## TABLE 5.9 O/D OF FISHERY PRODUCTS IN ZONE 3, (1995)

UNIT : Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 2,449 | 304 | 0 | 0 | 2,752 | 0 | 0 | 0 | 0 | 2,752 |
| | | Broker | 3,732 | 6,831 | 29 | 0 | 10,592 | 0 | 0 | 0 | 0 | 10,592 |
| | | Viajeros | 0 | 362 | 854 | 87 | 1,303 | 0 | 0 | 0 | 0 | 1,303 |
| | | S-total | 6,181 | 7,497 | 883 | 87 | 14,647 | 0 | 0 | 0 | 0 | 14,647 |
| | Process | | 94 | 3,867 | 18 | 0 | 3,979 | 0 | 0 | 0 | 0 | 3,979 |
| | Total | | 6,275 | 11,364 | 901 | 87 | 18,626 | 0 | 0 | 0 | 0 | 18,626 |
| B | Fresh | Producer | 2,992 | 133 | 576 | 0 | 3,701 | 0 | 0 | 0 | 0 | 3,701 |
| | | Broker | 2,388 | 1,569 | 6,286 | 0 | 10,243 | 0 | 0 | 0 | 0 | 10,243 |
| | | Viajeros | 0 | 210 | 2,957 | 28 | 3,195 | 0 | 0 | 0 | 0 | 3,195 |
| | | S-total | 5,380 | 1,912 | 9,820 | 28 | 17,140 | 0 | 0 | 0 | 0 | 17,140 |
| | Process | | 266 | 345 | 49 | 0 | 659 | 0 | 0 | 0 | 0 | 659 |
| | Total | | 5,646 | 2,256 | 9,869 | 28 | 17,799 | 0 | 0 | 0 | 0 | 17,799 |
| C | Fresh | Producer | 1,210 | 398 | 190 | 0 | 1,799 | 0 | 0 | 0 | 0 | 1,799 |
| | | Broker | 932 | 631 | 3,678 | 0 | 5,241 | 0 | 0 | 0 | 0 | 5,241 |
| | | Viajeros | 0 | 35 | 1,609 | 93 | 1,737 | 0 | 0 | 0 | 0 | 1,737 |
| | | S-total | 2,143 | 1,064 | 5,477 | 93 | 8,777 | 0 | 0 | 0 | 0 | 8,777 |
| | Process | | 0 | 15 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 15 |
| | Total | | 2,143 | 1,080 | 5,477 | 93 | 8,792 | 0 | 0 | 0 | 0 | 8,792 |
| D | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | Fresh | Producer | 33 | 0 | 0 | 0 | 33 | 900 | 0 | 0 | 900 | 933 |
| | | Broker | 34 | 0 | 0 | 0 | 34 | 680 | 0 | 0 | 680 | 714 |
| | | Viajeros | 0 | 92 | 0 | 18 | 110 | 0 | 956 | 2,336 | 3,292 | 3,402 |
| | | S-total | 67 | 92 | 0 | 18 | 177 | 1,580 | 956 | 2,336 | 4,872 | 5,049 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 67 | 92 | 0 | 18 | 177 | 1,580 | 956 | 2,336 | 4,872 | 5,049 |
| F | Fresh | Producer | 2,606 | 327 | 2,649 | 0 | 5,582 | 0 | 0 | 0 | 0 | 5,582 |
| | | Broker | 405 | 3,988 | 10,684 | 0 | 15,077 | 0 | 0 | 0 | 0 | 15,077 |
| | | Viajeros | 0 | 0 | 13,094 | 0 | 13,094 | 0 | 0 | 0 | 0 | 13,094 |
| | | S-total | 3,012 | 4,315 | 26,427 | 0 | 33,753 | 0 | 0 | 0 | 0 | 33,753 |
| | Process | | 3 | 24 | 1 | 0 | 28 | 0 | 0 | 0 | 0 | 28 |
| | Total | | 3,014 | 4,339 | 26,428 | 0 | 33,781 | 0 | 0 | 0 | 0 | 33,781 |
| G | Fresh | Producer | 277 | 0 | 0 | 0 | 277 | 0 | 0 | 0 | 0 | 277 |
| | | Broker | 87 | 683 | 109 | 0 | 879 | 0 | 0 | 0 | 0 | 879 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 364 | 683 | 109 | 0 | 1,156 | 0 | 0 | 0 | 0 | 1,156 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 364 | 683 | 109 | 0 | 1,156 | 0 | 0 | 0 | 0 | 1,156 |
| Other | | | 1,652 | 4,078 | 0 | 0 | 5,730 | 0 | 0 | 0 | 0 | 5,730 |
| Grand total | | | 19,160 | 23,891 | 42,783 | 226 | 86,061 | 1,580 | 956 | 2,336 | 4,872 | 90,933 |

## TABLE 5.10 O/D OF FISHERY PRODUCTS IN ZONE 3, (2010)

UNIT : Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 3,405 | 1,547 | 0 | 0 | 4,952 | 0 | 0 | 0 | 0 | 4,952 |
| | | Broker | 5,715 | 13,289 | 52 | 0 | 19,056 | 0 | 0 | 0 | 0 | 19,056 |
| | | Viajeros | 0 | 651 | 1,536 | 156 | 2,343 | 0 | 0 | 0 | 0 | 2,343 |
| | | S-total | 9,120 | 15,487 | 1,588 | 156 | 26,351 | 0 | 0 | 0 | 0 | 26,351 |
| | Process | | 169 | 6,956 | 32 | 0 | 7,157 | 0 | 0 | 0 | 0 | 7,157 |
| | Total | | 9,289 | 22,443 | 1,621 | 156 | 33,509 | 0 | 0 | 0 | 0 | 33,508 |
| B | Fresh | Producer | 4,646 | 250 | 2,088 | 0 | 6,984 | 0 | 0 | 0 | 0 | 6,985 |
| | | Broker | 3,508 | 2,960 | 12,864 | 0 | 19,332 | 0 | 0 | 0 | 0 | 19,332 |
| | | Viajeros | 0 | 397 | 5,580 | 53 | 6,031 | 0 | 0 | 0 | 0 | 6,031 |
| | | S-total | 8,154 | 3,608 | 20,532 | 53 | 32,347 | 0 | 0 | 0 | 0 | 32,348 |
| | Process | | 501 | 651 | 92 | 0 | 1,244 | 0 | 0 | 0 | 0 | 1,244 |
| | Total | | 8,655 | 4,258 | 20,625 | 53 | 33,591 | 0 | 0 | 0 | 0 | 33,592 |
| C | Fresh | Producer | 1,893 | 922 | 445 | 0 | 3,260 | 0 | 0 | 0 | 0 | 3,260 |
| | | Broker | 1,525 | 1,143 | 6,830 | 0 | 9,498 | 0 | 0 | 0 | 0 | 9,497 |
| | | Viajeros | 0 | 64 | 2,915 | 168 | 3,148 | 0 | 0 | 0 | 0 | 3,148 |
| | | S-total | 3,418 | 2,129 | 10,190 | 168 | 15,906 | 0 | 0 | 0 | 0 | 15,905 |
| | Process | | 0 | 28 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 28 |
| | Total | | 3,418 | 2,157 | 10,190 | 168 | 15,934 | 0 | 0 | 0 | 0 | 15,933 |
| D | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| E | Fresh | Producer | 39 | 0 | 0 | 0 | 39 | 1,080 | 0 | 0 | 1,080 | 1,119 |
| | | Broker | 41 | 0 | 0 | 0 | 41 | 816 | 0 | 0 | 816 | 857 |
| | | Viajeros | 0 | 110 | 0 | 22 | 132 | 0 | 1,148 | 2,804 | 3,952 | 4,084 |
| | | S-total | 80 | 110 | 0 | 22 | 212 | 1,897 | 1,148 | 2,804 | 5,848 | 6,061 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 80 | 110 | 0 | 22 | 212 | 1,897 | 1,148 | 2,804 | 5,848 | 6,060 |
| F | Fresh | Producer | 2,628 | 393 | 3,679 | 0 | 6,700 | 0 | 0 | 0 | 0 | 6,700 |
| | | Broker | 487 | 4,787 | 12,824 | 0 | 18,097 | 0 | 0 | 0 | 0 | 18,097 |
| | | Viajeros | 0 | 0 | 15,717 | 0 | 15,717 | 0 | 0 | 0 | 0 | 15,717 |
| | | S-total | 3,115 | 5,180 | 32,220 | 0 | 40,514 | 0 | 0 | 0 | 0 | 40,515 |
| | Process | | 3 | 29 | 1 | 0 | 33 | 0 | 0 | 0 | 0 | 33 |
| | Total | | 3,118 | 5,208 | 32,221 | 0 | 40,548 | 0 | 0 | 0 | 0 | 40,548 |
| G | Fresh | Producer | 333 | 0 | 0 | 0 | 333 | 0 | 0 | 0 | 0 | 333 |
| | | Broker | 104 | 820 | 131 | 0 | 1,055 | 0 | 0 | 0 | 0 | 1,055 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 437 | 820 | 131 | 0 | 1,388 | 0 | 0 | 0 | 0 | 1,388 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 437 | 820 | 131 | 0 | 1,388 | 0 | 0 | 0 | 0 | 1,388 |
| Other | | | 460 | 1,135 | 0 | 0 | 1,595 | 0 | 0 | 0 | 0 | 1,595 |
| Grand total | | | 25,457 | 36,132 | 64,788 | 400 | 126,777 | 1,897 | 1,148 | 2,804 | 5,848 | 132,624 |

## TABLE 5.11 O/D OF FISHERY PRODUCTS IN ZONE 6, (1986)

UNIT : Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 269 | 90 | 0 | 0 | 359 | 0 | 0 | 0 | 0 | 359 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 269 | 90 | 0 | 0 | 359 | 0 | 0 | 0 | 0 | 359 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 269 | 90 | 0 | 0 | 359 | 0 | 0 | 0 | 0 | 359 |
| B | Fresh | Producer | 2,483 | 189 | 0 | 0 | 2,672 | 0 | 0 | 0 | 0 | 2,672 |
| | | Broker | 11,563 | 18,281 | 0 | 0 | 29,843 | 0 | 0 | 0 | 0 | 29,843 |
| | | Viajeros | 0 | 20,497 | 0 | 0 | 20,497 | 0 | 0 | 0 | 0 | 20,497 |
| | | S-total | 14,046 | 38,966 | 0 | 0 | 53,012 | 0 | 0 | 0 | 0 | 53,012 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 14,046 | 38,966 | 0 | 0 | 53,012 | 0 | 0 | 0 | 0 | 53,012 |
| C | Fresh | Producer | 38 | 1 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 39 |
| | | Broker | 703 | 117 | 0 | 0 | 820 | 0 | 0 | 0 | 0 | 820 |
| | | Viajeros | 0 | 131 | 0 | 0 | 131 | 0 | 0 | 0 | 0 | 131 |
| | | S-total | 741 | 249 | 0 | 0 | 990 | 0 | 0 | 0 | 0 | 990 |
| | Process | | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 |
| | Total | | 741 | 249 | 0 | 0 | 990 | 0 | 0 | 0 | 0 | 990 |
| D | Fresh | Producer | 34 | 765 | 0 | 0 | 798 | 0 | 0 | 0 | 0 | 798 |
| | | Broker | 2,128 | 8,857 | 0 | 0 | 10,986 | 1,486 | 0 | 0 | 1,486 | 12,472 |
| | | Viajeros | 0 | 1,152 | 0 | 0 | 1,152 | 0 | 350 | 0 | 350 | 1,502 |
| | | S-total | 2,162 | 10,774 | 0 | 0 | 12,936 | 1,486 | 350 | 0 | 1,836 | 14,772 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 9,322 | 0 | 0 | 9,322 | 9,322 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 1,148 | 0 | 0 | 1,148 | 1,148 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 10,470 | 0 | 0 | 10,470 | 10,470 |
| | Total | | 2,162 | 10,774 | 0 | 0 | 12,936 | 11,956 | 350 | 0 | 12,306 | 25,242 |
| E | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 316 | 106 | 0 | 0 | 422 | 0 | 0 | 0 | 0 | 422 |
| | | S-total | 316 | 106 | 0 | 0 | 422 | 0 | 0 | 0 | 0 | 422 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 316 | 106 | 0 | 0 | 422 | 0 | 0 | 0 | 0 | 422 |
| G | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 8 | 3 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 |
| | | S-total | 8 | 3 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 8 | 3 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 11 |
| Other | | | 10 | 4 | | | 14 | | | | | 14 |
| Grand total | | | 17,552 | 50,192 | 0 | 0 | 67,744 | 11,956 | 350 | 0 | 12,306 | 80,050 |

## TABLE 5.12 O/D OF FISHERY PRODUCTS IN ZONE 6, (1995)

UNIT : Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 357 | 99 | 0 | 0 | 456 | 0 | 0 | 0 | 0 | 456 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 357 | 99 | 0 | 0 | 456 | 0 | 0 | 0 | 0 | 456 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 357 | 99 | 0 | 0 | 456 | 0 | 0 | 0 | 0 | 456 |
| B | Fresh | Producer | 3,301 | 236 | 0 | 0 | 3,536 | 0 | 0 | 0 | 0 | 3,536 |
| | | Broker | 15,368 | 22,849 | 0 | 0 | 38,217 | 0 | 0 | 0 | 0 | 38,217 |
| | | Viajeros | 0 | 25,620 | 0 | 0 | 25,620 | 0 | 0 | 0 | 0 | 25,620 |
| | | S-total | 18,668 | 48,705 | 0 | 0 | 67,373 | 0 | 0 | 0 | 0 | 67,373 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 18,668 | 48,705 | 0 | 0 | 67,373 | 0 | 0 | 0 | 0 | 67,373 |
| C | Fresh | Producer | 50 | 17 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 67 |
| | | Broker | 934 | 256 | 0 | 0 | 1,190 | 0 | 0 | 0 | 0 | 1,190 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 985 | 273 | 0 | 0 | 1,258 | 0 | 0 | 0 | 0 | 1,258 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 985 | 273 | 0 | 0 | 1,258 | 0 | 0 | 0 | 0 | 1,258 |
| D | Fresh | Producer | 23 | 490 | 0 | 0 | 512 | 0 | 0 | 0 | 0 | 512 |
| | | Broker | 1,438 | 5,669 | 0 | 0 | 7,107 | 4,692 | 0 | 0 | 4,692 | 11,799 |
| | | Viajeros | 0 | 737 | 0 | 0 | 737 | 0 | 435 | 0 | 435 | 1,172 |
| | | S-total | 1,461 | 6,896 | 0 | 0 | 8,357 | 4,692 | 435 | 0 | 5,127 | 13,484 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 16,698 | 0 | 0 | 16,698 | 16,698 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 1,898 | 0 | 0 | 1,898 | 1,898 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 18,596 | 0 | 0 | 18,596 | 18,596 |
| | Total | | 1,461 | 6,896 | 0 | 0 | 8,357 | 23,288 | 435 | 0 | 23,723 | 32,080 |
| E | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 21 | 6 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 27 |
| | | S-total | 21 | 6 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 27 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 21 | 6 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 27 |
| F | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 637 | 177 | 0 | 0 | 814 | 0 | 0 | 0 | 0 | 814 |
| | | S-total | 637 | 177 | 0 | 0 | 814 | 0 | 0 | 0 | 0 | 814 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 637 | 177 | 0 | 0 | 814 | 0 | 0 | 0 | 0 | 814 |
| G | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 16 | 5 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 21 |
| | | S-total | 16 | 5 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 21 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 16 | 5 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 21 |
| Other | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand total | | | 22,145 | 56,161 | 0 | 0 | 78,306 | 23,288 | 435 | 0 | 23,723 | 102,029 |

TABLE 5.13 O/D OF FISHERY PRODUCTS IN ZONE 6, (2010)

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 453 | 126 | 0 | 0 | 579 | 0 | 0 | 0 | 0 | 579 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 453 | 126 | 0 | 0 | 579 | 0 | 0 | 0 | 0 | 579 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 453 | 126 | 0 | 0 | 579 | 0 | 0 | 0 | 0 | 579 |
| B | Fresh | Producer | 4,160 | 297 | 0 | 0 | 4,458 | 0 | 0 | 0 | 0 | 4,458 |
| | | Broker | 19,371 | 28,802 | 0 | 0 | 48,173 | 0 | 0 | 0 | 0 | 48,173 |
| | | Viajeros | 0 | 32,294 | 0 | 0 | 32,294 | 0 | 0 | 0 | 0 | 32,294 |
| | | S-total | 23,532 | 61,393 | 0 | 0 | 84,925 | 0 | 0 | 0 | 0 | 84,925 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 23,532 | 61,393 | 0 | 0 | 84,925 | 0 | 0 | 0 | 0 | 84,925 |
| C | Fresh | Producer | 64 | 22 | 0 | 0 | 85 | 0 | 0 | 0 | 0 | 85 |
| | | Broker | 1,187 | 325 | 0 | 0 | 1,512 | 0 | 0 | 0 | 0 | 1,512 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 1,250 | 347 | 0 | 0 | 1,597 | 0 | 0 | 0 | 0 | 1,597 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 1,250 | 347 | 0 | 0 | 1,597 | 0 | 0 | 0 | 0 | 1,597 |
| D | Fresh | Producer | 29 | 621 | 0 | 0 | 650 | 0 | 0 | 0 | 0 | 650 |
| | | Broker | 1,825 | 7,194 | 0 | 0 | 9,019 | 5,954 | 0 | 0 | 5,954 | 14,973 |
| | | Viajeros | 0 | 936 | 0 | 0 | 936 | 0 | 552 | 0 | 552 | 1,488 |
| | | S-total | 1,853 | 8,751 | 0 | 0 | 10,605 | 5,954 | 552 | 0 | 6,506 | 17,110 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 21,189 | 0 | 0 | 21,189 | 21,189 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 2,408 | 0 | 0 | 2,408 | 2,408 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 23,598 | 0 | 0 | 23,598 | 23,598 |
| | Total | | 1,853 | 8,751 | 0 | 0 | 10,605 | 29,551 | 552 | 0 | 30,103 | 40,708 |
| E | Fresh | Producer | 0 | | | | 0 | | | | 0 | 0 |
| | | Broker | 0 | | | | 0 | | | | 0 | 0 |
| | | Viajeros | 56 | 14 | | | 70 | | | | 0 | 70 |
| | | S-total | 56 | 14 | 0 | 0 | 70 | | | | 0 | 70 |
| | Process | | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 |
| | Total | | 56 | 14 | 0 | 0 | 70 | | | | 0 | 70 |
| F | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 985 | 205 | 0 | 0 | 1,190 | 0 | 0 | 0 | 0 | 1,190 |
| | | S-total | 985 | 205 | 0 | 0 | 1,190 | 0 | 0 | 0 | 0 | 1,190 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 985 | 205 | 0 | 0 | 1,190 | 0 | 0 | 0 | 0 | 1,190 |
| G | Fresh | Producer | 0 | | | | 0 | | | | 0 | 0 |
| | | Broker | 0 | | | | 0 | | | | 0 | 0 |
| | | Viajeros | 19 | 8 | | | 27 | | | | 0 | 27 |
| | | S-total | 19 | 8 | 0 | 0 | 27 | | | | 0 | 27 |
| | Process | | 0 | 0 | 0 | 0 | 0 | | | | 0 | 0 |
| | Total | | 19 | 8 | 0 | 0 | 27 | | | | 0 | 27 |
| Other | | | 0 | | | | 0 | | | | 0 | 0 |
| | Grand total | | 28,149 | 70,844 | 0 | 0 | 98,993 | 29,551 | 552 | 0 | 30,103 | 129,096 |

## TABLE 5.14 O/D OF FISHERY PRODUCTS IN PROTOTYPE PASACAO, (1986)

UNIT:Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 44 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 44 |
| | | Broker | 254 | 1,024 | 34 | 0 | 1,312 | 0 | 0 | 0 | 0 | 1,312 |
| | | Viajeros | 0 | 131 | 0 | 0 | 131 | 0 | 0 | 0 | 0 | 131 |
| | | S-total | 299 | 1,155 | 34 | 0 | 1,487 | 0 | 0 | 0 | 0 | 1,487 |
| | Process | | 3 | 17 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 20 |
| | Total | | 302 | 1,172 | 34 | 0 | 1,507 | 0 | 0 | 0 | 0 | 1,507 |
| B | Fresh | Producer | 167 | 0 | 0 | 0 | 167 | 0 | 0 | 0 | 0 | 167 |
| | | Broker | 232 | 4,071 | 766 | 0 | 5,070 | 0 | 0 | 0 | 0 | 5,070 |
| | | Viajeros | 0 | 510 | 0 | 101 | 611 | 0 | 0 | 0 | 0 | 611 |
| | | S-total | 400 | 4,581 | 766 | 101 | 5,848 | 0 | 0 | 0 | 0 | 5,848 |
| | Process | | 131 | 124 | 0 | | 256 | 0 | 0 | 0 | 0 | 256 |
| | Total | | 531 | 4,706 | 766 | 101 | 6,104 | 0 | 0 | 0 | 0 | 6,104 |
| C | Fresh | Producer | 27 | 0 | 0 | | 27 | 0 | 0 | 0 | 0 | 27 |
| | | Broker | 169 | 732 | 101 | 476 | 1,478 | 0 | 0 | 0 | 0 | 1,478 |
| | | Viajeros | 0 | 68 | 17 | 79 | 163 | 0 | 0 | 0 | 0 | 163 |
| | | S-total | 196 | 799 | 118 | 554 | 1,668 | 0 | 0 | 0 | 0 | 1,668 |
| | Process | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | |
| | Total | | 196 | 799 | 118 | 554 | 1,668 | 0 | 0 | 0 | 0 | 1,668 |
| D | Fresh | Producer | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| | | Broker | 18 | 76 | 11 | 49 | 153 | 0 | 0 | 0 | 0 | 153 |
| | | Viajeros | 0 | 7 | 2 | 8 | 17 | 0 | 0 | 0 | 0 | 17 |
| | | S-total | 20 | 83 | 12 | 58 | 173 | 0 | 0 | 0 | 0 | 173 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 20 | 83 | 12 | 58 | 173 | 0 | 0 | 0 | 0 | 173 |
| E | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | | | | | | | | | | | | |
| Grand total | | | 1,049 | 6,760 | 930 | 713 | 9,452 | 0 | 0 | 0 | 0 | 9,452 |

## TABLE 5.15 O/D OF FISHERY PRODUCTS IN PROTOTYPE PASACAO, (1995)

UNIT: Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 47 | 0 | 0 | 0 | 47 | 0 | 0 | 0 | 0 | 47 |
| | | Broker | 271 | 1,160 | 38 | 0 | 1,469 | 0 | 0 | 0 | 0 | 1,469 |
| | | Viajeros | 0 | 148 | 0 | 0 | 148 | 0 | 0 | 0 | 0 | 148 |
| | | S-total | 319 | 1,308 | 38 | 0 | 1,665 | 0 | 0 | 0 | 0 | 1,665 |
| | Process | | 3 | 19 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 22 |
| | Total | | 322 | 1,327 | 38 | 0 | 1,687 | 0 | 0 | 0 | 0 | 1,687 |
| B | Fresh | Producer | 179 | 0 | 0 | 0 | 179 | 0 | 0 | 0 | 0 | 179 |
| | | Broker | 248 | 4,584 | 862 | 0 | 5,694 | 0 | 0 | 0 | 0 | 5,694 |
| | | Viajeros | 0 | 574 | 0 | 114 | 688 | 0 | 0 | 0 | 0 | 688 |
| | | S-total | 427 | 5,158 | 862 | 114 | 6,561 | 0 | 0 | 0 | 0 | 6,561 |
| | Process | | 137 | 137 | 0 | 0 | 274 | 0 | 0 | 0 | 0 | 274 |
| | Total | | 564 | 5,295 | 862 | 114 | 6,835 | 0 | 0 | 0 | 0 | 6,835 |
| C | Fresh | Producer | 29 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 29 |
| | | Broker | 181 | 825 | 114 | 536 | 1,656 | 0 | 0 | 0 | 0 | 1,656 |
| | | Viajeros | 0 | 76 | 19 | 89 | 184 | 0 | 0 | 0 | 0 | 184 |
| | | S-total | 209 | 901 | 133 | 625 | 1,868 | 0 | 0 | 0 | 0 | 1,868 |
| | Process | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| | Total | | 209 | 901 | 133 | 625 | 1,868 | 0 | 0 | 0 | 0 | 1,868 |
| D | Fresh | Producer | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| | | Broker | 19 | 86 | 12 | 56 | 172 | 0 | 0 | 0 | 0 | 172 |
| | | Viajeros | 0 | 8 | 2 | 9 | 19 | 0 | 0 | 0 | 0 | 19 |
| | | S-total | 22 | 94 | 14 | 65 | 194 | 0 | 0 | 0 | 0 | 194 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 22 | 94 | 14 | 65 | 194 | 0 | 0 | 0 | 0 | 194 |
| E | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | | | 14 | | | | 14 | | | | | 14 |
| | | | | | | | | | | | | |
| Grand total | | | 1,131 | 7,616 | 1,047 | 804 | 10,598 | | | | | 10,598 |

