N/A               | N/A     | N/A     | N/A                     | 47       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | BALUNOS            | N/A               | N/A     | N/A     | N/A                     | 70       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | CAG-AN             | N/A               | N/A     | N/A     | N/A                     | 81       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | CAMIROS            | N/A               | N/A     | N/A     | N/A                     | 68       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | DANGULAAN          | N/A               | N/A     | N/A     | N/A                     | 27       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | GUIPIS             | N/A               | N/A     | N/A     | N/A                     | 31       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | MANGANESE          | N/A               | N/A     | N/A     | N/A                     | 39       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | MEDINA             | N/A               | N/A     | N/A     | N/A                     | 25       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | MOSTRO             | N/A               | N/A     | N/A     | N/A                     | 64       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | PALAYPAY           | N/A               | N/A     | N/A     | N/A                     | 25       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | PANTALAN           | N/A               | N/A     | N/A     | N/A                     | 67       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | POBLACION          | N/A               | N/A     | N/A     | N/A                     | 23       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
|   | SAMBAG CULOB       | N/A               | N/A     | N/A     | N/A                     | 36       | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | N/A                   | LGU |
| SAN CARLOS  | N/A                | N/A               | N/A     | N/A     | 30                      | N/A      | N/A                   | N/A       | N/A                        | N/A  | N/A      | N/A           | N/A   | LGU                   |     |



|                     |     |     |     |     |            |     |     |     |     |     |     |     |     |     |
|---------------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SAN JUAN CRISOSTOMO | N/A | N/A | N/A | N/A | 16         | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | LGU |
| STA. RITA           | N/A | N/A | N/A | N/A | 30         | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | LGU |
| STO. ROSARIO        | N/A | N/A | N/A | N/A | 76         | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | LGU |
| SERALLO             | N/A | N/A | N/A | N/A | 5          | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | LGU |
| VISTA ALEGRE        | N/A | N/A | N/A | N/A | 57         | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | LGU |
| <b>TOTAL</b>        |     |     |     |     | <b>868</b> |     |     |     |     |     |     |     |     |     |

| HAZARD EVENTS AND DESCRIPTION/DATE                         | AFFECTED BARANGAYS | NO. OF CASUALTIES |         |         | NO. OF AFFECTED PERSONS |          | NO. OF HOUSES DAMAGED |           | DAMAGE TO PROPERTIES (Php) |               |        |                 |               | SOURCE OF INFORMATION |
|--|--------------------|-------------------|---------|---------|-------------------------|----------|-----------------------|-----------|----------------------------|---------------|--------|-----------------|---------------|-----------------------|
|  |                    | DEAD              | INJURED | MISSING | PERSONS                 | FAMILIES | TOTALY                | PARTIALLY | INFRA                      | AGRI          | INS TI | PRIV ATE/COM L. | TOTAL         |                       |
| TYPHOON Yolanda - 300 Kph Signal #5 As of January 15, 2014 | AGBATUAN           | none              | none    | none    | none                    | 34       | 46                    | N/A       | N/A                        | 19,560,000    | N/A    | N/A             | 19,560,000    | LGU                   |
|  | BDIANG             | none              | none    | none    | none                    | 17       | 78                    | N/A       | N/A                        | 54,600        | N/A    | N/A             | 54,600        | LGU                   |
|  | BALABAG            | none              | none    | none    | none                    | 47       | 69                    | N/A       | N/A                        | 76,262,500    | N/A    | N/A             | 76,262,500    | LGU                   |
|  | BALUNOS            | none              | none    | none    | none                    | 70       | 80                    | N/A       | N/A                        | 67,333,750    | N/A    | N/A             | 67,333,750    | LGU                   |
|  | LGU CAG-AN         | none              | none    | none    | none                    | 81       | 167                   | N/A       | N/A                        | 29,632,200    | N/A    | N/A             | 29,632,200    | LGU                   |
|  | CAMIROS            | none              | none    | none    | none                    | 68       | 77                    | N/A       | N/A                        | 109,045,000   | N/A    | N/A             | 109,045,000   | LGU                   |
|  | DANGULAAN          | none              | none    | none    | none                    | 27       | 46                    | N/A       | N/A                        | 10,235,000    | N/A    | N/A             | 10,235,000    | LGU                   |
|  | GUIPIS             | none              | none    | none    | none                    | 31       | 35                    | N/A       | N/A                        | 1,787,321,000 | N/A    | N/A             | 1,787,321,000 | LGU                   |
|  | MANGANESE          | none              | none    | none    | none                    | 39       | 77                    | N/A       | N/A                        | 21,917,000    | N/A    | N/A             | 21,917,000    | LGU                   |



|                        |      |      |      |      |            |              |     |     |                      |     |     |                      |     |
|------------------------|------|------|------|------|------------|--------------|-----|-----|----------------------|-----|-----|----------------------|-----|
| MEDINA                 | none | none | none | none | 25         | 34           | N/A | N/A | 609,200              | N/A | N/A | 609,200              | LGU |
| MOSTRO                 | none | none | none | none | 64         | 102          | N/A | N/A | 1,237,500            | N/A | N/A | 1,237,500            | LGU |
| PALAYPAY               | none | none | none | none | 25         | 43           | N/A | N/A | 906,248,000          | N/A | N/A | 906,248,000          | LGU |
| PANTALAN               | none | none | none | none | 67         | 64           | N/A | N/A | 4,705,000            | N/A | N/A | 4,705,000            | LGU |
| POBLACION              | none | none | none | none | 23         | 118          | N/A | N/A | 296,753,500          | N/A | N/A | 296,753,500          | LGU |
| SAMBAG<br>CULOB        | none | none | none | none | 36         | 46           | N/A | N/A | 120,801,110          | N/A | N/A | 120,801,110          | LGU |
| SAN CARLOS             | none | none | none | none | 30         | 79           | N/A | N/A | 3,047,100            | N/A | N/A | 3,047,100            | LGU |
| SAN JUAN<br>CRISOSTOMO | none | none | none | none | 16         | 61           | N/A | N/A | 20,000               | N/A | N/A | 20,000               | LGU |
| STA. RITA              | none | none | none | none | 30         | 27           | N/A | N/A | 9,434,000            | N/A | N/A | 9,434,000            | LGU |
| STO.<br>ROSARIO        | none | none | none | none | 76         | 78           | N/A | N/A | 243,200              | N/A | N/A | 243,200              | LGU |
| SERALLO                | none | none | none | none | 5          | 27           | N/A | N/A | 70,677,100           | N/A | N/A | 70,677,100           | LGU |
| VISTA<br>ALEGRE        | none | none | none | none | 57         | 34           | N/A | N/A | 40,480,000           | N/A | N/A | 40,480,000           | LGU |
| <b>TOTAL</b>           |      |      |      |      | <b>817</b> | <b>1,388</b> |     |     | <b>3,575,616,760</b> |     |     | <b>3,575,616,760</b> |     |

Source: OCD, MSWDO & MDRRMO, Anilao





**Seasonal Changes in Temperature**

The projected changes in seasonal temperature and rainfall in the mid-21<sup>st</sup> century were based on the recent publication of PAGASA entitled Observed Climate Trends and Climate Change in the Philippines. The climate projections models were derived from two (2) scenarios the RCP 4.5 (Moderate Level of GHG Emissions) and the RCP 8.5 (High Level of GHG Emissions) from the IPCC 5<sup>th</sup> assessment report.

