

5. Cost Estimation Born by the Recipient Country

(Unit:Thousand Peso)

| Item | 2,001 | 2,002 | 2,003 | 2,004 | 2,005 | Total |
|--|--------|--------|--------|-------|-------|--------|
| 1. Preparatory Works | 1,100 | 1,600 | 0 | 0 | 0 | 2,700 |
| - DAR | 500 | 1,000 | 0 | 0 | 0 | 1,500 |
| - LGUs | 400 | 400 | | | | 800 |
| - Beneficiaries | 200 | 200 | | | | 400 |
| 2. Institutional Development | 2,851 | 1,125 | 625 | 625 | | 5,226 |
| - DAR | 2,851 | 1,125 | 625 | 625 | 0 | 5,226 |
| - LGUs | | | | | | 0 |
| - Beneficiaries | | | | | | 0 |
| 3. Agricultural & Environment Development | 0 | 1,000 | 900 | 0 | 0 | 1,900 |
| - DAR | 0 | 200 | 100 | 0 | 0 | 300 |
| - LGUs | | 700 | 700 | | | 1,400 |
| - Beneficiaries | | 100 | 100 | | | 200 |
| 4. NGO Partner | 620 | 620 | 420 | 420 | 0 | 2,080 |
| - DAR | 620 | 620 | 420 | 420 | 0 | 2,080 |
| - LGUs | | | | | | 0 |
| - Beneficiaries | | | | | | 0 |
| 5. Administration | 530 | 4,783 | 4,253 | 720 | 720 | 11,006 |
| - DAR | 530 | 4,783 | 4,253 | 720 | 720 | 11,006 |
| - LGUs | | | | | | 0 |
| - Beneficiaries | | | | | | 0 |
| 6. MOOE | 3,520 | 14,080 | 7,240 | 300 | 300 | 25,440 |
| - DAR | 3,330 | 13,890 | 7,100 | 160 | 160 | 24,640 |
| - LGUs | 150 | 150 | 100 | 100 | 100 | 600 |
| - Beneficiaries | 40 | 40 | 40 | 40 | 40 | 200 |
| Subtotal | 8,621 | 23,208 | 13,438 | 2,065 | 1,020 | 48,352 |
| - DAR | 7,831 | 21,618 | 12,498 | 1,925 | 880 | 44,752 |
| - LGUs | 550 | 1,250 | 800 | 100 | 100 | 2,800 |
| - Beneficiaries | 240 | 340 | 140 | 40 | 40 | 800 |
| Taxes | | 20,000 | 10,000 | | | 30,000 |
| | | | | | | 0 |
| Total | 8,621 | 43,208 | 23,438 | 2,065 | 1,020 | 78,352 |
| Price Escalation and Physical Contingency | 1,724 | 8,602 | 4,668 | 413 | 204 | 15,611 |
| | | | | | | 0 |
| Grand Total | 10,345 | 51,810 | 28,106 | 2,478 | 1,224 | 93,963 |
| -DAR | 9,555 | 50,220 | 27,166 | 2,338 | 1,084 | 90,363 |
| -LGUs | 550 | 1,250 | 800 | 100 | 100 | 2,800 |
| -Beneficiaries | 240 | 340 | 140 | 40 | 40 | 800 |
| Grand Total (Excluding Ag'l Development) | 10,345 | 50,810 | 27,206 | 2,478 | 1,224 | 92,063 |
| -DAR | 9,555 | 50,020 | 27,066 | 2,338 | 1,084 | 90,063 |
| -LGUs | 550 | 550 | 100 | 100 | 100 | 1,400 |
| -Beneficiaries | 240 | 240 | 40 | 40 | 40 | 600 |

Source:PDMS/FAPsO,DAR

6. Traffic Survey Result and Traffic Forecast

1. TRAFFIC COUNT SURVEY

Traffic count survey was conducted along 2 access roads connected to the Marangog ARC. The Location of the traffic count stations is shown in the following map. Hourly traffic volumes by vehicle type and direction were counted in a weekday and Saturday the weekly market day of Barangay Concepcion. Traffic was counted from 6 am to 6 pm (12 hours). To obtain daily traffic volume, traffic was counted for 24 hours at the Concepcion Bridge Site station. The ratio of traffic volume for 12 hours vs. for 24 hours was obtained as 1.1.

Average Daily Traffic, ADT (September 2000)

| Station | Carge truck | Jeepney | Pick-up | Motor-Tricycle | Motor-bike | Bicycle | Animal drawn | Pedestrian |
|---------------|-------------|---------|---------|----------------|------------|---------|--------------|------------|
| Bagunbayan | 1 | 0 | 8 | 43 | 98 | 17 | 2 | 525 |
| Concepcion | 0 | 1 | 2 | 0 | 91 | 35 | 23 | 931 |
| Sta.Margarita | 0 | 0 | 0 | 0 | 32 | 3 | 60 | 210 |

2. MODAL DISTRIBUTION AND TRAFFIC GENERATION FACTORS

Presently no vehicular traffic is counted at Concepcion and Sta. Margarita Bridge sites due to lack of bridges. To forecast vehicular traffic volumes in the places after roads are improved, traffic generation factors and modal distribution were surveyed at Barangy Bagunbayan (Traffic Count Station No.1) which has a passable access road presently and its socio-economic condition is similar to the Marangog ARC.

In traffic forecasting, it is assumed that passenger and commodity traffics are function of population but of land. The relation between traffic and land is weak since the production from lands without population is little in the project area.