TABLE 5.16 O/D OF FISHERY PRODUCTS IN PROTOTYPE PASACAO, (2010)

UNIT:Tons

| Group | Form | Trader | For Domestic Consumption | | | | | For Export | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | In Zone | In Region | Manila | Others | S-total | In Zone | In Region | Manila | S-total | |
| A | Fresh | Producer | 63 | 0 | 0 | | 63 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 358 | 1,443 | 48 | | 1,848 | 0 | 0 | 0 | 0 | 1,848 |
| | | Viajeros | 0 | 185 | 0 | | 185 | 0 | 0 | 0 | 0 | 185 |
| | | S-total | 421 | 1,627 | 48 | | 2,095 | 0 | 0 | 0 | 0 | 2,095 |
| | Process | | 4 | 24 | 0 | | 28 | 0 | 0 | 0 | 0 | 28 |
| | Total | | 425 | 1,651 | 48 | | 2,124 | 0 | 0 | 0 | 0 | 2,124 |
| B | Fresh | Producer | 236 | 0 | 0 | | 236 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 327 | 5,737 | 1,079 | | 7,144 | 0 | 0 | 0 | 0 | 7,144 |
| | | Viajeros | 0 | 719 | 0 | 143 | 862 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 563 | 6,456 | 1,079 | 143 | 8,241 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 185 | 175 | 0 | | 360 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 748 | 6,631 | 1,079 | 143 | 8,601 | 0 | 0 | 0 | 0 | 0 |
| C | Fresh | Producer | 38 | 0 | 0 | | 38 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 239 | 1,031 | 143 | 670 | 2,083 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 95 | 24 | 111 | 230 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 276 | 1,126 | 167 | 781 | 2,350 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 276 | 1,126 | 167 | 781 | 2,350 | 0 | 0 | 0 | 0 | 0 |
| D | Fresh | Producer | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 25 | 107 | 15 | 70 | 216 | 0 | 0 | 0 | 0 | 216 |
| | | Viajeros | 0 | 10 | 2 | 12 | 24 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 29 | 117 | 17 | 81 | 244 | 0 | 0 | 0 | 0 | 0 |
| | Process | Canned | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Freezed | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 29 | 117 | 17 | 81 | 244 | 0 | 0 | 0 | 0 | 0 |
| E | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| F | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | Fresh | Producer | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Broker | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Viajeros | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | S-total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Process | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Grand total | | | 1,478 | 9,525 | 1,311 | 1,005 | 13,319 | | | | | 13,319 |

## TABLE 5.17 FISH PRICE AND MARKETING COST BY FISH GROUP AND BY DESTINATION FROM ZONE 1

Unit: Peso/kg

| Destination | Fish Group | Major species | Trader | Fish landing site | Producer price | Comm.at landing site | Marketing Cost | | | Profit | Consumption Area | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Trans. | Ice | Others | | Commi-ssion | Wholesale price |
| Within zone | A | Anchovy | B | Subic | — | 0.4 (5) | — | — | — | — | — | 7.2 (100) |
| | B | Eastern little tuna | P | Masinloc | 16.4 | — | — | — | — | — | — | 16.4 (100) |
| — | F | Milkfish | B | Guagua | — | 1.5 (5) | — | — | — | — | — | 29.3 (100) |
| Outside zone (Pangasinan) | B | Threadfin bream | B | Hagonoy | — | 0.83 (5) | 0.83 | 0.41 (12) | 0.7 | — | 0.83 (5) | 16.5 (100) |
| | | | V | Masinloc | 12.7 | — | 0.53 | 0.47 (10) | 0.7 | 1.27 (8) | 0.83 (5) | 16.5 (100) |
| (Pangasinan) | D | Yellowfin tuna | V | Masinloc | 10.9 | — | 0.53 | 0.47 (12) | 0.7 | 2.0 (14) | — | 14.6 |
| (San Fernando) | F | Milkfish | B | Hagonoy | — | 1.4 (5) | 0.41 | 0.2 (5) | 0.7 | — | 1.4 (5) | 28.1 (100) |
| | | | B | Guagua | — | 1.5 (5) | 0.11 | 0.2 (3) | 0.7 | — | — | 30.9 (100) |
| Manila | B | Threadfin bream | B | Hagonoy | — | 1.5 (5) | 0.32 | 0.35 (6) | 0.7 | — | 1.5 (5) | 29.7 (100) |
| | | | V | Masinloc | 16.17 | — | 1.0 | 0.58 (11) | 0.7 | 1.95 (9) | 1.0 (5) | 21.4 (100) |
| | D | Yellowfin tuna | V | Masinloc | 12.40 | — | 1.0 | 0.58 (14) | 0.7 | 1.92 (12) | — | 16.6 (100) |
| | E | Tiger prawn | B | Hagonoy | — | 3.1 (5) | 0.32 | 0.35 (2) | 0.7 | — | 3.1 (5) | 62.0 (100) |
| | | | B | Hagonoy | — | 7.79 (5) | 0.32 | 0.35 (1) | 0.7 | — | — | 155.7 (100) |
| | F | Milkfish | B | Hagonoy | — | 1.5 (5) | 0.32 | 0.35 (5) | 0.7 | — | 1.5 (5) | 30.0 (100) |
| Export processing at local/Manila | E | Tiger prawn (35 pcs/kg) | B | Hagonoy | — | 7.0 (5) | — | — | — | — | — | 140.0 (100) |
| | | Tiger prawn (31 pcs/kg) | B | Hagonoy | — | 7.0 (5) | — | — | — | — | — | 190.0 (100) |

Remarks : 1) P; Producer, B; Broker, V; Viajeros
Commission : Commission for broker
2) Figures in parenthesis show ratio of marketing cost to wholesale price at consumption area.
3) Cost and price collected through interview survey of FTS in 1988

## TABLE 5.18 FISH PRICE AND MARKETING COST BY FISH GROUP AND BY DESTINATION FROM ZONE 2

Unit: Peso/kg

| Destination | Fish Group | Major species | Trader | Producer price | Comm.at landing site | Marketing Cost | | | Profit | Consumption Area | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Trans. | Ice | Others | | Commi-ssion | Wholesale price |
| Within zone | A | Anchovy | B | — | 0.55 | — | — | — | — | — | 10.9 |
| | | | | | (5) | | | | | | (100) |
| | B | Threadfin bream | B | — | 0.65 | — | — | — | — | — | 13.0 |
| | | | | | (5) | | | | | | (100) |
| | C | Grouper | B | — | 0.9 | — | — | — | — | — | 18.0 |
| | | | | | (5) | | | | | | (100) |
| Outside zone (Camarines Norte) | A | Anchovy | B | — | 0.58 | 0.07 | 0.2 | 0.7 | — | — | 11.5 |
| | | | | | (5) | | (8) | - | | | (100) |
| | | Anchovy | V | 9.7 | — | 0.07 | 0.2 | 0.7 | 1.73 | — | 12.4 |
| | | | | | | | (8%) | | (14) | | (100) |
| | B | Eastern little tuna | B | — | 0.73 | 0.07 | 0.2 | 0.7 | — | — | 14.6 |
| | | | | | (5) | | (7) | | | | (100) |
| | | | V | 10.0 | — | 0.07 | 0.2 | 0.7 | 4.03 | — | 15.0 |
| | | | | | | | (7) | | (27) | | (100) |
| | C | Spanish mackerel | B | — | 1.6 | 0.07 | 0.2 | 0.7 | — | — | 32.4 |
| | | | | | (5) | | (3) | | | | (100) |
| | | | V | 25.0 | — | 0.07 | 0.2 | 0.7 | 4.03 | — | 30.0 |
| | | | | | | | (3) | | (13) | | (100) |
| Manila | A | Anchovy | B | — | 0.87 | 1.63 | 0.34 | 0.7 | — | 0.87 | 17.3 |
| | | | | | (5) | | (15) | | | (5) | (100) |
| | B | Threadfin bream | B | — | 1.25 | 1.63 | 0.34 | 0.7 | — | 1.25 | 25.0 |
| | | | | | (5) | | (11) | | | (5) | (100) |
| | | | V | 17.0 | — | 1.63 | 0.34 | 0.7 | 4.33 | — | 24.0 |
| | | | | | | | (11) | | (18) | | (100) |
| | C | Spanish mackerel | B | — | 2.0 | 1.63 | 0.34 | 0.7 | — | 2.0 | 40.0 |
| | | | | | (5) | | (15) | | | (5) | (100) |
| | | | V | 23.7 | — | 1.63 | 0.34 | 0.7 | 10.03 | — | 36.4 |
| | | | | | | | (14) | | (27.5) | | (100) |

Remarks : 1) P; Producer, B; Broker, V; Viajeros
Commission : Commission for broker
2) Figures in parenthesis show ratio of marketing cost to wholesale price at consumption area.
3) Cost and price collected through interview survey of FTS in 1988

## TABLE 5.19 FISH PRICE AND MARKETING COST BY FISH GROUP AND BY DESTINATION FROM ZONE 3

Unit: Peso/kg

| Destination | Fish Group | Major species | Trader | Producer price | Comm.at landing site | Marketing Cost | | | Profit | Consumption Area | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Trans. | Ice | Others | | Commi-ssion | Wholesale price |
| Within zone | A | Slipmouth | P | 7.3 (100) | — | — | — | — | — | — | 7.3 (100) |
| | | | B | — | 0.4 (5) | — | — | — | — | — | 8.0 (100) |
| | B | Indian mackerel | P | 10.8 (100) | — | — | — | — | — | — | 10.8 (100) |
| | | | B | — | 0.6 (5) | — | — | — | — | — | 12.0 (100) |
| | C | Spanish mackerel | P | 32.2 (100) | — | — | — | — | — | — | 32.2 (100) |
| | | | B | — | 1.7 (5) | — | — | — | — | — | 34.5 (100) |
| | F | Milkfish | P | 13.5 (100) | — | — | — | — | — | — | 13.5 (100) |
| | | | B | — | 1.0 (5) | — | — | — | — | — | 20.0 (100) |
| Outside zone (Iloilo City) | A | Slipmouth | B | — | 0.9 (5) | 0.7 | 0.56 (11) | 0.7 | — | 0.9 | 18.0 (100) |
| | | | V | 12.0 | — | 0.7 | 0.56 (10) | 0.7 | 5.04 (25) | 1.0 (5) | 20.0 (100) |
| | B | Indian mackerel | P | 12.9 | — | 0.7 | 0.56 (13) | 0.7 | — | 0.75 (5) | 15.0 (100) |
| | | | B | — | 0.9 (5) | 0.7 | 0.56 (11) | 0.7 | — | 0.9 (5) | 18.0 (100) |
| | | | V | 12.0 | — | 0.7 | 0.56 (10) | 0.7 | 5.04 (25) | 1.0 (5) | 20.0 (100) |
| | C | Spanish mackerel | B | — | 1.75 (5) | 0.7 | 0.56 (6) | 0.7 | — | 1.75 (5) | 35.0 (100) |
| | | | V | 29.7 | — | 0.7 | 0.56 (6) | 0.7 | 2.09 (6) | 1.78 (5) | 35.5 (100) |
| | F | Milkfish | B | — | 1.0 (5) | 0.7 | 0.56 (10) | 0.7 | — | — | 20.0 (100) |
| | | | V | 15.8 | — | 0.7 | 0.56 (9) | 0.7 | 4.64 (21) | — | 22.4 (100) |
| Manila | B | Indian mackerel | P | 9.54 (100) | — | 2.04 | 1.34 (31) | 1.33 | — | 0.75 (5) | 15.0 (100) |
| | | | B | — | 0.94 (5) | 2.04 | 1.34 (25) | 1.33 | — | — | 18.8 (100) |
| | | | V | 14.4 | — | 2.04 | 1.34 (22) | 1.33 | 2.79 (12.7) | — | 21.9 (100) |
| | C | Spanish mackerel | B | — | 1.75 (5) | 2.04 | 1.34 (14) | 1.33 | — | — | 35.0 (100) |
| | | | V | 26.8 | — | 2.04 | 1.34 (11) | 1.33 | 11.24 (25) | 2.25 (5) | 45.0 (100) |
| | F | Milkfish | B | — | 1.1 (5) | 2.04 | 1.34 (22) | 1.33 | — | — | 21.7 (100) |
| | | | V | 18.1 | — | 2.04 | 1.34 (15) | 1.33 | 8.09 (26.2) | — | 30.9 (100) |
| Export | E | Tiger prawn | V | 175 | — | 8.86 | 0.67 (5) | 1.33 | 19.14 (9.3) | — | 205.0 (100) |

Remarks : 1) P; Producer, B; Broker, V; Viajeros
Commission : Commission for broker
2) Figures in parenthesis show ratio of marketing cost to wholesale price at consumption area.
3) Cost and price collected through interview survey of FTS in 1988

## TABLE 5.20 FISH PRICE AND MARKETING COST BY FISH GROUP AND BY DESTINATION FROM ZONE 6

Unit : Peso/kg

| Destination | Fish Group | Major species | Trader | Producer price | Comm.at landing site | Marketing Cost | | | Profit | Consumption Area | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Trans | Ice | Others | | Commi-ssion | Wholesale Price |
| Within zone | B | Skipjack | P | 11.3 | — | — | — | — | — | — | 11.3 |
| | | | | (100) | | | | | | | (100) |
| | | | B | — | 0.63 | — | — | — | — | — | 12.5 |
| | | | | | (5) | | | | | | (100) |
| | D | Yellowfin | B | — | 0.7 | — | — | — | — | — | 13.7 |
| | | tuna | | (100) | (5) | | | | | | (100) |
| Outside zone | | | | | | | | | | | |
| (Davao City) | B | Skipjack | P | 11.69 | — | 0.7 | 0.41 | 0.7 | — | — | 13.5 |
| | | | | | | | (13) | | | | (100) |
| | | | B | — | 0.6 | 0.7 | 0.41 | 0.7 | — | — | 12.1 |
| | | | | | (5) | | (15) | | | | (100) |
| | | | V | 13.5 | — | 0.7 | 0.41 | 0.7 | 1.09 | — | 16.4 |
| | | | | | | | (11) | | (7) | | (100) |
| (Davao City) | B | Skipjack | V | 11.36 | 0.64 | 0.7 | 0.41 | 0.7 | 0.89 | — | 14.7 |
| | | | | | (5) | | (12) | | (6) | | (100) |
| (Misamis Oriental) | B | 〃 | V | 7.1 | — | 2.1 | 0.58 | 0.7 | 4.12 | — | 14.6 |
| | | | | | | | (23) | | (28) | | (100) |
| (Davao City) | D | Yellowfin tuna | B | — | 1.75 | 0.7 | 0.41 | 0.7 | — | — | 35.0 |
| | | | | | (5) | | (5) | | | | (100) |
| (Davao) | D | 〃 | B | — | 1.4 | 0.7 | 0.41 | 0.7 | — | — | 27.25 |
| | | | | | (5) | | (7) | | | | (100) |
| Misamis Oriental Export, Fresh | D | 〃 | V | 28 | — | 2.1 | 0.58 | 0.7 | 3.62 | | 35.0 |
| | | | | | | | (10) | | (10) | | (100) |
| fish (local market) | D | 〃 | B | — | 2.1 | — | — | — | — | — | 42.4 |
| | | | | | (5) | | | | | | (100) |
| (Davao City) | D | 〃 | V | 40.5 | — | 1.4 | 1.4 | 1.0 | 6.1 | — | 50.0 |
| | | | | | | | (8) | | (12) | | (100) |
| Export, Canned | D | 〃 | B | 〃 | 0.9 | — | — | — | — | — | 18.0 |
| | | | | | (5) | | | | | | (100) |

Remarks : 1) P; Producer, B; Broker, V; Viajeros
Commission : Commission for broker
2) Figures in parenthesis show ratio of marketing cost to wholesale price at consumption area.
3) Cost and price collected through interview survey of FTS in 1988.

## TABLE 5.21 FISH PRICE AND MARKETING COST BY FISH GROUP AND BY DESTINATION FROM PROTOTYPE SITE PASACAO

Unit : Peso/kg

| Destination | Fish Group | Major species | Trader | Producer price | Comm.at landing site | Marketing Cost | | | Profit | Consumption Area | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Trans | Ice | Others | | Commi-ssion | Wholesale Price |
| Within zone | B | Eastern little tuna | B | — | 0.53 | — | — | — | — | — | 10.6 |
| | | | | | (5) | | | | | | (100) |
| Outside zone | B | 〃 | B | — | 0.55 | 0.1 | 0.31 | 0.7 | — | — | 11.0 |
| | | | | | (5) | | (10) | | | | (100) |
| (Naga City) | C | Squid | B | — | 1.0 | 0.1 | 0.31 | 0.7 | — | — | 20 |
| | | | | | (5) | | (6) | | | | (100) |
| | | | V | 17.0 | — | 0.1 | 0.31 | 0.7 | 1.89 | — | 20 |
| | | | | | | | (6) | | (10) | | (100) |
| Manila | B | Eastern little tuna | B | — | 1.0 | 1.87 | 0.52 | 0.7 | — | — | 19.8 |
| | | | | | (5) | | (16) | | | | (100) |
| | C | Squid | C | — | 1.4 | 1.87 | 0.52 | 0.7 | — | — | 27.5 |
| | | | | | (5) | | (11) | | | | (100) |

Remarks : 1) P; Producer, B; Broker, V; Viajeros
Commission : Commission for broker
2) Figures in parenthesis show ratio of marketing cost to wholesale price at consumption area.
3) Cost and price collected through interview survey of FTS in 1988.

TABLE 5.22 PAYMENT METHOD BY TRADERS IN ZONE 1

| PAYMENT METHOD | TRADING CHANNEL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P-B | P-V | P-R | B-B | B-V | B-R | V-B | V-W | V-R | W-R | P-Pr | P-E | B-Pr | B-E |
| Cash on Delivery | ○● | | | | | ○ | | | | | | | | |
| Cash After Trading | | ○ | | ● | | | ○ | | | | | | | |
| Offset Account | ○ | | | | | | | | | | | | | |
| Credit 1-2 Days | | | | | ○● | | ○● | | ○ | | | | | |
| Credit 3-14 Days | ● | | | | | | | | | | | ● | | ● |

Remarks: 1) P ; Producer B; Broker V; Viajeros W; Wholesaler R; Retailer
Pr; Processor E; Exporter C; Consumer
X ; Aquaculture Product 0; Marine Product
2) Marine Product; Local = P-B-R, Outside Town = P-B-V-W/R
Manila = P/V-B-R
3) Aquaculture Product; Local = P-B-R, Outside Town = P-B-V-W/R
Manila = P-B-B-R and P-B-E

Source: Results of field survey of FTS 1988, JICA

TABLE 5.23 PAYMENT METHOD BY TRADERS IN ZONE 2

| PAYMENT METHOD | TRADING CHANNEL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P-B | P-V | P-R | B-B | B-V | B-R | V-B | V-W | V-R | W-R | P-Pr | P-E | B-Pr | B-E |
| Cash on Delivery | | | | | | ○ | | | | | | | | |
| Cash After Trading | | | | | | | | | | | | | | |
| Offset Account | ○ | ○ | | | | | | | | | | | | |
| Credit 1-2 Days | | | | | | | ○ | | ○ | | | | | |
| Credit 3-14 Days | | | | | | | | | | | | | ○ | |

Remarks: 1) P ; Producer B; Broker V; Viajeros W; Wholesaler R; Retailer
Pr; Processor E; Exporter C; Consumer
X ; Aquaculture Product 0; Marine Product
2) Marine Product; Local = P-B-R, Outside Town = P-B-V-W/R
Manila = P/V-B-R, P-B/V-E and P-E

Source: Results of field survey of FTS 1988, JICA

TABLE 5.24 PAYMENT METHOD BY TRADERS IN ZONE 3

| PAYMENT METHOD | TRADING CHANNEL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P-B | P-V | P-R | B-B | B-V | B-R | V-B | V-W | V-R | W-R | P-Pr | P-E | B-Pr | B-E |
| Cash on Delivery | ● | | | | | ○ | | | | | | ● | | |
| Cash After Trading | | | | | | | ○ | | | | | | | |
| Offset Account | ○ | | | | | | | | | | | | | |
| Credit 1-2 Days | ● | | | ○● | ○ | ○ | ● | | | ○ | | | | |
| Credit 3-14 Days | | | | | | | | | | | | | | |

Remarks: 1) P ; Producer B; Broker V; Viajeros W; Wholesaler R; Retailer
Pr; Processor E; Exporter C; Consumer
X ; Aquaculture Product 0; Marine Product
Marine Product; Local = P-B-R, Outside Town = P-B-V-W/R
Manila = P/V-B-R, P-B/V-E and P-E
Aquaculture Product; Local = P-B-R, Outside Town = P-B-V-W/R
Manila = P-B-B-R and P-B-E

Source: Results of field survey of FTS 1988, JICA

TABLE 5.25 PAYMENT METHOD BY TRADERS IN ZONE 6

| PAYMENT METHOD | TRADING CHANNEL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P-B | P-V | P-R | B-B | B-V | B-R | V-B | V-W | V-R | W-R | P-Pr | P-E | B-Pr | B-E |
| Cash on Delivery | ○ | ○ | | | | ○ | | | | | | | | |
| Cash After Trading | | ○ | | | | | ○ | | | | | | | |
| Offset Account | ○ | | | | | | | | | | | | | |
| Credit 1-2 Days | | | | | | | ○ | | ○ | | | | | |
| Credit 3-14 Days | | | | | | | | | | | | | | |

Remarks: 1) P ; Producer B; Broker V; Viajeros W; Wholesaler R; Retailer
Pr; Processor E; Exporter C; Consumer
X ; Aquaculture Product 0; Marine Product
2) Marine Product; Local = P-B-R,
Outside Town = P-B-V-R, P/V-B-R and P-V-R

Source: Results of field survey of FTS 1988, JICA

TABLE 5.26 PAYMENT METHOD BY TRADERS IN PROTOTYPE SITE PASACAO

| PAYMENT METHOD | TRADING CHANNEL | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P-B | P-V | P-R | B-B | B-V | B-R | V-B | V-W | V-R | W-R | P-Pr | P-E | B-Pr | B-E |
| Cash on Delivery | ○ | | | | | ○ | | | | | | | | |
| Cash After Trading | | | | | | | ○ | ○ | ○ | | | | | |
| Offset Account | ○ | | | | | | | | | | | | | |
| Credit 1-2 Days | | | | | | | ○ | | | | | | | |
| Credit 3-14 Days | | | | | | | | | | | | | | |

Remarks: 1) P ; Producer B; Broker V; Viajeros W; Wholesaler R; Retailer
Pr; Processor E; Exporter C; Consumer
X ; Aquaculture Product O; Marine Product
2) Marine Product; Local = P-B-R/Pr, Outside Town = P-V-W/RManila = P/B/V-B-

Source : Results of field survey of FTS 1988, JICA

# 6. LAYOUT PLAN OF FTS PROJECT

## 6. LAYOUT PLAN OF FTS PROJECT

### 6.1 The Structure of the FTS

The project component list is shown in Table 6.1 and FTS network by zone areas are shown in Figs. 1 to 4.

(1) NFPC

1) The Nationwide FTS Terminal

The FTS terminal will function as a base for the transport vessels that carry fish products from various zones to the Metro Manila area. It will organize the shipping schedules, taking into consideration the fish production condition in each zone and the balance between supply and demand of fish products in Manila, Luzon Island and other areas, with the objective of regulating the supply and demand of fish products at the nationwide level. In order to effectively fulfill this function, the FTS terminal will collect information from the various areas throughout the country, process the data, and distribute this information to the relevant parties. The FTS terminal facilities and operational system should make the fullest possible use of the existing facilities and PFDA organization. This base will have the dual function of serving simultaneously as the nationwide base and the zone center of Zone 1.

2) FTS Pilot Project

This project calls for establishing a pilot plant for processing prawns and surimi (minced fish meat), in order to establish a system for developing and improving processing technology, including upgrading the quality of processed fish products. In addition to this, the project calls for constructing a plant to manufacture insulated fish boxes in order to improve the capability of transporting and storing fresh fish.

