


No.

**MASTER PLAN STUDY
ON
THE IRRIGATION AND DRAINAGE PROJECT
IN
THE ADJACENT AREA TO THE YACYRETA DAM**

APPENDIX

MARCH, 1983

JAPAN INTERNATIONAL COOPERATION AGENCY

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Table 2-1 Gross Product by Industry

Unit: 1,000 Gs.

| | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|-------------|-------------|-------------|-------------|-------------|
| Agriculture | 59,307,790 | 63,248,900 | 84,200,130 | 101,237,600 | 120,086,010 |
| Stock farming | 21,776,545 | 30,139,400 | 38,487,080 | 46,651,860 | 55,405,430 |
| Forestry | 8,590,335 | 9,622,630 | 11,894,590 | 16,402,250 | 20,300,230 |
| Fishery | 250,000 | 420,000 | 580,600 | 844,710 | 992,570 |
| Subtotal | 89,924,670 | 103,430,930 | 135,162,400 | 165,136,420 | 196,784,240 |
| Mining | 685,280 | 794,400 | 1,446,340 | 2,284,700 | 2,932,650 |
| Manufacturing | 44,974,290 | 54,418,900 | 69,609,740 | 92,337,570 | 118,469,100 |
| Construction | 10,560,000 | 15,470,040 | 23,205,060 | 34,317,110 | 46,739,900 |
| Subtotal | 56,219,570 | 70,683,340 | 94,261,140 | 128,939,380 | 168,141,650 |
| Total of Production Section | 146,144,240 | 174,114,270 | 229,423,540 | 294,075,800 | 364,925,890 |
| Electricity | 3,953,290 | 5,087,880 | 6,777,250 | 11,237,980 | 13,148,430 |
| Water and sanitation | 653,920 | 893,910 | 1,112,400 | 1,685,240 | 2,123,400 |
| Communication and transportation | 10,263,900 | 12,994,100 | 17,358,660 | 23,783,510 | 29,058,760 |
| Subtotal | 14,871,110 | 18,975,890 | 25,248,310 | 36,706,730 | 44,330,590 |
| Trade (including properties) | 66,026,370 | 83,985,600 | 112,656,240 | 144,869,860 | 188,378,300 |
| Governmental finance | 10,283,100 | 12,709,910 | 14,595,200 | 19,115,040 | 26,677,980 |
| Housing | 6,076,630 | 7,492,500 | 11,228,580 | 14,992,960 | 20,090,570 |
| Other services | 20,210,800 | 25,263,500 | 37,361,880 | 50,698,430 | 64,285,600 |
| Subtotal | 102,596,900 | 129,451,510 | 175,841,900 | 229,676,290 | 299,432,450 |
| Total of Service Section | 117,468,010 | 148,427,400 | 201,090,210 | 266,383,020 | 343,763,040 |
| Total | 263,612,250 | 322,541,670 | 430,513,750 | 560,458,820 | 708,688,930 |

Table 2-2(1) Agriculture

| Item | Units | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|------------------------|--------------|----------------|---------------------|------------|---------------------|------------|---------------------|------------|---------------------|------------|---------------------|
| | | Yield, * 1,000 | From duction amount | Yield | From duction amount | Yield | From duction amount | Yield | From duction amount | Yield | From duction amount |
| Aguaesete | 1,000 fruits | 10,620 | 42,480 | 11,360 | 47,710 | 11,700 | 56,510 | 12,050 | 71,220 | 12,410 | 80,700 |
| Banana | 1,000 pieces | 14,740 | 1,134,980 | 15,270 | 1,658,750 | 13,530 | 2,718,720 | 14,070 | 2,729,580 | 12,660 | 2,725,700 |
| Coffee | ton | 6,000 | 1,278,000 | 7,200 | 2,484,000 | 7,560 | 2,764,090 | 7,180 | 2,872,000 | 10,000 | 2,950,000 |
| Caña dulce | ton | 1,600,000 | 2,816,000 | 1,785,600 | 3,303,360 | 2,053,440 | 4,158,660 | 2,356,992 | 5,692,130 | 2,121,292 | 4,495,300 |
| Plum | 1,000 fruits | 31,900 | 31,900 | 32,860 | 49,290 | 33,850 | 67,700 | 34,527 | 84,240 | 36,253 | 97,900 |
| Coconut | ton | 236,900 | 551,590 | 225,055 | 675,170 | 236,300 | 827,050 | 248,115 | 992,460 | 242,150 | 899,700 |
| Peach | 1,000 fruits | 45,420 | 28,160 | 46,330 | 46,330 | 46,800 | 70,200 | 44,460 | 81,810 | 45,790 | 91,600 |
| Guayaba | " | 189,770 | 51,240 | 192,670 | 95,840 | 201,250 | 201,250 | 205,275 | 250,430 | 211,430 | 274,900 |
| Lima de persia | " | 70,620 | 14,120 | 71,330 | 17,830 | 72,040 | 36,020 | 72,760 | 44,390 | 14,550 | 53,500 |
| Limon real | " | 11,010 | 12,770 | 11,240 | 14,400 | 11,910 | 13,580 | 13,101 | 28,300 | 13,760 | 44,100 |
| Limon sutil | " | 33,400 | 40,750 | 34,400 | 46,100 | 36,120 | 61,400 | 39,732 | 96,950 | 40,527 | 105,400 |
| Mango | " | 75,390 | 165,860 | 86,700 | 209,810 | 95,370 | 278,480 | 104,907 | 374,520 | 105,960 | 423,800 |
| Mamon | " | 8,420 | 16,840 | 8,670 | 19,070 | 9,100 | 45,500 | 9,191 | 56,250 | 9,470 | 64,400 |
| Apple | " | 4,560 | 37,850 | 4,510 | 45,100 | 4,600 | 69,000 | 4,240 | 76,010 | 4,260 | 86,900 |
| Orange | " | 415,200 | 406,890 | 394,440 | 591,660 | 406,270 | 812,540 | 394,082 | 788,160 | 413,780 | 1,075,890 |
| Navel orange | " | 81,000 | 106,600 | 180,400 | 469,040 | 189,420 | 568,260 | 185,432 | 681,270 | 193,060 | 791,500 |
| Haranja Injerreda | " | 1,345,800 | 2,382,060 | 1,318,884 | 2,637,770 | 1,345,260 | 2,098,610 | 1,331,800 | 2,543,740 | 1,771,750 | 4,429,400 |
| Haranja Pie France | " | 110,000 | 123,000 | 107,800 | 136,910 | 104,570 | 156,860 | 127,575 | 234,740 | 102,060 | 204,100 |
| Haranja agraria (hoja) | ton | 930 | 6,320 | 910 | 7,420 | 940 | 10,250 | 912 | 12,170 | 1,003 | 14,800 |
| Pear | 1,000 pieces | 16,450 | 716,230 | 16,610 | 830,500 | 17,110 | 1,711,000 | 19,990 | 2,613,450 | 20,550 | 2,827,700 |
| Pineapple | " | 98,700 | 156,930 | 95,740 | 162,760 | 100,530 | 245,290 | 94,480 | 204,080 | 99,200 | 267,800 |
| Cerefruit | ton | 24,500 | 745,290 | 30,625 | 949,360 | 31,910 | 1,005,170 | 33,505 | 1,038,670 | 33,840 | 1,082,900 |
| Tung (fruit) | " | 137,700 | 2,822,850 | 96,290 | 2,542,240 | 106,030 | 954,270 | 95,427 | 888,640 | 100,200 | 831,700 |
| Grape | " | 14,120 | 222,980 | 15,530 | 268,980 | 16,300 | 310,320 | 19,070 | 444,520 | 18,115 | 443,800 |
| Yerba Mate | " | 22,400 | 746,590 | 24,640 | 821,250 | 25,870 | 948,390 | 27,164 | 1,439,690 | 28,520 | 1,677,000 |
| Subtotal (A) | | 14,688,670 | | 17,110,670 | | 20,589,900 | | 24,369,610 | | 26,040,400 | |
| | | | | 15,667,350 | | 16,737,840 | | | | | 27,266,740 |