Traffic generation factors and modal distribution are as follows:

Traffic Generation Factors (per population)

| | Passenger | Commodity |
|-----------------------------------|-----------|-------------|
| Area without passable access road | 0.30~0.33 | 3.03~3.80kg |
| Area with passable access road | 0.70 | 7.00 kg |

Modal Distribution (After Road Improvement)

| Mode | Passenger(%) | Commodity(%) |
|----------------|--------------|--------------|
| Cargo Truck | 0 | 24 |
| Jeepney | 0 | 0 |
| Pick-up | 4 | 20 |
| Motor tricycle | 23 | 22 |
| Motorbike | 26 | 33 |
| Bicycle | 1 | 0 |
| Animal drawn | 0 | 1 |
| Pedestrian | 46 | 0 |

3. TRAFFIC FORECAST (CASE: ALL ROADS WILL BE IMPROVED)

Forecasted traffic volumes were obtained by multiplying populations in the influence areas and the generation factors, then multiplied by the modal distribution factors. The calculation of traffic volumes and the population in the influence areas are shown in the following page. The average load of passengers and commodities by type of mode are assumed as follows based on observation. The forecasted average daily traffic (ADT) in case all project roads will be improved are shown as follows:

Average Load of Passengers and Commodities

| Mode | Passenger | Commodities(kg) |
|----------------|-----------|-----------------|
| Carge truck | 5 | 3,000 |
| Jeepney | 10 | 200 |
| Pick-up | 5 | 300 |
| Motor tricycle | 6 | 60 |
| Motorbike | 3 | 40 |
| Bicycle | 1 | 0 |
| Animal drawn | 1 | 50 |
| Pedestrian | 1 | 0 |

Forecasted ADT (Case : All Project Roads will be Improved)

| Station | Carge truck | Jeepney | Pick-up | Motor tricycle | Motor-bike | Bicycle | Animal Drawn | Pedestrian |
|---------------|-------------|---------|---------|----------------|------------|---------|--------------|------------|
| Bagunbayan | 1 | 0 | 8 | 43 | 96 | 11 | 2 | 521 |
| Concepcion | 2 | 0 | 14 | 72 | 162 | 19 | 4 | 879 |
| Sta.Margarita | 0 | 0 | 1 | 6 | 13 | 2 | 0 | 72 |

4. TRAFFIC FORECAST (CASE: CAIMITO-STA.MARGARITA ROAD WILL NOT BE IMPROVED)

Traffic at Sta. Margarita Bridge Site is assumed 100 passenger per day which is composed of secondary school students (30 students) and some farmers. All of the Marangog population is included in the influence area of Concepcion Bridge Site. The ADT at Barangay Tagnate which is located at 3km from Marangog to Concepcion was obtained by

multiplying ADT of Concepcion Bridge Site and the ration of the populations in the influence areas ($1126/2954=0.38$).

Forecasted ADT (Case : Cimito-Sta. Margarita Road will not be Improved)

| Station | Carge truck | Jeepney | Pick-up | Motor tricycle | Motor-bike | Bicycle | Animal Drawn | Pedes-trian |
|---------------|-------------|---------|---------|----------------|------------|---------|--------------|-------------|
| Concepcion | 2 | 0 | 15 | 78 | 175 | 21 | 4 | 949 |
| Sta.Margarita | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Tagnate | 1 | 0 | 6 | 30 | 67 | 8 | 2 | 361 |