Moreover it is necessary in the surimi processing plant that PFDA will adequately investigate marketing conditions of products and price, quality and volume of raw materials utilized.

In order to facilitate the transfer of technology of the FTS at the sites located in various zones, insulated trucks, mobile ice-making plants, mobile plants for salt-cured fish, mobile plants that give demonstrations to sell fish products, and various training materials for transfer of quality control technology of fish products and to spread FTS technology, are to be arranged.

Furthermore, retail shops will provide demonstrations in the public markets at Metro Manila and the provinces of Tarlak/Nueva Ecija, located in the inland area neighboring Zone 1, and insulated trucks will be introduced for buying and transporting fish products from Zone 1.

In order to improve the handling of fish products from the stage of the catch, fishing vessels and collection vessels for training purposes are to be provided and to participate in conveying technical know-how at the various zones whenever necessary.

(2) FTS by Zone

1) Zone 1

a. Sub-center (Collection base for yellowfin tuna)

Carrier vessels will be provided in order to collect yellowfin tuna at sea, then to transport the fish to the Masinloc MFP, located in the province of Zambales, which will serve as the sub-center of the sub-zone as well as the base for municipal fisheries.

Based on preliminary arrangement for collection and transaction system for payment with fishermen before leaving MFP, fish carrier vessels go to some selected "Payaos" where fishing boats concentrate, to gather fish caught. Fishing boats immediately go to carrier vessels and transfer the fish caught. Fish is gutted on board and kept in ice water. Tags with name of fishermen, species of fish and number are attached to fish and receipts are given to the fishermen. At the mother port the fish are weighed and registered by number, and payments by cash are made to fishermen or representative after trading. The collection method on the sea is shown in Fig. 5.

Following this, after the catch is unloaded at MFP, the fish will be transported to Manila in insulated trucks. As a general rule, ice used for ice storage will be purchased at low prices in Manila; this ice is to be loaded onto the insulated trucks after their fish products have been unloaded, and the ice is then to be transported back to the zone. This system saves on facility construction and operation costs. The jetties of the existing MFP will be extended to facilitate the docking of fish collection vessels. Land for the on-land facilities of FTS should be donated from the municipal government to save construction costs and the land should be near the existing MFP.

b. Sub-center (Base for cultured black tiger prawns)

The Orani MFP, located in the province of Bataan, which is presently active in fish products trade and is the collection base of cultivated fish products, in particular black tiger prawns, will be established as the the sub-zone center. It will implement facilities with the functions as presented below.

It will construct a processing plant for the shrimp, provide insulated trucks to collect the raw materials (prawns) and refrigerated trucks to transport frozen prawns. In addition, it will implement an information facility to accurately grasp the actual availability of prawn resources as well as the market conditions of frozen prawns. When reclaiming land in front of the existing MFP for the on-land facilities for FTS, river bottom mud will be used for reclamation by the dredging boat of DPWH. Dredging and reclamation costs for repairing the river will be included in the budget of DPWH and be excluded in the Project cost. Expansion of the existing MFP will be undertaken to accommodate the FTS facility. Road repair, including the construction of bridges over small rivers, will be undertaken to create access roads linking major national highways with the FTS facility. This will facilitate the transportation of raw materials and processed products.

c. Satellite

Satellite will provide MFP with information processing devices to accommodate fishermen and aquaculture operators in the production and collection of fish products.

2) Zone 2

a. Zone Center

With Mercedes, which is located in the province of Camarines Norte and has the largest catch of fish products of the Bicol region, as the zone center, carrier vessels shall be provided to allow collection of the haul of ocean fish caught by municipal fisheries. Fishing grounds vary seasonally but some representative grounds have been already selected where almost all fishing boats gather. As in Zone 1, fishing grounds will be selected with fishermen as collection points. Carrier vessels go with fishing boats from MFP to selected fishing grounds and wait. In the event ice is required , the fishing boats will bring the required quantity of ice in an insulated box from MFP. Otherwise carrier vessels will provide ice for temporary preservation. The method of collection for fish caught and payment are the same as in Zone 1 (Fig. 5).

This particular area has become a base for a salt-cured fish processing industry which has already advanced into a relatively commercialized scale. A salt-cured fish production plant will be constructed here to upgrade the quality of these products into a high value-added item suitable for both domestic and export markets, and thus raise the incomes of small-scale fishermen.

FTS base will be established on the grounds of existing IPCS land owned by PFDA, and fish carrier vessels will be introduced to the existing neighboring MFP so that unloaded fish products can be collected, and then transported by insulated trucks to neighboring areas and Manila.

Ice for storage is to be purchased at low prices in Manila and transported back to the site by these insulated trucks, or the ice can be supplied by the IPCS project.

b. Satellite

Each of the isolated and dispersed MFPs in the coastal areas in the province of Camarines Norte will function as a satellite. The primary function of these MFPs will be to collect, at the zone center, the raw materials to be processed into salt-cured fish products. Fish to be transported as fresh fish to the neighboring areas around the zone will, as a general rule, be collected at the zone center from each satellite, and then transported to their respective place of consumption by insulated trucks. However, fresh fish destined for Manila will be either transported directly from each satellite or collected first at Mercedes, and then transported to Manila together with the processed fish.

(4) Zone 3

a. Zone Center (Marine fish collection base)

Estancia, located in the northern part of the province of Iloilo, will function as a zone center, where fish will be collected by carrier vessels from fishing villages on isolated islands, and then unloaded at the existing MFP sites. Fish collection and transaction methods as shown in Zone 2 are applicable. Many fishermen are living in the offshore islands and fishing grounds and are comparatively near. Processing is carried out on the islands or fish is transported to MFP for processing. Therefore collection of fish on the island could also be employed (Fig. 5).

Following this the catch will be finally transported to Metro Manila by transport vessels bound for Manila. Fish products for consumption in the areas adjacent to the zone or Iloilo City are to be transported overland by insulated trucks.

As the zone has numerous very small-scale salt-cured fish processing facilities that utilize the natural sunshine (mostly operated by the fishermen at their homes), it is hoped that this will grow into a fish processing base operating on a commercial scale in order to raise the income of the fishermen. To accomplish this, an indoor high-grade salt-

cured fish processing plant which is capable of operating in the rainy and typhoon seasons, should be established as a FTS facility, with the aim of developing high value-added processed goods suitable for export. From the social and economic point of view, it is necessary to avoid drastic and sudden changes, and improvement of the existing simple processing style should be carried out at a slow phase. As this is a MFP site where the area around the harbor is densely settled, it will be necessary to spend money here for coastal land reclamation and other related infrastructure. For these reasons the processing plant will be established as a pilot project.

As the grounds of the existing MFP are already over-crowded, several social problems, including that of illegal occupants or squatters, may arise. Therefore, in accordance with DPWH (Department of Public Works and Highways) guidelines, a portion of land which has been enlarged by reclamation, should be set aside for building this facility. Further, in light of the overall problem of obtaining water and electricity on Panay Island, it is essential to consolidate the infrastructure to alleviate this situation.

This center is located near the zone center of the IPCS project, which will be planned and set up in a land area with an available water source. The ice plant and cold storage of the IPCS project will be fully utilized for FTS.

b. Sub-Center (Collection base for cultured fish)

Roxas City, in the province of Capis, will be the sub-center and will function primarily as a base for the collecting and processing of cultivated prawns, and their transportation to Manila. As for facilities for this base, a prawn processing plant will be established in the present commercial zone, which is located inland, with insulated trucks readied to secure raw materials (prawns) and refrigerator trucks for transporting the processed goods to the nearly completed Roxas MFP or the Roxas commercial port. As transportation from this point to Manila by sea is convenient, the NFPC can serve as the terminal, where regularly scheduled transport vessels equipped with refrigeration equipment can be stationed, and the production, collection, processing and transportation of prawns can be

implemented as an integrated system. This zone is also the aquaculture base for milkfish. As Manila is the main destination for the milkfish production, transportation of this product must be taken into consideration when formulating shipping plans and schedules.

To secure the required water depth for the transport vessels when coming in to dock at the MFP, construction to extend the jetties should be carried out. In the FTS, facilities for ice manufacturing, refrigeration and cold storage should be implemented within the factory to provide ice for raw materials (prawns) and refrigeration and cold storage for the processed goods.

c. Satellite

Each of the MFPs scattered throughout the northern part of Panay Island will function as a satellite. They will be furnished with equipment which will be used to disseminate simple information related to fish products to the fishermen and to communicate with the zone center and sub-center so that the appropriate amount of fish products can be collected at the appropriate time at any of the fish products collection, processing or transporting terminals.

4) Zone 6

Zone 6 is the largest base for producing large fish, such as yellowfin tuna, in the Philippines. By upgrading its functions, it will be possible to achieve mass production of high-grade fish for export, thus contributing to the country's acquisition of foreign exchange, and in addition, increase the zone's capacity to supply the inland areas of Mindanao Island with fish products. Another objective of this zone is to contribute to raising the incomes of small-scale fishermen and to enhance local industrial development.

The zone center will be located in General Santos, in the province of South Cotabato, where the unloading of tuna is presently concentrated. In this area, highly capitalized private enterprises have aggressively engaged in business activities, with activities by these private enterprises in related industries, such as refrigerated tuna processing,

showing yearly increases. Therefore, it is planned that establishment of facilities be limited to those which can be jointly operated by the private and government sectors, with the government organs only taking the role of supporting private enterprises. Further, FTS will be implemented for the benefit of small-scale tuna fishermen who do not have much capital, in order to enlarge their operations and raise their incomes.

Whether or not to collect the fish products at the MFP will be left up to the discretion of the fishermen, therefore neither Payao nor carrier vessels will be instituted under this project. As for FTS facilities, however, transport vessels will be introduced to chill or freeze and ship the unloaded tuna to Manila. The primary aim of using these transport vessels is to facilitate the transport of fresh tuna, replacing the current method of transportation via General Santos Airport or Davos Airport. These transport vessels will collect fish products at the General Santos commercial port or the newly constructed MFP, with the goal of transporting large volumes of fish products to Manila. Insulated trucks will also be a means of transporting various fish products to the various inland areas of Mindanao for expansion of their transportation capacity.

Communication equipment will be installed to gain timely and more accurate information concerning tuna production in this zone, as well as market conditions in various parts of the Philippines and abroad.

The services provided by the IPCS project (which calls for the renovation and expansion of the existing ice making and cold storage plants that stand on land owned by PFDA and set aside for IPCS use), should be utilized to their fullest possible extent.

As for the MFP, only a part of this coastal area has been equipped with unloading facilities, and transport vessels are presently unable to approach for docking. In order to facilitate the effective operation of FTS facilities, construction work will be carried out to extend the jetties, making it possible for the transport vessels to dock.

5) Prototype Site Pasacao

This is a typical unloading site for the exclusive use of municipal fishing vessels. To increase the efficiency of the collection of fish products at sea, carrier vessels will be stationed there. Collection methods of fish are a combination of those in zone 1 and zone 2. As is obvious in the present distribution pattern, fish products unloaded at this site are mostly consumed in the neighboring areas, and insulated trucks will be introduced to increase the capacity of transport. However, for transportation to Manila, or in the event of a surplus in production sometime in the future, it will be made possible to utilize the services of the Zone 2 center, located at the Mercedes base.

Construction work will be undertaken to extend the jetties to allow the carrier vessels access to MFP. As this site is the prototype site of the IPCS project, a small ice manufacturing plant will be set up, and with the completion of FTS, the integrated MFP/IPCS/FTS will be able to function effectively.

## 6.2 Capacity of Major Components of FTS

### 6.2.1 Determing the Capacity of FTS Facilities

The capacity of FTS was determined by components to meet the requirements of 1995 and as a suitable model project. The decisions on the capacity of the facility are outlined below. The target fish volume by components to be included in this model project is shown separately in Table 6.2.

(1) Fish Carrier Vessel

Major factors in deciding the capacity and number of fish carrier vessels are as follows:

1) To carry the appropriate volume of fish production as a model of the new system

2) To contribute to the improvement of the fish transport system under the consideration of fishing methods and fishing activities by the existing fishing vessels

3) Size of fish carrier vessels which minimize the MFP expansion cost due to securing suitable depth of water

a) Zone 1

Production of yellowfin tuna in the municipal fisheries sector is about 4,600 tons. Exportable size (45 kg/piece) is 10% of the total catch and is collected by the carrier vessels. About 50% of smaller size yellowfin tuna for the domestic market are also carried by these vessels.

b) Zone 2

Marine fish caught by municipal fishing boats are collected at sea by the introduction of a motherboat system. The volume collected by these vessels as a test case for the establishment of the new system was only 5 - 10 % of total catch of about 22,000 tons.

c) Zone 3

Small scale fish producers who live in the islands near by Estancia will be benefited from the introduction of the fish carrier vessels. When local consumption volume is excluded, about 50% or 1,800 tons of the total volume of 3,900 tons which are of 2,300 tons of fresh fish and 1,600 tons of processed fish from these islands are shipped to the MFP of Estancia.

d) Prototype Site Pasacao

Small scale municipal fisheries harvests marine fish by the same system as in Zone 2. Approximately 15% of the marine production volume of 10,000 tons is the target volume.

(2) Fish Transport Vessels

Fish volume dealt by these fish transport vessels was determined not to affect existing private shippers between the islands, to subsidize a part of the increase transport demand in order to strengthen and promote the future transport system, and size and number of these vessels are determined to be realistic and effective in this country.

a) Zone 3

Only 5,800 tons among the total increment of transport demand, which includes the frozen prawn and fresh milkfish/marine fish, are transported by these vessels.

The total increase in export volume of black tiger prawn will be frozen in the zone and transported to Manila. This capacity is calculated to be 2,000 tons per year converted to raw materials.

About 2,400 tons of milkfish or 20% of the yearly increase distribution volume of 10,600 tons projected for the years 1986-1995 will be transported to Manila. Similarly, 1,400 tons or 70% of the increase distribution volume of marine fish will also be transported to Manila.

b) Zone 6

The increased volume of fresh yellowfin tuna for export is projected to be 3,300 tons. This volume was calculated by subtracting the 1986 export volume of 1,800 tons from the export volume of 5,100 tons. Furthermore, 900 tons or 50% of the 1,800 tons currently shipped by air will be shifted to FTS sea transport. Therefore the total transported volume will be 4,200 tons.

(3) Truck (Insulated and Refrigerated)

Insulated and/or refrigerated trucks are introduced to improve overland transport capacity and to save cost/time in fish transport. Moreover, they will be introduced in such a way so as not to disrupt current transport services by the private sector. Trucks will be medium

size or slightly larger at 5 to 7 tons. Only a portion of the increased volume from 1986-1995 will be subsidized out of consideration for the circumstances of each zone.

(4) Shrimp Processing Plant

Capacity of the plant was selected according to the following factors:

a) To process a part of the increase in black tiger prawn for export without seriously disrupting the private shrimp processing plants

b) To secure a profitable processing capacity

c) To provide an incentive and encourage fish pond operators

d) To adopt average capacity of the private plants constructed in the Philippines

(5) Surimi Processing Plant

Minimum size of the plant was adopted to avoid difficulties in obtaining a stable supply of raw materials and to be feasible.

(6) Dried-salted fish processing plant

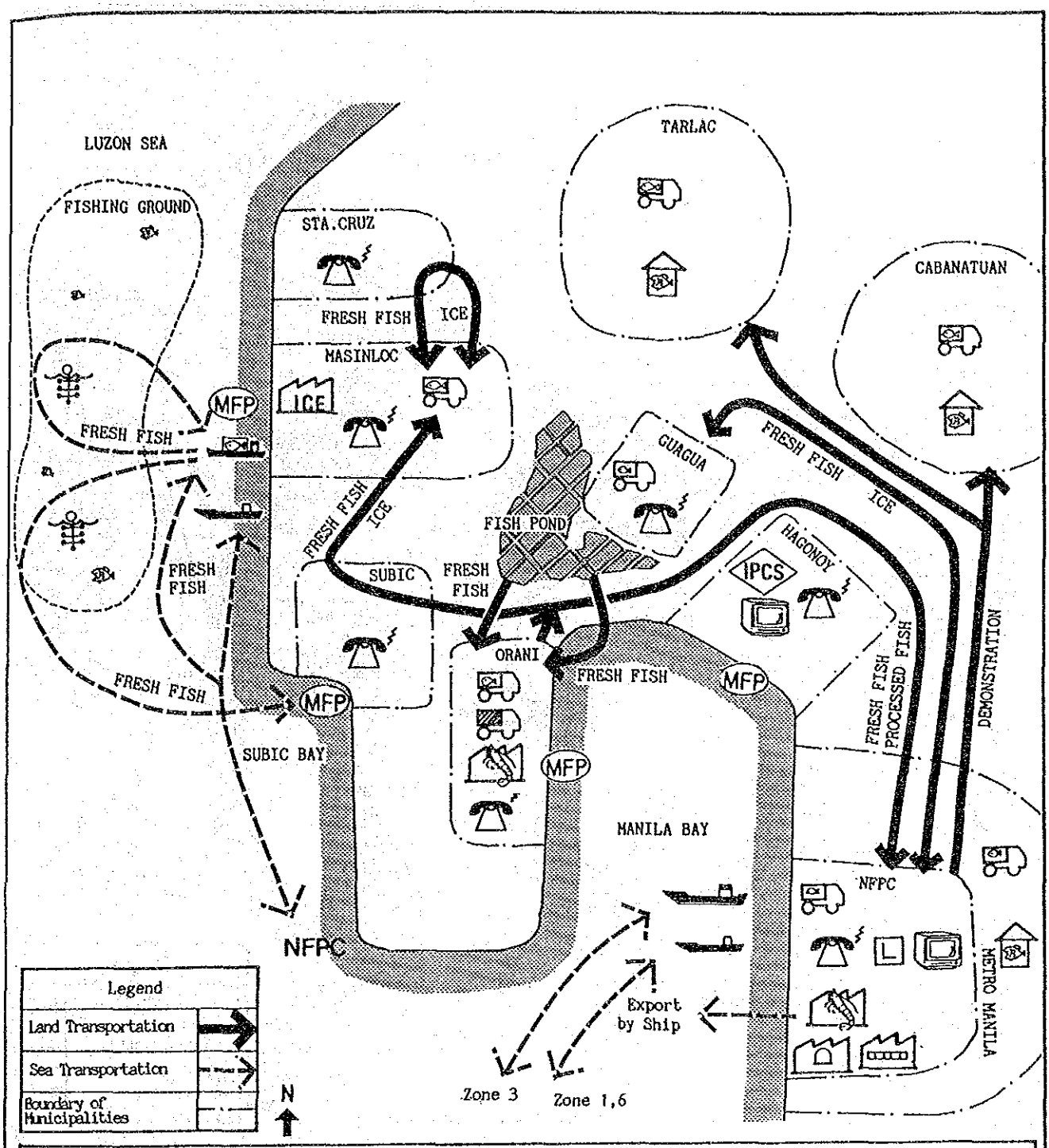
The suitable size of the plant was determined not to exceed the possible supply of raw materials in a year and to avoid a fall in production in the wet season.

### 6.2.2 Capacity of FTS Components

The capacity of FTS components by zone is as shown in Table 6.3.

## 6.3 Layout of FTS Project

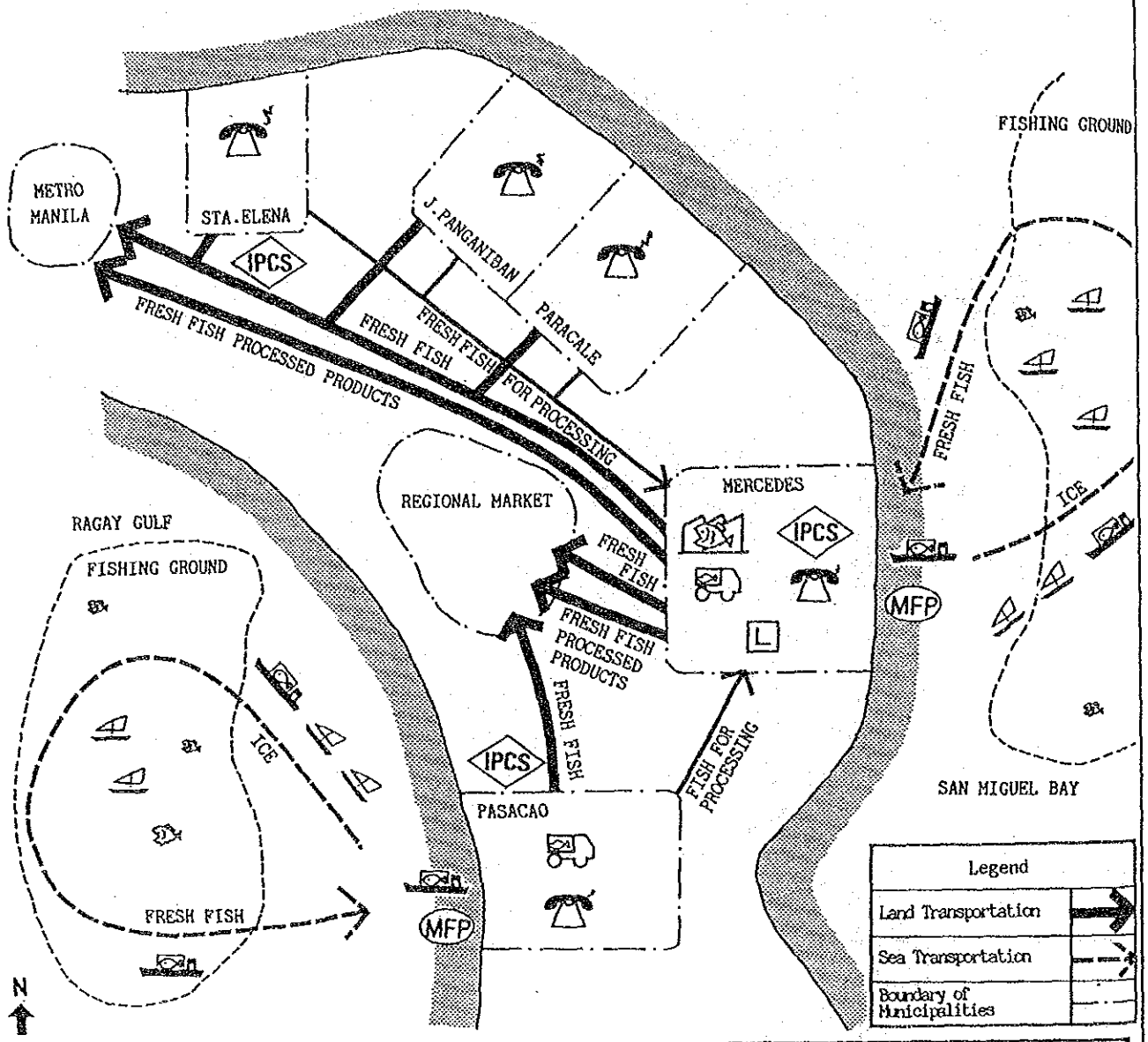
The layout plan of FTS project is shown in Figs. 6 to 14.




| PROJECT COMPONENT | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fish Transport Vessel | | Shrimp Processing Plant | | Insulated Truck | | Training/Extension Facilities | |
| Training Vessel | | Salted/Dried Fish Processing Plant | | Refrigerated Truck | | Demonstration Facilities | |
| Fish Carrier Vessel | | Surimi Processing Plant | | Information/Communication Facilities | | Payao | |
| Fishing Boat | | Ice Making Plant | ICE | Fish Quality Testing Facilities | L | Existing Airport | |
| | | Insulated Fish Box Manufacturing Plant | | Municipal Fishing Port | MFP | IPCS Project | IPCS |