The data from PAGASA shown in Table DRA-15 presents the seasonal changes in temperature in the period from 2036-2065 for Iloilo Province. The highest projected seasonal mean temperature is in the months of March, April and May which is 30.34 degrees centigrade and the months of June, July and August which is 30.1 degrees centigrade. The lowest seasonal mean temperature is on the months of December, January and February which is 27.4 – 27.6 degrees centigrade.



**Table DRA-15. Projected Changes in Seasonal Temperature in the Mid-21 Century (2036-2065) for Iloilo Province relative to 1971-2000**

| Season  | Scenario                    | Range       | Projected Change |  | Information about patterns of Change | Potential Impacts  | Adaptation Option   |
|---|-----------------------------|-------------|------------------|--|--------------------------------------|--|---|
|   |                             |             | Change in °C     | Projected Seasonal Mean Temperature (°C) |                                      |  |   |
| December-January-February (DJF)<br><br>Observed baseline = 26.4 °C  | Moderate Emission (RCP 4.5) | Lower Bound | 1.0              | 27.4                                     | Coldest season<br>27.4 – 27.6        | <ul style="list-style-type: none"> <li>• Impotent crops and livestock</li> <li>• Pest infestation</li> <li>• Fish kill</li> <li>• Decreased yield</li> <li>• Decreased water supply</li> <li>• Forest fires</li> <li>• Increase of health related illness</li> </ul> | <ul style="list-style-type: none"> <li>• Conduct of Climate Field School to help farmers more resilient to climate hazards</li> <li>• Establish early warning systems</li> <li>• Crop insurance enrolment to farmers and fisherfolks</li> </ul> |
|   |                             | Median      | 1.2              | 27.6                                     |                                      |  |   |
| Upper Bound   |                             | 1.6         | 28.0             |  |                                      |  |   |
| Moderate Emission (RCP 8.5)   | Lower Bound                 | 1.2         | 27.6             | 27.6 – 28.3                              |                                      |  |   |
|   | Median                      | 1.6         | 28.0             |  |                                      |  |   |
|   | Upper Bound                 | 1.9         | 28.3             |  |                                      |  |   |
| March-April-May (MAM)<br><br>Observed baseline = 27.9 °C            | Moderate Emission (RCP 4.5) | Lower Bound | 1.0              | 29.2                                     | 29.2 – 29.9                          |  |   |
|   |                             | Median      | 1.2              | 29.4                                     |                                      |  |   |
| Upper Bound   |                             | 1.7         | 29.9             |  |                                      |  |   |
| Moderate Emission (RCP 8.5)   | Lower Bound                 | 1.3         | 29.5             | Hottest Season<br>29.5 – 30.34           |                                      |  |   |
|   | Median                      | 1.7         | 29.9             |  |                                      |  |   |
|   | Upper Bound                 | 2.2         | 30.34            |  |                                      |  |   |
| June-July-August (JJA)<br><br>Observed baseline = 27.9 °C           | Moderate Emission (RCP 4.5) | Lower Bound | 0.9              | 28.8                                     | 28.8 – 29.7                          |  |   |
|   |                             | Median      | 1.2              | 29.1                                     |                                      |  |   |
| Upper Bound   |                             | 1.8         | 29.7             |  |                                      |  |   |
| Moderate Emission (RCP 8.5)   | Lower Bound                 | 1.4         | 29.3             | 29.3 – 30.1                              |                                      |  |   |
|   | Median                      | 1.5         | 29.4             |  |                                      |  |   |
|   | Upper Bound                 | 2.2         | 30.1             |  |                                      |  |   |
| September-October-November (SON)<br><br>Observed baseline = 27.6 °C | Moderate Emission (RCP 4.5) | Lower Bound | 1.0              | 28.6                                     | 28.6 – 29.4                          |  |   |
|   |                             | Median      | 1.1              | 28.7                                     |                                      |  |   |
| Upper Bound   |                             | 1.8         | 29.4             |  |                                      |  |   |
| Moderate Emission (RCP 8.5)   | Lower Bound                 | 1.3         | 28.9             | 28.9 – 29.8                              |                                      |  |   |
|   | Median                      | 1.5         | 29.1             |  |                                      |  |   |
|   | Upper Bound                 | 2.2         | 29.8             |  |                                      |  |   |

Source: PAGASA, 2011. *Climate Change in the Philippines*



**Seasonal Changes in Rainfall**

Table DRA-16 shows that the highest percentage change in rainfall is during the months of June, July and August which is expected at 28.4% at 1,028.6 mm. The period from September, October and November comes next at 894 mm.

**Table DRA-16. Projected Seasonal Change in Total Rainfall (in millimetres) in the Mid-21st Century (2036-2065) for Iloilo Province relative to 1971-2000**

| Season                                 | Scenario          | Range       | Projected Change |                 | Information about patterns of Change  | Potential Impacts   | Adaptation Option  |
|--|-------------------|-------------|------------------|-----------------|---|---|--|
|  |                   |             | Percent Change   | Projected Value |   |   |  |
| <b>December-January-February (DJF)</b> | Moderate Emission | Lower Bound | -4.4             | 310.4           | Minimal to no change  |   |  |
|  | (RCP 4.5)         | Median      | 6.5              | 346.0           | Minimal to no change  |   | <ul style="list-style-type: none"> <li>• Massive reforestation</li> <li>• Crop insurance</li> <li>• Rehabilitate mangrove areas</li> <li>• Swift to climate resilient and adaptive technologies</li> </ul> |
|  |                   | Upper Bound | 26.9             | 412.1           | The highest possible rainfall change during the SW monsoon shows an increase of 28% | <ul style="list-style-type: none"> <li>• Flooding in lowland areas</li> <li>• Low farm yield</li> <li>• Increased water borne diseases</li> <li>• Disruption of economic activities</li> <li>• Isolation of some barangays</li> </ul> |  |
| <b>Observed baseline = 324.8 mm</b>    | Moderate Emission | Lower Bound | -9.8             | 293.0           | Decreasing amount of rainfall   |   |  |
|  | (RCP 8.5)         | Median      | 8.7              | 353.2           | Minimal to no change  |   |  |
|  |                   | Upper Bound | 28.3             | 416.8           | The highest possible rainfall change during the SW monsoon shows an increase of 28% | <ul style="list-style-type: none"> <li>• Flooding in lowland areas</li> <li>• Low farm yield</li> <li>• Increased water borne diseases</li> <li>• Disruption of economic activities</li> <li>• Isolation of some barangays</li> </ul> |  |
| <b>March-April-May</b>                 | Moderate Emission | Lower Bound | -9.3             | 263.4           | Minimal to no change  |   |  |