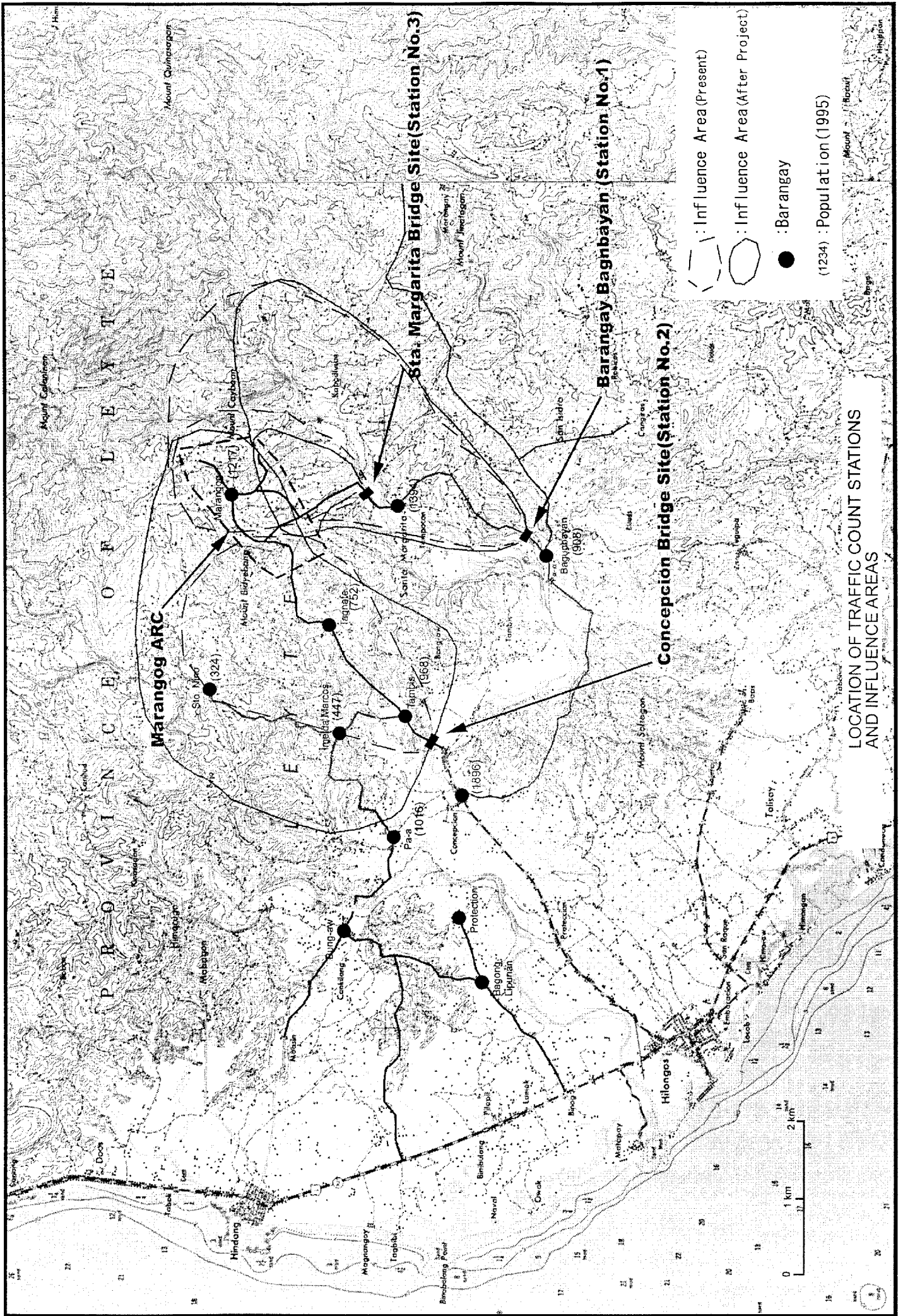
5. TRAFFIC FORECAST OF FARM ROADS IN MARANGOG ARC

In analysis, no vehicular and motor tricycle traffic will be contained along the farm roads since they are narrow and steep. ADT of the roads impassable for vehicles are referred to the present ADT at Sta. Margarita Bridge Site and assumed to be contained by 11 motorbikes, 21 Animal drowns and 40 pedestrians per an influence area of 100 population. Based on the assumption, ADT along the farm roads to be constructed in the Project are forecasted as follows:

Forecasted ADT of Farm Roads in Marangog ARC

| Farm Road | Population | Motorbike | Animal Drawn | Pedes-trian |
|-----------------------------------|------------|-----------|--------------|-------------|
| Marangog Proper-Banban Road | 194 | 21 | 41 | 78 |
| Marangog Propoer-Guintulinan Road | 167 | 18 | 35 | 67 |
| Marangog Propoer-Caimito Road* | 60 | 7 | 13 | 24 |
| JCT.Marangog-Caimito Road** | 156 | 17 | 33 | 62 |

Note: road with* is the case where all requested roads will be improved, while, road ** as the case section from Caimito and Sat. Margarita will not be improved.



TRAFFIC FORECAST

| | | | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian | Total | Traffic / Population |
|----------------------------|--|--------------------|-------------|---------|---------|----------------|------------|---------|--------------|------------|--------|----------------------|
| Passenger per vehicle | | | 5 | 10 | 5 | 6 | 3 | 1 | 1 | 1 | | |
| Commodity per vehicle (kg) | | | 3,000 | 200 | 300 | 60 | 40 | 0 | 50 | 0 | | |
| Present Traffic | Station No.1 Bagunbayan | ADT | 1 | 0 | 8 | 43 | 98 | 17 | 2 | 525 | | |
| | | Passanger (%) | 5 | 0 | 40 | 258 | 294 | 17 | 2 | 525 | 1,141 | 0.64 |
| | | | 0 | 0 | 4 | 23 | 26 | 1 | 0 | 46 | 100 | |
| | | Commodity (kg) (%) | 3,000 | 0 | 2,400 | 2,580 | 3,920 | 0 | 100 | 0 | 12,000 | 6.78 |
| | | | 25 | 0 | 20 | 22 | 33 | 0 | 1 | 0 | 101 | |
| | Station No.2 Conception Bridge Site | ADT | 0 | 1 | 2 | 0 | 91 | 35 | 23 | 931 | | |
| | | Passanger | 0 | 10 | 10 | 0 | 273 | 35 | 23 | 931 | 1,282 | 0.69 |
| | | Commodity (kg) | 0 | 200 | 600 | 0 | 3,640 | 0 | 1,150 | 0 | 5,590 | 3.03 |
| | Station No.3 Sta. Margarita Bridge Site | ADT | 0 | 0 | 0 | 0 | 32 | 3 | 60 | 210 | | |
| | | Passanger | 0 | 0 | 0 | 0 | 96 | 3 | 60 | 210 | 369 | 0.33 |
| | | Commodity (kg) | 0 | 0 | 0 | 0 | 1,280 | 0 | 3,000 | 0 | 4,280 | 3.80 |

Note : Traffic generation factors (0.7 Passenger/Population and 7.0kg Commodity / Population) and present modal distribution of Bagunbayan are applied for forecasting Traffic After Project.

| | | | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian | Total | Traffic / Population |
|-------------------------------------|--|------------|-------------|----------|-----------|----------------|------------|-----------|--------------|------------|--------|----------------------|
| Forecast - ed Traffic After Project | Station | | | | | | | | | | | |
| | Station No.1 Bagunbayan | Passenger | 0 | 0 | 45 | 261 | 295 | 11 | 0 | 521 | 1,133 | 0.70 |
| | | Commodity | 2,833 | 0 | 2,267 | 2,493 | 3,740 | 0 | 113 | 0 | 11,333 | 7.00 |
| | | ADT | 1 | 0 | 8 | 43 | 96 | 11 | 2 | 521 | | |
| | Station No.2 Conception Bridge Site | Passenger | 0 | 0 | 76 | 439 | 497 | 19 | 0 | 879 | 1,910 | 0.70 |
| | | Commodity | 4,776 | 0 | 3,821 | 4,203 | 6,304 | 0 | 191 | 0 | 19,103 | 7.00 |
| | | ADT | 2 | 0 | 14 | 72 | 162 | 19 | 4 | 879 | | |
| | Station No.3 Sta. Margarita Bridge Site | Passenger | 0 | 0 | 6 | 36 | 41 | 2 | 0 | 72 | 158 | 0.70 |
| | | Commodity | 394 | 0 | 315 | 347 | 520 | 0 | 16 | 0 | 1,575 | 7.00 |
| | | ADT | 0 | 0 | 1 | 6 | 13 | 2 | 0 | 72 | | |