Table 2-2(2) Agriculture

| Item | UNIT | 1977 | | | 1978 | | | 1979 | | | 1980 | | | 1981 | | | 1977 | | |
|--------------------------|------------------|--------------|--------------------|------------------------|--------------|--------------------|------------------------|--------------|--------------------|------------------------|--------------|--------------------|------------------------|--------------|--------------------|------------------------|--------------|--------------------|------------------------|
| | | Yield amount | Pro-duction amount | 1977 conversion amount | Yield amount | Pro-duction amount | 1977 conversion amount | Yield amount | Pro-duction amount | 1977 conversion amount | Yield amount | Pro-duction amount | 1977 conversion amount | Yield amount | Pro-duction amount | 1977 conversion amount | Yield amount | Pro-duction amount | 1977 conversion amount |
| Garlic | 1,000 lbs | 210 | 35,700 | 54,930 | 323 | 62,020 | 54,930 | 330 | 71,530 | 56,100 | 347 | 29,500 | 58,990 | 357 | 60,700 | 60,700 | | | |
| Alfalfa | ton | 29,980 | 402,030 | 393,980 | 29,380 | 264,420 | 393,980 | 29,670 | 461,960 | 397,870 | 27,040 | 521,930 | 368,370 | 26,645 | 559,500 | 357,300 | | | |
| Cotton | " | 222,500 | 11,125,000 | 14,235,000 | 284,700 | 12,640,480 | 14,235,000 | 230,000 | 11,000,900 | 11,500,000 | 235,000 | 13,512,500 | 11,750,000 | 317,000 | 16,801,000 | 15,850,000 | | | |
| Rice | " | 36,400 | 642,820 | 629,970 | 35,672 | 963,140 | 629,970 | 68,300 | 1,926,060 | 1,206,170 | 60,500 | 1,633,500 | 1,068,430 | 62,315 | 1,626,400 | 1,103,000 | | | |
| Pea | " | 4,600 | 164,680 | 158,090 | 4,426 | 141,310 | 158,090 | 4,500 | 176,810 | 161,100 | 4,225 | 245,050 | 151,250 | 4,436 | 252,000 | 158,800 | | | |
| Sweetpotato | " | 196,500 | 1,980,720 | 1,881,680 | 186,675 | 1,717,410 | 1,881,680 | 192,275 | 2,334,220 | 1,938,130 | 207,395 | 3,110,930 | 2,090,540 | 213,617 | 3,375,200 | 2,153,300 | | | |
| Pumpkin | 1,000 fruits | 15,300 | 642,600 | 738,990 | 17,595 | 753,070 | 738,990 | 18,120 | 969,420 | 761,040 | 19,025 | 1,246,140 | 799,050 | 19,596 | 1,348,200 | 823,000 | | | |
| Onion | fruits ton | 27,520 | 650,570 | 780,690 | 33,024 | 726,430 | 780,690 | 25,000 | 741,750 | 591,000 | 27,500 | 1,265,000 | 650,100 | 26,125 | 1,233,100 | 617,600 | | | |
| Tirucilla | " | 540 | 72,900 | 80,190 | 594 | 89,160 | 80,190 | 565 | 81,930 | 76,270 | 595 | 65,450 | 80,320 | 654 | 100,100 | 88,300 | | | |
| Miscellaneous pulse crop | " | 3,180 | 213,310 | 266,640 | 6,473 | 220,150 | 266,640 | 6,280 | 238,640 | 258,610 | 6,595 | 382,510 | 271,580 | 6,925 | 487,500 | 285,200 | | | |
| Maize | " | 372,200 | 3,896,920 | 3,857,960 | 368,478 | 4,421,740 | 3,857,960 | 405,326 | 8,459,150 | 4,243,760 | 506,000 | 10,120,000 | 5,297,820 | 495,880 | 11,206,900 | 5,191,900 | | | |
| Peanut | " | 21,890 | 592,780 | 580,920 | 21,452 | 707,920 | 580,920 | 23,500 | 914,150 | 636,380 | 24,675 | 1,307,780 | 668,200 | 23,440 | 1,441,600 | 634,800 | | | |
| Cassava | " | 876,175 | 7,535,110 | 7,459,750 | 867,413 | 6,939,200 | 7,459,750 | 893,435 | 9,281,070 | 7,883,540 | 911,303 | 11,846,940 | 7,837,210 | 920,416 | 12,241,500 | 5,936,700 | | | |
| Melon | 1,000 fruits ton | 12,400 | 534,190 | 614,320 | 14,260 | 815,820 | 614,320 | 13,830 | 1,521,300 | 995,800 | 14,520 | 1,874,080 | 625,520 | 14,810 | 1,895,700 | 638,000 | | | |
| Potato | " | 11,750 | 283,650 | 226,990 | 9,400 | 216,200 | 226,990 | 9,120 | 282,720 | 220,160 | 9,670 | 444,820 | 233,440 | 9,960 | 350,600 | 240,400 | | | |
| Poroto beans | " | 36,960 | 1,096,600 | 1,480,410 | 49,896 | 1,646,570 | 1,480,410 | 51,400 | 2,415,800 | 1,525,040 | 54,485 | 3,051,160 | 1,616,570 | 57,209 | 3,220,900 | 1,697,400 | | | |
| Watermelon | 1,000 fruits ton | 27,400 | 984,210 | 1,230,260 | 34,250 | 1,712,500 | 1,230,260 | 35,300 | 2,671,150 | 1,267,980 | 37,770 | 3,980,200 | 1,356,700 | 37,903 | 4,851,600 | 1,361,500 | | | |
| Sorogo (grain) | " | 6,800 | 127,430 | 163,040 | 8,700 | 146,940 | 163,040 | 8,960 | 159,850 | 167,910 | 9,050 | 197,660 | 169,590 | 9,502 | 229,500 | 178,100 | | | |
| Sorogo (ear) | " | 9,000 | 59,310 | 60,830 | 9,230 | 54,830 | 60,830 | 9,570 | 60,000 | 62,670 | 10,050 | 77,080 | 66,210 | 10,552 | 89,700 | 69,500 | | | |
| Soybean | " | 250,000 | 8,750,000 | 8,250,000 | 330,000 | 6,600,000 | 8,250,000 | 450,000 | 11,443,500 | 11,250,000 | 650,000 | 12,350,000 | 16,250,000 | 880,000 | 24,728,000 | 22,000,000 | | | |
| Tobacco | " | 32,000 | 1,434,560 | 896,400 | 20,000 | 1,009,000 | 896,400 | 25,000 | 1,693,750 | 1,120,750 | 26,500 | 1,468,500 | 799,690 | 15,000 | 1,288,500 | 672,500 | | | |
| Wheat | " | 37,450 | 686,250 | 754,750 | 30,190 | 664,180 | 754,750 | 65,000 | 1,430,000 | 1,525,000 | 43,500 | 1,044,000 | 1,087,500 | 55,000 | 1,419,000 | 1,375,000 | | | |
| Sunflower | " | 9,350 | 149,600 | 230,400 | 14,400 | 230,400 | 230,400 | 15,120 | 265,960 | 241,920 | 17,390 | 372,150 | 278,240 | 23,476 | 558,700 | 375,600 | | | |
| Others | " | - | 2,158,450 | 2,340,160 | - | 2,627,450 | 2,340,160 | - | 3,817,880 | 2,707,720 | - | 4,907,890 | 3,480,700 | - | 6,306,640 | 4,472,690 | | | |
| Dried cassava | " | 876,175 | 3,767,550 | 3,729,880 | 867,413 | 3,469,650 | 3,729,880 | 858,740 | 4,690,530 | 3,841,770 | 911,303 | 5,923,470 | 3,918,600 | 920,416 | 12,241,500 | 5,936,700 | | | |
| Subtotal (B) | " | 47,986,950 | 48,822,390 | 51,096,340 | 48,822,390 | 51,096,340 | 48,822,390 | 67,020,030 | 54,136,690 | 67,020,030 | 60,914,620 | 80,977,240 | 60,914,620 | 107,914,440 | 72,277,990 | | | | |
| Total (A + B) | " | 62,675,620 | 65,953,060 | 65,753,790 | 62,675,620 | 65,953,060 | 65,753,790 | 87,799,930 | 69,804,040 | 87,799,930 | 77,152,460 | 105,286,850 | 77,152,460 | 133,954,840 | 89,538,730 | | | | |

Table 2-3 Stock Farming

Cuentas Nacionales 1974/1981 No.18
Banco Central del Paraguay

| Item | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|----------------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|-----------|-----------------------|
| | Quantity | Amount (1,000,000 GS) | Quantity | Amount (1,000,000 GS) | Quantity | Amount (1,000,000 GS) | Quantity | Amount (1,000,000 GS) | Quantity | Amount (1,000,000 GS) |
| Number of butchered cattle | 635,283 | 9,043 | 596,202 | 12,479 | 577,767 | 15,261 | 565,066 | 17,215 | 553,855 | 18,999 |
| Young cattle (2-3 years) | 539,963 | 7,964 | 447,152 | 10,045 | 375,550 | 10,968 | 350,341 | 11,912 | 325,817 | 12,596 |
| Cow | 95,300 | 1,079 | 149,050 | 2,434 | 202,217 | 4,293 | 214,725 | 5,304 | 228,038 | 6,403 |
| Horse | 3,960 | 16 | 3,960 | 16 | 2,380 | 12 | 2,400 | 15 | 2,419 | 17 |
| Pig | 1,032,080 | 4,954 | 1,130,130 | 7,911 | 1,291,330 | 9,685 | 1,419,390 | 12,634 | 1,560,129 | 15,789 |
| Sheep | 124,110 | 186 | 127,210 | 305 | 137,390 | 343 | 142,882 | 424 | 148,597 | 502 |
| Goat | 20,180 | 28 | 50,466 | 101 | 59,520 | 125 | 61,904 | 155 | 64,380 | 183 |
| Poultry | | | | | | | | | | |
| Hen | 1,140,740 | 274 | 1,232,000 | 370 | 1,335,280 | 630 | 1,431,567 | 787 | 1,534,640 | 967 |
| Chicken | 1,806,170 | 361 | 1,977,760 | 514 | 2,281,320 | 919 | 2,437,533 | 1,170 | 2,603,285 | 1,432 |
| Others | 81 | 81 | 105 | 105 | 147 | 147 | 183 | 183 | 233 | 233 |
| Milk | 132,130 | 3,554 | 144,680 | 5,064 | 157,330 | 7,115 | 158,112 | 8,506 | 158,903 | 9,720 |
| Hen's eggs and other eggs | 389,260 | 3,367 | 428,190 | 4,068 | 490,490 | 4,990 | 519,900 | 6,291 | 551,094 | 7,583 |
| Wool | 422 | 53 | 435 | 60 | 460 | 65 | 486 | 82 | 514 | 98 |
| Honey | 567 | 85 | 595 | 161 | 685 | 206 | 755 | 269 | 832 | 338 |
| Bristle | 287 | 39 | 338 | 51 | 263 | 40 | 253 | 46 | 243 | 50 |
| Total | 22,042 | 22,042 | 31,205 | 22,549 | 29,540 | 23,873 | 47,778 | 24,612 | 55,911 | 25,457 |
| Change in list items | 2,150 | 2,150 | 6,461 | 4,306 | 6,830 | 4,125 | 8,736 | 4,500 | 10,064 | 4,582 |
| Total produced amount | 24,192 | 24,192 | 37,666 | 26,855 | 46,370 | 27,998 | 56,514 | 29,112 | 65,975 | 30,039 |
| Total by-product price | 21,777 | 21,777 | 30,139 | 22,600 | 48,487 | 23,504 | 46,652 | 24,444 | 55,405 | 25,226 |