FIG. 1 FTS NETWORK OF ZONE 1

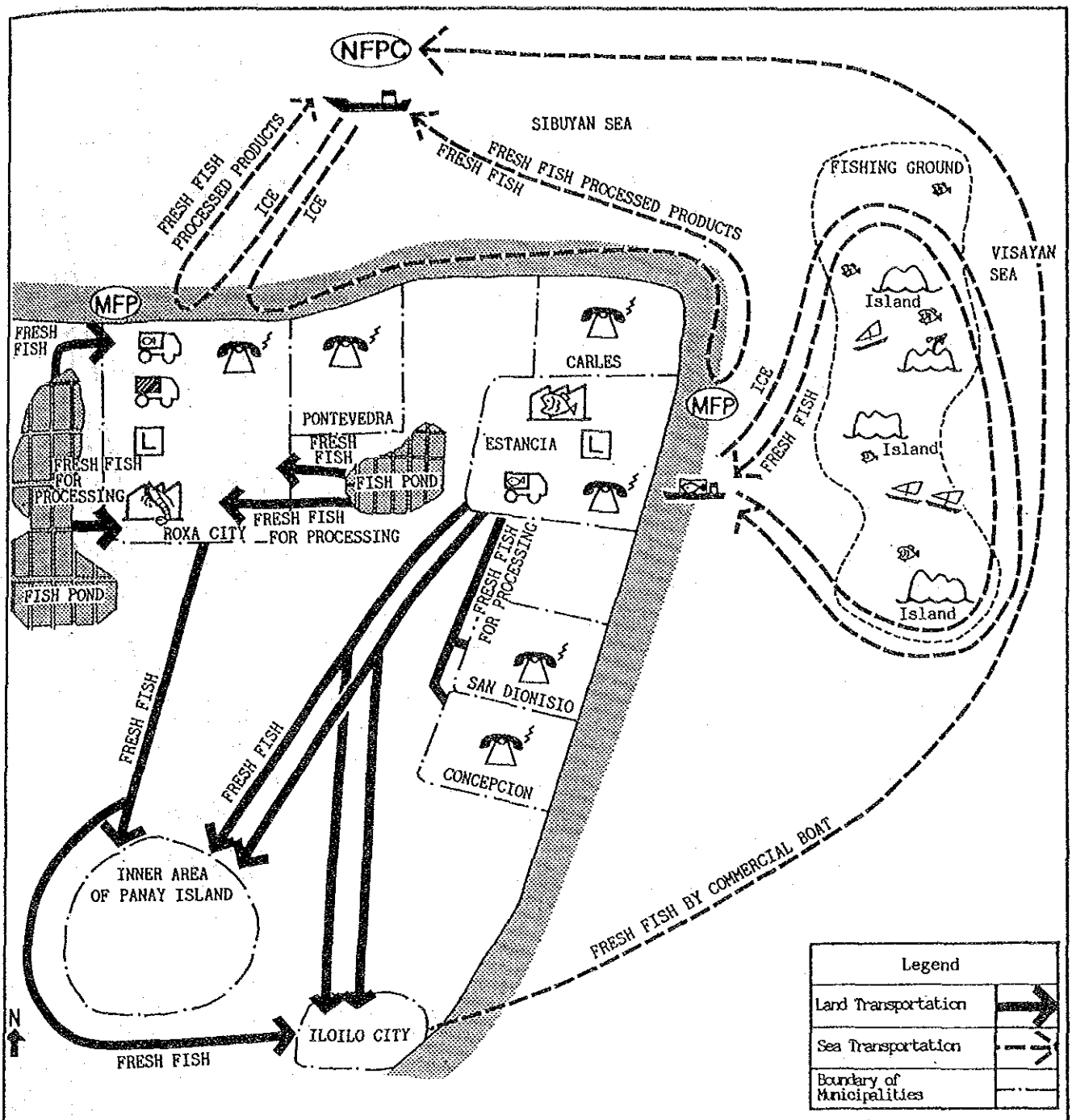
THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fish Transport Vessel | | Shrimp Processing Plant | | Insulated Truck | | Training/Extension Facilities | |
| Training Vessel | | Salted/Dried Fish Processing Plant | | Refrigerated Truck | | Demonstration Facilities | |
| Fish Carrier Vessel | | Surimi Processing Plant | | Information/Communication Facilities | | Payao | |
| Fishing Boat | | Ice Making Plant | ICE | Fish Quality Testing Facilities | L | Existing Airport | |
| | | Insulated Fish Box Manufacturing Plant | | Municipal Fishing Port | MFP | IPCS Project | IPCS |

FIG. 2 FTS NETWORK OF ZONE 2 AND PROTOTYPE SITE PASACAO

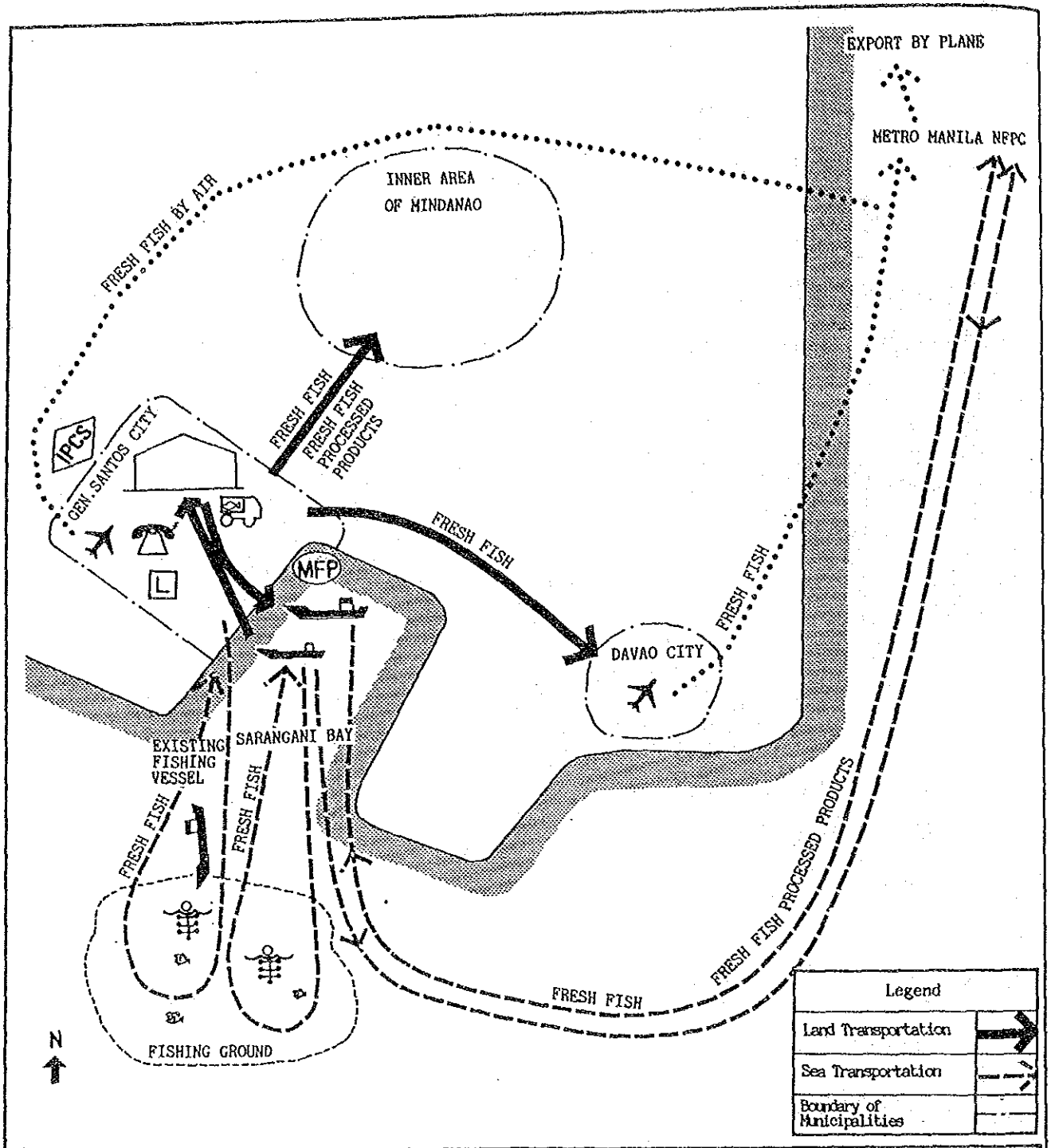
THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY




| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Fish Transport Vessel | | Shrimp Processing Plant | | Insulated Truck | | Training/Extension Facilities | |
| Training Vessel | | Salted/Dried Fish Processing Plant | | Refrigerated Truck | | Demonstration Facilities | |
| Fish Carrier Vessel | | Surimi Processing Plant | | Information/Communication Facilities | | Payao | |
| Fishing Boat | | Ice Making Plant | ICE | Fish Quality Testing Facilities | L | Existing Airport | |
| | | Insulated Fish Box Manufacturing Plant | | Municipal Fishing Port | MFP | IPCS Project | IPCS |

FIG. 3 FTS NETWORK OF ZONE 3

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY




| | | | |
|---|---|---|---|
| Fish Transport Vessel | Shrimp Processing Plant | Insulated Truck | Training/Extension Facilities |
| Training Vessel | Salted/Dried Fish Processing Plant | Refrigerated Truck | Demonstration Facilities |
| Fish Carrier Vessel | Surimi Processing Plant | Information/Communication Facilities | Payao |
| Fishing Boat | Ice Making Plant | Fish Quality Testing Facilities | Existing Airport |
| | Insulated Fish Box Manufacturing Plant | Municipal Fishing Port | IPCS Project |

FIG. 4 FTS NETWORK OF ZONE 6

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

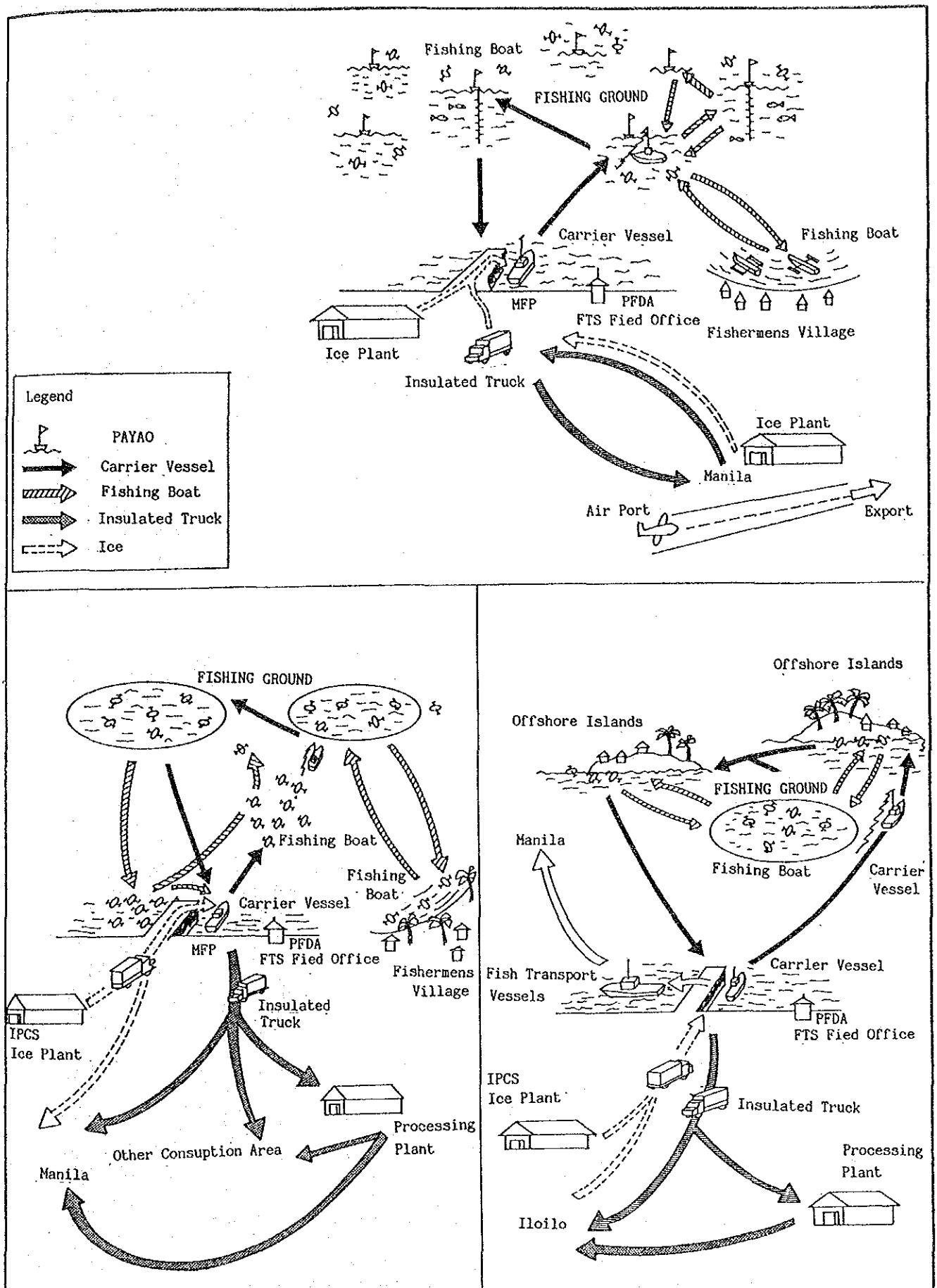
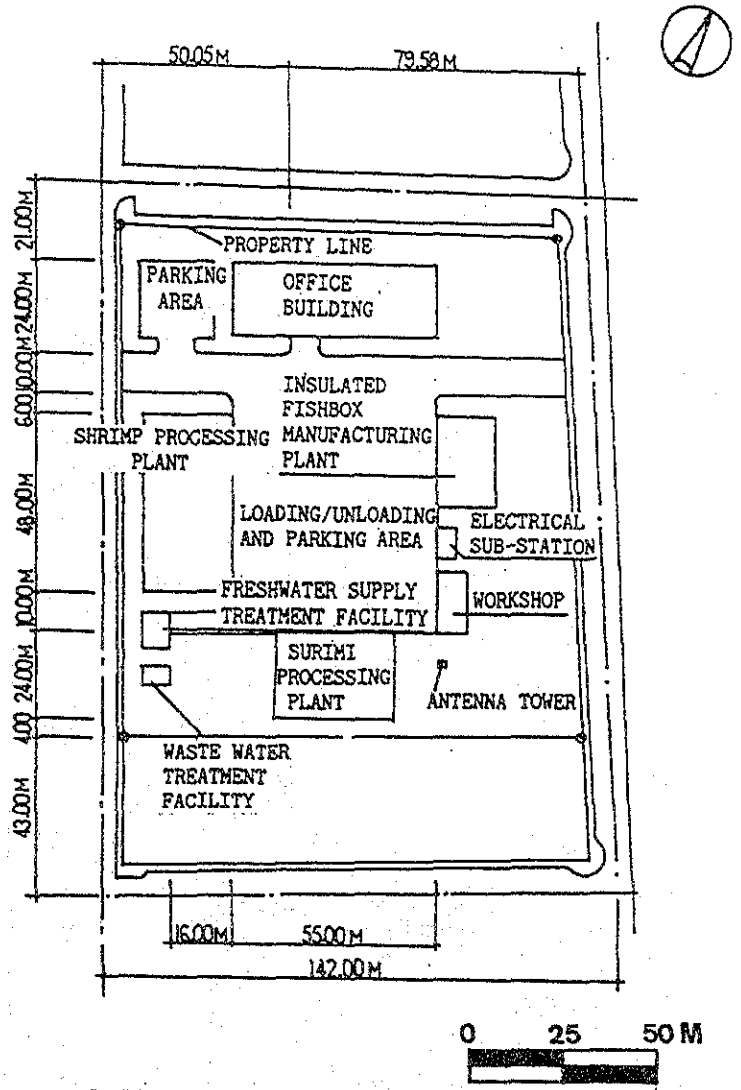



FIG. 5 FISH COLLECTION SYSTEM BY FISH CARRIER VESSELS

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

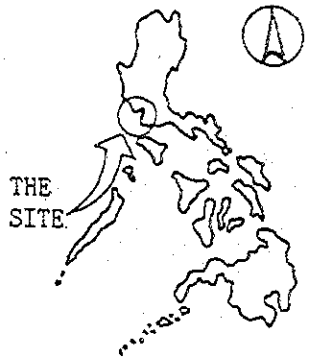



GENERAL LAYOUT PLAN

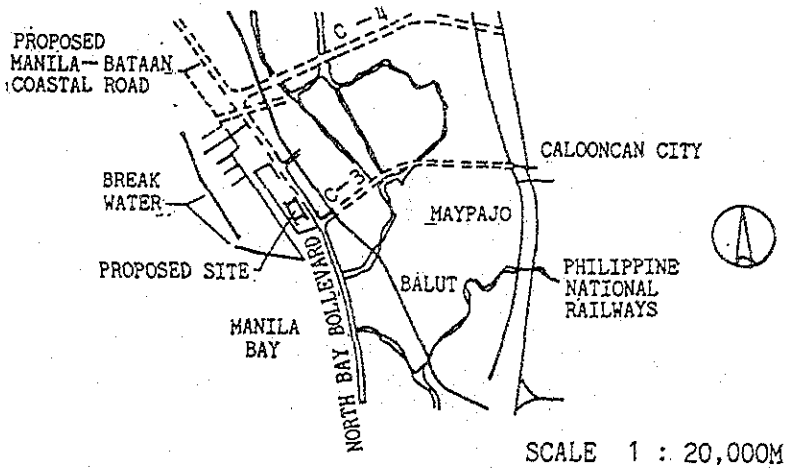
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      56M X 19M = 1,064M²
   2) INSULATED FISH BOX MANUFACTURING PLANT
      24M X 16M = 384M²
   3) SHRIMP PROCESSING PLANT
      48M X 24M = 1,152M²
   4) SURIMI PROCESSING PLANT
      32M X 24M = 768M²
   5) WORKSHOP
      16M X 8M = 128M²
   6) ELECTRICAL SUB-STATION
      8M X 5M = 40M²

2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) FRESHWATER SUPPLY TREATMENT FACILITY
      10M X 8M = 80M²
   3) WASTE WATER TREATMENT FACILITY
      8M X 5M X 3M(D)



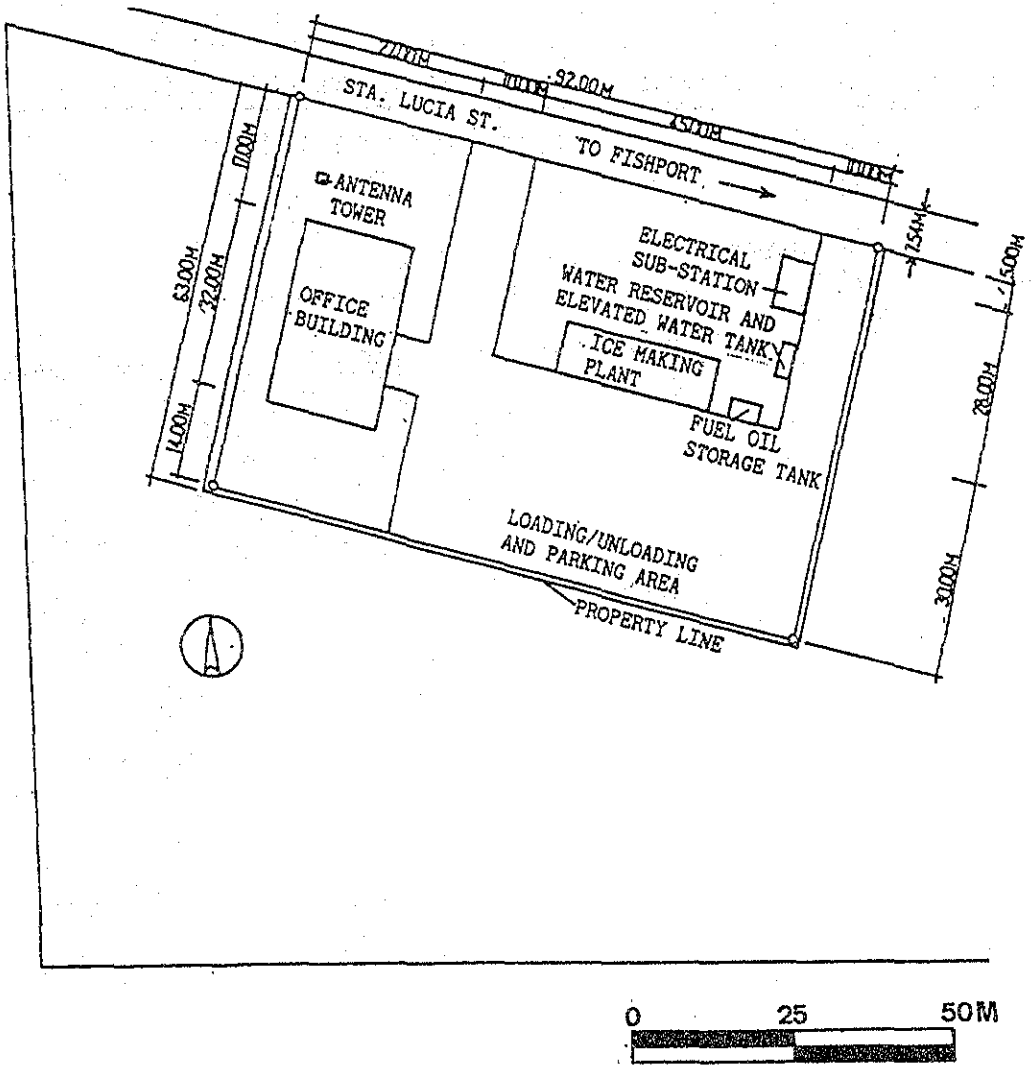

LOCATION MAP




VICINITY MAP

Fig 6 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF NAVOTAS FISHING PORT COMPLEX (NFPC)

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

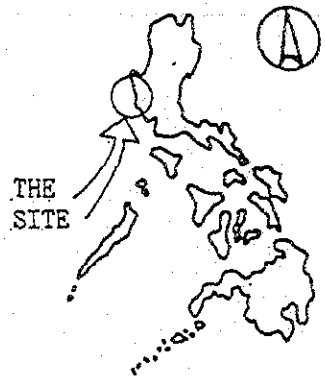



GENERAL LAYOUT PLAN

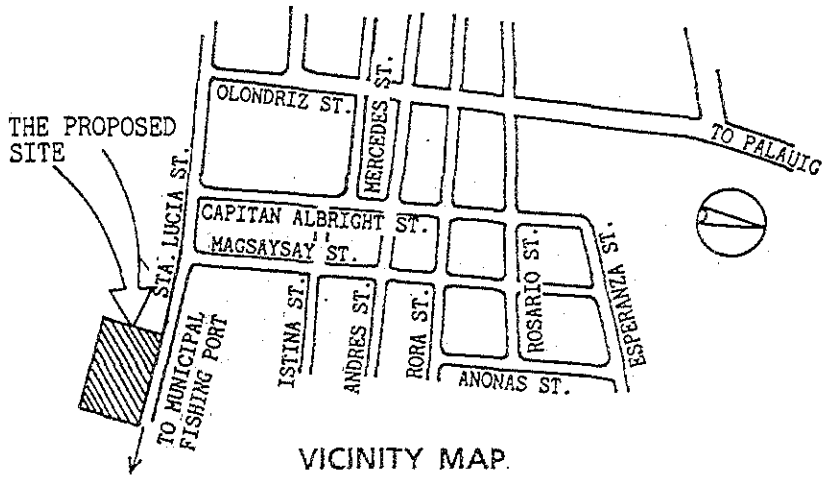
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      32M X 19M = 608M²
   2) ICE MAKING PLANT
      24M X 8M = 192M²
   3) ELECTRICAL SUB-STATION
      8M X 5M = 40M².

2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) WATER RESERVOIR AND ELEVATED TANK
      5M X 2M X 2.5M(D) + 2M X 2M X 1.5M(H)
   3) FUEL OIL STORAGE TANK
      3M(dia) X 5M(L).