Population in Influence Area (1995)

| | | |
|---------------|---|---|
| Present | Station No.1 Bagunbayan | Sta. Margarita (1394) +Marangog/3 (1126/3) : 1769 |
| | Station No.2 Conception Bridge Site | Tagnate (752) + Tambis/2 (968/2) + Marangog/5 (1125/5) + Sto Nino/2 (324/2) + Imalda Marcos/2 (447/2) = 1846 |
| | Station No.3 Sta. Margarita Bridge Site | Marangog (1126) = 1126 |
| After Project | Station No.1 Bagunbayan | Sta. Margarita (1394) +Marangog/5 (1126/5) : 1619 |
| | Station No.2 Conception Bridge Site | Tagnate (752) + Tambis (968) + Marngog*4/5 (1125*4/5) + Sto Nino (324) + Imelda Marcos (447) +Paa/3 (1016/3) = 2729 |
| | Station No.3 Sta. Margarita Bridge Site | Marangog /5 (1126/5) = 225 |

SUMMARY OF TRAFFIC COUNT SURVEY RESULT

| | | | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian |
|-----------------------------|------------|----------------|-------------|----------|----------|----------------|------------|-----------|--------------|------------|
| Stataion No.1 Bagunbayan | Market Day | Hilongos Bound | 4 | 0 | 6 | 28 | 54 | 3 | 0 | 315 |
| | | Mrangog Bound | 3 | 0 | 6 | 29 | 59 | 2 | 0 | 294 |
| | | Total | 7 | 0 | 12 | 57 | 113 | 5 | 0 | 609 |
| | Other Days | Hilongos Bound | 0 | 0 | 4 | 22 | 50 | 9 | 0 | 271 |
| | | Mrangog Bound | 0 | 0 | 3 | 19 | 46 | 10 | 2 | 240 |
| | | Total | 0 | 0 | 7 | 41 | 96 | 19 | 2 | 511 |
| ADT | | | 1 | 0 | 8 | 43 | 98 | 17 | 2 | 525 |

| | | | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian |
|---|------------|----------------|-------------|----------|----------|----------------|------------|-----------|--------------|------------|
| Station No.2 Conception Bridge Site | Market Day | Hilongos Bound | 0 | 2 | 0 | 0 | 80 | 21 | 14 | 795 |
| | | Mrangog Bound | 0 | 2 | 0 | 0 | 80 | 20 | 12 | 789 |
| | | Total | 0 | 4 | 0 | 0 | 160 | 41 | 26 | 1584 |
| | Other Days | Hilongos Bound | 0 | 0 | 1 | 0 | 39 | 17 | 17 | 416 |
| | | Mrangog Bound | 0 | 0 | 1 | 0 | 40 | 17 | 5 | 406 |
| | | Total | 0 | 0 | 2 | 0 | 79 | 34 | 22 | 822 |
| ADT | | | 0 | 1 | 2 | 0 | 91 | 35 | 23 | 931 |

| | | | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian |
|--|------------|----------------|-------------|----------|----------|----------------|------------|----------|--------------|------------|
| Station No.3 Sta Margarita Bridge Site | Market Day | Hilongos Bound | 0 | 0 | 0 | 0 | 14 | 4 | 30 | 44 |
| | | Mrangog Bound | 0 | 0 | 0 | 0 | 19 | 7 | 25 | 78 |
| | | Total | 0 | 0 | 0 | 0 | 33 | 11 | 55 | 122 |
| | Other Days | Hilongos Bound | 0 | 0 | 0 | 0 | 14 | 1 | 32 | 98 |
| | | Mrangog Bound | 0 | 0 | 0 | 0 | 18 | 1 | 29 | 127 |
| | | Total | 0 | 0 | 0 | 0 | 32 | 2 | 61 | 225 |
| ADT | | | 0 | 0 | 0 | 0 | 32 | 3 | 60 | 210 |

TRAFFIC COUNT SURVEY RECORD

Date : September 16, 2000 (Saturday)

Station No.1: Bagunbayan

Surveyor : Rodolfo Leonor Jr.

| Time | Hilongos Bound | | | | | | | Mrangog Bound | | | | | | | | |
|----------------|----------------|---------|---------|----------------|-------------|---------|--------------|---------------|-------------|---------|---------|----------------|-------------|---------|--------------|-------------|
| | Cargo Truck | Jeepney | Pick-up | Motor- Trycyle | Motor- Bike | Bicycle | Animal Drawn | Pedest- rian | Cargo Truck | Jeepney | Pick-up | Motor- Trycyle | Motor- Bike | Bicycle | Animal Drawn | Pedes- rian |
| 6:00 – 7:00 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 13 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 18 |
| 7:00 – 8:00 | 0 | 0 | 0 | 2 | 4 | 1 | 0 | 15 | 0 | 0 | 0 | 2 | 9 | 0 | 0 | 27 |
| 8:00 – 9:00 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 16 | 2 | 0 | 0 | 2 | 2 | 1 | 0 | 32 |
| 9:00 – 10:00 | 1 | 0 | 2 | 3 | 5 | 0 | 0 | 36 | 1 | 0 | 0 | 3 | 6 | 0 | 0 | 26 |
| 10:00 – 11:00 | 1 | 0 | 0 | 2 | 5 | 0 | 0 | 34 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 8 |
| 11:00 – 12:00 | 0 | 0 | 1 | 3 | 3 | 0 | 0 | 28 | 0 | 0 | 1 | 1 | 4 | 0 | 0 | 19 |
| 12:00 – 13:00 | 0 | 0 | 1 | 3 | 4 | 1 | 0 | 25 | 0 | 0 | 2 | 2 | 2 | 0 | 0 | 26 |
| 13:00 – 14:00 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 5 | 0 | 0 | 1 | 2 | 2 | 0 | 0 | 36 |
| 14:00 – 15:00 | 0 | 0 | 0 | 4 | 6 | 0 | 0 | 40 | 0 | 0 | 0 | 5 | 7 | 0 | 0 | 27 |
| 15:00 – 16:00 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 10 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 13 |
| 16:00 – 17:00 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 31 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 21 |
| 17:00 – 18:00 | 0 | 0 | 0 | 3 | 5 | 1 | 0 | 33 | 0 | 0 | 0 | 2 | 4 | 1 | 0 | 14 |
| Total (12 hrs) | 4 | 0 | 5 | 25 | 49 | 3 | 0 | 286 | 3 | 0 | 5 | 25 | 54 | 2 | 0 | 267 |
| Total (24 hrs) | 4 | 0 | 6 | 28 | 54 | 3 | 0 | 315 | 3 | 0 | 6 | 28 | 59 | 2 | 0 | 294 |