|   |           |             |       |         |   |  |                 |
|---|-----------|-------------|-------|---------|---|--|-----------------|
| <b>(MAM)</b>                            | Emission  | Median      | 4.0   | 302.1   | Minimal to no change  |  | School<br><br>x |
|   | (RCP 4.5) | Upper Bound | 11.7  | 324.5   | Minimal to no change  |  |                 |
| <b>Observed baseline = 290.6 mm</b>     | Moderate  | Lower Bound | -15.4 | 246.0   | Minimal to no change  |  |                 |
|   | Emission  | Median      | -2.1  | 284.6   | Minimal to no change  |  |                 |
| <b>June-July-August (JJA)</b>           | (RCP 8.5) | Upper Bound | 9.5   | 318.2   | Minimal to no change  |  |                 |
|   | Moderate  | Lower Bound | -22.1 | 726.9   | Minimal to no change  |  |                 |
| <b>Observed baseline = 932.8 mm</b>     | Emission  | Median      | -5.8  | 878.4   | Minimal to no change  |  |                 |
|   | (RCP 4.5) | Upper Bound | 7.1   | 998.6   | Minimal to no change  |  |                 |
| <b>Observed baseline = 932.8 mm</b>     | Moderate  | Lower Bound | -28.4 | 667.9   | The driest possible future rainfall change during the transition period from SW to NE monsoons shows a reduction of 28% | <ul style="list-style-type: none"> <li>• Water shortage for irrigation</li> <li>• Prevalence of diseases caused by excessive heat</li> <li>• Pest and diseases in crops and livestock</li> <li>• Low production</li> </ul> |                 |
|   | Emission  | Median      | -4.0  | 895.0   | Decreasing amount of rainfall   |  |                 |
|   | (RCP 8.5) | Upper Bound | 10.3  | 1,028.6 | Increasing amount of rainfall   |  |                 |
| <b>September-October-November (SON)</b> | Moderate  | Lower Bound | -20.0 | 662.6   | Minimal to no change  |  |                 |
|   | Emission  | Median      | -11.2 | 735.9   | Minimal to no change  |  |                 |
|   | (RCP 4.5) | Upper Bound | 7.9   | 894     | Minimal to no change  |  |                 |
| <b>Observed baseline = 828.3</b>        | Moderate  | Lower Bound | -22.7 | 639.9   | Minimal to no change  |  |                 |
|   | Emission  | Median      | -11.1 | 736.4   | Minimal to no change  |  |                 |
|   | (RCP 8.5) | Upper Bound | 3.4   | 856.2   | Minimal to no change  |  |                 |

Source: PAGASA2011, Observed Climate Trends and Projected Change in the Philippines

Table DRA-17 .shows the frequency of extreme events in terms of temperature and rainfall.

### Extreme Events

For extreme events data for 2020 and 2050 climate projections were used as basis because the new climate projections based on RCP 4.5 and RCP 8.5 did not include the said data.



The Municipality of Anilao has adopted the projected seasonal temperature increase, seasonal rainfall change and frequency of extreme events in 2020 and 2050 under the medium-range emission scenario for the Province of Iloilo in Region 6 as presented in Table DRA-15, Table DRA-16 and Table DRA-17 respectively.

**Table DRA-17. Frequency of extreme events in 2020 and 2050 under medium-range emission scenario in Iloilo Province**

| Province | Stations | No. of Days w/ Tmax >35 °C |      |           | No. of Dry Days |      |           | No. of Days w/ Rainfall > 200mm |      |           |
|----------|----------|----------------------------|------|-----------|-----------------|------|-----------|---------------------------------|------|-----------|
|          |          | 2020                       | 2050 | 2020-2050 | 2020            | 2050 | 2020-2050 | 2020                            | 2050 | 2020-2050 |
| ILOILO   | Iloilo   | 460                        | 1431 | 3076      | 7839            | 5227 | 5226      | 4                               | 5    | 4         |

Source: PAGASA 2011, Observed Climate Trends and Projected Change in the Philippines

**Climate Impact Chain per Sector**

The concept of impact chain is to present a clear picture of the cause and effect of climate and weather-related hazards such as sea level rise, changes in mean temperature and rainfall, typhoons, drought and other worse disaster impacts. The impact chain was considered through ecosystem-based scenario namely agriculture areas, urban areas, coastal and forest ecosystem.

The diagram below shows the cause and effect relationships among stimuli presented in the chain diagram. These were further categorized as per exposure, sensitivity, potential impacts and adaptive capacity. As an output of the discussions and workshop of the Technical Working Group and representatives from the CSO, the ecosystems in Anilao are exposed to climate change stimuli which are increase in temperature and sea level rise. These stimuli results and may be exacerbated by different climate actions that causes hazards to the ecosystems.

Presented in Figures DRA- to Figure DRA- are the climate impact chain diagram of four ecosystems namely, forest, coastal, agriculture and urban areas.

The Philippines annual mean temperature has risen by 0.68°C over the past 65 years (1951-2015). Based on Table DRA-15, Seasonal Changes in Temperature Mid-21 Century (2036-2065) for Iloilo Province relative to 1971-2000, it is projected that country’s mean temperature could increase by as much as 0.9°C-1.9°C (assuming the moderate emission scenario, RCP4.5) and 1.2°C-2.3°C (high emission scenario, RCP8.5). Warmer conditions are further expected by the end of the 21<sup>st</sup> century (2070-2099).

Significantly, the increase in temperature is expected to affect the different vital ecosystems in the Municipality of Anilao. Foremost, the climate stimulus affecting the agriculture production areas is the increase in temperature. The concept of climate change vulnerability considers this stimuli and the possible risk as affected by exposure, sensitivity, potential impact and adaptive capacity.



In Figure DRA-26, an increase in temperature will result to drought and water shortage directly affecting the capacity of the crops to produce thereby resulting to the low income of farmers and decrease in food supply (impacts).

The vulnerability however of these exposed elements such as the household, the farmers and the farmlands depends greatly upon the nature of the resource and characteristics of these elements, such as their family income. Their risk is reduced by their adaptive capacity such as technology (use of alternative livelihood, use of climate resilient varieties) and the presence of crop protection (insurance). The presence of adaptive measures significantly reduces the risk into low level. These are usually provided by the government like the following; climate adaptive facilities, rain harvesting technology, small reservoir facilities and intensification of climate field school.

Figure DRA-27 shows that an increase in temperature also affect the forest ecosystem with drought and forest fire as potential hazards. This will cause water shortage, loss of flora and fauna, destruction of critical habitats and soil erosion affecting the exposed elements. The forest lands will suffer great loss of flora and fauna, critical habitats will be destroyed. Landslides will occur due to loss of vegetation and the people will suffer of health issues due to water shortage. Destructive practices like kaingin system, charcoal making and illegal logging aggravates the impact of this stimuli to the forest ecosystem. However, loss of forest cover maybe reduced by raising awareness of population on alternative forest farming, used of alternative construction materials and rainwater harvesting. Local government investment on environmental programs like tree planting, reforestation projects, Bantay Gubat Program and the implementation of the Forest Land Use Plan promotes reduction of further losses and protection of the forest

Generally, coastal areas are prone to sea level rise that will bring coastal flooding and inundation. Saltwater intrusion in farm lands has been observed in some areas along the coast (see Figure DRA-28). Adverse effects to population may cause displacement of families due to damage to their properties, their livelihood and even death. Consequently, their production will be reduced due to decrease in fish catch among fisherfolks. Once supply of fish and other commodities occur, affected families will suffer from malnutrition and health problems. People may suffer from loss of income, malnutrition, loss of life and damage to properties and infrastructures. The exposure to flooding is expected due to the influx of informal settlers and those living in makeshift houses and light materials in riverbanks and near the coastline. In order to increase the capacity of the population and the ecosystem itself, crop insurance should be popularized. Planting of mangroves by the community should be massively implemented. Government initiatives like inter-LGU alliance and inter-agency collaboration should be prioritized as this will bring further development and support to the coastal resource program.