Table 2-4 Forest Development

Cuentas Nacionales 1974/1981 No.18
Banco Central del Paraguay

| Item | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|-----------------------------------|----------------|-----------------------|----------------|-----------------------|----------------|-----------------------|----------------|-----------------------|----------------|-----------------------|
| | Quantity (ton) | Amount (1,000,000 GS) | Quantity (ton) | Amount (1,000,000 GS) | Quantity (ton) | Amount (1,000,000 GS) | Quantity (ton) | Amount (1,000,000 GS) | Quantity (ton) | Amount (1,000,000 GS) |
| Log | | | | | | | | | | |
| For manufacturing | 722,575 | 2,312.2 | 872,960 | 2,793.5 | 1,204,455 | 4,352.9 | 1,512,860 | 7,379.7 | 1,510,765 | 8,717.1 |
| For agriculture and stock farming | 164,690 | 315.2 | 179,510 | 364.9 | 195,666 | 439.5 | 215,232 | 570.4 | 236,755 | 742.2 |
| Tannin (quebracho) | 43,550 | 203.2 | 57,260 | 308.3 | 20,162 | 100.0 | 51,703 | 307.6 | 43,510 | 306.3 |
| Pole | | | | | | | | | | |
| For export | 1,241 | 18.7 | 156 | 2.4 | 204 | 2.4 | 126 | 3.5 | 78 | 2.6 |
| For agriculture and stock farming | 253,260 | 329.2 | 260,858 | 347.7 | 270,680 | 398.7 | 281,507 | 483.1 | 292,770 | 595.8 |
| Board | | | | | | | | | | |
| For export | 255 | 1.9 | 859 | 6.6 | 1,795 | 13.7 | 612 | 5.4 | 208 | 2.2 |
| For agriculture and stock farming | 2,870 | 12.7 | 3,217 | 14.8 | 3,600 | 18.4 | 4,140 | 23.2 | 4,761 | 31.5 |
| Fuel | | | | | | | | | | |
| For household use | 1,014,814 | 500.0 | 1,030,036 | 532.5 | 1,045,486 | 598.0 | 1,061,170 | 679.2 | 1,119,534 | 847.6 |
| For manufacturing | 1,400,450 | 3,893.3 | 1,431,395 | 4,115.3 | 1,467,180 | 4,661.2 | 1,496,523 | 5,230.4 | 1,526,453 | 6,319.5 |
| For charcoal | 139,580 | 739.8 | 143,767 | 787.8 | 148,080 | 896.6 | 151,042 | 1,005.9 | 154,063 | 1,210.2 |
| Palm tree | | | | | | | | | | |
| For export | 1,205 | 11.6 | 1,940 | 26.1 | - | - | - | - | - | - |
| For domestic consumption | 2,660 | 10.6 | 2,793 | 15.6 | 2,932 | 18.1 | 3,078 | 19.0 | 3,230 | 23.6 |
| Palm sprout | 11,155 | 25.1 | 11,435 | 35.9 | 18,176 | 58.6 | 11,920 | 41.1 | 8,085 | 33.6 |
| Palm sprout (for food) | 1,020 | 191.0 | 927 | 242.2 | 977 | 279.1 | 980 | 285.1 | 890 | 302.9 |
| Subtotal | 8,564.6 | | 9,593.9 | 9,246.3 | 11,896.5 | 10,321.3 | 16,033.6 | 11,590.6 | 19,135.0 | 11,702.6 |
| Others | 25.7 | | 28.8 | 27.7 | 38.1 | 33.2 | 85.7 | 279.7 | 1,165.2 | 736.7 |
| Total | 8,590.3 | | 9,622.6 | 9,272.0 | 11,894.6 | 10,354.5 | 16,885.3 | 11,870.3 | 20,300.2 | 12,439.3 |

Table 2-5 Mining

Cuentas Nacionales 1974/1981 No.18
Banco Central del Paraguay

| Item | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|------------------|----------------|-----------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|----------------|--------------------------------------|
| | Quantity (ton) | Amount (1,000,000 GS) | Quantity (ton) | Amount (1,000,000 conversion amount) | Quantity (ton) | Amount (1,000,000 conversion amount) | Quantity (ton) | Amount (1,000,000 conversion amount) | Quantity (ton) | Amount (1,000,000 conversion amount) |
| Limestone | 615,406 | 184,620 | 581,662 | 174,499 | 560,000 | 196,000 | 738,213 | 295,280 | 754,542 | 377,270 |
| Raw stone | 322,190 | 112,767 | 268,325 | 128,914 | 379,958 | 132,980 | 688,429 | 413,040 | 826,115 | 528,700 |
| Rock (crushed) | | | | | | | | | | |
| Common | 433,500 | 216,750 | 501,818 | 250,909 | 551,990 | 413,990 | 680,220 | 578,017 | 761,845 | 746,600 |
| Selected | 41,830 | 26,771 | 42,890 | 27,450 | 45,030 | 28,820 | 63,042 | 75,650 | 69,346 | 98,400 |
| Rock (uncrushed) | | | | | | | | | | |
| Common | 28,570 | 10,000 | 28,760 | 10,066 | 29,620 | 11,850 | 41,460 | 19,072 | 49,752 | 24,870 |
| Selected | 32,050 | 14,422 | 41,960 | 20,983 | 46,160 | 27,700 | 66,670 | 46,670 | 55,500 | 55,500 |
| Others | | 119,950 | | 183,300 | | 561,790 | | 836,946 | | 1,101,310 |
| Total | | 885,280 | | 794,405 | | 1,446,340 | | 2,284,695 | | 2,932,650 |
| | | | | 795,938 | | 1,128,190 | | 1,421,520 | | 1,634,700 |

Table 2-6 Manufacturing

Cuentas Nacionales 1974/1981 No.18
Banco Central del Paraguay P.68-69

| Item | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|---|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|-----------------|------------------------|
| | Produced amount | 1977 conversion amount | Produced amount | 1978 conversion amount | Produced amount | 1979 conversion amount | Produced amount | 1980 conversion amount | Produced amount | 1981 conversion amount |
| Non-ferrous metal industry | 13,504,667 | 13,504,670 | 14,826,480 | 12,929,049 | 17,130,283 | 13,067,538 | 22,372,650 | 13,773,474 | 28,730,130 | 16,857,230 |
| Various foods manufacturing | 1,005,290 | 1,005,290 | 1,474,870 | 1,117,369 | 2,012,637 | 1,117,360 | 2,341,930 | 1,225,432 | 2,777,320 | 1,331,790 |
| Drinking water | 2,752,960 | 2,752,960 | 3,854,320 | 3,762,185 | 4,775,098 | 4,276,398 | 6,248,960 | 4,485,398 | 8,042,420 | 4,914,420 |
| Tobacco | 1,142,160 | 1,142,160 | 1,212,470 | 850,413 | 948,536 | 848,415 | 816,290 | 634,067 | 971,210 | 680,460 |
| Textile | 5,482,430 | 5,482,430 | 7,127,160 | 6,601,064 | 5,987,579 | 5,520,924 | 6,466,320 | 5,447,201 | 7,986,230 | 7,136,810 |
| Clothes | 243,380 | 243,390 | 282,420 | 281,850 | 444,971 | 352,313 | 346,340 | 225,480 | 384,840 | 229,190 |
| Footgear | 1,638,950 | 1,638,950 | 1,762,980 | 1,565,432 | 2,203,242 | 1,206,370 | 980,550 | 1,163,298 | 3,478,520 | 1,255,390 |
| Lumber and rubber | 2,149,430 | 1,149,430 | 1,280,490 | 1,183,918 | 2,058,317 | 1,301,951 | 2,558,800 | 1,533,602 | 3,334,750 | 1,855,320 |
| Wooden furniture | 3,480,354 | 3,480,450 | 5,105,350 | 4,188,487 | 9,379,598 | 7,068,880 | 13,915,810 | 10,337,375 | 15,522,220 | 8,052,040 |
| Paper | 39,280 | 39,280 | 42,870 | 39,128 | 55,128 | 39,870 | 69,150 | 46,054 | 92,050 | 54,230 |
| Printing and publishing | 945,160 | 945,160 | 1,019,200 | 989,211 | 2,324,102 | 1,749,063 | 3,436,950 | 2,248,370 | 4,423,350 | 1,129,880 |
| Chemical products | 390,450 | 390,450 | 483,030 | 478,197 | 487,435 | 347,519 | 623,520 | 482,375 | 830,790 | 515,200 |
| Other chemical manufacturing | 1,072,590 | 1,072,590 | 1,161,700 | 1,019,561 | 1,322,283 | 1,155,586 | 1,528,910 | 1,092,569 | 1,409,160 | 938,960 |
| Petroleum by-products | 4,899,080 | 4,899,080 | 5,292,350 | 5,939,987 | 8,450,302 | 6,126,808 | 13,692,010 | 6,638,258 | 17,558,130 | 7,004,980 |
| Rubber | 13,080 | 13,080 | 14,540 | 14,468 | 22,507 | 15,863 | 27,380 | 18,198 | 35,750 | 29,900 |
| Plastics | 242,280 | 242,280 | 257,690 | 273,290 | 414,199 | 327,948 | 836,820 | 544,901 | 1,598,620 | 927,830 |
| Ceramics and porcelain | - | - | - | - | - | - | - | - | - | - |
| Glass and glass goods | 17,450 | 17,450 | 18,540 | 9,220 | 49,302 | 44,228 | 82,660 | 66,349 | 203,090 | 132,720 |
| Mineral production and manufacturing | 1,889,450 | 1,889,450 | 2,045,420 | 1,729,070 | 2,336,330 | 1,693,394 | 3,742,630 | 2,059,025 | 4,753,140 | 2,257,680 |
| Steel industry | 13,010 | 13,010 | 16,750 | 9,146 | 13,835 | 10,954 | 18,780 | 12,227 | 27,430 | 15,920 |
| Non-ferrous metal industry | 29,840 | 29,840 | 34,840 | 23,640 | 76,436 | 59,091 | 152,600 | 99,331 | 320,790 | 186,370 |
| Metal production | 979,660 | 979,660 | 1,159,230 | 850,806 | 1,157,258 | 897,090 | 1,309,810 | 880,079 | 1,917,940 | 1,140,550 |
| Machinery | 78,200 | 78,200 | 23,590 | 86,290 | 119,280 | 90,630 | 146,280 | 95,156 | 181,720 | 105,280 |
| Electric appliance | 12,210 | 12,210 | 17,540 | 13,768 | 21,760 | 16,833 | 32,820 | 21,369 | 63,990 | 37,150 |
| Transportation machinery manufacturing | 375,150 | 375,150 | 406,410 | 423,170 | 564,974 | 447,326 | 732,180 | 476,753 | 1,026,470 | 595,820 |
| Manufacturing and adjustment of special measuring instruments | 56,390 | 56,390 | 61,390 | 63,606 | 83,320 | 65,969 | 104,970 | 68,342 | 135,660 | 78,720 |
| Other manufacturing industry | 142,400 | 142,400 | 160,660 | 160,631 | 265,830 | 210,473 | 361,450 | 235,321 | 566,620 | 328,860 |
| Subtotal | 41,987,170 | 41,987,160 | 49,613,870 | 45,007,410 | 63,483,430 | 48,485,140 | 83,861,390 | 54,380,810 | 107,594,200 | 58,343,160 |
| Technology | 2,987,130 | 2,987,130 | 4,305,030 | 4,368,210 | 6,146,310 | 4,691,840 | 8,476,180 | 5,496,470 | 10,874,900 | 6,320,340 |
| Total | 44,974,290 | 44,974,290 | 54,418,900 | 49,375,620 | 69,609,740 | 53,176,980 | 92,337,570 | 59,877,280 | 118,469,100 | 64,662,100 |