Note : Markets in Concepcion open every Saturday. Total (24 hrs) = Total 12 hrs x 1.1

Date : September 18, 2000 (Monday) Station No.1: Bagunbayan

Surveyor : Rodolfo Leonor Jr.

| Time | Hilongos Bound | | | | | | | Mrangog Bound | | | | | | | | |
|----------------|----------------|---------|---------|----------------|-------------|---------|--------------|---------------|-------------|---------|---------|----------------|-------------|---------|--------------|-------------|
| | Cargo Truck | Jeepney | Pick-up | Motor- Trycyle | Motor- Bike | Bicycle | Animal Drawn | Pedest- rian | Cargo Truck | Jeepney | Pick-up | Motor- Trycyle | Motor- Bike | Bicycle | Animal Drawn | Pedes- rian |
| 6:00 – 7:00 | 0 | 0 | 0 | 3 | 2 | 2 | 0 | 24 | 0 | 0 | 0 | 2 | 6 | 0 | 0 | 25 |
| 7:00 – 8:00 | 0 | 0 | 1 | 2 | 11 | 1 | 0 | 42 | 0 | 0 | 0 | 2 | 7 | 2 | 0 | 46 |
| 8:00 – 9:00 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 |
| 9:00 – 10:00 | 0 | 0 | 1 | 2 | 4 | 0 | 0 | 12 | 0 | 0 | 0 | 4 | 3 | 1 | 0 | 18 |
| 10:00 – 11:00 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 11 | 0 | 0 | 1 | 4 | 4 | 1 | 1 | 24 |
| 11:00 – 12:00 | 0 | 0 | 0 | 1 | 3 | 2 | 0 | 22 | 0 | 0 | 1 | 1 | 2 | 1 | 0 | 14 |
| 12:00 – 13:00 | 0 | 0 | 0 | 2 | 3 | 0 | 0 | 11 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 10 |
| 13:00 – 14:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 8 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 7 |
| 14:00 – 15:00 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 4 |
| 15:00 – 16:00 | 0 | 0 | 1 | 1 | 4 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 10 |
| 16:00 – 17:00 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 38 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 12 |
| 17:00 – 18:00 | 0 | 0 | 0 | 5 | 8 | 0 | 0 | 39 | 0 | 0 | 1 | 1 | 3 | 3 | 0 | 47 |
| Total (12 hrs) | 0 | 0 | 4 | 20 | 45 | 8 | 0 | 246 | 0 | 0 | 3 | 17 | 42 | 9 | 2 | 218 |
| Total (24 hrs) | 0 | 0 | 4 | 22 | 50 | 9 | 0 | 271 | 0 | 0 | 3 | 19 | 46 | 10 | 2 | 240 |

Note : Markets in Conception open every Saturday. Total (12 hrs) x 1.1 = Total (24 hrs)

TRAFFIC COUNT SURVEY RECORD

Date : September 16, 2000 (Saturday) Station No.2 : Conception Bridge Site Surveyor : Ramon S. Jelmonte

| Time | Hilongos Bound | | | | | | | Mrangog Bound | | | | | | | | |
|---------------|----------------|----------|----------|----------------|------------|-----------|--------------|---------------|-------------|----------|----------|----------------|------------|-----------|--------------|------------|
| | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian | Cargo Truck | Jeepney | Pick-up | Motor-Tricycle | Motor-Bike | Bicycle | Animal Drawn | Pedestrian |
| 5:00 – 6:00 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 19 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 15 |
| 6:00 – 7:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 40 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 12 |
| 7:00 – 8:00 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 75 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 33 |
| 8:00 – 9:00 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 78 | 0 | 0 | 0 | 0 | 10 | 1 | 0 | 36 |
| 9:00 – 10:00 | 0 | 0 | 0 | 0 | 8 | 2 | 2 | 80 | 0 | 1 | 0 | 0 | 13 | 3 | 0 | 59 |
| 10:00 – 11:00 | 0 | 1 | 0 | 0 | 15 | 6 | 3 | 127 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 33 |
| 11:00 – 12:00 | 0 | 0 | 0 | 0 | 7 | 1 | 4 | 76 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 35 |
| 12:00 – 13:00 | 0 | 0 | 0 | 0 | 7 | 2 | 1 | 74 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 26 |
| 13:00 – 14:00 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 37 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 46 |
| 14:00 – 15:00 | 0 | 0 | 0 | 0 | 8 | 1 | 0 | 74 | 0 | 1 | 0 | 0 | 6 | 2 | 1 | 57 |
| 15:00 – 16:00 | 0 | 1 | 0 | 0 | 6 | 1 | 0 | 42 | 0 | 0 | 0 | 0 | 10 | 1 | 2 | 105 |
| 16:00 – 17:00 | 0 | 0 | 0 | 0 | 10 | 2 | 0 | 47 | 0 | 0 | 0 | 0 | 10 | 1 | 4 | 123 |
| 17:00 – 18:00 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 14 | 0 | 0 | 0 | 0 | 5 | 3 | 2 | 94 |
| 18:00 – 19:00 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 115 |
| Total | 0 | 2 | 0 | 0 | 80 | 21 | 14 | 795 | 0 | 2 | 0 | 0 | 80 | 20 | 12 | 789 |