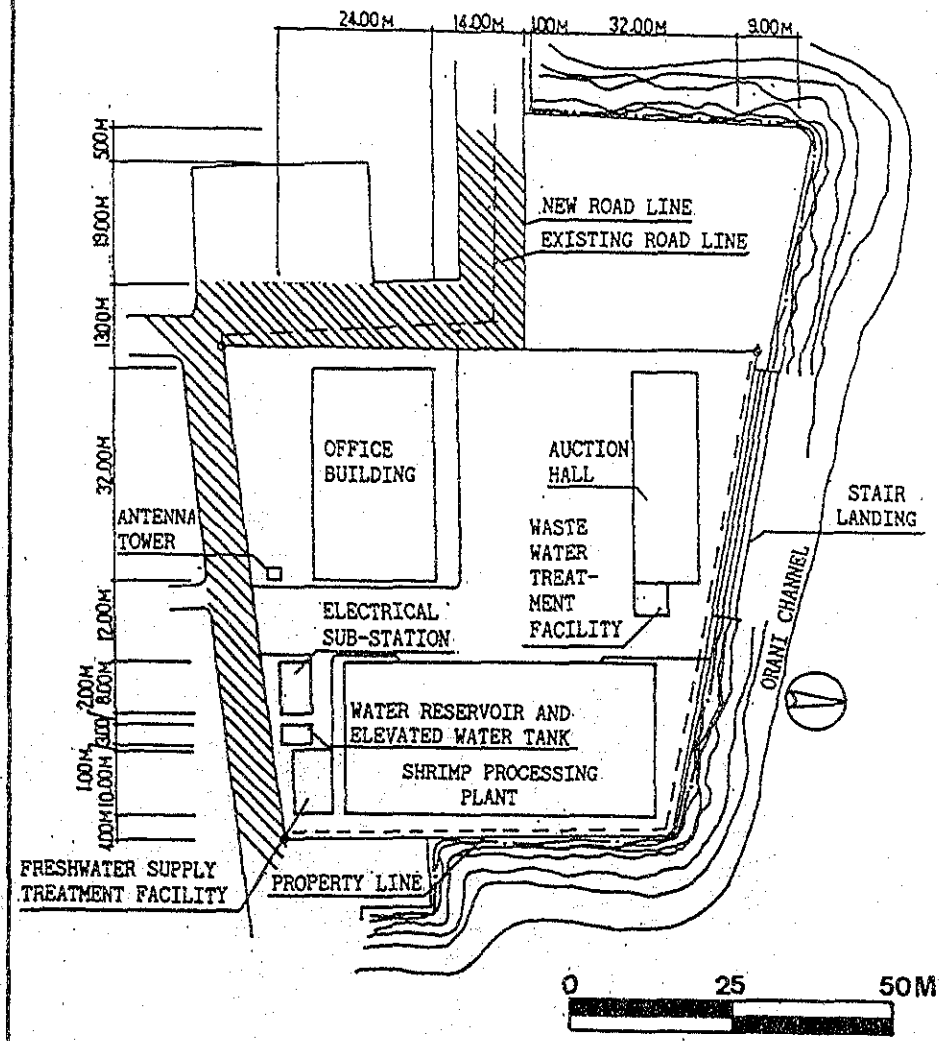

LOCATION MAP




VICINITY MAP

Fig 7 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF MASINLOC, SUB-CENTER IN ZONE 1

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

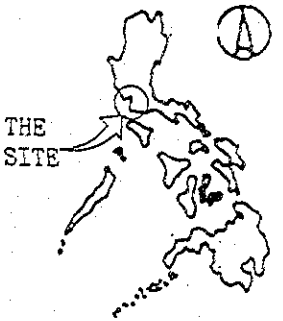



GENERAL LAYOUT PLAN

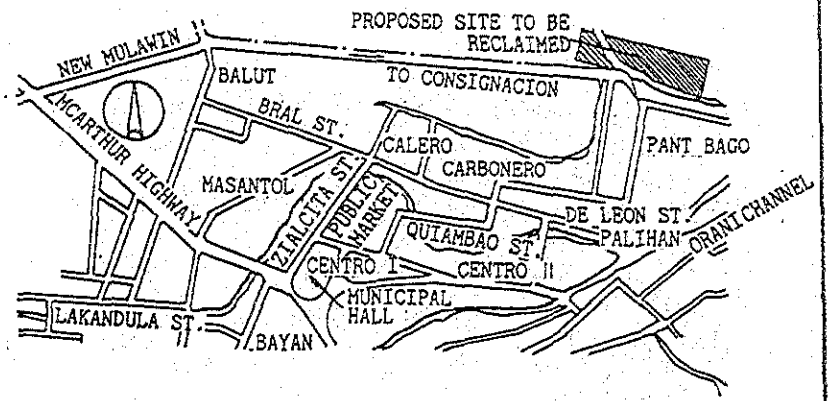
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      32M X 19M = 608M²
   2) SHRIMP PROCESSING PLANT
      48M X 24M = 1,152M²
   3) ELECTRICAL SUB-STATION
      8M X 5M = 40M²
   4) AUCTION HALL
      32M X 10M = 320M²

2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) WATER RESERVOIR AND ELEVATED TANK
      5M X 2M X 2.5M(D)
      + 3M X 2M X 2.0M(H)
   3) FRESH WATER SUPPLY TREATMENT FACILITY
      10M X 6M = 60M²
   4) WASTE WATER TREATMENT FACILITY
      5M X 5M X 3M(D)




LOCATION MAP

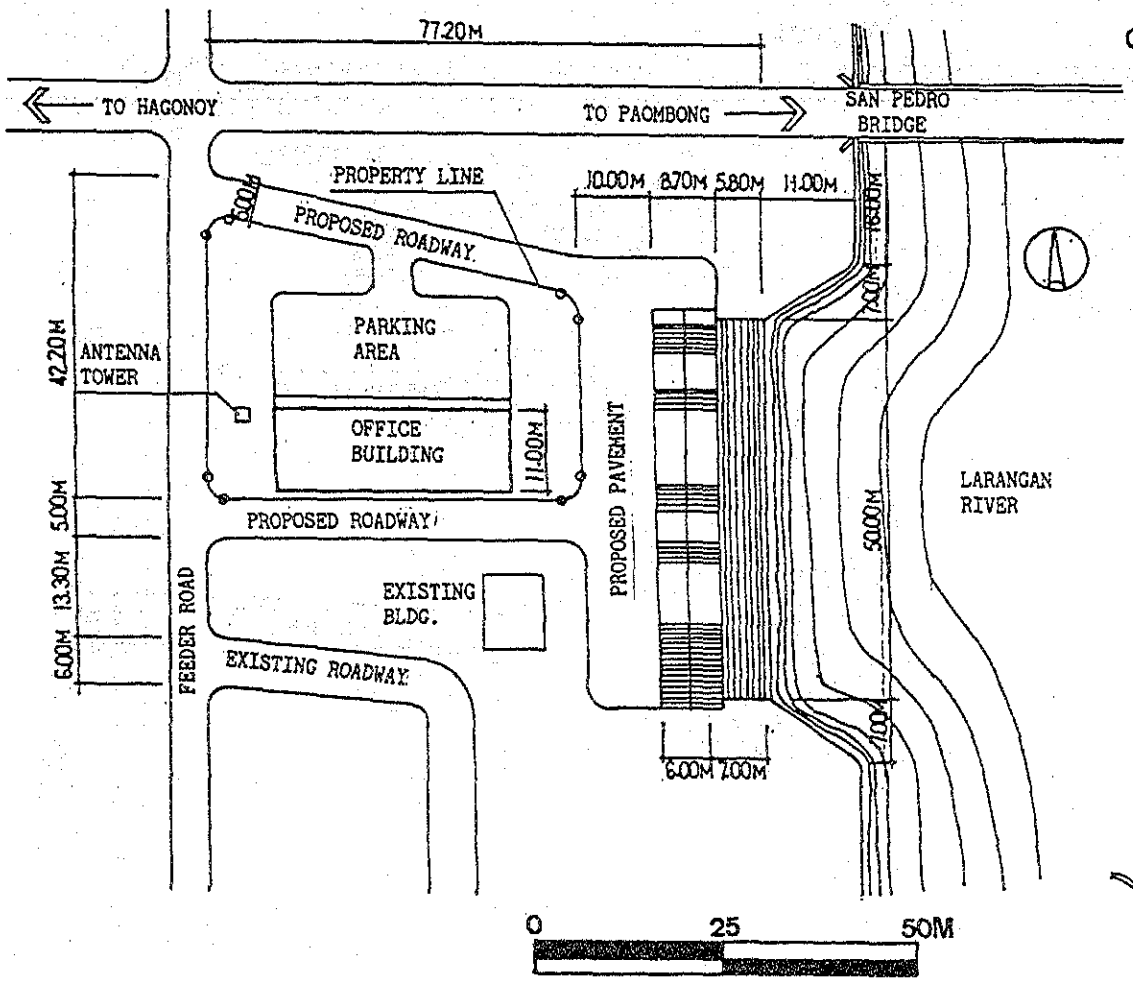



SCALE 1 : 5,000 M

VICINITY MAP

Fig 8 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF ORANI, SUB-CENTER IN ZONE 1

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

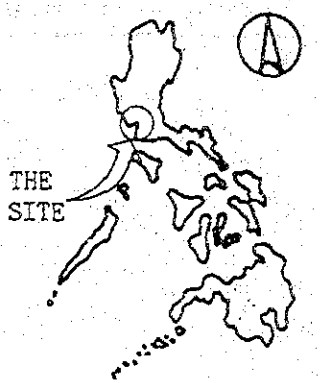



GENERAL LAYOUT PLAN

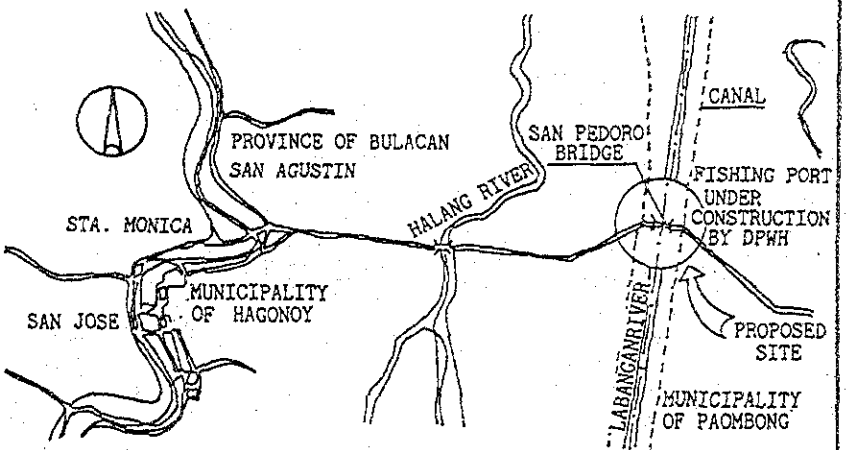
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      32M X 11M = 352M²

2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²




LOCATION MAP




SCALE 1 : 5,000 M

VICINITY MAP

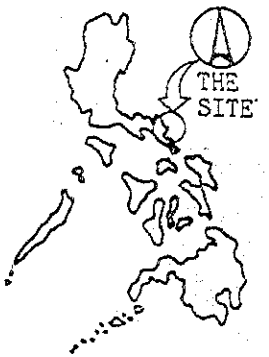
Fig 9 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF HACONOY, SATELITTE SUB-CENTER IN ZONE 1

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

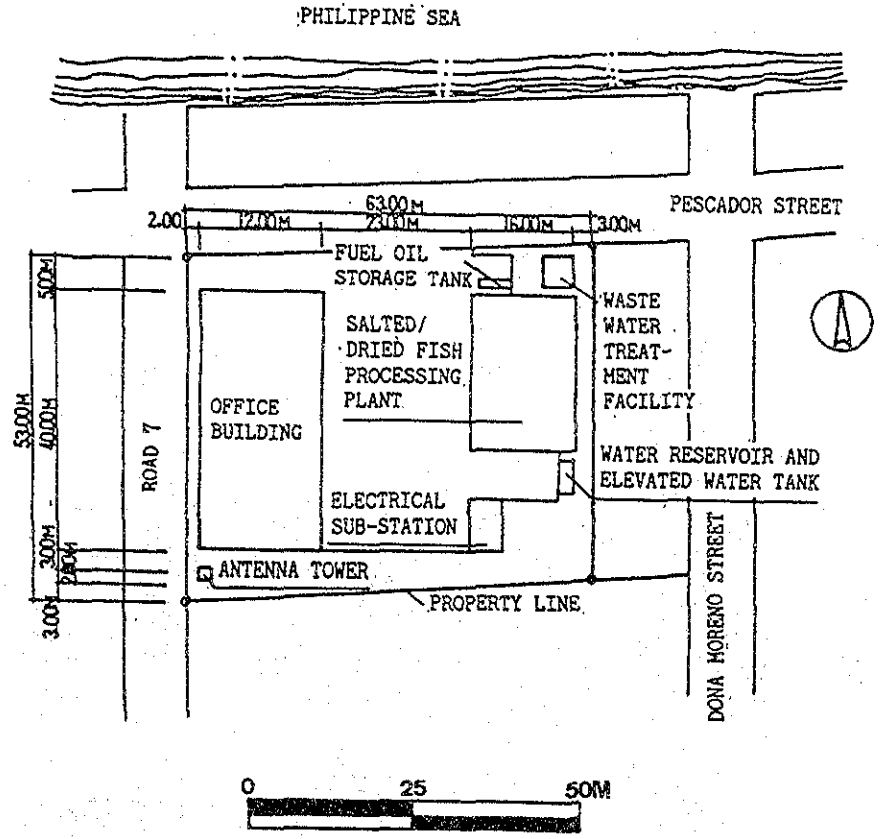
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      40M X 19M = 760M²
   2) SALTED/DRIED FISH PROCESSING PLANT
      24M X 16M = 384M²
   3) ELECTRICAL SUB-STATION
      8M X 5M = 40M²

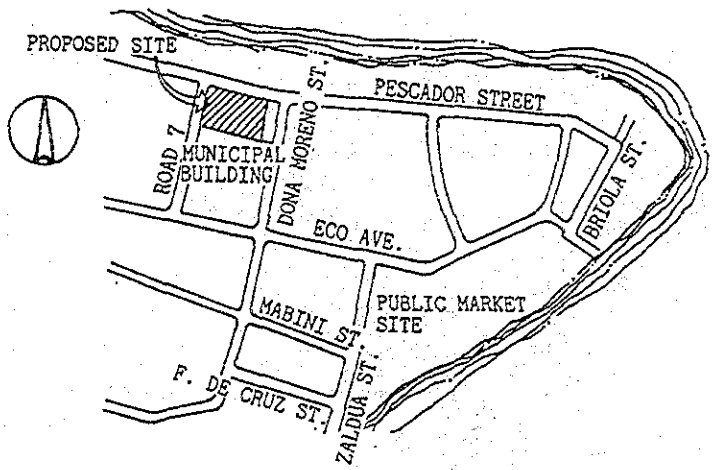
2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) WATER RESERVOIR AND ELEVATED TANK
      5M X 2M X 2.5M(D)
      + 2M X 2M X 1.5M(H)
   3) FUEL OIL STORAGE TANK
      1.3M(dia) X 5M
   4) WASTE WATER TREATMENT FACILITY
      5M X 5M X 3M(D)




LOCATION MAP



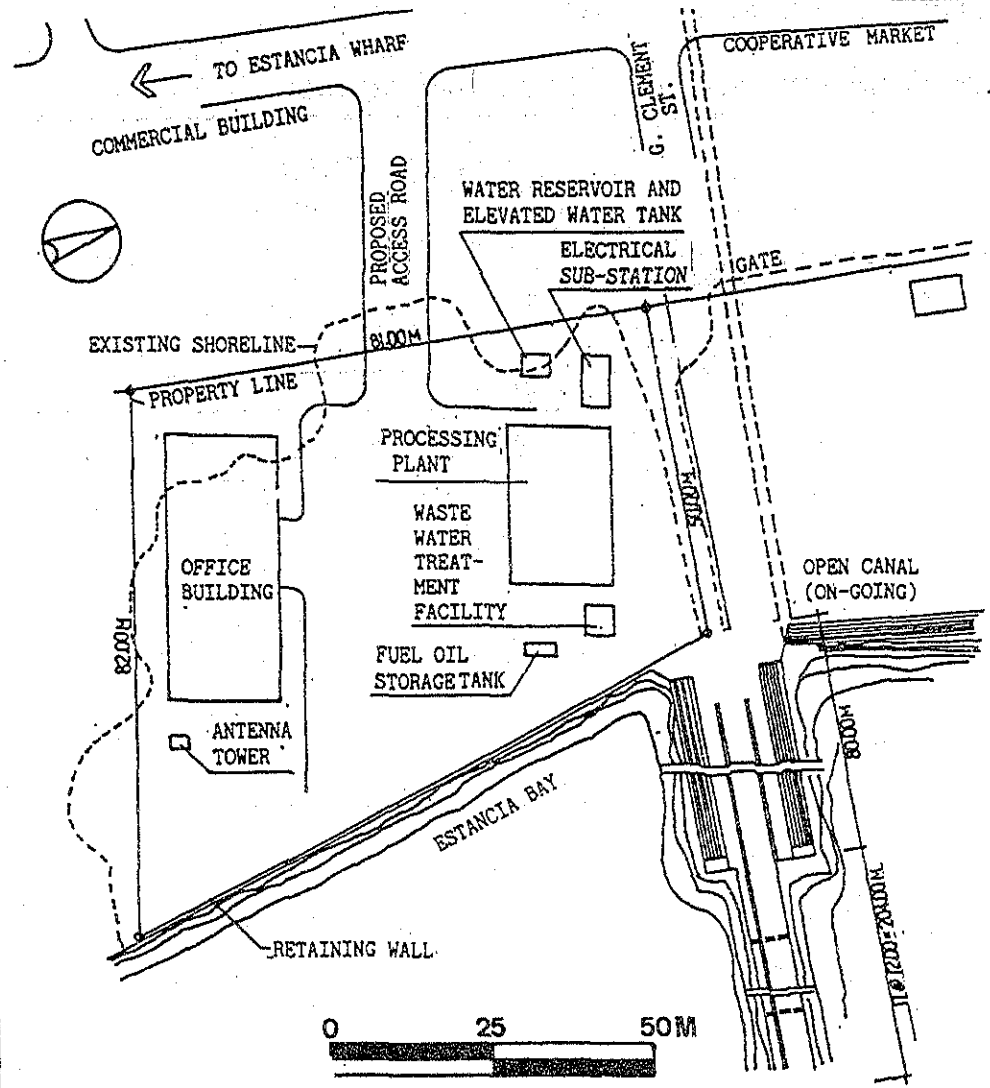

GENERAL LAYOUT PLAN




VICINITY MAP

Fig 10 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF MERCEDES, ZONE CENTER IN ZONE 2

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH-TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

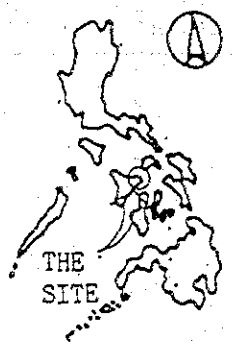



GENERAL LAYOUT PLAN

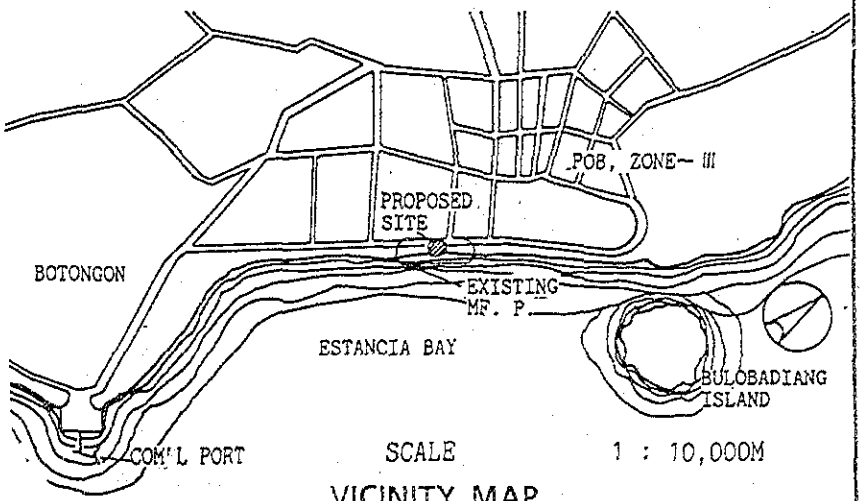
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      40M X 19M = 760M²
   2) SALTED/DRIED FISH PROCESSING PLANT
      24M X 16M = 384M²
   3) ELECTRICAL SUB-STATION
      8M X 5M = 40M²

2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) WATER RESERVOIR AND ELEVATED TANK
      5M X 2M X 2.5M(D)+ 2M X 2M X 1.5M(H)
   3) FUEL OIL STORAGE TANK
      1.3M(dia) X 5M
   4) WASTE WATER TREATMENT FACILITY
      5M X 5M X 3M(D)



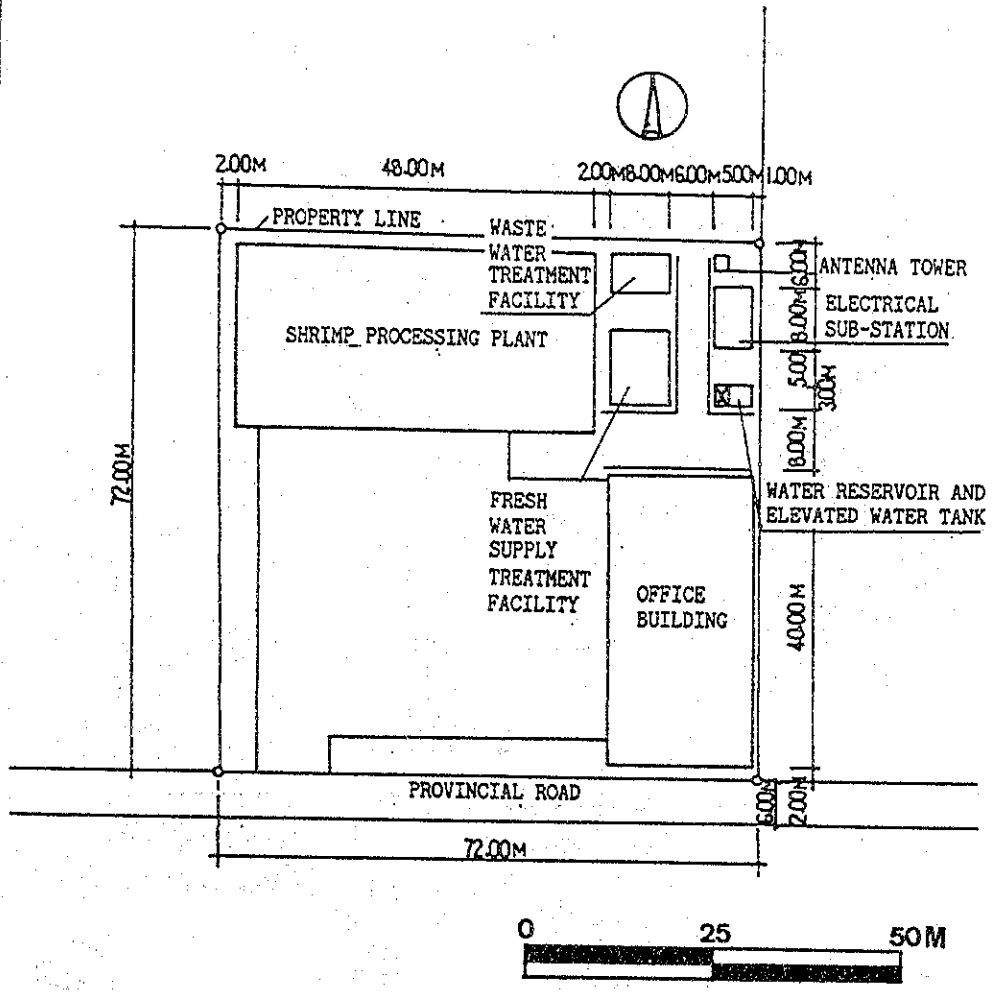

LOCATION MAP




VICINITY MAP

Fig 11 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF ESTANCIA, ZONE CENTER IN ZONE 3

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

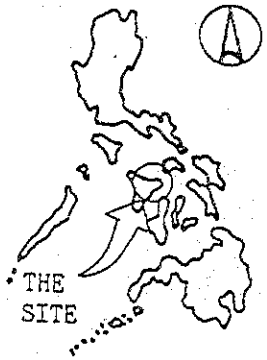



GENERAL LAYOUT PLAN

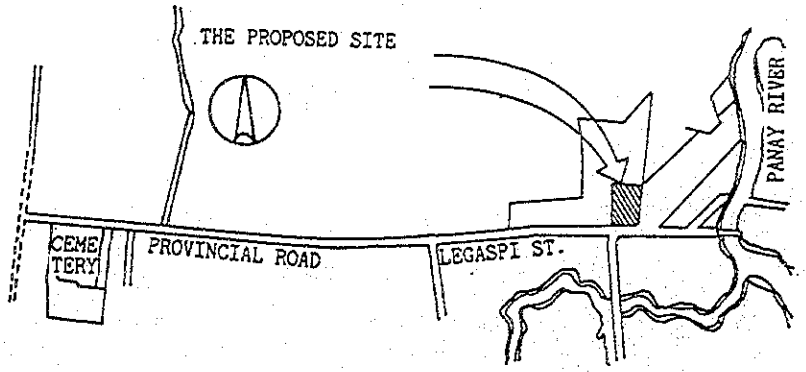
## COMPONENT OF THE FACILITIES

1. BUILDING :
   1) OFFICE BUILDING
      40M X 19M = 760M²
   2) SHRIMP PROCESSING PLANT
      48M X 24M = 1,152 M²
   3) ELECTRICAL SUB-STATION
      8M X 5M = 40M²