Table 2-7 Transport and Communication

Unit: 1000 GS

| Item | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|---------------------------------|-------------|------------|-------------|------------|-------------|------------|-------------|------------|-------------|-----------|
| | Real amount | 1978/1977 | Real amount | 1979/1977 | Real amount | 1980/1977 | Real amount | 1981/1977 | Real amount | 1981/1977 |
| A. Transportation | | | | | | | | | | |
| Bus service in the capital city | 1,564,170 | 1,931,450 | 1,692,780 | 2,141,713 | 2,923,440 | 3,959,427 | 2,336,910 | 4,940,974 | 2,462,240 | |
| Local bus service | 1,759,470 | 1,901,670 | 2,358,914 | 3,219,920 | 3,219,920 | 4,366,149 | 2,576,963 | 5,442,205 | 2,712,020 | |
| Cooperative taxi | 1,879,580 | 2,106,660 | 3,552,420 | 2,602,505 | 3,552,420 | 4,742,589 | 2,799,144 | 6,005,125 | 2,992,540 | |
| Taxi | 367,310 | 438,900 | 384,660 | 441,393 | 602,500 | 801,253 | 472,911 | 1,019,811 | 508,200 | |
| Freight trucks | 592,550 | 642,050 | 1,105,860 | 810,155 | 1,105,860 | 1,516,134 | 894,844 | 1,869,975 | 931,870 | |
| Total of automobiles | 6,163,080 | 7,676,440 | 6,727,820 | 8,354,680 | 11,404,140 | 15,385,552 | 9,080,772 | 19,278,090 | 9,606,870 | |
| Air transport | 479,210 | 570,250 | 290,000 | 652,010 | 1,997,348 | 1,172,780 | 699,094 | 2,312,930 | 1,152,600 | |
| Water transport | 790,710 | 815,500 | 714,720 | 643,250 | 903,900 | 1,184,475 | 1,241,340 | 618,600 | | |
| Electric trains and Railroads | 292,770 | 338,510 | 296,680 | 259,720 | 354,520 | 442,295 | 261,049 | 516,600 | 257,440 | |
| Hauling | 795,690 | 716,120 | 627,620 | 472,160 | 644,500 | 592,940 | 349,962 | 563,290 | 280,710 | |
| Total | 8,521,460 | 10,197,220 | 8,937,090 | 10,381,820 | 14,197,060 | 19,602,610 | 11,563,657 | 23,912,250 | 11,916,220 | |
| B. Communication | 1,742,440 | 2,796,880 | 2,451,250 | 3,161,600 | 2,316,180 | 4,180,900 | 2,467,633 | 5,146,507 | 2,564,080 | |
| Grand total | 10,263,900 | 12,994,100 | 11,388,340 | 17,358,660 | 12,698,060 | 23,783,510 | 14,031,290 | 29,058,757 | 14,480,300 | |

Table 2-8 Commerce

Cuentas Nacionales 1974/1981 No.18

Unit: Million GS

| Item | 1977 | | 1978 | | 1979 | | 1990 | | 1991 | |
|----------------------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|--------|-----------------|
| | Amount | 1977 conversion | Amount | 1977 conversion | Amount | 1977 conversion | Amount | 1977 conversion | Amount | 1977 conversion |
| Permanent cultivation | 14,689 | 17,062 | 20,590 | 15,667 | 24,310 | 16,238 | 26,040 | 17,261 | | |
| Temporary cultivation | 47,837 | 48,628 | 67,210 | 54,137 | 80,977 | 60,915 | 107,914 | 72,278 | | |
| Subtotal | 62,526 | 65,690 | 87,800 | 69,804 | 105,287 | 77,152 | 133,955 | 89,539 | | |
| Minus: Private consumption | -30,638 | 31,531 | -42,144 | 33,940 | -47,379 | 37,033 | -60,298 | 42,710 | | |
| Total amount of production | 31,888 | 34,159 | 45,656 | 35,864 | 57,908 | 40,119 | 73,657 | 46,829 | | |
| Agriculture | 9,536 | 10,289 | 13,697 | 10,759 | 17,372 | 12,036 | 22,097 | 13,468 | | |
| Industry | 22,117 | 24,285 | 34,109 | 26,057 | 45,245 | 29,340 | 58,772 | 32,081 | | |
| Stock-farming | 1,199 | 1,176 | 2,117 | 1,293 | 2,566 | 1,344 | 3,930 | 1,433 | | |
| Forest development | 1,394 | 1,423 | 1,785 | 1,553 | 2,461 | 2,461 | 3,077 | 1,885 | | |
| Fishery | 55 | 70 | 128 | 100 | 186 | 107 | 221 | 113 | | |
| Import | 9,469 | 11,299 | 13,278 | 15,180 | 23,236 | 16,948 | 28,852 | 18,391 | | |
| Export | 10,542 | 9,714 | 11,485 | 12,761 | 11,727 | 12,219 | 13,090 | 12,048 | | |
| Subtotal | 54,312 | 61,906 | 82,597 | 67,702 | 102,793 | 74,456 | 130,040 | 78,419 | | |
| Total amount | 47,502 | 49,446 | 74,338 | 57,546 | 92,514 | 63,287 | 120,216 | 67,506 | | |
| Banks, etc., financing | 7,617 | 11,411 | 14,491 | 10,863 | 22,480 | 13,271 | 31,092 | 15,293 | | |
| Total | 55,118 | 60,857 | 88,829 | 68,410 | 114,994 | 76,558 | 151,308 | 82,800 | | |
| Indirect tax | 10,908 | 13,399 | 23,828 | 16,502 | 29,876 | 17,269 | 37,070 | 18,894 | | |
| Grand total | 66,026 | 74,455 | 112,656 | 84,911 | 144,870 | 93,827 | 188,378 | 101,694 | | |

Table 2-9 Annual Expenditure of Government, Etc.

Unit: 1,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|------------|----------------------|----------------------|---------------------|----------------------|
| House of Representatives | 124,200 | 136,520 | 150,930 | 172,630 | 218,722 |
| Presidential office | 122,050 | 142,320 | 162,440 | 190,250 | 226,968 |
| Ministry of Interior | 1,000,850 | 1,220,080 | 1,525,230 | 1,970,450 | 3,083,754 |
| Ministry of Foreign Affairs | 237,280 | 270,340 | 314,780 | 400,240 | 441,064 |
| Ministry of Finance | 656,330 | 772,870 | 885,330 | 1,025,480 | 1,257,238 |
| Education Ministry | 89,270 | 100,400 | 130,850 | 167,450 | 207,805 |
| Ministry of Agricultural livestock | 351,790 | 415,200 | 515,330 | 791,080 | 1,141,528 |
| Ministry of Public Works and Communication | 183,570 | 216,340 | 273,020 | 329,780 | 494,340 |
| Ministry of National Defense | 2,003,000 | 2,372,360 | 2,403,640 | 3,148,770 | 4,357,898 |
| Ministry of Health and Welfare | 105,480 | 195,020 | 156,020 | 221,220 | 305,284 |
| Ministry of Justice and Labor | 191,040 | 219,000 | 239,500 | 277,050 | 326,365 |
| Ministry of Commerce and Industry | 67,260 | 78,600 | 92,620 | 115,820 | 138,521 |
| Ministry without portfolio | 3,810 | 4,420 | 5,060 | 5,730 | 6,922 |
| House of Councilors | 7,500 | 8,630 | 9,600 | 11,220 | 14,193 |
| Judicial Office | 240,920 | 273,820 | 317,240 | 362,230 | 491,566 |
| Subtotal | 5,384,350 | 6,425,920 | 7,181,590 | 1,189,400 | 12,712,148 |
| Municipal offices | | | | | |
| Metropolitan | 396,400 | 479,320 | 575,000 | 608,140 | 985,700 |
| Local | 234,080 | 266,950 | 298,900 | 327,460 | 585,400 |
| Subtotal | 630,480 | 746,270 | 873,900 | 935,600 | 1,571,100 |
| Local public entity | 936,710 | 1,415,420 | 1,806,100 | 2,913,300 | 3,781,463 |
| Total | 6,951,540 | 8,587,610 | 9,861,590 | 13,038,300 | 18,064,711 |
| Other liabilities | 3,331,560 | 4,122,300 | 4,733,600 | 6,076,700 | 8,613,269 |
| Grand total (Growth rate) | 10,283,100 | 12,709,910 (23.6) | 14,595,190 (11.8) | 19,115,000 (3.1) | 26,677,980 (39.6) |
| Conversion amount based on 1977 (Growth rate) | 10,283,100 | 11,100,360 (7.9) | 12,199,300 (9.9) | 13,053,250 (7.0) | 16,031,360 (22.8) |

Table 2-10 Other Services

Unit: 1,000 GS

| Item | 1977 | | 1978 | | 1979 | | 1980 | | 1981 | |
|-------------------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|-----------------|--------|-----------------|
| | Amount | 1977 conversion | Amount | 1977 conversion | Amount | 1977 conversion | Amount | 1977 conversion | Amount | 1977 conversion |
| A. Educational expenses | 4,609,090 | 5,263,310 | 7,707,170 | 5,814,630 | 11,711,300 | 6,597,900 | 14,657,126 | 7,188,390 | | |
| Civic education | 2,616,040 | 3,013,410 | 3,970,200 | 3,281,160 | 4,993,170 | 2,813,060 | 6,299,998 | 3,089,749 | | |
| School education | 1,993,050 | 2,491,310 | 3,736,970 | 2,533,470 | 6,718,130 | 3,784,840 | 8,357,128 | 4,098,641 | | |
| Elementary education | 686,830 | 858,530 | 1,287,800 | 868,380 | 2,317,750 | 1,305,780 | 2,841,423 | 1,393,538 | | |
| Secondary education | 619,470 | 774,340 | 1,161,510 | 790,210 | 2,082,620 | 1,173,900 | 2,590,710 | 1,270,579 | | |
| University education | 547,700 | 684,630 | 1,026,950 | 697,500 | 1,847,500 | 1,040,850 | 2,339,996 | 1,147,619 | | |
| Other educations | 139,050 | 173,810 | 260,710 | 177,380 | 470,260 | 264,910 | 584,999 | 286,905 | | |
| B. Health workers | 2,123,670 | 2,509,970 | 3,214,300 | 2,505,880 | 5,019,150 | 2,827,690 | 6,364,274 | 3,121,272 | | |
| Public | 1,524,690 | 1,761,240 | 2,091,200 | 1,728,270 | 2,634,240 | 1,706,120 | 3,342,851 | 1,639,456 | | |
| Private | 598,980 | 748,730 | 1,123,100 | 777,610 | 2,384,910 | 1,121,570 | 3,021,423 | 1,481,816 | | |
| C. Domestic service | 2,730,630 | 3,306,100 | 4,959,150 | 3,300,530 | 6,641,500 | 3,741,690 | 8,421,414 | 4,130,169 | | |
| Total (A + B + C) | 9,463,390 | 11,644,130 | 15,880,620 | 11,621,040 | 23,371,950 | 13,157,280 | 29,442,814 | 14,439,831 | | |
| D. Other services | 10,747,420 | 13,619,370 | 21,481,260 | 14,145,770 | 27,326,480 | 15,398,430 | 34,842,786 | 16,060,909 | | |
| Service stand total | 20,210,800 | 25,263,500 | 37,361,880 | 25,766,810 | 50,698,430 | 28,565,710 | 64,285,600 | 30,500,740 | | |