Note : Markets in Conception open every Saturday. Total (5:00–19:00)/Total (6:00–18:00) =1.1

TRAFFIC COUNT SURVEY RECORD

Date : September 18, 2000 (Monday) Station No.2 : Conception Bridge Site Surveyor : Ramon S. Jelmonte

| Time | Hilongos Bound | | | | | | | Mrangog Bound | | | | | | | | |
|---------------|----------------|----------|----------|-----------------|-------------|-----------|--------------|---------------|-------------|----------|----------|-----------------|-------------|-----------|--------------|--------------|
| | Cargo Truck | Jeepney | Pick-up | Motor- Trycycle | Motor- Bike | Bicycle | Animal Drawn | Pedest- rian | Cargo Truck | Jeepney | Pick-up | Motor- Trycycle | Motor- Bike | Bicycle | Animal Drawn | Pedest- rian |
| 5:00 – 6:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 6:00 – 7:00 | 0 | 0 | 0 | 0 | 2 | 5 | 5 | 62 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 6 |
| 7:00 – 8:00 | 0 | 0 | 0 | 0 | 5 | 2 | 2 | 89 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 7 |
| 8:00 – 9:00 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 25 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 7 |
| 9:00 – 10:00 | 0 | 0 | 0 | 0 | 6 | 3 | 3 | 46 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 10 |
| 10:00 – 11:00 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 3 | 1 | 2 | 29 |
| 11:00 – 12:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 21 |
| 12:00 – 13:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 26 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 15 |
| 13:00 – 14:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 4 |
| 14:00 – 15:00 | 0 | 0 | 0 | 0 | 4 | 2 | 2 | 24 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 20 |
| 15:00 – 16:00 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 23 |
| 16:00 – 17:00 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 17 | 0 | 0 | 0 | 0 | 4 | 5 | 0 | 125 |
| 17:00 – 18:00 | 0 | 0 | 0 | 0 | 2 | 3 | 3 | 19 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 95 |
| 18:00 – 19:00 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 19 | 0 | 0 | 1 | 0 | 6 | 1 | 0 | 43 |
| Total | 0 | 0 | 1 | 0 | 39 | 17 | 17 | 416 | 0 | 0 | 1 | 0 | 40 | 17 | 5 | 406 |

Note : Total (5:00–19:00)/Total (6:00–18:00) =1.1

TRAFFIC COUNT SURVEY RECORD

Date : September 16, 2000 (Saturday)

Station No.3 : Sta. Margarita Bridge Site

Surveyor : Lelis

| Time | Hilongos Bound | | | | | | | Mrangog Bound | | | | | | | | |
|-----------------------|----------------|----------|----------|-----------------|-------------|----------|--------------|---------------|-------------|----------|----------|-----------------|-------------|----------|--------------|-------------|
| | Cargo Truck | Jeepney | Pick-up | Motor- Trycycle | Motor- Bike | Bicycle | Animal Drawn | Pedest- rian | Cargo Truck | Jeepney | Pick-up | Motor- Trycycle | Motor- Bike | Bicycle | Animal Drawn | Pedes- rian |
| 6:00 – 7:00 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 7:00 – 8:00 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 1 |
| 8:00 – 9:00 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 |
| 9:00 – 10:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 10:00 – 11:00 | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 4 |
| 11:00 – 12:00 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 1 | 7 |
| 12:00 – 13:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 12 |
| 13:00 – 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 |
| 14:00 – 15:00 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 6 | 0 | 0 | 0 | 0 | 5 | 0 | 5 | 14 |
| 15:00 – 16:00 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 15 |
| 16:00 – 17:00 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| 17:00 – 18:00 | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 7 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 11 |
| Total (12 hrs) | 0 | 0 | 0 | 0 | 13 | 4 | 27 | 40 | 0 | 0 | 0 | 0 | 17 | 6 | 23 | 71 |
| Total (24 hrs) | 0 | 0 | 0 | 0 | 14 | 4 | 30 | 44 | 0 | 0 | 0 | 0 | 19 | 7 | 25 | 78 |

Note : Markets in Concepcion open every Saturday.

Total (12 hrs) x 1.1 = Total (24 hrs)

TRAFFIC COUNT SURVEY RECORD

Date : September 18, 2000 (Monday) Station No.3 : Sta. Margarita Bridge Site

Surveyor : Lelis

| Time | Hilongos Bound | | | | | | | Mrangog Bound | | | | | | | | |
|----------------|----------------|---------|---------|--------------------|----------------|---------|-----------------|-----------------|----------------|---------|---------|--------------------|----------------|---------|-----------------|-----------------|
| | Cargo Truck | Jeepney | Pick-up | Motor- Tricycle | Motor- Bike | Bicycle | Animal Drawn | Pedest- rian | Cargo Truck | Jeepney | Pick-up | Motor- Tricycle | Motor- Bike | Bicycle | Animal Drawn | Pedes- trian |
| 6:00 – 7:00 | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 28 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 6 |
| 7:00 – 8:00 | 0 | 0 | 0 | 0 | 3 | 0 | 4 | 18 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| 8:00 – 9:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 6 | |
| 9:00 – 10:00 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 7 | |
| 10:00 – 11:00 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 1 | 0 | 3 | 5 | |
| 11:00 – 12:00 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | |
| 12:00 – 13:00 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | |
| 13:00 – 14:00 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | |
| 14:00 – 15:00 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | |
| 15:00 – 16:00 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 8 | 0 | 0 | 0 | 1 | 0 | 3 | 15 | |
| 16:00 – 17:00 | 0 | 0 | 0 | 0 | 2 | 0 | 3 | 7 | 0 | 0 | 0 | 3 | 0 | 5 | 20 | |
| 17:00 – 18:00 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 13 | 0 | 0 | 0 | 4 | 0 | 1 | 47 | |
| Total (12 hrs) | 0 | 0 | 0 | 0 | 13 | 1 | 29 | 89 | 0 | 0 | 0 | 16 | 1 | 26 | 115 | |
| Total (24 hrs) | 0 | 0 | 0 | 0 | 14 | 1 | 32 | 98 | 0 | 0 | 0 | 18 | 1 | 29 | 127 | |