2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) WATER RESERVOIR AND ELEVATED WATER TANK
      5M X 3M X 2.5M(D) + 3M X 2M X 2M(H)
   3) FRESH WATER SUPPLY TREATMENT FACILITY
      10M X 8M = 80M²
   4) WASTE WATER TREATMENT FACILITY
      8M X 5M X 3M(D)




LOCATION MAP




VICINITY MAP

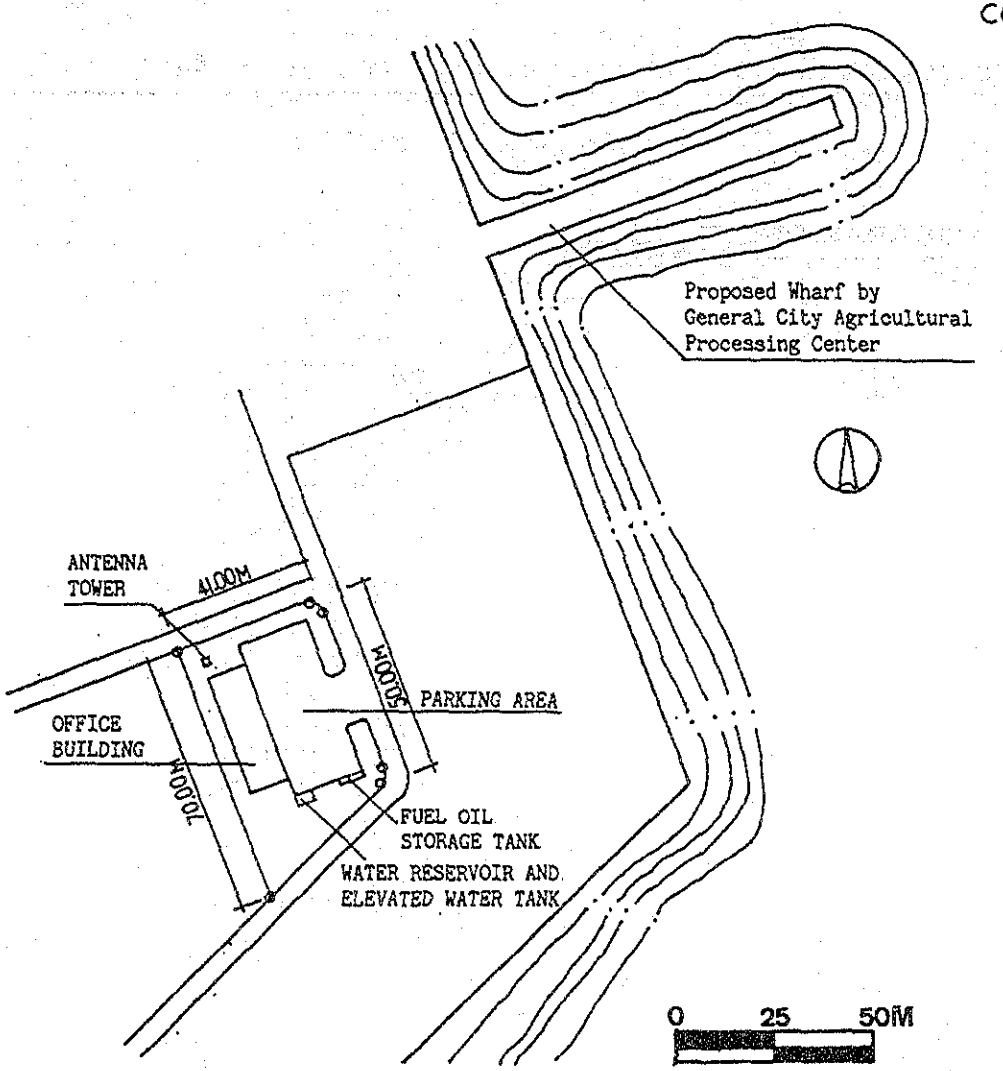
Fig 12 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF ROXAS CITY, SUB-CENTER IN ZONE 3

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

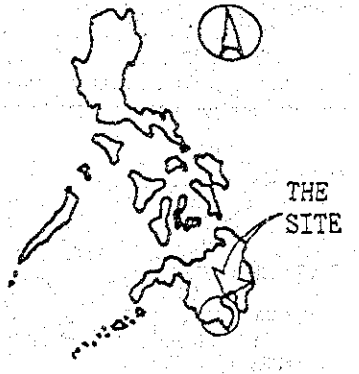
## COMPONENT OF THE FACILITIES

1. BUILDINGS
   1) OFFICE BUILDING
      32M X 11M = 352M²

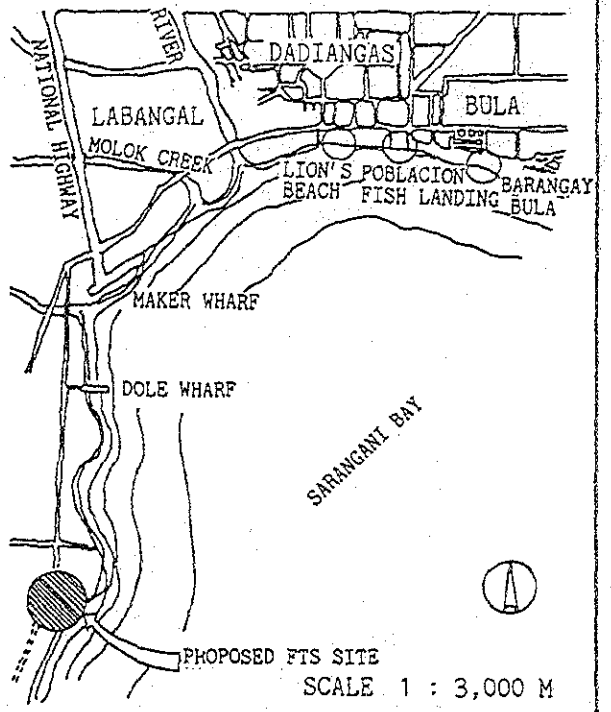
2. OTHER FACILITIES
   1) ANTENNA TOWER
      2M X 2M = 4M²
   2) WATER RESERVOIR AND ELEVATED TANK
      5M X 2M X 2.5M(D)
      + 2M X 3M X 2M(H)
   3) FUEL OIL STORAGE TANK
      1.5M(dia) X 7M(L)




GENERAL LAYOUT PLAN




LOCATION MAP

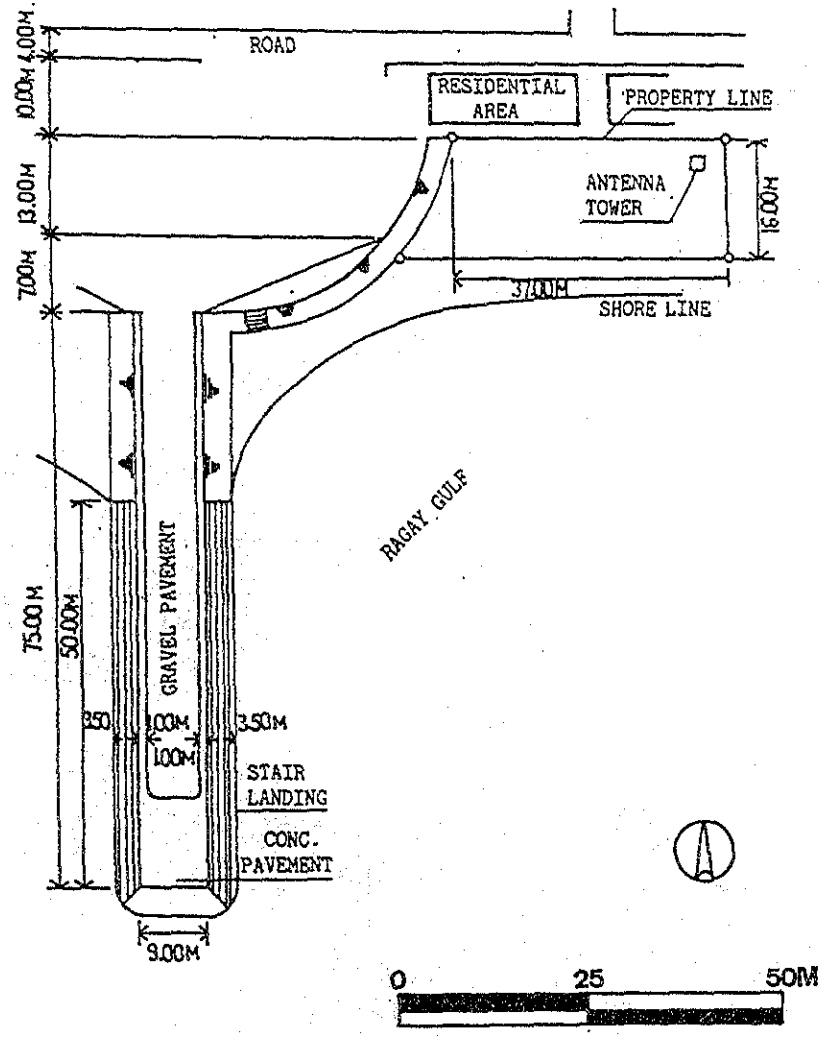



SCALE 1 : 3,000 M

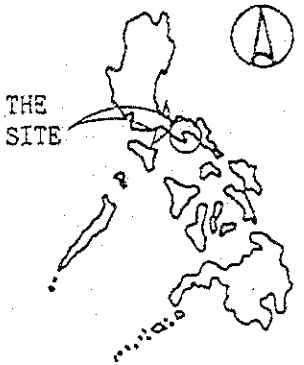
VICINITY MAP

Fig 13 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF GENERAL SANTOS, ZONE CENTER IN ZONE 6

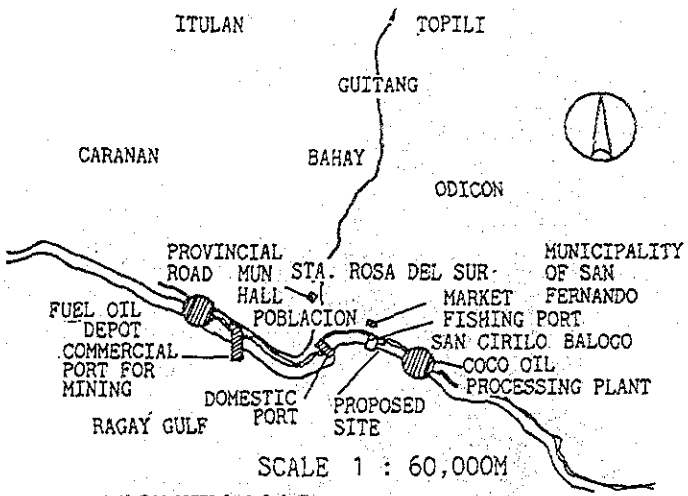
THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON
FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY




GENERAL LAYOUT PLAN




LOCATION MAP




SCALE 1 : 60,000M

VICINITY MAP

Fig 14 GENERAL LAYOUT PLAN OF THE FACILITIES AND LOCATION/VICINITY MAP OF PASACAO, PROTOTYPE SITE

THE REPUBLIC OF THE PHILIPPINES
THE FEASIBILITY STUDY ON FISH TRANSPORT SYSTEM
JAPAN INTERNATIONAL COOPERATION AGENCY

TABLE 6.1 PROJECT COMPONENT BY SITE (1/2)

| COMPONENTS | PILOT PROJECT | | ZONE 1 | | | | ZONE 2 | | ZONE 3 | | | ZONE 6 | PROTO TYPE 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NFPC | ♯2 Consumption Center | Sub-Center 1 Masinloc | Sub-Center 2 Orani | Satellite Hagonoy | Satellite ♯1 Others | Zone Center Mercedes | ♯3 Satellite | Zone Center Estancia | Sub-Centre Roxas | ♯1 Satellite | Zone Center Gen. Santos | Pasacao |
| 1 OFF-SHORE FACILTIES | | | | | | | | | | | | | |
| (1) Fish transport vessel | | | | | | | | | ● | | | ● | |
| (2) Training vessel | ● | | | | | | | | | | | | |
| (3) Fish carrier vessel | | | ● | | | | ● | | ● | | | | ● |
| (4) Payao | ● | | | | | | | | | | | | |
| 2 ON-LAND FACILITIES/BUILDING | | | | | | | | | | | | | |
| (1) Office Building | ● | ● | ● | ● | ● | | ● | | ● | ● | | ● | |
| (2) Insulated Fish Box Manufacturing Plant | ● | | | | | | | | | | | | |
| (3) Shrimp Processing Plant | ● | | | ● | | | | | | ● | | | |
| (4) Salted/Dried Fish Processing Plant | | | | | | | ● | | ● | | | | |
| (5) Surimi Processing Plant | ● | | | | | | | | | | | | |
| (6) Ice Making Plant | | | ● | | | | | | | | | | |
| (7) Workshop | ● | | | | | | | | | | | | |
| (8) Electrical Sub-Station | ● | | ● | ● | | | ● | | ● | ● | | | |
| (9) Auction Hall | | | | ● | | | | | | | | | |

REMARKS ♯1: Guagua, Subic and Sta. Cruz
♯2: Metro Manila, Tarlac and Cabanatuan
♯3: Paracale, Jose Panganiban and Sta. Elena
♯4: Pontevedra, Carles, San Dionisio and Concepcion

TABLE 6.1 PROJECT COMPONENT BY SITE (2/2)

| COMPONENTS | PILOT PROJECT | | ZONE 1 | | | | ZONE 2 | | ZONE 3 | | | ZONE 6 | PROTO TYPE 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Satellite | | | | | | | | |
| | NFPC | ※2 Consumption Center | Sub-Center 1 Masinloc | Sub-Center 2 Orani | Hagonoy | ※1 Others | Zone Center Mercedes | ※3 Satellite | Zone Center Estancia | Sub-Centre Roxas | ※4 Satellite | Zone Center Gen. Santos | Pasacao |
| 3.ON-LAND FACILITIES/FACILITY | | | | | | | | | | | | | |
| (1) Antenna Tower | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| (2) Water Reservoir and Elevated Water Tank | | | ● | ● | | | ● | | ● | ● | | ● | |
| (3) Fuel Oil Storage Tank | | | ● | | | | ● | | ● | | | ● | |
| (4) Fresh Supply Water Treatment Facility | ● | | | ● | | | | | | ● | | | |
| (5) Waste Water Treatment F | ● | | | ● | | | ● | | ● | ● | | | |
| 4.ON-LAND FACILITYES/EQUIPMENT | | | | | | | | | | | | | |
| (1) Insulated truck | ● | ● | ● | ● | | | ● | | ● | ● | | ● | ● |
| (2) Mobile ice making plant | ● | | | | | | | | | | | | |
| (3) Mobile salting/drying plant | ● | | | | | | | | | | | | |
| (4) Tools & machine for workshop | ● | | ● | ● | | | ● | | ● | ● | | ● | |
| (5) Information/communi-cation facilities | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| (6) Fish quality testing facilities | ● | | | | | | ● | | ● | ● | | ● | |
| (7) Training/extension facilities | ● | | | | | | | | | | | | |
| (8) Mobile fish store | ● | | | | | | | | | | | | |
| (9) Fuel oil tank lorry | | | ● | | | | ● | | ● | | | ● | |
| (10) Freshwater tank lorry | | | ● | | | | | | ● | | | ● | |
| (11) Refrigerated truck | | | | ● | | | | | | ● | | | |
| (12) Cooking facilities for demonstration | | ● | | | | | | | | | | | |
| (13) Marine showing facilities | | ● | | | | | | | | | | | |
| 5 IMPROVEMENT WORKS FOR INFRASTRUCTURER | | | | | | | | | | | | | |
| (1) Rehabilitation for existing MFP | | | ● | | | | ● | | ● | ● | | ● | ● |
| (2) Access road | | | | ● | | | | | | | | | |
| (3) Extension for city water main | | | ● | ● | | | ● | | ● | | | | |
| (4) Wiring electrical power primary line | | | ● | ● | | | ● | | ● | | | ● | |
| (5) Reclamation | | | | | | | ● | | ● | | | | ● |

REMARKS ※1: Guagua, Subic and Sta. Cruz
※2: Metro Manila, Tarlac and Cabanatuan
※3: Paracale, Jose Panganiban and Sta. Elena
※4: Pontevedra, Carles, San Dionisio and Concepcion

## TABLE 6.2 FISH VOLUME TO BE TRANSPORTED OR PROCESSED BY FTS FACILITIES

Unit : Tons/year

| Facilities | Zone | Site | Species | A | B/A Approx. Share % | B |
|---|---|---|---|---|---|---|
| Fish Carrier Vessel | Zone 1 | Masinloc | Yellowfin Tuna | 4,600 * | 50 | 2,400 |
| | Zone 2 | Mercedes | Marine | 22,000 * | 15 | 1,500 |
| | Zone 3 | Estancia | Marine | 3,900 * | 50 | 1,800 |
| | Prototype | Pasacao | Marine | 10,000 * | 15 | 1,500 |
| Fish Transport Vessel | Zone 3 | Roxas | Tiger Prawn | 2,000 | 100 | 2,000 |
| | | Roxas | Milk Fish | 7,000 | 30 | 2,400 |
| | | Roxas Estancia | Marine | 2,200 | 70 | 1,400 |
| | Zone 6 | Gen.Santos | Yellowfin Tuna | 4,200 | 100 | 4,200 |
| Truck | NFPC | Guagua Hagonoy | Tiger Prawn | 5,400 | 20 | 1,100 |
| | | Guagua Hagonoy | Milk Fish | 16,300 | 10 | 1,500 |
| | Zone 1 | Masinloc | Marine | 25,000 * | 10 | 2,400 |
| | | Guagua | Milk Fish | 5,700 | 50 | 2,800 |
| | | Orani | Tiger Prawn | 4,300 | 25 | 1,100 |
| | Zone 2 | Mercedes | Marine | 3,900 | 50 | 2,000 |
| | Zone 3 | Estancia | Marine | 4,200 | 50 | 1,900 |
| | | Roxas | Milk Fish | 7,000 | 30 | 2,400 |
| | | Roxas | Tiger Prawn | 2,000 | 50 | 1,100 |
| | Zone 6 | Gen.Santos | Yellowfin Tuna | 4,200 | 100 | 4,200 |
| | | Gen.Santos | Marine | 6,000 | 30 | 1,800 |
| | prototype | Pasacao | Marine | 1,200 | 100 | 1,200 |
| Shrimp Processing Plant | NFPC | Navotas | Tiger Prawn | 5,400 | 20 | 1,100 |
| | Zone 1 | Orani | Tiger Prawn | 4,300 | 25 | 1,100 |
| | Zone 3 | Roxas | Tiger Prawn | 2,000 | 50 | 1,100 |
| Surimi Plant | NFPC | Navotas | Milk Fish | 16,300 | 10 | 1,500 |
| Salted and Dried Fish processing Plant | Zone 2 | Mercedes | Marine | 4,200 | 25 | 1,000 |
| | Zone 3 | Estancia | Marine | 3,200 | 30 | 1,000 |
| Ice Making Plant | Zone 1 | Masinloc | Ice | 24 ** | 40 | 10 *** |

Remarks : A : Increase of fish production and O/D volume from 1986 to 1995.

* ; Fish production in 1995

** ; Ice demand (tons/day)

*** ; Ice plant capacity (tons/day)

B : Fish volume to be transported or processed by FTS components.

TABLE 6.3 PROJECT COMPONENT AND CAPACITY BY SITE (1/2)

| ITEM | PILOT PROJECT | | ZONE 1 | | | | ZONE 2 | | ZONE 3 | | | ZONE 6 | PROTO TYPE 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NFPC | ※2 Consumption Center | Sub-Center 1 Masinloc | Sub-Center 2 Orani | Satellite Bagonoy | Satellite ※1 Others | Zone Center Mercedes | ※3 Satellite | Zone Center Estancia | Sub-Centre Roxas | ※4 Satellite | Zone Center Gen. Santos | Pasacao |
| 1 OFF-SHORE FACILTIES | | | | | | | | | | | | | |
| (1) Fish transport vessel | | | | | | | | | 270GT X 2 | | | 270GT X 2 | |
| (2) Training vessel | 40GT X 1 | | | | | | | | | | | | |
| (3) Fish carrier vessel | 18GT X 1 | | 15GT X 8 | | | | 15GT X 2 | | 15GT X 3 | | | | 15GT X 2 |
| (4) Payao | 24 SETS | | | | | | | | | | | | |
| 2 ON-LAND FACILITIES/BUILDING | | | | | | | | | | | | | |
| (1) Office Building | 1,064㎡ | 64㎡ X 3 | 608㎡ | 608㎡ | 352㎡ | | 760㎡ | | 760㎡ | 760㎡ | | 352㎡ | |
| (2) Insulated Fish Box Manufacturing Plant | 384㎡ 84b x s/d | | | | | | | | | | | | |
| (3) Shrimp Processing Plant | 1,152㎡ 3tons/d | | | 1,152㎡ 3tons/d | | | | | | 1,152㎡ 3tons/d | | | |
| (4) Salted/Dried Fish Processing Plant | | | | | | | | | | | | | |
| (5) Surimi Processing Plant | 768㎡ 2tons/day | | | | | | | | | | | | |
| (6) Ice Making Plant | | | 192㎡ 10tons/d | | | | | | | | | | |
| (7) Workshop | 128㎡ | | | | | | | | | | | | |
| (8) Electrical Sub-Station | 40㎡ | | 40㎡ | 40㎡ | | | 40㎡ | | 40㎡ | 40㎡ | | | |
| (9) Auction Hall | | | | 320㎡ | | | | | | | | | |

REMARKS ※1: Guagua, Subic and Sta. Cruz
※2: Metro Manila, Tarlac and Cabanatuan
※3: Paracale, Jose Panganiban and Sta. Elena
※4: Pontevedra, Carles, San Dionisio and Concepcion

TABLE 6.3 PROJECT COMPONENT AND CAPACITY BY SITE (2/2)

| ITEM | PILOT PROJECT | | ZONE 1 | | | | ZONE 2 | | ZONE 3 | | | ZONE 6 | PROTO TYPE 8 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Satellite | | | | | | | | |
| | NFPC | #2 Consumption Center | Sub-Center 1 Masinloc | Sub-Center 2 Orani | Hagonoy | #1 Others | Zone Center Mercedes | #3 Satellite | Zone Center Estancia | Sub-Centre Roxas | #4 Satellite | Zone Center Gen. Santos | Pasacao |
| 3.ON-LAND FACILITIES/FACILITY | | | | | | | | | | | | | |
| (1) Antenna Tower | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| (2) Water Reservoir and Elevated Water Tank | | | ● | ● | | | ● | | ● | ● | | ● | |
| (3) Fuel Oil Storage Tank | | | ● | | | | ● | | ● | | | ● | |
| (4) Fresh Supply Water Treatment Facility | 80m 8tons/hr | | | 60m 5tons/hr | | | | | | ● | | | |
| (5) Waste Water Treatment F | 40m 8tons/hr | | | 25m 5tons/hr | | | ● | | ● | ● | | | |
| 4.ON-LAND FACILITYES/EQUIPMENT | | | | | | | | | | | | | |
| (1) Insulated truck | 7tonsx2 | 1ton x 9 | 7tons x 5 | 5tons x 2 | | 7tons x5 | 7tons x 3 | | 7tons x 3 | 7tonsx4 | | 7tonsx4 3tonsx4 | 7tonsx3 |
| (2) Mobile ice making plant | 5tons x 3 | | | | | | | | | | | | |
| (3) Mobile salting/drying plant | 1ton/D x1 1ton/D x1 | | | | | | | | | | | | |
| (4) Tools & machine for workshop | ● | | ● | ● | | | ● | | ● | ● | | ● | |
| (5) Information/communication facilities | ● | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| (6) Fish quality testing facilities | ● | | | | | | ● | | ● | ● | | ● | |
| (7) Training/extension facilities | ● | | | | | | | | | | | | |
| (8) Mobile fish store | | | | | | | | | | | | | |
| (9) Fuel oil tank lorry | 1ton x 5 | | | | | | | | | | | | |
| (10) Freshwater tank lorry | | | 5ton x 1 | | | | 5ton x 1 | | 5ton x 1 | | | 5ton x 1 | |
| (11) Refrigerated truck | | | 5ton x 1 | | | | | | 5ton x 1 | | | 5ton x 1 | |
| (12) Cooking facilities for demonstration | | ● | | 5ton x 2 | | | | | | 5ton x 2 | | | |
| (13) Marine showing facilities | | ● | | | | | | | | | | | |
| 5 IMPROVEMENT WORKS FOR INFRASTRUCTURER | | | | | | | | | | | | | |
| (1) Rehabilitation for existing MFP | | | ● | | | | ● | | ● | ● | | ● | ● |
| (2) Access road | | | | ● | | | | | | | | | |
| (3) Extension for city water main | | | ● | ● | | | ● | | ● | | | | |
| (4) Wiring electrical power primary line | | | ● | ● | | | ● | | ● | | | ● | |
| (5) Reclamation | | | | | | | ● | | ● | | | | ● |

REMARKS #1: Guagua, Subic and Sta. Cruz
#2: Metro Manila, Tarlac and Cabanatuan
#3: Paracale, Jose Panganiban and Sta. Elena
#4: Pontevedra, Carles, San Dionisio and Concepcion

# 7. COST ESTIMATION OF FTS PROJECT

## 7. COST ESTIMATION OF FTS PROJECT

Project cost was estimated based upon the following assumptions.