Drought and loss of water brought about by increase in temperature is a potential climate change scenario in the urban areas (see Figure DRA-29). Poor supply of irrigation in farms may cause loss of food supply, loss of vegetation, increase in water-borne diseases, malnutrition, increase morbidity and mortality and eventually poverty. These directly affect households, farm lands, infrastructure and commercial establishments. Indiscriminate cutting of trees, conversion of agrilands to residential, overpopulation, excessive water wastage in households and farms further aggravates these climatic changes. Government measures to





reduce this problem may include massive urban reforestation, water recycling, water source exploitation, SALINTUBIG program, massive IEC on water conservation and management and water rationing.

Figure DRA-26. Climate Change Impact Chain – Agriculture Production Areas

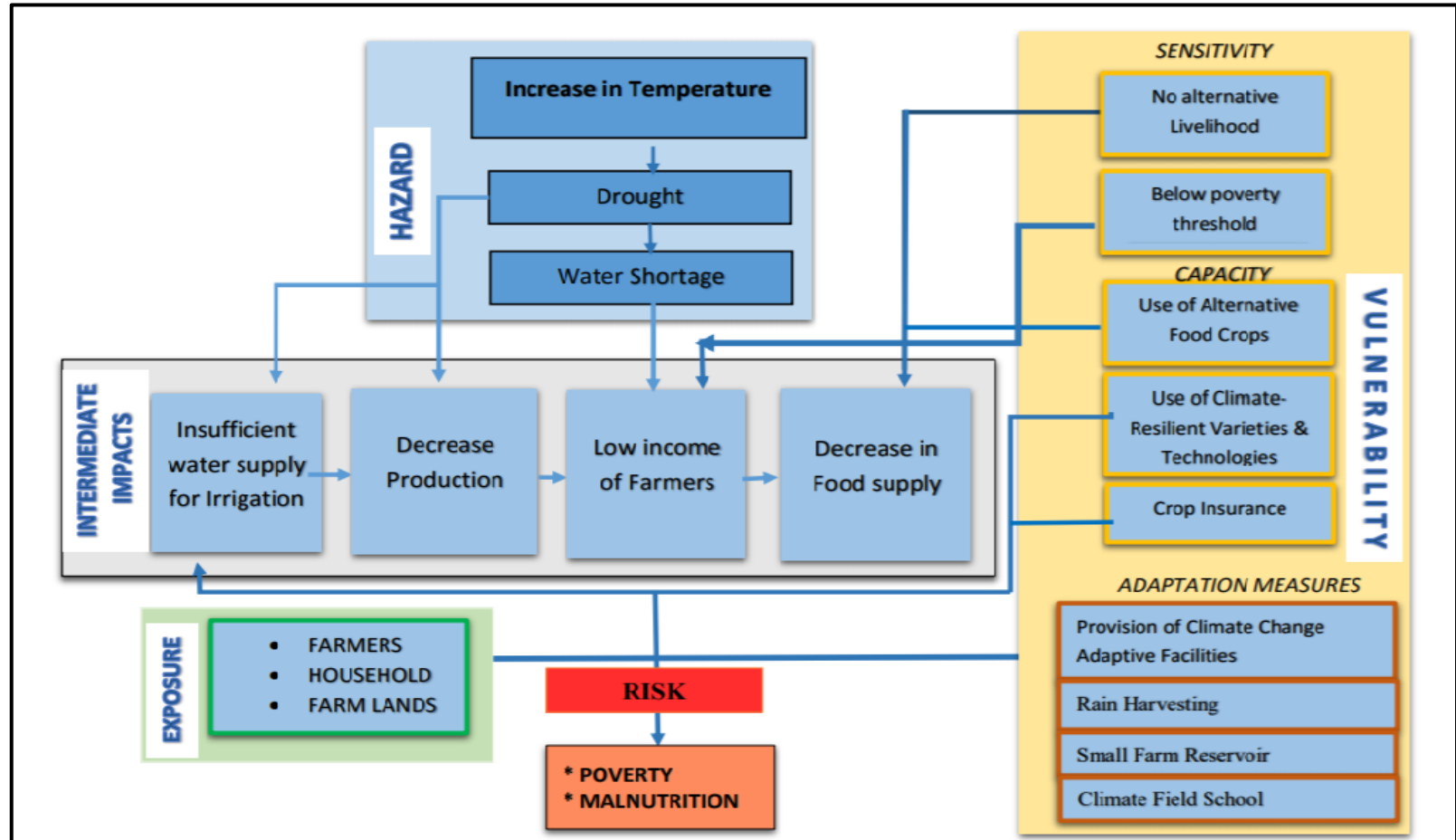


Figure DRA-27 .Climate Change Impact Chain – Coastal Ecosystem

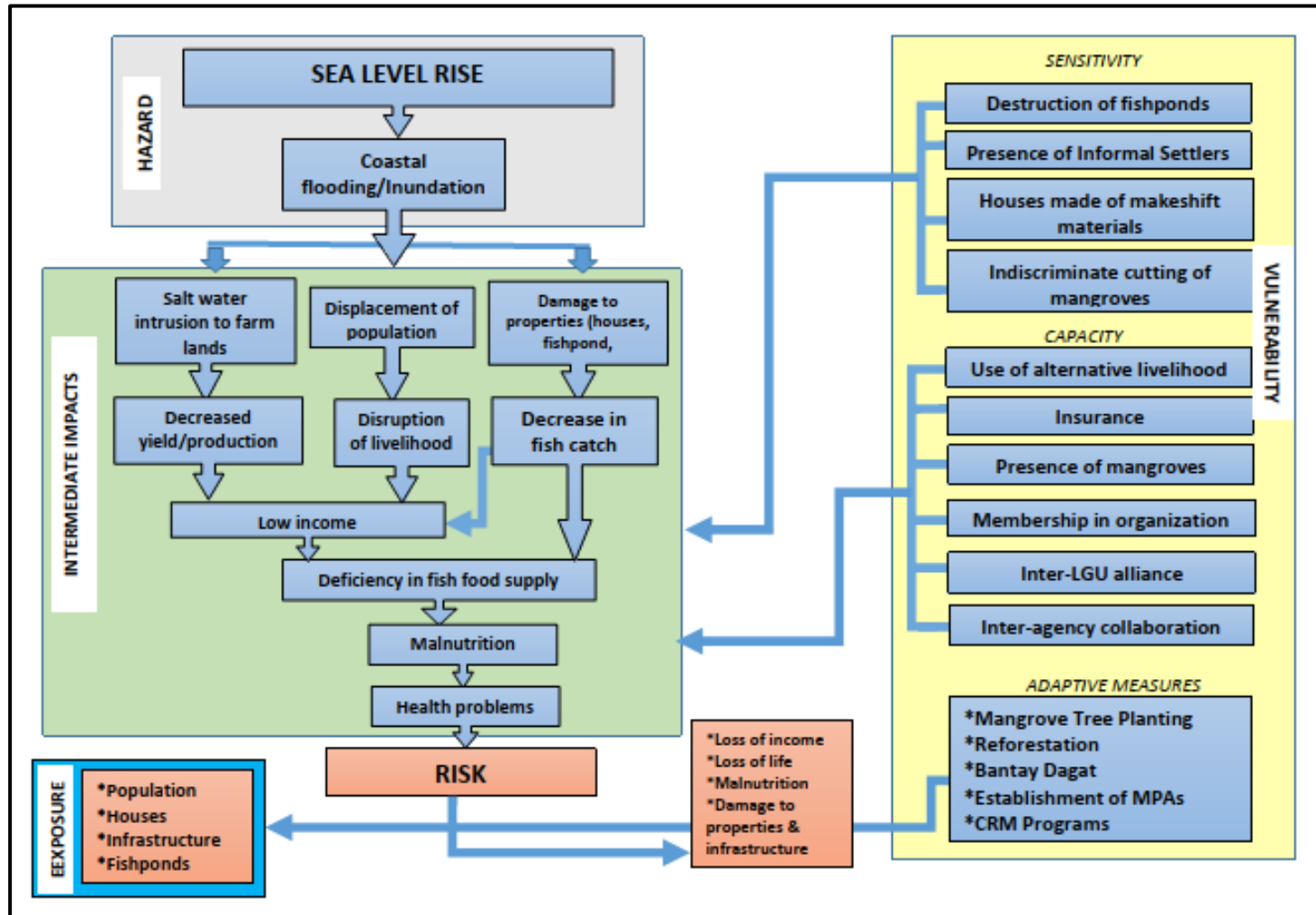


Figure DRA-28. Climate Change Impact Chain – Forest Ecosystem

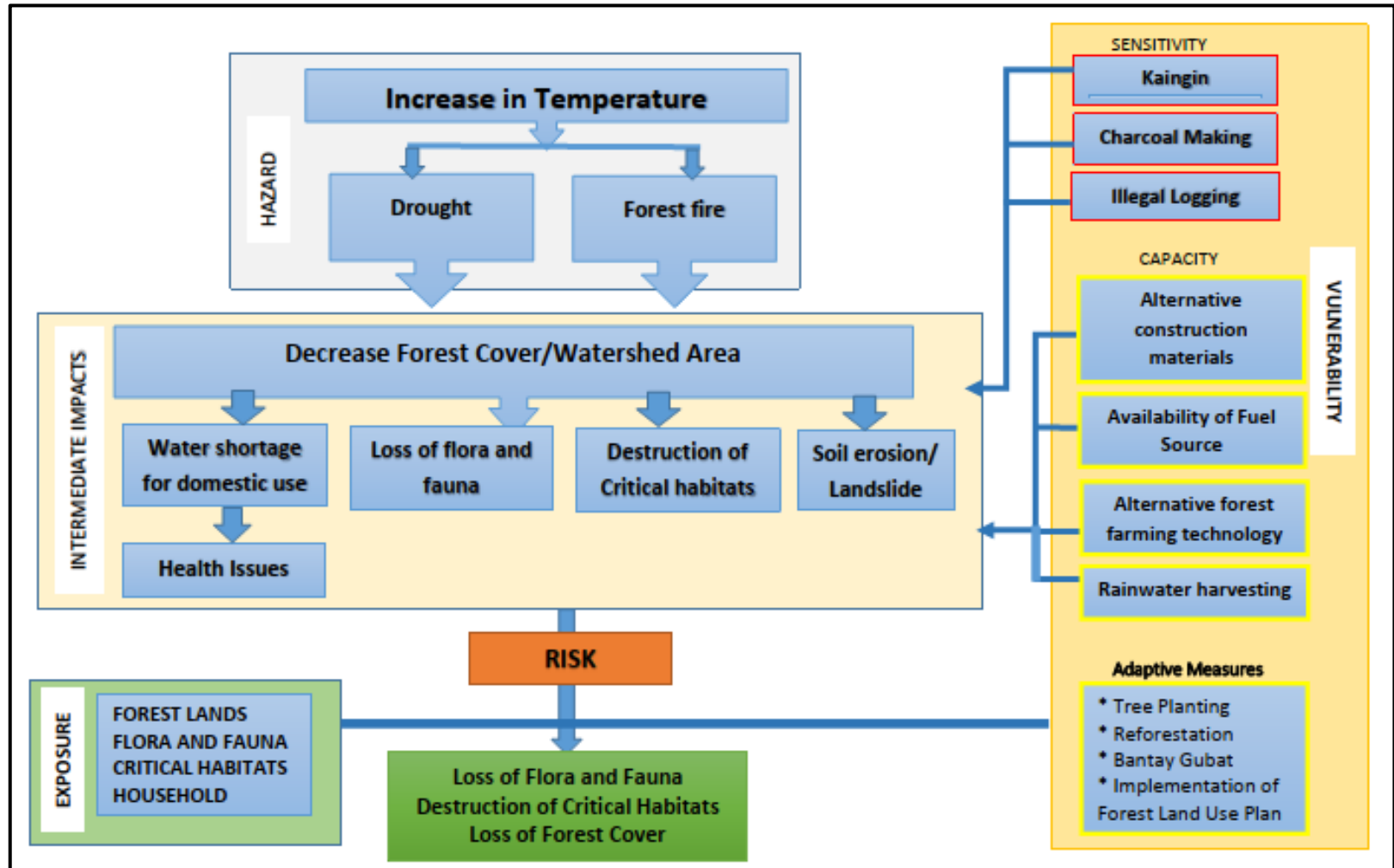
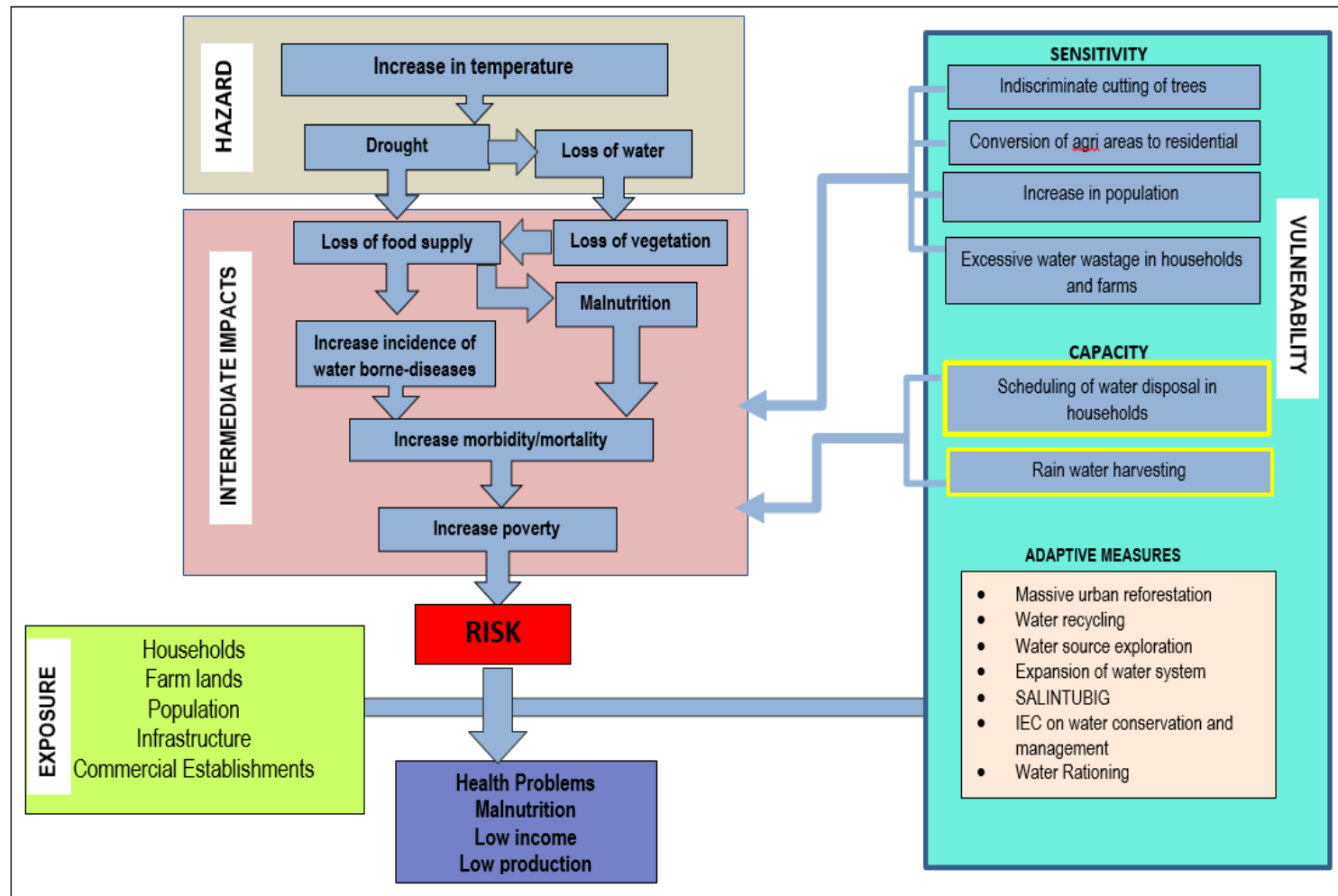