Table 2-11 Structure of Gross Domestic Capital Formation

Unit: 1,000,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|---------------|---------------|----------------------------------|----------------|----------------|
| 1. Gross domestic fixed capital formation | | | A. Types of Property and Capital | | |
| a) Buildings and other structures | 27,800 (42.7) | 40,710 (46.4) | 61,066 (50.1) | 90,308 (54.5) | 123,000 (57.1) |
| b) Transportation facilities | 16,580 (25.5) | 22,556 (26.8) | 25,669 (21.2) | 30,489 (20.2) | 29,467 (16.2) |
| c) Communication facilities | 2,072 (3.2) | 2,128 (2.5) | 1,104 (0.9) | 2,541 (1.7) | 5,092 (2.8) |
| d) Machinery and other facilities | 16,470 (25.3) | 15,862 (18.9) | 28,303 (23.4) | 29,316 (19.4) | 36,660 (20.2) |
| 2. Increase in stored goods | 2,150 (3.3) | 6,461 (5.4) | 6,830 (4.4) | 8,550 (4.2) | 10,064 (3.7) |
| Gross domestic capital formation | 65,072 (100) | 87,717 (100) | 122,972 (100) | 161,204 (100) | 204,283 (100) |
| | | | B. Buyers Section | | |
| 1. Private enterprise | 44,972 (69.0) | 65,875 (75.0) | 98,363 (80.0) | 135,484 (84.0) | 169,983 (83.0) |
| 2. Government and public enterprise | 20,100 (31.0) | 21,842 (25.0) | 24,609 (20.0) | 25,720 (16.0) | 34,300 (17.0) |
| Gross domestic capital formation | 65,072 (100) | 87,717 (100) | 122,970 (100) | 161,204 (100) | 204,283 (100) |
| | | | C. Proportion | | |

Table 2-12 Net Production Profit (The Conversion Values are Based on 1977)

Unit: 1,000,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|---------|---------|----------|----------|----------|
| Gross production income at the current price | 263,612 | 292,235 | 323,504 | 360,383 | 390,837 |
| Trade balance of materials | - | - 2,979 | - 12,254 | - 11,926 | - 16,800 |
| Gross real domestic income at the current price | 263,612 | 289,256 | 311,250 | 348,457 | 374,037 |
| Net income of production materials from abroad | - 4,570 | - 6,953 | - 56 | - 3,187 | - 3,816 |
| Gross real domestic income | 259,042 | 282,303 | 311,194 | 345,270 | 377,853 |
| Net indirect tax | 10,270 | 14,135 | 19,142 | 22,426 | 22,882 |
| Appropriation to fixed capital consumption | 24,621 | 30,342 | 38,732 | 39,256 | 47,325 |
| National real profit | 224,151 | 237,826 | 253,320 | 283,588 | 307,646 |

Table 2-13 Use of Gross Real National Income
(The Conversion Values are Based on 1977)

Unit: 1,000,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|----------|----------|----------|----------|----------|
| Private consumption expenditure | 197,055 | 211,850 | 227,322 | 250,564 | 264,631 |
| Government consumption expenditure | 16,353 | 19,454 | 20,656 | 22,308 | 27,219 |
| Fixed capital formation | 62,922 | 74,819 | 91,075 | 105,561 | 118,311 |
| Increase in stored goods | 2,150 | 4,306 | 4,125 | 4,500 | 4,582 |
| Excess of national current account | - 19,438 | - 28,126 | - 31,984 | - 37,663 | - 36,890 |
| Export of property and service | 39,600 | 44,347 | 51,626 | 55,410 | 53,271 |
| Minus: Import of property and service | - 54,468 | - 62,541 | - 71,300 | - 77,960 | - 77,177 |
| Net income of production materials | - 4,570 | - 6,953 | - 56 | - 3,187 | - 3,816 |
| Trade balance | - | - 2,979 | - 12,254 | - 11,926 | - 16,800 |
| Gross real national income at the current price | 259,042 | 282,303 | 311,194 | 345,270 | 377,853 |

Table 2-14 Foreign Trade (Index based on 1977 and Price)

Unit: US\$1,000

| Year | Export | | | | Import | | | | Currency exchange rate | Export purchasing power |
|------|---------------|-----------------|-----------|---------|---------------|-----------------|-----------|---------|------------------------|-------------------------|
| | Value | | Index | | Value | | Index | | | |
| | Current value | 1977 Conversion | Unit cost | Quantum | Current value | 1977 Conversion | Unit cost | Quantum | | |
| 1971 | 66,500 | 168,689 | 39.4 | 60.5 | 83,034 | 167,314 | 49.6 | 46.5 | 79.4 | 48.0 |
| 1972 | 86,188 | 203,776 | 42.3 | 73.1 | 78,692 | 159,044 | 49.5 | 44.2 | 85.5 | 62.5 |
| 1973 | 127,023 | 212,164 | 59.9 | 76.1 | 127,270 | 221,725 | 57.4 | 61.6 | 104.4 | 79.4 |
| 1974 | 172,962 | 236,214 | 73.2 | 84.7 | 198,249 | 260,180 | 76.2 | 72.3 | 96.1 | 81.4 |
| 1975 | 176,711 | 248,354 | 71.2 | 89.1 | 227,342 | 221,464 | 102.6 | 61.5 | 69.4 | 62.0 |
| 1976 | 182,336 | 225,968 | 80.7 | 81.1 | 236,293 | 256,707 | 92.0 | 71.3 | 87.7 | 71.0 |
| 1977 | 278,891 | 278,891 | 100.0 | 100.0 | 360,075 | 360,075 | 100.0 | 100.0 | 100.0 | 100.0 |
| 1978 | 281,454 | 288,319 | 97.6 | 103.4 | 431,993 | 406,370 | 106.3 | 112.9 | 91.8 | 94.9 |
| 1979 | 305,176 | 337,692 | 90.4 | 121.1 | 577,135 | 454,437 | 127.0 | 126.2 | 71.2 | 86.2 |
| 1980 | 310,230 | 320,850 | 96.7 | 115.1 | 675,322 | 492,576 | 137.1 | 136.8 | 70.5 | 81.1 |
| 1981 | 295,541 | 333,340 | 88.7 | 119.5 | 725,000 | 490,528 | 147.8 | 136.2 | 60.0 | 71.7 |

Table 2-15(1) Export Amount by Items

Unit: US\$1,000

| Item | 1977 | | | 1978 | | | 1979 | | | 1980 | | | 1981 | | |
|----------------------------------|--------|-------|------------|--------|--------|------------|--------|--------|------------|--------|-------|------------|--------|-------|------------|
| | Amount | Index | conversion | Amount | Index | conversion | Amount | Index | conversion | Amount | Index | conversion | Amount | Index | conversion |
| | | | | | | | | | | | | | | | |
| Animals (Living body) | 12 | 1.00 | - | - | - | - | 4 | 0.2 | - | 4 | 2.00 | - | - | - | - |
| Frozen beef | 3,790 | 1.00 | 3,782 | 1.13 | 1.13 | 4,341 | 5,311 | 0.82 | 1,014 | 234 | 0.02 | - | - | - | - |
| Horse meat | 98 | 1.00 | 96 | 1.00 | 41.4 | 0.99 | - | - | - | 1,485 | 0.68 | - | - | - | - |
| Frozen mutton | - | - | - | - | - | - | 16 | - | - | - | - | - | - | - | - |
| Other meats | - | - | - | - | - | - | 820 | - | - | 305 | - | - | - | - | - |
| Processed meat | 17,593 | 1.00 | 19,600 | 0.95 | 20,736 | 987 | 1.20 | 52 | 58 | 219 | 0.17 | 3 | 3 | 1.00 | - |
| Viscera | 696 | 1.00 | 585 | 0.98 | 594 | 136 | 1.40 | 46 | 277 | 332 | 0.26 | 30 | 30 | 1.53 | - |
| Other animal products | 448 | 1.00 | 387 | 1.19 | 325 | 270 | 1.11 | - | - | - | 0.68 | 181 | 36 | 5.03 | - |
| Milk product | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Flower | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Vegetables | 1,469 | 1.00 | 2,358 | 1.11 | 2,116 | 2,521 | 1.27 | 5 | 8,098 | 193 | 0.03 | - | - | - | - |
| Fruits | 344 | 1.00 | 247 | 0.83 | 296 | 278.4 | 0.93 | 282 | 442 | 8,023 | 1.01 | 4,203 | 4,077 | 1.03 | - |
| Coffee | 10,092 | 1.00 | 213 | 0.66 | 324 | 5,999 | 0.70 | 2,394 | 3,681 | 442 | 0.64 | 152 | 188 | 0.81 | - |
| Herbs Mate | 823 | 1.00 | 793 | 1.08 | 732 | 756 | 1.50 | 1,280 | 1,930 | 3,681 | 0.65 | 1,789 | 2,796 | 0.64 | - |
| Miscellaneous grain crops | 182 | 1.00 | 116 | 1.08 | 121 | 18 | 1.33 | 2,493 | 3,998 | 292 | 1.52 | 349 | 292 | 1.20 | - |
| Cassava processed products | 14 | 1.00 | - | 0.96 | - | - | - | - | - | - | 0.62 | 294 | - | 1.01 | - |
| Seeds | 58,829 | 1.00 | 41,632 | 0.87 | 47,841 | 79,858 | 1.02 | 45,266 | 57,777 | 54,661 | 0.78 | 52,519 | 54,661 | 0.96 | - |
| Medical herbs | 30 | 1.00 | 21 | 1.31 | 16 | 9 | 0.78 | 6 | 191 | 3 | 0.03 | 3 | 5 | 0.60 | - |
| Vegetable oil | 29,387 | 1.00 | 16,814 | 0.85 | 19,889 | 21,885 | 0.87 | 17,117 | 23,797 | 22,421 | 0.72 | 22,421 | 31,263 | 0.72 | - |
| Resin | - | - | - | - | - | - | - | 13 | 206 | - | 0.09 | - | - | - | - |
| Sugar and confectionery material | 55 | 1.00 | 76 | 4.94 | 16 | 25,007 | 0.002 | 3,159 | 3,357 | 94 | 0.94 | 94 | 56,643 | 0.01 | - |
| Fruit processed products | 1,054 | 1.00 | 359 | 0.83 | 432 | 537 | 1.29 | 383 | 488 | 30 | 0.78 | 30 | 16 | 1.88 | - |
| Canned vegetables | 1,663 | 1.00 | 1,562 | 0.95 | 1,642 | 1,590 | 1.11 | 2,483 | 1,769 | 2,163 | 1.40 | 2,163 | 1,407 | 1.54 | - |
| Alcoholic beverage | 96 | 1.00 | 114 | 0.95 | 120 | - | - | 57 | 383 | - | 0.15 | - | 3 | - | - |
| Oil and fat cakes | 10,277 | 1.00 | 10,203 | 0.81 | 12,663 | 13,802 | 1.02 | 22,256 | 19,697 | 13,735 | 1.13 | 13,735 | 11,570 | 1.19 | - |
| Leaf tobacco | 13,659 | 1.00 | 9,246 | 1.03 | 9,005 | 7,614 | 1.12 | 10,139 | 9,232 | 6,458 | 1.10 | 6,458 | 5,486 | 1.18 | - |
| Tabacco | 56 | 1.00 | 38 | 0.26 | 145 | 461 | 0.03 | 212 | 1,389 | - | 0.15 | - | - | - | - |
| Cement and stones | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Tannin | 5,284 | 1.00 | 5,169 | 0.99 | 5,236 | 3,424 | 0.93 | 4,388 | 4,920 | 5,569 | 0.89 | 5,569 | 4,955 | 1.12 | - |
| Perfumed oil | 12,290 | 1.00 | 8,497 | 0.96 | 8,850 | 10,597 | 0.92 | 9,041 | 10,205 | 6,235 | 0.89 | 6,235 | 6,108 | 1.02 | - |
| Soap | 39 | 1.00 | 46 | 0.94 | 49 | 118 | 1.03 | 271 | 345 | 63 | 0.79 | 63 | 50 | 1.26 | - |
| March | - | - | - | - | - | - | - | 16 | 203 | - | 0.08 | - | - | - | - |