1) Constant price as of December 1988

2) Tax exemption for imported materials and goods

3) Foreign exchange rate of US$ 1 equivalent to 21 pesos or 130 yen

4) Unit cost is estimated by items based on the data provided by the main office DPWH, its field offices and private local contractors.

5) Cost of imported materials and goods is estimated at CIF price in Manila. It includes additional transportation cost from Manila to the proposed sites.

6) Average wages of the skilled and the unskilled laborers are estimated based on data obtained through interviews with local private contractors.

7) Designing and supervising cost are estimated under the following conditions.

   i) By foreign consultants in the case of the pilot project of FTS

   ii) By J/V of foreign and local consultants in the case of the commercial projects of FTS

8) Price escalation rate is assumed at 10% of the construction cost and consultant fee, respectively.

9) Physical contingency is assumed to be 10% of the total construction cost. Total project cost and construction by component and by zone are estimated as shown in Table 7.1 and Tables 7.2 to 7.7, respectively.

## TABLE 7.1 PROJECT COST OF FTS

Unit: 1,000 US$

| | 1 OFF-SHORE FACILITIES | 2 ON-LAND FACILITIES BUILDING & FACILITY | 3 ON-LAND FACILITIES EQUIPMENT | 4 CIVIL WORKS | 5 IMPROVEMENT WORKS FOR INFRASTRUCTURE | TOTAL CONSTRUCTION COST | 6 CONSULTANT FEE | 7 PRICE ESCALATION | 8 PHYSICAL CONTIGENCY | 9 TOTAL PROJECT COST |
|---|---|---|---|---|---|---|---|---|---|---|
| 1. Pilot Project | 1,597 | 8,085 | 2,408 | 440 | 0 | 12,530 | 2,160 | 1,469 | 1,469 | 17,628 |
| | 9.1% | 45.0% | 13.7% | 2.5% | 0.0% | 71.1% | 12.3% | 8.3% | 8.3% | 100.0% |
| 2. Commercial Project | 17,579 | 17,461 | 4,972 | 964 | 3,139 | 44,116 | 2,846 | 4,696 | 4,696 | 56,354 |
| | 31.2% | 31.0% | 8.8% | 1.7% | 5.6% | 78.3% | 5.1% | 8.3% | 8.3% | 100.0% |
| 2.1 Zone | 16,653 | 17,373 | 4,756 | 843 | 2,908 | 42,533 | 2,846 | 4,538 | 4,538 | 54,456 |
| | 30.6% | 31.9% | 8.7% | 1.5% | 5.3% | 78.1% | 5.2% | 8.3% | 8.3% | 100.0% |
| 2.1.1 Zone 1 | 3,689 | 7,255 | 1,631 | 174 | 1,085 | 13,833 | 872 | 1,471 | 1,471 | 17,646 |
| | 20.9% | 41.1% | 9.2% | 1.0% | 6.1% | 78.4% | 4.9% | 8.3% | 8.3% | 100.0% |
| 2.1.2 Zone 2 | 926 | 2,534 | 678 | 86 | 109 | 4,333 | 448 | 478 | 478 | 5,737 |
| | 16.1% | 44.2% | 11.8% | 1.5% | 1.9% | 75.5% | 7.8% | 8.3% | 8.3% | 100.0% |
| 2.1.3 Zone 3 | 6,475 | 6,836 | 1,539 | 583 | 1,477 | 16,911 | 1,073 | 1,798 | 1,798 | 21,581 |
| | 30.0% | 31.7% | 7.1% | 2.7% | 6.8% | 78.4% | 5.0% | 8.3% | 8.3% | 100.0% |
| 2.1.4 Zone 6 | 5,563 | 748 | 908 | 0 | 237 | 7,456 | 454 | 791 | 791 | 9,492 |
| | 58.6% | 7.9% | 9.6% | 0.0% | 2.5% | 78.6% | 4.8% | 8.3% | 8.3% | 100.0% |
| 2.2 F.T.Pasacao | 925 | 88 | 216 | 121 | 231 | 1,582 | 0 | 158 | 158 | 1,899 |
| | 48.7% | 4.7% | 11.4% | 6.4% | 12.2% | 83.3% | 0.0% | 8.3% | 8.3% | 100.0% |
| Grand Total | 19,175 | 25,546 | 7,380 | 1,404 | 3,139 | 56,646 | 5,006 | 6,165 | 6,165 | 73,982 |
| | 25.9% | 34.5% | 10.0% | 1.9% | 4.2% | 76.6% | 6.8% | 8.3% | 8.3% | 100.0% |

Remarks: Land aquisition cost and tax are not included in the project cost.
Consultant fee for Prototype Pasacao is included in the fee for zone 2.

## TABLE 7.2 PROJECT COST OF PILOT PROJECT

| | NAME OF COMPONENT | FOREIGN CURRENCY (US$) | LOCAL CURRENCY (Pesos) | TOTAL (US$) |
|---|---|---|---|---|
| 1 | OFF-SHORE FACILITIES | 1,596,730 | 0 | 1,596,730 |
| | 1-1 Fish Transport Vessel (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-2 Fish Transport Vessel for Tuna (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-3 Training Vessel (40GT) | 785,266 | 0 | 785,266 |
| | (1) Direct Cost | 598,846 | | 598,846 |
| | (2) Indirect Cost | 186,420 | | 186,420 |
| | 1-4 Training Vessel (18GT) | 534,535 | 0 | 534,535 |
| | (1) Direct Cost | 438,462 | | 438,462 |
| | (2) Indirect Cost | 96,073 | | 96,073 |
| | 1-5 Fish Carrier Vessel (15GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-6 Payao | 276,929 | 0 | 276,929 |
| | (1) Direct Cost | 276,929 | | 276,929 |
| | (2) Indirect Cost | | | 0 |
| 2 | ON-LAND FACILITIES/BUILDING & FACILITY | 5,334,697 | 57,763,047 | 8,085,318 |
| | (1) Direct Cost | 3,376,390 | 40,981,587 | 5,327,894 |
| | 1) Office Building | 448,226 | 10,154,561 | 931,777 |
| | 2) Insulated Fish Box Manufacturing Plant | 257,478 | 3,456,905 | 422,093 |
| | 3) Shrimp Processing Plant | 997,921 | 12,022,201 | 1,570,407 |
| | 4) Salted/Dried Fish Processing Plant | | | 0 |
| | 5) Surimi Processing Plant | 1,209,716 | 10,971,295 | 1,732,159 |
| | 6) Ice Making Plant | | | 0 |
| | 7) Workshop | 26,189 | 786,201 | 63,627 |
| | 8) Electrical Sub-station | 239,904 | 1,418,807 | 307,466 |
| | 9) Auction Hall | | | 0 |
| | 10) Radio Antenna Tower | 13,848 | 779,537 | 50,969 |
| | 11) Water Reservoir/Elevated Water Tank | | | 0 |
| | 12) Fuel Oil Storage Tank | | | 0 |
| | 13) Fresh Water Supply Treatment Facility | 87,864 | 564,074 | 114,725 |
| | 14) Waste Water Treatment Facility | 95,244 | 828,006 | 134,673 |
| | 15) Sea Water Intake Facility | | | 0 |
| | 16) Marine Lighting Facility | | | 0 |
| | 17) Well Drilling | | | 0 |
| | (2) Indirect Cost | 1,958,307 | 16,781,460 | 2,757,424 |
| 3 | ON-LAND FACILITIES/EQUIPMENT | 2,381,062 | 561,788 | 2,407,814 |
| | (1) Direct Cost | 1,890,611 | 0 | 1,890,611 |
| | 1) Insulated Truck | 370,002 | | 370,002 |
| | 2) Refrigerated Truck | | | 0 |
| | 3) Mobile Ice Making Plant | 104,308 | | 104,308 |
| | 4) Mobile Salting/Drying Plant | 138,462 | | 138,462 |
| | 5) Tools & Machines for Workshop | 168,923 | | 168,923 |
| | 6) Information/Communication Facilities | 65,385 | | 65,385 |
| | 7) Fish Quality Testing Facilities | 642,762 | | 642,762 |
| | 8) Training/Extension Facilities | 50,000 | | 50,000 |
| | 9) Mobile Fish Store w/ Cooling Unit | 230,769 | | 230,769 |
| | 10) Fuel Oil Tank Lorry | | | 0 |
| | 11) Fresh Water Tank Lorry | | | 0 |
| | 12) Cooking Facilities for Demonstration | 53,076 | | 53,076 |
| | 13) Marine Products Showing Facilities | 66,924 | | 66,924 |
| | (2) Indirect Cost | 490,451 | 561,788 | 517,203 |
| 4 | CIVIL WORKS | 0 | 9,245,064 | 440,241 |
| | (1) Direct Cost | 0 | 7,396,051 | 352,193 |
| | 1) Retaining Wall | | | 0 |
| | 2) Reclamation | | 6,504,056 | 309,717 |
| | 3) Premises Access Road & Pavement | | | 0 |
| | 4) Premises Drainage | | 891,995 | 42,476 |
| | (2) Indirect Cost | | 1,849,013 | 88,048 |
| 5 | IMPROVEMENT WORKS FOR INFRASTRUCTURE | 0 | 0 | 0 |
| | (1) Direct Cost | 0 | 0 | 0 |
| | 1) Rehabilitations for Existing MFP | | | 0 |
| | 2) Access Road | | | 0 |
| | 3) Extensions of City Water Main | | | 0 |
| | 4) Wiring Electrical Power Prymary Line | | | 0 |
| | 5) Drainage | | | 0 |
| | (2) Indirect Cost | | | 0 |
| 6 | CONSULTANT FEE | 2,006,223 | 3,229,249 | 2,168,997 |
| | (1) Remuneration | 1,797,697 | | 1,797,697 |
| | (2) Direct Cost | 208,526 | 3,229,249 | 362,300 |
| 7 | Sub-Total | 11,318,712 | 70,799,148 | 14,690,190 |
| 8 | Price Escalation | 1,131,871 | 7,079,915 | 1,469,019 |
| 9 | Physical Contingency | 1,131,871 | 7,079,915 | 1,469,019 |
| 10 | Grand-Total | 13,582,454 | 84,958,978 | 17,628,228 |

TABLE 7.3 PROJECT COST IN ZONE 1

| | NAME OF COMPONENT | FOREIGN CURRENCY (US$) | LOCAL CURRENCY (Pesos) | TOTAL (US$) |
|---|---|---|---|---|
| 1 | OFF-SHORE FACILITIES | 3,688,629 | 0 | 3,688,629 |
| | 1-1 Fish Transport Vessel (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-2 Fish Transport Vessel for Tuna (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-3 Training Vessel (40GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-4 Training Vessel (18GT) | 0 | 0 | 0 |
| | (1) Direct Cost | 0 | | 0 |
| | (2) Indirect Cost | 0 | | 0 |
| | 1-5 Fish Carrier Vessel (15GT) | 3,688,629 | 0 | 3,688,629 |
| | (1) Direct Cost | 3,051,080 | | 3,051,080 |
| | (2) Indirect Cost | 637,549 | | 637,549 |
| | 1-6 Payao | 0 | | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| 2 | ON-LAND FACILITIES/BUILDING & FACILITY | 4,490,303 | 58,061,795 | 7,255,150 |
| | (1) Direct Cost | 2,701,054 | 38,585,762 | 4,538,471 |
| | 1) Office Building | 560,717 | 13,252,875 | 1,191,806 |
| | 2) Insulated Fish Box Manufacturing Plant | | | 0 |
| | 3) Shrimp Processing Plant | 997,921 | 12,022,201 | 1,570,407 |
| | 4) Salted/Dried Fish Processing Plant | | | 0 |
| | 5) Surimi Processing Plant | 0 | 0 | 0 |
| | 6) Ice Making Plant | 297,248 | 3,402,532 | 459,273 |
| | 7) Workshop | | | 0 |
| | 8) Electrical Sub-station | 479,808 | 2,837,614 | 614,932 |
| | 9) Auction Hall | 66,048 | 803,150 | 104,293 |
| | 10) Radio Antenna Tower | 83,088 | 4,677,222 | 305,813 |
| | 11) Water Reservoir/Elevated Water Tank | 1,802 | 306,704 | 16,407 |
| | 12) Fuel Oil Storage Tank | 1,848 | 86,909 | 5,987 |
| | 13) Fresh Water Supply Treatment Facility | 77,940 | 476,916 | 100,650 |
| | 14) Waste Water Treatment Facility | 92,328 | 606,567 | 121,212 |
| | 15) Sea Water Intake Facility | | | 0 |
| | 16) Marine Lighting Facility | 42,306 | 113,072 | 47,690 |
| | 17) Well Drilling | | | 0 |
| | (2) Indirect Cost | 1,789,249 | 19,476,033 | 2,716,679 |
| 3 | ON-LAND FACILITIES/EQUIPMENT | 1,591,150 | 826,485 | 1,630,506 |
| | (1) Direct Cost | 1,073,538 | 0 | 1,073,538 |
| | 1) Insulated Truck | 343,231 | | 343,231 |
| | 2) Refrigerated Truck | 115,384 | | 115,384 |
| | 3) Mobile Ice Making Plant | | | 0 |
| | 4) Mobile Salting/Drying Plant | | | 0 |
| | 5) Tools & Machines for Workshop | 253,385 | | 253,385 |
| | 6) Information/Communication Facilities | 161,538 | | 161,538 |
| | 7) Fish Quality Testing Facilities | | | 0 |
| | 8) Training/Extension Facilities | 0 | | 0 |
| | 9) Mobile Fish Store w/ Cooling Unit | | | 0 |
| | 10) Fuel Oil Tank Lorry | 115,400 | | 115,400 |
| | 11) Fresh Water Tank Lorry | 84,600 | | 84,600 |
| | 12) Cooking Facilities for Demonstration | 0 | | 0 |
| | 13) Marine Products Showing Facilities | 0 | | 0 |
| | (2) Indirect Cost | 517,612 | 826,485 | 556,968 |
| 4 | CIVIL WORKS | 0 | 2,655,525 | 126,454 |
| | (1) Direct Cost | | 0 | 0 |
| | 1) Retaining Wall | | 0 | 0 |
| | 2) Reclamation | | 953,238 | 45,392 |
| | 3) Premises Access Road & Pavement | | 1,702,287 | 81,061 |
| | 4) Premises Drainage | | 1,003,789 | 47,799 |
| | (2) Indirect Cost | | | |
| 5 | IMPROVEMENT WORKS FOR INFRASTRUCTURE | 0 | 22,780,097 | 1,084,767 |
| | (1) Direct Cost | 0 | 16,699,169 | 795,199 |
| | 1) Rehabilitations for Existing MFP | | 3,565,651 | 169,793 |
| | 2) Access Road | | 8,752,818 | 416,791 |
| | 3) Extensions of City Water Main | | 1,215,000 | 57,857 |
| | 4) Wiring Electrical Power Primary Line | | 3,165,900 | 150,757 |
| | 5) Drainage | | | 0 |
| | (2) Indirect Cost | | 6,080,928 | 289,568 |
| 6 | CONSULTANT FEE | 744,397 | 2,673,541 | 871,703 |
| | (1) Remuneration | 626,579 | 270,894 | 639,479 |
| | (2) Direct Cost | 117,813 | 2,402,647 | 232,230 |
| 7 | Sub-Total | 10,514,473 | 88,001,232 | 14,705,014 |
| 8 | Price Escalation | 1,051,448 | 8,800,123 | 1,470,501 |
| 9 | Physical Contingency | 1,051,448 | 8,800,123 | 1,470,501 |
| 10 | Grand-Total | 12,617,375 | 105,601,478 | 17,646,017 |

## TABLE 7.4 PROJECT COST IN ZONE 2

| NAME OF COMPONENT | FOREIGN CURRENCY (US$) | LOCAL CURRENCY (Pesos) | TOTAL (US$) |
|---|---|---|---|
| 1 OFF-SHORE FACILITIES | 926,385 | 0 | 926,385 |
| 1-1 Fish Transport Vessel (270GT) | 0 | 0 | 0 |
| (1) Direct Cost | | | 0 |
| (2) Indirect Cost | | | 0 |
| 1-2 Fish Transport Vessel for Tuna (270GT) | 0 | 0 | 0 |
| (1) Direct Cost | | | 0 |
| (2) Indirect Cost | | | 0 |
| 1-3 Training Vessel (40GT) | 0 | 0 | 0 |
| (1) Direct Cost | | | 0 |
| (2) Indirect Cost | | | 0 |
| 1-4 Training Vessel (18GT) | 0 | 0 | 0 |
| (1) Direct Cost | | | 0 |
| (2) Indirect Cost | | | 0 |
| 1-5 Fish Carrier Vessel (15GT) | 926,385 | 0 | 926,385 |
| (1) Direct Cost | 762,770 | | 762,770 |
| (2) Indirect Cost | 163,615 | | 163,615 |
| 1-6 Payao | | | |
| (1) Direct Cost | | | |
| (2) Indirect Cost | | | |
| 2 ON-LAND FACILITIES/BUILDING & FACILITY | 1,483,776 | 22,051,128 | 2,533,830 |
| (1) Direct Cost | 953,700 | 15,724,832 | 1,702,501 |
| 1) Office Building | 271,776 | 6,144,091 | 564,352 |
| 2) Insulated Fish Box Manufacturing Plant | | | 0 |
| 3) Shrimp Processing Plant | | | 0 |
| 4) Salted/Dried Fish Processing Plant | 279,713 | 3,994,025 | 469,905 |
| 5) Surimi Processing Plant | | | 0 |
| 6) Ice Making Plant | 0 | 0 | 0 |
| 7) Workshop | | | 0 |
| 8) Electrical Sub-station | 239,904 | 1,418,807 | 307,466 |
| 9) Auction Hall | | | 0 |
| 10) Radio Antenna Tower | 55,392 | 3,118,148 | 203,875 |
| 11) Water Reservoir/Eleveted Water Tank | 1,201 | 281,358 | 14,599 |
| 12) Fuel Oil Storage Tank | 1,848 | 60,073 | 4,709 |
| 13) Fresh Water Supply Treatment Facility | | | 0 |
| 14) Waste Water Treatment Facility | 92,328 | 651,784 | 123,365 |
| 15) Sea Water Intake Facility | | | 0 |
| 16) Marine Lighting Facility | 11,538 | 56,536 | 14,230 |
| 17) Well Drilling | | | 0 |
| (2) Indirect Cost | 530,076 | 6,326,306 | 831,329 |
| 3 ON-LAND FACILITIES/EQUIPMENT | 669,881 | 172,616 | 678,101 |
| (1) Direct Cost | 538,859 | 0 | 538,859 |
| 1) Insulated Truck | 129,231 | | 129,231 |
| 2) Refrigerated Truck | | | 0 |
| 3) Mobile Ice Making Plant | | | 0 |
| 4) Mobile Salting/Drying Plant | | | 0 |
| 5) Tools & Machines for Workshop | 168,923 | | 168,923 |
| 6) Information/Communication Facilities | 69,228 | | 69,228 |
| 7) Fish Quality Testing Facilities | 56,077 | | 56,077 |
| 8) Training/Extension Facilities | 0 | | 0 |
| 9) Mobile Fish Store w/ Cooling Unit | | | 0 |
| 10) Fuel Oil Tank Lorry | 115,400 | | 115,400 |
| 11) Fresh Water Tank Lorry | | | 0 |
| 12) Cooking Facilities for Demonstration | | | 0 |
| 13) Marine Products Shoving Facilities | | | 0 |
| (2) Indirect Cost | 131,022 | 172,616 | 139,242 |
| 4 CIVIL WORKS | 0 | 1,796,255 | 85,536 |
| (1) Direct Cost | 0 | 1,320,783 | 62,894 |
| 1) Retaining Wall | | | 0 |
| 2) Reclamation | | 1,100,800 | 52,410 |
| 3) Premises Access Road & Pavement | | | 0 |
| 4) Premises Drainage | | 220,183 | 10,485 |
| (2) Indirect Cost | | 475,482 | 22,642 |
| 5 IMPROVEMENT WORKS FOR INFRASTRUCTURE | 0 | 2,292,427 | 109,163 |
| (1) Direct Cost | 0 | 1,666,644 | 79,364 |
| 1) Rehabilitations for Existing MFP | | 1,369,044 | 65,193 |
| 2) Access Road | | | 0 |
| 3) Extensions of City Water Main | | 225,000 | 10,714 |
| 4) Wiring Electrical Power Prymary Line | | 72,800 | 3,457 |
| 5) Drainage | | | 0 |
| (2) Indirect Cost | | 625,783 | 29,799 |
| 6 CONSULTANT FEE | 343,161 | 2,204,683 | 448,126 |
| (1) Remuneration | 287,726 | 271,112 | 300,706 |
| (2) Direct Cost | 55,345 | 1,933,571 | 147,420 |
| 7 Sub-Total | 3,423,193 | 28,517,119 | 4,781,141 |
| 8 Price Escalation | 342,313 | 2,851,712 | 478,114 |
| 9 Physical Contingency | 342,313 | 2,851,712 | 478,114 |
| 10 Grand-Total | 4,127,820 | 34,220,543 | 5,737,369 |