Figure DRA-29. Climate Change Impact Chain – Urban Ecosystem



## Priority Decision Areas Identified in Highly Susceptible Sectors

Table DRA-18 presents the priority decision areas with very high to very high exposure and susceptibility to hazards. Likewise, technical findings, implications and recommended policies are also presented in this table.

Table DRA-18 . Climate Change Vulnerability Assessment Summary Matrix

| Decision Areas  | Technical Findings  | Implications   | Policy Interventions   |
|---|---|--|--|
| Dangulaan<br>Manganese<br>Mostro<br>Palaypay<br>Poblacion<br>San Carlos<br>Sta. Rita<br>\<br>Camiros, Balabag<br>and Guipis<br>Sta. Rita, San<br>Carlos, Dangulaan,<br>Pantalan | <ul style="list-style-type: none"> <li>Very high susceptibility of 137 households to flood with flood depth more than 1 meter (Exposure)</li> <li>67% of households are living in dwelling units made of light materials (Sensitivity)</li> <li>17% are young and old dependents (sensitivity)</li> <li>45 households are informal settlers (with no security of tenure) (Sensitivity)</li> <li>Government is prioritizing relocation sites for affected families (adaptive capacity)</li> <li>Affected population are willing to be relocated if government provides assistance (adaptive capacity)</li> </ul> | <ul style="list-style-type: none"> <li>Possible loss of lives and properties</li> <li>Exposure may increase in the future due to uncontrolled growth of informal settlers</li> <li>Government resources may increase due to land banking</li> <li>Reduction of available lands for residential uses</li> </ul> | <ul style="list-style-type: none"> <li>Identification of new residential sites/relocation sites</li> <li>Seek assistance from NGAs in the provision of housing</li> <li>Rehabilitate mangrove areas and riverbanks</li> <li>Massive reforestation of open areas</li> <li>Disallow further settlement on the impact areas</li> <li>Identify new residential areas to accommodate relocation of affected families</li> </ul> |
| Cag-an, Dangulaan,<br>Manganese, Mostro,<br>Palaypay, San<br>Carlos, Sta. Rita  | <ul style="list-style-type: none"> <li>High susceptibility of 29 households with 128 population to landslide (exposure)</li> <li>High susceptibility of on stormsurge affecting 219 households with 964 population (exposure)</li> </ul>  | <ul style="list-style-type: none"> <li>Possible loss of lives and properties</li> <li>Reduced production</li> <li>Exposure may increase in the future due to uncontrolled growth of informal settlers</li> <li>Possible loss of lives and properties</li> </ul>  | <ul style="list-style-type: none"> <li>Establishment of early warning systems in all hazard areas</li> <li>Swift to other climate resilient technology/livelihood</li> <li>Crop insurance</li> </ul>   |
|   | <ul style="list-style-type: none"> <li>2 rivers traversing the affected barangays affecting households due to their location along river easement (sensitivity)</li> </ul>  | <ul style="list-style-type: none"> <li>Exposure may increase in the future due to uncontrolled growth of informal settlers</li> </ul>  | <ul style="list-style-type: none"> <li>Strict implementation of No Build Zone</li> </ul>   |



|   |  |  |  |
|---|--|--|--|
| Coastal areas   | <ul style="list-style-type: none"> <li>• Occurrence of sea level rise in the coastal areas (exposure)</li> </ul>             | <ul style="list-style-type: none"> <li>• Potential damages to structures, deaths and injuries</li> </ul>   | <ul style="list-style-type: none"> <li>• Massive coastal reforestation</li> <li>• Relocation of informal settlers</li> <li>• Development of livelihood projects</li> <li>• Crop insurance</li> <li>• Identify other natural based productions areas for high value crops farming</li> <li>• Encourage climate smart production technologies (SALT)</li> <li>• Extension services with emphasis on Climate adaptive agriculture</li> <li>• Popularize Farmers Field School</li> </ul> |
| Agriculture Areas (Riceland, Mango Plantation, Sugarcane Farms and Fishponds) | <ul style="list-style-type: none"> <li>• Some portions have high susceptibility to flood and landslide (exposure)</li> </ul> | <ul style="list-style-type: none"> <li>• Potential damages to structures, deaths and injuries</li> <li>• Loss of production/low production</li> <li>• Possible disruption of classes resulting to shorter number of school days</li> </ul> |  |
| Camiro, Dangulaan, Mostro, Palaypay, Pantalan, Sambag Culob, San Carlos       | <ul style="list-style-type: none"> <li>• High susceptibility of road sections in the barangay to flood (exposure)</li> </ul> | <ul style="list-style-type: none"> <li>• Potential future inadequacies in the provision of primary level educational services expected</li> </ul>  | <ul style="list-style-type: none"> <li>• Establishment of escape route to safer areas</li> <li>• Climate proofing of existing route through road and drainage upgrading</li> <li>• Pre-emptive evacuation of areas that will be potentially isolated during floods and landslides</li> <li>• Formulation of flood contingency plan focused on the affected barangays</li> <li>• Relocation of schools with high susceptibility</li> </ul>  |
| Manganese Elementary School & Arandilla Memorial Elementary School            | <ul style="list-style-type: none"> <li>• Elementary schools are exposed to high susceptibility floods (exposure)</li> </ul>  |  |  |





## Disaster Risk Reduction and Management

The municipality has implemented programs, projects and activities to address the preparedness issues like conducting seminars and trainings in Disaster Risk Reduction and Response.