Table 2-15(2) Export Amount by Items

| Item | 1977 | | | 1978 | | | 1979 | | | 1980 | | | 1981 | | |
|---|---------|-------|-----------------|---------|-------|-----------------|---------|--------|-----------------|---------|-------|-----------------|---------|-------|-----------------|
| | Amount | Index | 1977 conversion | Amount | Index | 1977 conversion | Amount | Index | 1977 conversion | Amount | Index | 1977 conversion | Amount | Index | 1977 conversion |
| Fur | 5,504 | 1.00 | 8,297 | 7,841 | 0.95 | 6,126 | 5,359 | 1.14 | 3,117 | 1,921 | 1.62 | 6,129 | 2,922 | 2.10 | |
| Wild animal fur | 924 | 1.00 | 1,261 | 1,572 | 1.25 | 866 | 564 | 1.50 | 786 | 1,167 | 0.67 | 406 | 639 | 0.65 | |
| Leather processed products | 22 | 1.00 | 36 | 55 | 1.53 | 11 | 9 | 1.22 | 3 | 1,189 | 0.02 | 37 | 8 | 4.63 | |
| Log | 319 | 1.00 | 490 | 412 | 0.84 | 69 | 84 | 0.82 | 567 | 520 | 1.09 | 496 | 386 | 1.29 | |
| Wood products | 308 | 1.00 | 234 | 215 | 0.92 | 427 | 401 | 1.06 | 134 | 237 | 0.45 | 87 | 44 | 1.98 | |
| Tile cleat | 3 | 1.00 | 3 | 3 | 1.00 | - | - | 1.00 | 7 | 191 | 0.04 | 13 | 6 | 2.17 | |
| Boards (chick) | 11,799 | 1.00 | 10,657 | 10,311 | 0.97 | 26,417 | 25,429 | 1.04 | 44,056 | 32,753 | 1.35 | 20,519 | 12,232 | 1.78 | |
| Rafter material | 24 | 1.00 | 11 | 18 | 1.64 | 117 | 86 | 1.36 | 109 | 237 | 0.42 | 153 | 10 | 15.30 | |
| Beam material | - | - | - | - | - | 103 | - | - | 357 | 545 | 0.66 | 84 | - | - | |
| Boards (chic) | 2,337 | 1.00 | 4,383 | 3,448 | 0.79 | 5,639 | 7,285 | 0.77 | 9,481 | 12,951 | 0.73 | 6,845 | 5,937 | 1.15 | |
| Flooring (tile type) | 520 | 1.00 | 1,287 | 846 | 0.66 | 1,510 | 2,235 | 0.68 | 1,752 | 1,468 | 1.19 | 967 | 545 | 1.77 | |
| Plywood | 755 | 1.00 | 934 | 966 | 1.03 | 1,671 | 1,209 | 1.38 | 2,378 | 1,420 | 1.67 | 631 | 677 | 0.93 | |
| Slats | 3 | 1.00 | 5 | 13 | 2.60 | 26 | 13 | 2.00 | 266 | 353 | 0.75 | 178 | 163 | 1.09 | |
| Flooring | 3,037 | 1.00 | 4,437 | 4,046 | 0.91 | 5,223 | 5,925 | 0.95 | 5,114 | 3,759 | 1.36 | 3,576 | 2,046 | 1.75 | |
| Wooden door | 411 | 1.00 | 247 | 262 | 1.06 | 945 | 590 | 1.60 | 1,859 | 1,618 | 1.15 | 1,270 | 1,306 | 0.97 | |
| Door stopper | 716 | 1.00 | 155 | 217 | 1.40 | 164 | 63 | 2.60 | 387 | 322 | 1.20 | 427 | 103 | 4.15 | |
| Cotton | 80,489 | 1.00 | 114,526 | 100,024 | 0.87 | 98,596 | 105,071 | 0.94 | 105,833 | 103,948 | 1.02 | 127,318 | 116,138 | 1.10 | |
| Fibers | 456 | 1.00 | 1,160 | 996 | 0.86 | 176 | 230 | 0.77 | 680 | 495 | 1.37 | 93 | 67 | 1.39 | |
| Silk processed goods | 866 | 1.00 | 1,083 | 1,377 | 1.27 | 1,461 | 1,017 | 1.44 | 1,134 | 1,156 | 0.98 | 2,601 | 2,145 | 1.21 | |
| Clothing | 183 | 1.00 | 186 | 144 | 0.77 | 43 | 37 | 1.16 | 56 | 198 | 0.28 | 59 | 52 | 1.14 | |
| Shoes | - | - | - | - | - | 2 | 104 | - | - | - | - | - | - | - | |
| Palm products | 52 | 1.00 | 59 | 50 | 0.85 | 79 | 27 | 0.76 | 59 | 240 | 0.25 | 48 | 30 | 1.60 | |
| Chinaaware | 1 | 1.00 | 4 | 1 | 0.25 | - | - | - | - | - | - | - | - | - | |
| Jewels | 1 | 1.00 | 3 | 3 | 1.00 | - | - | - | - | - | - | - | - | - | |
| Old scrap iron | - | - | - | - | - | - | - | - | 5 | 193 | 0.03 | - | - | - | |
| Toys and sporting goods | - | - | - | - | 0.07 | - | - | - | - | 209 | 0.58 | 241 | 82 | 2.94 | |
| Old waste paper | 5 | 1.00 | 10 | 16 | 1.60 | 13 | 30 | 0.43 | 121 | - | - | - | - | | |
| Foot and mouth disease protective injection | 191 | 1.00 | 91 | 113 | 1.24 | 195 | 106 | 1.84 | 261 | 303 | 0.86 | 105 | 25 | 4.20 | |
| Electricity | 1,434 | 1.00 | 1,137 | 1,111 | 0.98 | 1,090 | 1,087 | 100.30 | - | - | - | - | - | - | |
| Others | 251 | 1.00 | 2,958 | 25,442 | 8.60 | 817 | 77 | 10.61 | 299 | 215 | 1.39 | 6,948 | 7,806 | 0.89 | |
| Total | 278,891 | 1.00 | 288,319 | 281,454 | 0.98 | 305,176 | 337,692 | 0.90 | 310,230 | 320,850 | 0.97 | 295,541 | 333,240 | 0.89 | |