## TABLE 7.5 PROJECT COST IN ZONE 3

| | NAME OF COMPONENT | FOREIGN CURRENCY (US$) | LOCAL CURRENCY (Pesos) | TOTAL (US$) |
|---|---|---|---|---|
| 1 | OFF-SHORE FACILITIES | 6,475,047 | 0 | 6,475,047 |
| | 1-1 Fish Transport Vessel (270GT) | 5,083,785 | 0 | 5,083,785 |
| | (1) Direct Cost | 4,054,154 | | 4,054,154 |
| | (2) Indirect Cost | 1,029,631 | | 1,029,631 |
| | 1-2 Fish Transport Vessel for Tuna (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-3 Training Vessel (40GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-4 Training Vessel (18GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-5 Fish Carrier Vessel (15GT) | 1,391,262 | 0 | 1,391,262 |
| | (1) Direct Cost | 1,144,155 | | 1,144,155 |
| | (2) Indirect Cost | 247,107 | | 247,107 |
| | 1-6 Payao | | | |
| | (1) Direct Cost | | | |
| | (2) Indirect Cost | | | |
| 2 | ON-LAND FACILITIES/BUILDING & FACILITY | 4,120,966 | 57,019,409 | 6,836,176 |
| | (1) Direct Cost | 2,693,841 | 41,270,277 | 4,659,092 |
| | 1) Office Building | 548,112 | 11,771,926 | 1,108,680 |
| | 2) Insulated Fish Box Manufacturing Plant | | | 0 |
| | 3) Shrimp Processing Plant | 997,921 | 12,022,201 | 1,570,407 |
| | 4) Salted/Dried Fish Processing Plant | 279,713 | 3,994,025 | 469,905 |
| | 5) Surimi Processing Plant | | | 0 |
| | 6) Ice Making Plant | | | 0 |
| | 7) Workshop | | | 0 |
| | 8) Electrical Sub-station | 481,560 | 2,805,626 | 615,161 |
| | 9) Auction Hall | | | 0 |
| | 10) Radio Antenna Tower | 83,088 | 4,677,222 | 305,813 |
| | 11) Water Reservoir/Eleveted Water Tank | 3,087 | 574,849 | 30,461 |
| | 12) Fuel Oil Storage Tank | 1,848 | 86,909 | 5,987 |
| | 13) Fresh Water Supply Treatment Facility | 87,864 | 564,074 | 114,725 |
| | 14) Waste Water Treatment Facility | 187,572 | 1,434,573 | 255,885 |
| | 15) Sea Water Intake Facility | | | 0 |
| | 16) Marine Lighting Facility | 23,076 | 113,072 | 28,460 |
| | 17) Well Drilling | | 3,225,800 | 153,610 |
| | (2) Indirect Cost | 1,427,125 | 15,749,132 | 2,177,084 |
| 3 | ON-LAND FACILITIES/EQUIPMENT | 1,524,778 | 299,659 | 1,539,047 |
| | (1) Direct Cost | 1,246,913 | 0 | 1,246,913 |
| | 1) Insulated Truck | 301,539 | | 301,539 |
| | 2) Refrigerated Truck | 115,385 | | 115,385 |
| | 3) Mobile Ice Making Plant | | | 0 |
| | 4) Mobile Salting/Drying Plant | | | 0 |
| | 5) Tools & Machines for Workshop | 337,846 | | 337,846 |
| | 6) Information/Communication Facilities | 69,228 | | 69,228 |
| | 7) Fish Quality Testing Facilities | 122,915 | | 122,915 |
| | 8) Training/Extension Facilities | 100,000 | | 100,000 |
| | 9) Mobile Fish Store w/ Cooling Unit | | | 0 |
| | 10) Fuel Oil Tank Lorry | 115,400 | | 115,400 |
| | 11) Fresh Water Tank Lorry | 84,600 | | 84,600 |
| | 12) Cooking Facilities for Demonstration | | | 0 |
| | 13) Marine Products Shoving Facilities | | | 0 |
| | (2) Indirect Cost | 277,865 | 299,659 | 292,134 |
| 4 | CIVIL WORKS | 0 | 12,248,863 | 583,279 |
| | (1) Direct Cost | 0 | 9,006,517 | 428,882 |
| | 1) Retaining Wall | | 1,825,485 | 86,928 |
| | 2) Reclamation | | 6,482,586 | 308,695 |
| | 3) Premises Access Road & Pavement | | 431,480 | 20,547 |
| | 4) Premises Drainage | | 266,966 | 12,713 |
| | (2) Indirect Cost | | 3,242,346 | 154,397 |
| 5 | IMPROVEMENT WORKS FOR INFRASTRUCTURE | 0 | 31,026,628 | 1,477,458 |
| | (1) Direct Cost | 0 | 22,503,285 | 1,071,585 |
| | 1) Rehabilitations for Existing MFP | | 21,754,261 | 1,035,917 |
| | 2) Access Road | | | 0 |
| | 3) Extensions of City Water Main | | 150,000 | 7,143 |
| | 4) Wiring Electrical Power Prmary Line | | 207,600 | 9,886 |
| | 5) Drainage | | 391,424 | 18,639 |
| | (2) Indirect Cost | | 8,523,343 | 405,873 |
| 6 | CONSULTANT FEE | 921,500 | 3,176,800 | 1,072,776 |
| | (1) Remuneration | 799,698 | 342,000 | 815,924 |
| | (2) Direct Cost | 121,802 | 2,834,800 | 256,792 |
| 7 | Sub-Total | 13,042,291 | 23,771,359 | 17,933,784 |
| 8 | Price Escalation | 1,304,229 | 13,377,136 | 1,793,378 |
| 9 | Physical Contingency | 1,304,229 | 13,377,136 | 1,793,378 |
| 10 | Grand-Total | 15,650,749 | 71,525,631 | 21,550,541 |

## TABLE 7.6 PROJECT COST IN ZONE 6

| NAME OF COMPONENT | FOREIGN CURRENCY (US$) | LOCAL CURRENCY (Pesos) | TOTAL (US$) |
|---|---|---|---|
| 1 OFF-SHORE FACILITIES | 5,563,318 | 0 | 5,563,318 |
| 1-1 Fish Transport Vessel (270GT) | 0 | 0 | 0 |
| (1) Direct Cost | | | 0 |
| (2) Indirect Cost | | | 0 |
| 1-2 Fish Transport Vessel for Tuna (270GT) | 5,563,318 | 0 | 5,563,318 |
| (1) Direct Cost | 4,382,307 | | 4,382,307 |
| (2) Indirect Cost | 1,181,011 | | 1,181,011 |
| 1-3 Training Vessel (60GT) | 0 | 0 | 0 |
| (1) Direct Cost | 0 | | 0 |
| (2) Indirect Cost | 0 | | 0 |
| 1-4 Training Vessel (18GT) | 0 | 0 | 0 |
| (1) Direct Cost | 0 | | 0 |
| (2) Indirect Cost | 0 | | 0 |
| 1-5 Fish Carrier Vessel (15GT) | 0 | 0 | 0 |
| (1) Direct Cost | | | 0 |
| (2) Indirect Cost | | | 0 |
| 1-6 Payao | | | |
| (1) Direct Cost | | | |
| (2) Indirect Cost | | | |
| 2 ON-LAND FACILITIES/BUILDING & FACILITY | 258,779 | 10,264,496 | 747,565 |
| (1) Direct Cost | 155,121 | 7,474,176 | 511,034 |
| 1) Office Building | 125,875 | 3,079,636 | 272,524 |
| 2) Insulated Fish Box Manufacturing Plant | | | 0 |
| 3) Shrimp Processing Plant | | | 0 |
| 4) Salted/Dried Fish Processing Plant | | | 0 |
| 5) Surimi Processing Plant | | | 0 |
| 6) Ice Making Plant | | | 0 |
| 7) Workshop | | | 0 |
| 8) Electrical Sub-station | | | 0 |
| 9) Auction Hall | | | 0 |
| 10) Radio Antenna Tower | 13,848 | 779,537 | 50,969 |
| 11) Water Reservoir/Eleveted Water Tank | 2,012 | 302,294 | 16,407 |
| 12) Fuel Oil Storage Tank | 1,848 | 86,909 | 5,987 |
| 13) Fresh Water Supply Treatment Facility | | | 0 |
| 14) Waste Water Treatment Facility | | | 0 |
| 15) Sea Water Intake Facility | | | 0 |
| 16) Marine Lighting Facility | 11,538 | | 11,538 |
| 17) Well Drilling | | 3,225,800 | 153,610 |
| (2) Indirect Cost | 103,658 | 2,790,320 | 236,530 |
| 3 ON-LAND FACILITIES/EQUIPMENT | 893,767 | 303,531 | 908,221 |
| (1) Direct Cost | 669,769 | 0 | 669,769 |
| 1) Insulated Truck | 233,231 | | 233,231 |
| 2) Refrigerated Truck | | | 0 |
| 3) Mobile Ice Making Plant | | | 0 |
| 4) Mobile Salting/Drying Plant | | | 0 |
| 5) Tools & Machines for Workshop | 168,923 | | 168,923 |
| 6) Information/Communication Facilities | 11,538 | | 11,538 |
| 7) Fish Quality Testing Facilities | 56,077 | | 56,077 |
| 8) Training/Extension Facilities | 0 | | 0 |
| 9) Mobile Fish Store w/ Cooling Unit | | | 0 |
| 10) Fuel Oil Tank Lorry | 115,400 | | 115,400 |
| 11) Fresh Water Tank Lorry | 84,600 | | 84,600 |
| 12) Cooking Facilities for Demonstration | | | 0 |
| 13) Marine Products Shoving Facilities | | | 0 |
| (2) Indirect Cost | 223,998 | 303,531 | 238,452 |
| 4 CIVIL WORKS | 0 | 0 | 0 |
| (1) Direct Cost | 0 | 0 | 0 |
| 1) Retaining Wall | | | 0 |
| 2) Reclamation | | | 0 |
| 3) Premises Access Road & Pavement | | | 0 |
| 4) Premises Drainage | | | 0 |
| (2) Indirect Cost | 0 | 0 | 0 |
| 5 IMPROVEMENT WORKS FOR INFRASTRUCTURE | 0 | 4,976,398 | 236,971 |
| (1) Direct Cost | 0 | 3,610,542 | 171,931 |
| 1) Rehabilitations for Existing MFP | | 3,402,942 | 162,045 |
| 2) Access Road | | | 0 |
| 3) Extensions of City Water Main | | | 0 |
| 4) Wiring Electrical Power Prymary Line | | 207,600 | 9,886 |
| 5) Drainage | | 0 | 0 |
| (2) Indirect Cost | | 1,365,856 | 65,041 |
| 6 CONSULTANT FEE | 336,734 | 2,461,000 | 453,924 |
| (1) Remuneration | 283,765 | 300,000 | 298,051 |
| (2) Direct Cost | 52,969 | 2,161,000 | 155,874 |
| 7 Sub-Total | 7,052,598 | 18,005,425 | 7,909,939 |
| 8 Price Escalation | 705,260 | 1,800,543 | 791,000 |
| 9 Physical Contingency | 705,260 | 1,800,543 | 791,000 |
| 10 Grand-Total | 8,463,117 | 21,606,510 | 9,491,939 |

## TABLE 7.7 PROJECT COST IN PROTOTYPE SITE PASACAO

| | NAME OF COMPONENT | FOREIGN CURRENCY (US$) | LOCAL CURRENCY (Pesos) | TOTAL (US$) |
|---|---|---|---|---|
| 1 | OFF-SHORE FACILITIES | 925,301 | 0 | 925,301 |
| | 1-1 Fish Transport Vessel (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-2 Fish Transport Vessel for Tuna (270GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-3 Training Vessel (40GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-4 Training Vessel (18GT) | 0 | 0 | 0 |
| | (1) Direct Cost | | | 0 |
| | (2) Indirect Cost | | | 0 |
| | 1-5 Fish Carrier Vessel (15GT) | 925,301 | 0 | 925,301 |
| | (1) Direct Cost | 762,770 | | 762,770 |
| | (2) Indirect Cost | 162,531 | | 162,531 |
| | 1-6 Payao | | | |
| | (1) Direct Cost | | | |
| | (2) Indirect Cost | | | |
| 2 | ON-LAND FACILITIES/BUILDING & FACILITY | 34,445 | 1,133,319 | 88,413 |
| | (1) Direct Cost | 25,386 | 836,073 | 65,199 |
| | 1) Office Building | | | 0 |
| | 2) Insulated Fish Box Manufacturing Plant | | | 0 |
| | 3) Shrimp Processing Plant | | | 0 |
| | 4) Salted/Dried Fish Processing Plant | | | 0 |
| | 5) Surimi Processing Plant | | | 0 |
| | 6) Ice Making Plant | | | 0 |
| | 7) Workshop | | | 0 |
| | 8) Electrical Sub-station | | | 0 |
| | 9) Auction Hall | | | 0 |
| | 10) Radio Antenna Tower | 13,848 | 779,537 | 50,969 |
| | 11) Water Reservoir/Elevated Water Tank | | | 0 |
| | 12) Fuel Oil Storage Tank | | | 0 |
| | 13) Fresh Water Supply Treatment Facility | | | 0 |
| | 14) Waste Water Treatment Facility | | | 0 |
| | 15) Sea Water Intake Facility | | | 0 |
| | 16) Marine Lighting Facility | 11,538 | 56,536 | 14,230 |
| | 17) Well Drilling | | | 0 |
| | (2) Indirect Cost | 9,059 | 297,246 | 23,214 |
| 3 | ON-LAND FACILITIES/EQUIPMENT | 209,153 | 152,645 | 216,422 |
| | (1) Direct Cost | 122,307 | 0 | 122,307 |
| | 1) Insulated Truck | 110,769 | | 110,769 |
| | 2) Refrigerated Truck | | | 0 |
| | 3) Mobile Ice Making Plant | | | 0 |
| | 4) Mobile Salting/Drying Plant | | | 0 |
| | 5) Tools & Machines for Workshop | | | 0 |
| | 6) Information/Communication Facilities | 11,538 | | 11,538 |
| | 7) Fish Quality Testing Facilities | | | 0 |
| | 8) Training/Extension Facilities | | | 0 |
| | 9) Mobile Fish Store w/ Cooling Unit | | | 0 |
| | 10) Fuel Oil Tank Lorry | | | 0 |
| | 11) Frsh Water Tank Lorry | | | 0 |
| | 12) Cooking Facilities for Demonstration | | | 0 |
| | 13) Marine Products Showing Facilities | | | 0 |
| | (2) Indirect Cost | 86,846 | 152,645 | 94,115 |
| 4 | CIVIL WORKS | 0 | 2,544,968 | 121,189 |
| | (1) Direct Cost | 0 | 1,871,300 | 89,110 |
| | 1) Retaining Wall | | 910,540 | 43,359 |
| | 2) Reclamation | | 701,207 | 33,391 |
| | 3) Premises Access Road & Pavement | | 215,740 | 10,273 |
| | 4) Premises Drainage | | 43,813 | 2,086 |
| | (2) Indirect Cost | | 673,668 | 32,079 |
| 5 | IMPROVEMENT WORKS FOR INFRASTRUCTURE | 0 | 4,846,888 | 230,804 |
| | (1) Direct Cost | 0 | 3,513,721 | 167,320 |
| | 1) Rehabilitations for Existing MFP | | 3,513,721 | 167,320 |
| | 2) Access Road | | | 0 |
| | 3) Extensions of City Water Main | | | 0 |
| | 4) Wiring Electrical Power Prmary Line | | | 0 |
| | 5) Drainage | | | 0 |
| | (2) Indirect Cost | | 1,333,167 | 63,484 |
| 6 | CONSULTANT FEE | 0 | 0 | 0 |
| | (1) Remuneration | | | 0 |
| | (2) Direct Cost | | | 0 |
| 7 | Sub-Total | 1,168,339 | 8,677,820 | 1,582,129 |
| 8 | Price Escalation | 116,830 | 287,782 | 158,213 |
| 9 | Physical Contingency | 116,830 | 287,782 | 158,213 |
| 10 | Grand-Total | 1,402,[illegible]9 | 10,[illegible]3,3[illegible] | 1,898,554 |

# 8. ECONOMIC EVALUATION

## 8. ECONOMIC EVALUATION

### (1) Assumptions for Economic Evaluation

The economic conditions for the pilot project intended to transfer technical know-how and FTS, i.e. the projects to be carried out on a commercial basis such as those for the four zones and one prototype site, were evaluated from a national economic point of view. The evaluation index is Economic Internal Rate of Return (EIRR) based on the following assumptions.

1) Social life of the project

The physical life of the project was assumed to be 30 years after the commencement of operation.

2) Physical life by project components

The physical life by project components is listed in Table 8.2.

3) Prices

All costs and benefits are indicated at the constant price of 1988.

4) Construction schedule

Construction work should commence in 1990 and be completed in five years after commencement of construction. Construction will be introduced in stages so as to avoid any constraints in construction and operation. It is expected that in the sixth year after commencement of construction FTS of all zones will be completed and go into full operation. Ranking of construction by zones and prototype site is established according to the following reasons.

Initial Stage

1) Pilot project for the purpose of technology transfer

2) Zone 3 because of various kinds of FTS components and higher profitability

3) Pasacao as a model site of a prototype FTS for the other 52 sites covering the entire country. Though low in profitability, sociological characteristics can be made important.

Following Stages

1) Zone 6 is expected to contribute exclusively to foreign exchange earnings with high profitability. Construction will begin in stage 2.

2) Zone 1 is the major supply base of fish products to Metro Manila but is still slightly unfavorable in terms of profitability. Construction will begin in stage 3.

3) Zone 2 is important in terms of developing a depressed area. However, the area is low in profitability and requires subsidizing from government. Therefore construction will begin in the final stage.

Construction schedule by zone is shown in the following table.

TABLE 8.1 CONSTRUCTION SCHEDULE BY ZONE

| | 1990 | 1991 | 1992 | 1993 | 1994 |
|---|---|---|---|---|---|
| Pilot project | ********---------- | | | | |
| Zone 1 | | | **********---------- | | |
| Zone 2 | | | ********** | | |
| Zone 3 | ********---------- | | | | |
| Zone 6 | | ********---------- | | | |
| Pasacao | ********---------- | | | | |

Remarks: ****** construction period ------ operation period

(2) Economic Cost

The economic costs of this project include construction cost (initial investment cost), operation and maintenance cost and reinvestment cost of all facilities and equipment. Construction cost of FTS includes offshore facilities, on-land facilities and equipment, civil works including land reclamation, land consolidation, drainage works and infrastructure including rehabilitation and construction of MFP, access road, primary electric power line and main water line and drainage within the premises.

Transfer costs within the national economy, such as interest, insurance and tax are excluded from economic cost. Operation cost by PFDA is composed of electricity cost, fuel cost, salary and wages, transportation cost and other office expense.

Financial cost was applied for economic cost because reasonable data on it was not available, while in general economic cost is estimated by shadow pricing. The cost applied for economic evaluation is higher than the economic cost, so the EIRR is underestimated with the higher project cost.

(3) Direct Benefits

Economic benefit is the value in saving cost/time through the FTS project, when compared to the cost "without project" and "with project". Time/cost savings are divided into three categories: from fishing ground to unloading at MFP (by fish carrier vessels), from MFP to final consumption area or to a domestic port for export (by truck and fish transport vessels), and operation cost of the fish processing plants.

1) From fishing ground to MFP (fish carrier vessels)

Calculation formula of the benefit (B1) is as follows.

$$B1 = (Cf(o)-Cf(w)) + (Ci(o)-Ci(w)) + Kf(o)$$

Where, (Cf(o)-Cf(w)) is a difference between the transport costs by fishing boat without the project (village - fishing ground - MFP -

village), and those with the project and fishing boat (village - fishing ground - village), and the carrier vessel (MFP - fishing ground - MFP) with the project. The term (Ci(o)-Ci(w)) is the difference between the ice cost required for quality control by existing fishing boats and by carrier vessel. The last term kf(o) is the depreciation cost of fishing boats which would be saved by increasing the catch volume per boat with the time saved in fish transport.

2) MFP to retailer or exporter (trucks and transport vessels)

Calculation formula of the benefit (B2) is as follows.

$$B2 = (Ct(o)-Ct(w)) + Kt(o) + (Cs(o)-Cs(w)) + (Ci(o)-Ci(w)) + Ca(o)$$

Where, (Ct(o)-Ct(w)) is the difference in transport costs between existing smaller trucks and bigger insulated or refrigerated trucks which will be provided by the project. The term (Cs(o)-Cs(w)) is the difference between the transport costs by existing cargo vessel (in case of zone 3) and by the transport vessels to be provided. The term kt(o) is the depreciation cost of trucks which would be saved by increasing the transport volume per truck. The last term Ca(o) is the transport cost by the existing airline in case fresh tuna or fresh prawns can not be transported by other means without the project. The term (Ci(o)-Ci(w)) is the difference of ice cost required, to quality control as well as from fishing ground to MFP.

3) Benefits from the fish processing plants

Calculation formula of the benefit (B3) is as follows.

$$B3 = V(o) - V(w)$$

Saving transport cost by locating the plant in the fish production area is included in the above 2). The benefit of B3 is the difference between value added of the products processed by existing plants V(o) and those by the planned processing plants V(w).

(4) Indirect Benefits

a) Increase in international competitiveness and with it, the acquisition of foreign exchange, due to the promotion of the export of cultivated black tiger prawns and yellowfin tuna, which have been made more competitive by improving their quality and by reducing the cost of their processing, transportation and distribution.

b) Greater employment opportunities resulting from the construction of fish product processing plants and the institution of improved methods for transporting fish products.

c) Rationalization of the fish product collection system through the participation of fishermen, and the expansion of the capability of fish product processing at the local level and the promotion of regional development.

d) Increase in the fishermen's efforts to catch fish, as well as increase in the production of fish products by effecting a change in the awareness of the fishermen.

e) Redistribution of income among fishermen, fish pond operators, traders, and transporters.

f) The setting of appropriate fish prices for consumers as well as for fish producers by reducing the transportation and distribution costs of the fish products.

(5) Results of Evaluation

The Economic Internal Rate of Return (EIRR) is estimated as shown in Table 8.3.

The EIRR for the entire project, including the pilot project and the commercial project, is estimated to be 17.2% and is highly feasible from a national economic point of view. Although the EIRR for the pilot project

intended for the transfer of technical know-how, is estimated to be 11.3% and is lower due to its characteristics of technology transfer, the pilot project is significant from the viewpoint of national economy considering the affects to other zones.

The EIRR for the total FTS, i.e. the projects to be carried out on a commercial basis, such as those for the 4 zones and 1 prototype site, is estimated to be 19.6%. This indicates that the FTS model projects as a whole, are highly feasible.

Looking at the EIRR broken down by zones, Zone 6 where transport vessels for yellowfin tuna will be instituted, is expected to account for the highest value at 29.2%; Zone 3, which is to be equipped with many FTS components such as transport vessels for fish products and insulated trucks, and the Pasacao prototype site, which is to be equipped with small-scale FTS, including carrier vessels for fish products, are estimated to account for 18.6% and 18.9%,respectively. Zone 1 will be equipped with various FTS components excluding, however, means of large-scale transportation, and is estimated to account for 15.1%; and Zone 2, which is a typical municipal fisheries base centered around small-scale fisheries, will account for the lowest figure at 11.2%. Zone 2 is an underdeveloped area primarily conducting small-scale fisheries, and from the economic point of view, it is difficult to say that the implementation of FTS in this zone would be desirable. However, looking at it from a social aspect, such as promoting industries in an underdeveloped area and raising the income levels of the people, the implementation of FTS in this zone is absolutely necessary. FTS projects should be carried out from a national standpoint that promotes a nation-wide FTS network. Therefore, even areas such as this zone, which is centered around small-scale fisheries, should be included in the overall FTS, with economic success being pursued for the entire FTS program.

TABLE 8.2 LIFESPAN AND RATE OF MAINTENANCE COST/CONSTRUCTION COST OF FTS COMPONENTS

| COMPONENTS | LIFE SPAN (YEAR) | RATE OF MAINTENANCE COST |
|---|---|---|
| 1 OFF-SHORE FACILITIES | | |
| (1) Fish Transport Vessel (270GT) | 15 | 1.0 |
| (2) Fish Transport Vessel for Tuna (270GT) | 15 | 1.0 |
| (3) Training Vessel (40GT) | 10 | 0.7 |
| (4) Training Vessel (18GT) | 10 | 0.7 |
| (5) Fish Carrier Vessel (15GT) | 10 | 0.7 |
| (6) Payao | 5 | 0.0 |
| 2 ON-LAND FACILITIES/BUILDING & FACILITY | | |
| (1) Office Building | 25 | 1.5 |
| (2) Insulated Fish Box Manufacturing Plant | 15 | 2.5 |
| (3) Shrimp Processing Plant | 15 | 2.5 |
| (4) Salted/Dried Fish Processing Plant | 15 | 2.5 |
| (5) Surimi Processing Plant | 15 | 2.5 |
| (6) Ice Making Plant | 15 | 2.5 |
| (7) Workshop | 25 | 1.5 |
| (8) Electrical Sub-station | 15 | 2.0 |
| (9) Auction Hall | 25 | 1.5 |
| (10) Radio Antenna Tower | 15 | 1.0 |
| (11) Water Reservoir/Eleveted Water Tank | 15 | 1.0 |
| (12) Fuel Oil Storage Tank | 15 | 1.0 |
| (13) Fresh Water Supply Treatment Facility | 15 | 2.5 |
| (14) Waste Water Treatment Facility | 15 | 2.5 |
| (15) Sea Water Intake Facility | 15 | 3.0 |
| (16) Marine Lighting Facility | 15 | 1.5 |
| (17) Well Drilling | 15 | 3.0 |
| 3 ON-LAND FACILITIES/EQUIPMENT | | |
| (1) Insulated Truck | 6 | 5.0 |
| (2) Refrigerated Truck | 6 | 5.0 |
| (3) Mobile Ice Making Plant | 6 | 5.0 |
| (4) Mobile Salting/Drying Plant | 6 | 5.0 |
| (5) Tools & Machines for Workshop | 15 | 5.0 |
| (6) Information/Communication Facilities | 10 | 2.5 |
| (7) Fish Quality Testing Facilities | 10 | 5.0 |
| (8) Training/Extension Facilities | 10 | 5.0 |
| (9) Mobile Fish Store w/ Cooling Unit | 6 | 5.0 |
| (10) Fuel Oil Tank Lorry | 6 | 5.0 |
| (11) Fresh Water Tank Lorry | 6 | 5.0 |
| (12) Cooking Facilities for Demonstration | 5 | 5.0 |
| (13) Marine Products Showing Facilities | 5 | 5.0 |

Source : Based on Japanese Standard

TABLE 8.3 ECONOMIC INTERNAL RATE OF RETURN

| Item | EIRR (%) |
|---|---|
| The Project | 17.2 |
| Pilot Project | 11.3 |
| Commercial Project | 19.6 |
| Zone 1 | 15.1 |
| Zone 2 | 11.2 |
| Zone 3 | 18.6 |
| Zone 6 | 29.2 |
| Prototype Site Pasacao | 18.9 |