### Preparedness Issues

Introduction of the four phases of emergency management, mitigation, preparedness, response and recovery, perhaps the place that individuals can make the biggest difference in their own state of resiliency and survival of a disaster is in the preparedness phase. Being prepared before a disaster strikes makes sense yet many people fail to take even simple, precautionary steps to reduce the consequences of destruction produced by natural events such as flood, storm surge, Landslide, earthquakes and typhoon. Educating the people of this municipality and getting them to take preparatory actions to better protect themselves in the face of natural hazards has led to extensive study of risk reduction. Not only thru Information Education Campaign (IEC) we prepare the people of Anilao but by purchasing Rescue Equipments and Tools, Likewise, we have Trained Responders both from the Municipality (ALERT) and from the Barangays (BERT).

### Prevention and Mitigation

Climate change in the world can be caused by various activities. When climate change occurs; temperatures can increase dramatically. When temperature rises, many different changes can occur on Earth. For example, it can result in more floods, droughts, or intense rain, as well as more frequent and severe heat waves. Oceans and glaciers have also experienced some changes: oceans are warming and becoming more acidic, glaciers are melting, and sea levels are rising. As these changes frequently occur in future decades, they will likely present challenges to our society and environment. The municipality have implemented programs, projects and activities such as information drive to mitigate or adapt the effects of climate change. Activities such as planting mangroves along coastal barangays and likewise the strict implementation of no burning policy have been undertaken by the LGU. Likewise, the municipality is installing Hazard Prevention Signages Hazardous and Accident Prone Areas to avoid or if not lessen its adverse effect.



### Response Issues

The municipality through the Municipal Disaster Risk Reduction and Management Office (MDRRMO) has organized a relief and recovery program which involved the MDRRMO Council, Government Offices and rescue and disaster response group. Financial assistance is extended to the affected individual. Likewise the Municipal Disaster Risk Reduction and Management Council undertake a Seminar Workshop on Incident Command System (ICS). This help us in understanding how the flow works, thru command, control, and coordination of a response and provides a means to coordinate the efforts of individual agencies as they work toward the common goal of stabilizing the incident and protecting life, property, and the environment. The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected is a priority goal of how response issues are delivered. Disaster response is predominantly focused on immediate and short-term needs of the affected population. A diagram indicating the response protocol being followed is shown in Figure DRA-30.

The Municipality has the following existing support facilities and systems in conducting disaster response, to wit:

#### Rescue Teams:

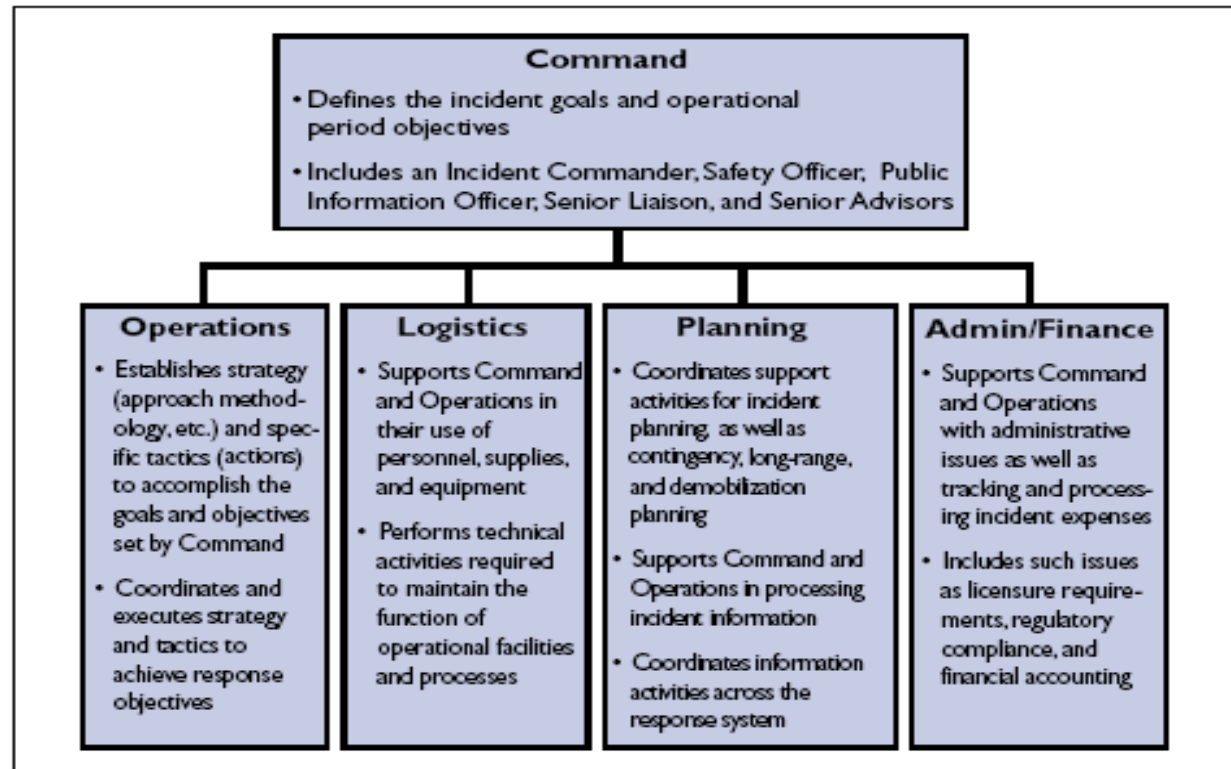
1. Anilao Local Emergency Response Team – 20 personnel
2. Barangay Emergency Response Team – 10 personnel per barangay

Rescue Vehicles: Rescue Vehicle – 4 units, Ambulance – 3 units, Evacuation Vehicle (Dump Truck) – 3 units, Clearing Vehicles – 2 units (Payloader, Backhoe and Road Grader)

Rescue Equipments: Life Vest, Life Ring, Rescue Bouy, Spine Boards, Vehicle Extrication Kit, Shovel, Chainsaw, Jump Kit, Ropes, Rappelling Equipments and Safety Helmet.



Figure DRA-30. Response Protocol



Source: Anilao DRRM Plan 2020-2022

**Relief and Recovery**

The Municipalities Relief and Recovery program focused on rehabilitation, reconstruction and sustainable recovery that focus in restoring the livelihood, asset and production levels of emergency-affected communities. Rehabilitation also includes measures to help increase the resilience of food systems in case of future disasters and emergencies.



Land Use Constraints and Issues Related to Climate and Disaster Risks

Table DRA-19 shows the land use constraints and issues related to climate and disaster risks.