Table 2-16 Export Conditions of Main Products and By-products
 Boletín Estadístico No. 293
 Unit: US\$1,000 (FOB Price)

| Item | 1977 (1,000 tons) | 1978 (1,000 tons) | 1979 (1,000 tons) | 1980 (1,000 tons) | 1981 (1,000 tons) |
|--------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Wood | 15,801 (100) | 14,675 (100) | 32,167 (188) | 47,487 (187) | 23,046 (75) |
| Woodwork | 4,111 (12) | 5,657 (23) | 10,076 (37) | 18,964 (75) | 13,903 (42) |
| Palm material | 104 (3.2) | 233 (1.9) | - | - | 30 (0.6) |
| Meat products | 21,383 (14) | 23,382 (16) | 5,176 (4.3) | 1,022 (1.0) | 3 (2t) |
| Beef viscera | 696 (1.4) | 585 (1.2) | 190 (0.3) | 32 (0.03) | - |
| Tanned leather | 4,182 (5.2) | 6,025 (8.1) | 6,126 (6.7) | 3,117 (2.2) | 6,551 (3.8) |
| Other animal products | 448 (0.5) | 367 (3.3) | 301 (2.7) | 252 (1.5) | 234 (0.7) |
| Seeds for oil | 58,828 (254) | 41,632 (208) | 81,349 (347) | 45,272 (249) | 52,541 (238) |
| Cotton | 80,487 (57) | 100,024 (84) | 98,596 (77) | 105,833 (75) | 129,287 (91) |
| Tobacco | 13,658 (22) | 9,246 (15) | 8,547 (12) | 10,142 (15) | 6,458 (9) |
| Cereals (mainly rice) | 182 (1.2) | 116 (0.8) | 24 (0.12) | 2,493 (25.4) | 294 (1.95) |
| Fruits (fresh) | 344 (1.5) | 248 (1.3) | 259 (1.2) | 282 (1.1) | 152 (0.8) |
| Fruit processed product | 1,054 (1.6) | 359 (0.7) | 694 (0.8) | 409 (0.5) | 45 (71t) |
| Vegetables | 1,469 (3.5) | 2,358 (5.0) | 3,208 (6.0) | 8,098 (17.5) | 4,257 (10.0) |
| Coffee beans | 10,092 (1.9) | 213 (60t) | 4,193 (1.1) | 2,303 (0.63) | 1,260 (0.44) |
| Yerba Mate | 823 (2.0) | 793 (1.8) | 1,132 (1.8) | 1,930 (2.7) | 349 (0.71) |
| Palmito | 1,663 (1.1) | 1,526 (1.0) | 1,763 (1.1) | 2,457 (1.1) | 2,163 (1.0) |
| Vegetable oil | 29,387 (28) | 16,816 (19) | 19,111 (21) | 16,981 (21) | 22,421 (30) |
| Perfumed oil | 12,291 (1.4) | 8,497 (1.0) | 9,732 (1.2) | 9,093 (1.1) | 6,615 (0.7) |
| Oil cake | 4,038 (32) | 3,901 (33) | 7,967 (56) | 21,904 (155) | 14,244 (107) |
| Powder (cereal) | 6,239 (55) | 6,302 (72) | 6,176 (59) | 390 (3.5) | 100 (2.2) |
| Tannin | 5,284 (15) | 5,160 (15) | 3,178 (10) | 4,388 (14) | 5,569 (14) |
| Sugar and Caña Paraguaya | 96 (98t) | 115 (123t) | 52 (75t) | 3,167 (5,998t) | 101 (198t) |
| Silkworm cocoon | 866 (72t) | 1,377 (90t) | 1,461 (85t) | 1,134 (81t) | 2,601 (179t) |
| Others | | | | | |
| Total | 278,891 | 256,984 | 305,176 | 310,230 | 295,541 |

Table 2-17 Import Amount of Main Products

Unit: US\$1,000 (FOB Price)

| Item | 1977 | 1978 | 1979 | 1980 | 1981 | UP to October 1982 |
|--|---------|---------|---------|---------|---------|--------------------------|
| Foodstuffs (Wheat flour, sugar confectionery, etc.) | 12,651 | 14,453 | 19,977 | 24,074 | 32,604 | 18,689 |
| Tobacco and alcoholic drinks | 19,599 | 28,979 | 41,567 | 39,664 | 37,222 | 33,665 |
| Fuel (Crude oil, gasoline, etc.) | 42,571 | 59,644 | 87,520 | 129,518 | 94,588 | 99,101 |
| Paper (For newspaper, etc.) | 7,057 | 7,111 | 8,693 | 12,301 | 9,798 | 11,556 |
| Medicine and chemicals | 12,535 | 16,334 | 26,229 | 31,719 | 31,070 | 26,654 |
| Automobile and vessel parts (truck, etc.) | 40,660 | 60,133 | 69,273 | 93,253 | 65,493 | 40,388 |
| Textile and processed goods | 6,187 | 6,733 | 9,437 | 9,817 | 9,767 | 8,441 |
| Agricultural machines and implements (Working machines and precision instruments) | 9,802 | 10,478 | 11,083 | 9,483 | 13,196 | 7,830 |
| Ironworks (steel material) | 15,208 | 14,655 | 30,899 | 20,002 | 22,657 | 27,912 |
| General hardware (Aluminium, tinplate, etc.) | 3,567 | 5,222 | 4,448 | 6,415 | 7,616 | 11,576 |
| Machinery and apparatus (Tractor, motor, etc.) | 56,855 | 53,831 | 79,737 | 79,739 | 107,757 | 77,968 |
| Other general products (Crushed stone, cement, electric appliance, etc.) | 28,685 | 40,166 | 48,860 | 61,157 | 74,344 | 78,629 |
| Total | 255,377 | 317,738 | 431,758 | 517,141 | 506,111 | 442,410 |

Table 2-18 Adjustment of Monetary System and Income and Expenditure Account

Boletín Estadístico No. 293
Unit: 1,000,000 GS

| Item | 1981 | | | | | | | | | | | | 1982 | | | | | |
|--|--------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | 1977 | | | 1978 | | | 1979 | | | 1980 | | | 1981 | | | 1982 | | |
| | Mar. | Jun. | Sep. | Mar. | Jun. | Sep. | Mar. | Jun. | Sep. | Mar. | Jun. | Sep. | Mar. | Jun. | Sep. | Mar. | Jun. | Sep. |
| Asset | | | | | | | | | | | | | | | | | | |
| Net international asset | 33 | 57 | 50 | 583 | 583 | 542 | 542 | 542 | 542 | 542 | 511 | 511 | 511 | 511 | 511 | 511 | 511 | 511 |
| Gold | 30,752 | 53,233 | 71,628 | 89,581 | 90,330 | 92,153 | 91,191 | 91,879 | 85,921 | 89,462 | 80,715 | 80,715 | 80,715 | 80,715 | 80,715 | 80,715 | 80,715 | 80,715 |
| Foreign current | 1,235 | -64 | 1,212 | 2,959 | -1,301 | -685 | 4,566 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 | 3,308 |
| Other banks | 970 | 1,001 | 1,363 | 2,428 | 2,486 | 3,670 | 3,742 | 3,779 | 3,779 | 3,779 | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 | 3,831 |
| International monetary fund | 983 | 1,025 | 1,509 | 1,784 | 2,186 | 2,276 | 2,276 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 | 2,461 |
| Exchange special tax | 33,953 | 53,233 | 76,240 | 97,325 | 95,435 | 98,440 | 96,994 | 103,023 | 96,011 | 101,802 | 91,621 | 91,621 | 91,621 | 91,621 | 91,621 | 91,621 | 91,621 | 91,621 |
| Total | 3,053 | 3,125 | 4,548 | 4,267 | 5,496 | 4,519 | 3,821 | 4,309 | 4,534 | 4,454 | 3,584 | 3,584 | 3,584 | 3,584 | 3,584 | 3,584 | 3,584 | 3,584 |
| Government | 3,142 | 3,751 | 3,773 | 8,257 | 8,258 | 8,647 | 9,338 | 9,918 | 10,218 | 10,080 | 10,585 | 10,585 | 10,585 | 10,585 | 10,585 | 10,585 | 10,585 | 10,585 |
| Official division | 92 | - | 11 | 183 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Loans to Wheat Committee | 6,287 | 6,876 | 8,332 | 12,747 | 13,754 | 13,166 | 13,169 | 14,227 | 14,752 | 14,534 | 14,169 | 14,169 | 14,169 | 14,169 | 14,169 | 14,169 | 14,169 | 14,169 |
| Total | 38,516 | 40,670 | 53,568 | 76,826 | 82,078 | 85,139 | 86,587 | 88,635 | 93,215 | 94,764 | 95,018 | 95,018 | 95,018 | 95,018 | 95,018 | 95,018 | 95,018 | 95,018 |
| Investments | 1,818 | 2,353 | 2,347 | 3,183 | 3,123 | 1,687 | 1,346 | 1,473 | 2,436 | 1,083 | 964 | 964 | 964 | 964 | 964 | 964 | 964 | 964 |
| Loans and investments to private enterprises | 13,710 | 15,578 | 16,642 | 19,503 | 24,064 | 24,375 | 24,010 | 28,868 | 33,776 | 34,663 | 44,621 | 44,621 | 44,621 | 44,621 | 44,621 | 44,621 | 44,621 | 44,621 |
| Invested asset to international monetary fund | 84,279 | 120,930 | 157,129 | 209,592 | 218,454 | 223,037 | 222,306 | 236,228 | 239,191 | 248,450 | 246,392 | 246,392 | 246,392 | 246,392 | 246,392 | 246,392 | 246,392 | 246,392 |
| Other asset accounts | 13,344 | 18,692 | 24,316 | 31,131 | 30,646 | 30,801 | 38,313 | 31,161 | 29,479 | 31,026 | 30,287 | 30,287 | 30,287 | 30,287 | 30,287 | 30,287 | 30,287 | 30,287 |
| Total of asset and liability | 13,583 | 18,942 | 21,807 | 26,877 | 29,292 | 30,530 | 27,258 | 26,290 | 26,056 | 25,676 | 25,676 | 25,676 | 25,676 | 25,676 | 25,676 | 25,676 | 25,676 | 25,676 |
| Civilian possessed coins and notes | 5,372 | 12,153 | 19,044 | 21,134 | 21,500 | 18,020 | 13,338 | 9,226 | 8,806 | 9,799 | 6,684 | 6,684 | 6,684 | 6,684 | 6,684 | 6,684 | 6,684 | 6,684 |
| Civilian's current deposit amount | 1,639 | 2,232 | 3,467 | 4,332 | 5,369 | 4,723 | 4,780 | 4,236 | 3,556 | 3,169 | 3,801 | 3,801 | 3,801 | 3,801 | 3,801 | 3,801 | 3,801 | 3,801 |
| Current deposit amount of Public Entity | 33,938 | 51,939 | 68,534 | 83,574 | 86,907 | 84,074 | 73,997 | 71,878 | 68,131 | 70,660 | 66,443 | 66,443 | 66,443 | 66,443 | 66,443 | 66,443 | 66,443 | 66,443 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Ordinary and time deposits | 4,102 | 3,941 | 3,159 | 2,833 | 3,197 | 3,158 | 3,158 | 3,733 | 3,700 | 3,891 | 4,330 | 4,330 | 4,330 | 4,330 | 4,330 | 4,330 | 4,330 | 4,330 |
| Private | 828 | 1,202 | 3,814 | 6,711 | 7,820 | 7,937 | 9,947 | 11,312 | 12,840 | 14,846 | 15,496 | 15,496 | 15,496 | 15,496 | 15,496 | 15,496 | 15,496 | 15,496 |
| Public institution | 26,001 | 31,956 | 24,644 | 47,567 | 50,142 | 54,472 | 61,763 | 69,908 | 71,545 | 74,258 | 84,166 | 84,166 | 84,166 | 84,166 | 84,166 | 84,166 | 84,166 | 84,166 |
| Total | 25 | 133 | 242 | 364 | 701 | 831 | 1,343 | 2,328 | 2,143 | 1,449 | 3,517 | 3,517 | 3,517 | 3,517 | 3,517 | 3,517 | 3,517 | 3,517 |
| Settlement bills | 1,014 | 1,453 | 1,950 | 1,886 | 1,747 | 1,779 | 1,343 | 931 | 711 | 319 | 346 | 346 | 346 | 346 | 346 | 346 | 346 | 346 |
| Import pre-reserve fund | 1,360 | 1,610 | 1,498 | 1,230 | 1,231 | 1,126 | 1,671 | 2,978 | 1,623 | 787 | 1,639 | 1,639 | 1,639 | 1,639 | 1,639 | 1,639 | 1,639 | 1,639 |
| Import traders' prepayments | 1,813 | 2,533 | 2,347 | 3,183 | 3,125 | 1,687 | 1,346 | 1,473 | 2,436 | 1,083 | 964 | 964 | 964 | 964 | 964 | 964 | 964 | 964 |
| International monetary fund (Gs) | 465 | 1,138 | 2,007 | 2,374 | 2,516 | 2,524 | 2,546 | 2,978 | 2,373 | 2,378 | 2,562 | 2,562 | 2,562 | 2,562 | 2,562 | 2,562 | 2,562 | 2,562 |
| Deposit to international agency | 636 | 1,454 | 544 | 487 | 568 | 571 | 869 | 1,218 | 1,153 | 1,093 | 1,043 | 1,043 | 1,043 | 1,043 | 1,043 | 1,043 | 1,043 | 1,043 |
| Long period liabilities from foreign countries | 1 | - | 180 | 500 | 500 | 500 | 1,100 | 3,000 | 3,000 | 2,432 | 1,532 | 1,532 | 1,532 | 1,532 | 1,532 | 1,532 | 1,532 | 1,532 |
| Loans from domestic organs | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Deposit money of Wheat Committee | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| From USA | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| From Argentina | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Deposit of foreign currency | 4,480 | 5,475 | 12,090 | 20,749 | 21,021 | 20,329 | 20,305 | 21,744 | 24,716 | 26,937 | 27,778 | 27,778 | 27,778 | 27,778 | 27,778 | 27,778 | 27,778 | 27,778 |
| Asset and reserve fund | 8,226 | 11,446 | 18,340 | 27,279 | 31,086 | 36,445 | 38,726 | 36,412 | 42,607 | 45,232 | 46,893 | 46,893 | 46,893 | 46,893 | 46,893 | 46,893 | 46,893 | 46,893 |
| Other liabilities | 6,317 | 12,683 | 14,653 | 20,379 | 18,850 | 18,119 | 16,677 | 21,987 | 19,747 | 22,360 | 19,488 | 19,488 | 19,488 | 19,488 | 19,488 | 19,488 | 19,488 | 19,488 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 | 54,360 |
| Total | 21,071 | 26,813 | 27,671 | 38,023 | 39,567 | 43,338 | 48,658 | 54,863 | 55,005 | 55,521 | 54,360 | 54,360 | | | | | | |