Note : Markets in Conception open every Saturday. Total (12 hrs) x 1.1 = Total (24 hrs)

7. Results of Water Examination

Table 1-1 Water Examination in Marangog Area

| No. | Item | Water Quality Standard in Philippines (mg/L) | Sampling Point | | | | | (Village, New/Existing Water Resource) | | | |
|-----|-------------------------------|--|----------------|--------------|--------------|--------------|--------------|--|--------------------------|---------------------|--|
| | | | BH-1 | BH-2 | BH-3 | BH-4 | BH-5 | Silae Water Tank | Silae New Water Resource | Daractan Water Tank | |
| 1 | pH | 6.5 – 8.5 | 8.2 | 8.4 | 8.5 | 7.7 | 9.1 | 8.5 | 8.4 | 8.5 | |
| 2 | Alkalinity | — | 175 | 195 | 135 | 110 | 170 | 180 | 388 | 170 | |
| 3 | Turbidity | 5 NTU | 16 | — | 75 | 24 | 127 | 1.5 | 1 | 1 | |
| 4 | Dissolved Evaporated Residue | — | 128 | 13 | 78 | 94 | 63 | 17 | 42 | 69 | |
| 5 | Total Solids (TS) | 500 | 252 | 277 | 202 | 168 | 241 | 247 | 248 | 243 | |
| 6 | Chloride | 250 | 12 | 12 | 14 | 10 | 10 | 10 | 10 | 14 | |
| 7 | SO ₄ ²⁻ | 250 | 4 | 4 | 9 | 2 | 6 | 1 | 1 | 1 | |
| 8 | NO ₃ ⁻ | 50 | not detected | 3 | 1 | 2 | 1 | 7 | 7 | 2 | |
| 9 | Total Hardness | 300 | 190 | 203 | 150 | 124 | 200 | 178 | 178 | 173 | |
| 10 | Hardness | — | 90 | 108 | 80 | 50 | 130 | 100 | 100 | 95 | |
| 11 | Na | 200 | 4 | 13 | 8 | 2 | 6 | 3 | 10 | 3 | |
| 12 | K | — | 2 | 5 | 3 | 1 | 2 | 1 | 2 | 2 | |
| 13 | Mg | — | 24 | 23 | 17 | 18 | 17 | 19 | 19 | 19 | |
| 14 | Ca | — | 36 | 43 | 32 | 20 | 2 | 40 | 40 | 38 | |
| 15 | F | 1.0 | 0.1 | 0.08 | not detected | 0.04 | not detected | 0.09 | 0.09 | 0.12 | |
| 16 | Total Fe | 1.0 | 0.8 | 1.6 | 3.5 | 0.8 | 7.5 | 0.2 | 0.2 | not detected | |
| 17 | Si | — | 35 | 17 | 18 | 22 | 13 | 20 | 11 | 13.0 | |
| 18 | Mn | 0.5 | 0.05 | 0.1 | 0.1 | 0.05 | 0.15 | not detected | not detected | not detected | |
| 19 | Coliforms (24h) | — | 5 | 5 | 3 | 5 | 4 | 5 | 5 | 5 | |
| 20 | Coliforms (72h) | — | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| 21 | Fecal Coliforms | 0 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | |
| 22 | As | 0.01 | not detected | not detected | not detected | not detected | not detected | not detected | not detected | not detected | |
| 23 | Hg | 0.001 | not detected | not detected | not detected | not detected | not detected | not detected | not detected | not detected | |
| 24 | Cd | 0.003 | not detected | not detected | not detected | not detected | not detected | not detected | not detected | not detected | |

* quoted from Basic Design Study Team

Table 1-1 Water Examination in Marangog Area


| No. | Item | Water Quality Standard in Philippines (mg/L) | Sampling Point (Village, New/Existing Water Resource) | | |
|-----|-------------------------------|--|---|--------------|--------------|
| | | | Proper Existing | Iba New | Banban New |
| 1 | pH | 6.5 – 8.5 | 7.6 | 7.8 | 7.6 |
| 2 | Alkalinity | — | 345 | 321 | 311 |
| 3 | Turbidity | 5 NTU | 0.1 | 0.1 | 0.1 |
| 4 | Dissolved Evaporated Residue | — | 300 | 300 | 310 |
| 5 | Total Solids (TS) | 500 | 240 | 240 | 253 |
| 6 | Chloride | 250 | 7 | 7 | 7 |
| 7 | SO ₄ ²⁻ | 250 | not detected | not detected | not detected |
| 8 | NO ₃ ⁻ | 50 | not detected | not detected | not detected |
| 9 | Total Hardness | 300 | 342 | 318 | 319 |
| 10 | Hardness | — | 328 | 298 | 291 |
| 11 | Na | 200 | 3.6 | 3.5 | 3.2 |
| 12 | K | — | 0.56 | 0.44 | 0.71 |
| 13 | Mg | — | 7.3 | 7.3 | 36.6 |
| 14 | Ca | — | 124 | 124 | 76 |
| 15 | F | 1.0 | 0.2 | 0.2 | 0.2 |
| 16 | Total Fe | 1.0 | 0.02 | 0.02 | 0.02 |
| 17 | Si | — | 20.4 | 20.9 | 15.0 |
| 18 | Mn | 0.5 | not detected | not detected | not detected |
| 19 | Coliforms (24h) | — | 20 | 27 | a lot |
| 20 | Coliforms (72h) | — | a lot | a lot | a lot |
| 21 | Fecal Coliforms | 0 | 1 | 0 | a lot |
| 22 | As | 0.01 | not detected | not detected | not detected |
| 23 | Hg | 0.001 | not detected | not detected | not detected |
| 24 | Cd | 0.003 | not detected | not detected | not detected |