Table DRA-19. Summary of Land Use Constraints and Issues Related to Climate and Disaster Risks

| Decision Areas   | Issues Matrix on Exposure of Population, Critical Point Facilities, Lifeline Facilities, Natural Resourced Based Production Areas and Urban Areas  |  |   |
|--|--|--|---|
|  | Technical Findings   | Implications   | Policy Interventions  |
| Balabag, Balunos, Dangulaan, Cag-an, Camiros, Balabag, Guipis, Vista Alegre, | <ul style="list-style-type: none"> <li>• Land development cannot be carried out due to the following reasons:                             <ul style="list-style-type: none"> <li>➢ very high susceptibility to flood of 14 barangays</li> <li>➢ Four barangays are highly susceptible to landslide</li> </ul> </li> </ul>    | <ul style="list-style-type: none"> <li>• Potential loss and injuries to lives, properties and infrastructures due to houses made of light materials</li> <li>• Significant government resources will be allocated for rescue and relief operations</li> <li>• Low production due to flooding and landslide in agricultural areas</li> <li>• Possible isolation of communities due to high risk of roads to flooding and landslide</li> <li>• Isolation of communities</li> <li>• Disruption of economic activities, transport of goods and services</li> <li>• Power and water stoppage</li> </ul> | <ul style="list-style-type: none"> <li>• Land banking for possible allocation of additional residential or socialized housing</li> <li>• Establishment of relocation sites</li> <li>• Strict enforcement of No Build Zone</li> <li>• Strict enforcement of easement in rivers</li> <li>• Slope protection in agricultural areas prone to landslide</li> <li>• Massive reforestation</li> <li>• Construction/rehabilitation of water impounding system</li> <li>• Mandatory retrofitting/rehabilitation of multi-purpose centers as temporary evacuation center</li> <li>• Identification of alternate routes for evacuation and response and relief operations</li> </ul> |
| 7 Coastal areas  | <ul style="list-style-type: none"> <li>➢ Coastal barangays are highly susceptible to stormsurge</li> <li>➢ More than 500 hectares of agricultural lands are susceptible to flood</li> <li>➢ Presence of informal settlers</li> <li>➢ LGU does not have enough resources to implement flood control measures along</li> </ul> | <ul style="list-style-type: none"> <li>• Potential loss and injuries to lives, properties and infrastructures due to houses made of light materials</li> </ul>   | <ul style="list-style-type: none"> <li>• Relocation of informal settlers to safe areas</li> <li>• Development and implementation of Contingency Plan on Flood and Landslide</li> <li>• Establishment of early warning</li> </ul>  |



|                           |  |   |   |
|---------------------------|--|---|---|
| <p>Balabag and Guipis</p> | <p>rivers and creeks</p> <ul style="list-style-type: none"> <li>➤ Early warning systems can be extensively pursued by the local government to minimize potential fatalities and injuries</li> <li>➤ LGU does not have an Evacuation Center</li> </ul><br><ul style="list-style-type: none"> <li>➤ Portions of road section the barangay are at high risk to flood and landslide</li> </ul><br><ul style="list-style-type: none"> <li>➤ Congested cemetery</li> </ul> | <ul style="list-style-type: none"> <li>• Delays in the conduct of rescue and relief operations</li> <li>• Power and water stoppage</li> <li>• Disruption of economic activities</li> <li>• Land banking for possible expansion of cemetery lot</li> </ul> | <p>systems in rivers, creeks and coastal areas</p> <ul style="list-style-type: none"> <li>• Retrofitting/climate proofing of existing route</li> <li>• Establishment of escape/ alternate route to safe places</li> </ul><br><ul style="list-style-type: none"> <li>• Resolution on the acquisition of lot</li> </ul> |
|---------------------------|--|---|---|

**Climate Change Adaptation and Disaster Risks Reduction Interventions and Policy Options**

**Climate Change Adaptation and Disaster Risk Reduction Policies**

- Mangrove Plantation/Rehabilitation
- Dredging of rivers and creeks
- Construction of climate proof evacuation center in every barangay
- Relocation of informal settlers along rivers banks and coastal areas.
- Maintenance of Rescue Vehicle and Boat
- Reforestation of eroded prone river banks



- Purchase of emission testing device
- Capacitate the Municipal Disaster Reduction and Management Council (MDRRMC) and Barangay Disaster Risk Reduction and Management Committee's (BDRRMCs) on rescue and disaster preparedness
- Implement the Municipal Disaster Risk Reduction and Management Plan (MDRRMP)
- Conduct Community Preparedness Program through Calamity/Disaster Information/Readiness Training Campaign
- Strengthen Barangay Disaster Risk Reduction & Management Committees
- Integration of Disaster Risk Reduction Management Programs into School Curricula & SK Programs as provided for in RA 10121
- Strict Enforcement of Solid Waste Management Ordinance and other related ordinance
- Strict implementation building code disaster prone areas.
- Strict implementation of forestry code and Forest Land Use Plan
- Strict implementation of Coastal Resource Management Plan/Fishery Code
- Rain water Harvesting
- Land Banking
- Contingency Planning
- Establishment of Early Warning System
- Establishment of Socialized Housing/Resettlement Areas
- Retrofitting of building and other infra facilities
- Renewable Energy
- Review and Updating of all Local Plans
- Enhancement of Alliances with other LGUs





DISASTER RISK REDUCTION AND CLIMATE CHANGE ADAPTATION SECTORAL ANALYSIS MATRIX

Table DRA-20. Sectoral Analysis Matrix

| Technical Findings   | Implications  | Policy Interventions  |
|--|---|---|
| <ul style="list-style-type: none"> <li>• Population susceptibility is categorized from high to very high but with moderate risk</li> <li>• Large number of population are exposed to landslide</li> <li>• Significant number of population are living in dwelling units made of light materials</li> <li>• Significant number of population are living below poverty threshold</li> <li>• LGU does not have enough resources to implement flood control measures along rivers and creeks</li> <li>• Early warning systems can be extensively pursued by the local government to minimize potential fatalities and injuries</li> <li>• Significant number of population are informal settlers</li> <li>• LGU does not have an Evacuation Center</li> <br/> <li>• Coastal barangays are highly susceptible to stormsurge</li> <br/> <li>• Portions of road section the barangay are at high risk to flood and landslide</li> </ul> | <ul style="list-style-type: none"> <li>• Potential loss and injuries to lives, properties and infrastructures due to houses made of light materials</li> <li>• Significant government resources will be allocated for rescue and relief operations</li> <li>• Available livelihood opportunities are not enough to accommodate affected families</li> <li>• Low production due to flooding and landslide in agricultural areas</li> <li>• Possible isolation of communities due to high risk of roads to flooding and landslide</li> <br/> <li>• Isolation of communities</li> <li>• Disruption of economic activities, transport of goods and services</li> <li>• Power and water stoppage</li> <li>• Delays in the conduct of rescue and relief operations</li> </ul> | <ul style="list-style-type: none"> <li>• Land banking for possible allocation of additional residential or socialized housing</li> <li>• Establishment of relocation sites</li> <li>• Strict enforcement of No Build Zone</li> <li>• Strict enforcement of easement in rivers</li> <li>• Slope protection in agricultural areas prone to landslide</li> <li>• Massive reforestation</li> <li>• Construction/rehabilitation of water impounding system</li> <li>• Mandatory retrofitting/rehabilitation of multi-purpose centers as temporary evacuation center</li> <li>• Identification of alternate routes for evacuation and response and relief operations</li> <li>• Relocation of informal settlers to safe areas</li> <li>• Development and implementation of Contingency Plan on Flood and Landslide</li> <li>• Establishment of early warning systems in rivers, creeks and coastal areas</li> <li>• Retrofitting/climate proofing of existing route</li> <li>• Establishment of escape/ alternate route to safe places</li> </ul> |