* quoted from Basic Design Study Team

8. Check List of Environment (1)

| Environmental Issues | Activities of Construction | 2. Farm-to-market Road Development Plan | | | 3. Post Harvest Development | | 4. Rural Development | | 5. Farmers' Organization Development Plan | 8. Management Capability Building Plan |
|---|----------------------------|---|----------------------|----------------------|-----------------------------|-----------------------------|---------------------------|-----------------------------|---|--|
| | | 1. Agriculture Development Plan | Construction of FTMR | Construction bridges | Rehabilitation of roads | Construction of solar dryer | Construction of warehouse | Construction of solar dryer | | |
| I. Socio-economic Environment | | | | | | | | | | |
| 1. Social Life | | | | | | | | | | |
| (1) Living | | | | | | | | | | |
| - Planned resettlement | | | | | | | | | | |
| - Non-spontaneous resettlement | | C | C | C | C | C | C | C | | |
| - Change in life style | C | C | C | C | C | C | C | C | C | |
| - Friction among inhabitants | C | C | C | C | C | C | C | C | C | |
| - Indigenous people / Minority / Nomad | | | | | | | | | | |
| (2) Population | | | | | | | | | | |
| - Population increase | | | | | | | | | | |
| - Sudden change in population composition | | | | | | | | | | |
| (3) Economic activities | | | | | | | | | | |
| - Shift of economic activity base | C | C | C | C | C | C | C | C | C | |
| - Shift in / economic activities unemployment | C | C | C | C | C | C | C | C | C | |
| - Expansion of economic gap | B | C | C | C | C | C | C | C | B | |
| (4) Institution / Custom | | | | | | | | | | |
| - Resettlement of water right / fishery right | | | | | | | | | | |
| - Change in social structure (e.g. organization) | C | C | C | C | C | C | C | C | B | |
| - Restructuring of existing system / custom | C | C | C | C | C | C | C | C | B | |
| 2. Health / Sanitation | | | | | | | | | | |
| - Increase in pesticide use | C | | | | | | | | | |
| - Outbreak of endemic disease | C | C | C | C | C | C | C | C | | |
| - Spread of infectious illness | C | C | C | C | C | C | C | C | | |
| - Accumulation of residual toxic (e.g. pesticides) | | | | | | | | | | |
| - Increase in waste / excrement | | | | | | | | | | |
| 3. Historic spot / Cultural heritage / Scenery | | | | | | | | | | |
| - Damage and destruction of historic spot / cultural heritage | | C | C | C | C | C | C | C | | |
| - Loss in important landscape or scenery | C | C | C | C | C | C | C | C | | |
| - Impact to buried cultural assets | | C | C | C | C | C | C | C | | |


Note: A)major impact B) small impact C) expected that serious impact will not occurred or not clear

 : not applicable

8. Check List of Environment (2)

| Environmental Issues | Activities of Construction | 2. Farm-to-market Road Development Plan | | | 3. Post Harvest Development | | 4. Rural Development | | 5. Farmers' Organization Development Plan | 8. Management Capability Building Plan |
|--|----------------------------|---|----------------------|----------------------|-----------------------------|-----------------------------|---------------------------|-----------------------------|---|--|
| | | 1. Agriculture Development Plan | Construction of FTMR | Construction bridges | Rehabilitation of roads | Construction of solar dryer | Construction of warehouse | Construction of solar dryer | | |
| II. Natural Environment | | | | | | | | | | |
| 4. Valuable life / ecological area | | | | | | | | | | |
| - Change in vegetation | C | C | C | C | C | C | C | C | | |
| - Impact to scarce or specific animal or plant species | | | | | | | | | | |
| - Diversity of species | C | C | C | C | C | C | C | C | | |
| - Penetration / Propagation of a harmful life | C | | | | C | C | C | C | | |
| - Extinction of wetland / peat bog | | | | | | | | | | |
| - Extinction of tropical forest / wild land | | | | | | | | | | |
| - Destruction of mangrove forest | | | | | | | | | | |
| - Destruction of coral reef | | | | | | | | | | |
| 5. Soil / Land | | | | | | | | | | |
| (1) Soil | | | | | | | | | | |
| - Soil erosion | C | | | | | | | | | |
| - Salinization of soil | C | | | | | | | | | |
| - Fall in soil fertility | C | | | | | | | | | |
| - Soil contamination | C | C | C | C | | | | | | |
| (2) Land | | | | | | | | | | |
| - Land degradation (including desertification) | C | C | C | C | | | | | | |
| - Hinterland degradation | C | C | C | C | | | | | | |
| - Land subsidence | C | C | C | C | C | C | | | | |
| 6. Hydrology / Water quality | | | | | | | | | | |
| (1) Hydrology | | | | | | | | | | |
| - Change in surface runoff | C | C | C | C | C | C | | | | |
| - Change in groundwater runoff / level | C | C | C | C | C | C | | | | |
| - Inundation / Flood | C | C | | | C | C | | | | |
| - Soil deposit | C | | | | C | C | | | | |
| - Fall in riverbed | | | | | | | | | | |
| - Shipping | | | | | | | | | | |
| (2) Water quality / Water temperature | | | | | | | | | | |
| - Water pollution / degradation | C | C | C | C | C | C | | | | |
| - Eutrophication | C | C | C | C | C | C | | | | |
| - Change in salt-water | | | | | | | | | | |
| - Change in water temperature | C | C | C | C | C | C | | | | |
| (3) The air | | | | | | | | | | |
| - Air pollution | C | C | C | C | C | C | | | | |

Note: A)major impact B) small impact C) expected that serious impact will not occurred or not clear

 : not applicable

9. Reference

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