Table 2-19 Full Aspect of Money

Unit: 1,000,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 | | | | 1982 | | |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | | | Mar. | Jun. | Sep. | Dec. | Mar. | Jun. | Sep. |
| International asset | 37,718 | 55,317 | 75,028 | 94,376 | 95,565 | 99,501 | 97,679 | 98,439 | 92,703 | 96,671 | 88,090 |
| Central bank | 1,235 | -64 | 1,212 | 2,959 | -130 | -1,061 | -685 | 4,586 | 3,308 | 5,131 | 3,531 |
| Other banks | 3,053 | 3,125 | 4,548 | 4,267 | 5,496 | 4,519 | 3,831 | 4,309 | 4,524 | 4,454 | 3,584 |
| Domestic asset | 3,245 | 3,751 | 3,773 | 8,297 | 8,258 | 8,647 | 9,338 | 9,918 | 10,213 | 10,080 | 10,585 |
| Debts | 92 | - | 11 | 183 | - | - | - | - | - | - | - |
| Public Entity | 28,516 | 40,670 | 53,568 | 76,826 | 82,076 | 85,389 | 86,587 | 88,635 | 93,216 | 94,364 | 95,018 |
| Wheat Committee | 7,393 | 2,915 | 1,989 | -876 | 5,314 | 6,256 | 7,333 | 6,881 | 14,028 | 14,305 | 25,136 |
| Private body | 33,938 | 51,999 | 68,634 | 83,574 | 86,907 | 84,074 | 73,997 | 71,871 | 68,131 | 70,060 | 66,448 |
| Other net assets | 26,001 | 31,956 | 34,644 | 47,567 | 50,142 | 54,472 | 61,763 | 69,908 | 71,545 | 74,258 | 84,166 |
| Currency | 1,014 | 1,453 | 1,950 | 1,886 | 1,747 | 1,779 | 1,263 | 931 | 711 | 319 | 346 |
| Quasi money and articles | 1,360 | 1,610 | 1,498 | 1,230 | 1,291 | 1,126 | 1,671 | 2,978 | 1,629 | 797 | 1,659 |
| Import pre-reserve fund | 25 | 133 | 242 | 384 | 701 | 831 | 1,343 | 2,328 | 2,143 | 1,449 | 3,517 |
| Import prepayment | 3 | - | - | - | - | - | - | - | - | 50 | - |
| Settlement bills | 636 | 454 | 544 | 487 | 568 | 571 | 869 | 1,218 | 1,153 | 1,093 | 1,043 |
| Wheat Committee deposit money | 1 | - | 180 | 500 | 500 | 1,100 | 1,500 | 3,000 | 3,000 | 2,432 | 1,535 |
| Long-term debt | 465 | 1,188 | 2,007 | 2,374 | 2,516 | 2,524 | 2,546 | 2,378 | 2,373 | 2,376 | 2,562 |
| Public loans | 4,480 | 5,475 | 12,090 | 20,749 | 21,021 | 20,329 | 20,305 | 21,744 | 24,716 | 26,957 | 17,778 |
| Deposit money of international agency | 2,226 | 11,466 | 18,340 | 27,279 | 31,086 | 36,445 | 38,726 | 36,412 | 42,606 | 45,232 | 46,893 |
| Foreign currency deposits | | | | | | | | | | | |
| Asset and reserve fund | | | | | | | | | | | |

Table 2-20 Primary Factors of Expansion and Contraction of Circulation

Unit: 1,000,000 CS

| Item | 1981 | | | | | 1982 | | | | | | |
|------------------------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | 1977 | 1978 | 1979 | 1980 | Mar. | Jun. | Sep. | Dec. | Mar. | Jun. | Sep. | |
| Primary factors of expansion | Central bank | | | | | | | | | | | |
| | Internal factors | | | | | | | | | | | |
| | External factors | | | | | | | | | | | |
| | Money and foreign currency | 30,895 | 53,290 | 72,178 | 90,164 | 90,913 | 93,697 | 91,733 | 92,421 | 86,463 | 89,973 | 81,226 |
| | Gold standard of international monetary fund | 970 | 1,001 | 1,841 | 2,428 | 2,486 | 3,528 | 3,670 | 3,742 | 3,779 | 3,831 | 3,952 |
| | Exchange tax | 963 | 1,026 | 1,509 | 1,784 | 2,166 | 2,276 | 2,276 | 2,276 | 2,461 | 2,867 | 2,912 |
| | Domestic banks | 1,235 | -64 | 1,212 | 2,959 | -130 | -1,061 | -685 | 4,586 | 3,308 | 5,131 | 3,531 |
| | Investments to public institutions | 6,287 | 6,876 | 8,232 | 12,747 | 13,754 | 13,166 | 13,169 | 14,227 | 14,752 | 14,524 | 14,169 |
| | Investments to private institutions | 42,478 | 56,055 | 69,971 | 93,929 | 100,019 | 102,189 | 104,534 | 110,353 | 115,740 | 115,112 | 116,955 |
| | Others | 2,370 | -1,713 | -5,397 | -11,048 | -6,602 | -5,280 | -7,218 | -12,022 | -6,972 | -6,316 | 2,867 |
| Total | 85,088 | 116,471 | 149,146 | 192,963 | 202,606 | 208,515 | 207,479 | 215,583 | 219,531 | 225,133 | 225,612 | |
| Contraction factors | Time and ordinary deposits | 25,173 | 30,754 | 30,830 | 40,856 | 42,322 | 46,535 | 51,816 | 58,596 | 58,705 | 59,412 | 68,670 |
| | Import pre-reserve fund | 1,014 | 1,453 | 1,950 | 1,886 | 1,747 | 1,779 | 1,363 | 931 | 711 | 319 | 346 |
| | Import prepayment | 1,360 | 1,610 | 1,498 | 1,230 | 1,291 | 1,126 | 1,671 | 2,978 | 1,629 | 797 | 1,659 |
| | Settlement bills | 25 | 133 | 242 | 384 | 702 | 831 | 1,343 | 2,328 | 2,143 | 1,449 | 3,517 |
| | Wheat Committee deposit money | 3 | - | - | - | - | - | - | - | - | 50 | - |
| | Deposit money to international agency | 465 | 1,188 | 2,007 | 2,374 | 2,516 | 2,524 | 2,546 | 2,378 | 2,373 | 2,378 | 2,562 |
| | Foreign currency and deposit | 4,480 | 5,475 | 12,090 | 20,749 | 21,021 | 20,329 | 20,305 | 21,744 | 24,716 | 26,937 | 17,778 |
| | Loan of government agency | 1 | - | 180 | 500 | 500 | 1,100 | 1,500 | 3,000 | 3,000 | 2,432 | 1,532 |
| | Long-term foreign bonds | 7,977 | 8,409 | 9,039 | 9,143 | 9,216 | 8,097 | 8,293 | 8,621 | 8,514 | 8,787 | 8,677 |
| | Asset and reserve fund | 10,652 | 15,450 | 22,676 | 32,267 | 36,387 | 42,120 | 44,645 | 43,136 | 49,609 | 52,512 | 54,423 |
| Total | 51,150 | 64,472 | 80,512 | 109,389 | 115,699 | 124,441 | 133,482 | 143,712 | 151,400 | 155,073 | 159,164 | |
| Currency | 32,938 | 51,999 | 68,634 | 83,574 | 86,907 | 84,074 | 73,997 | 71,871 | 68,131 | 70,060 | 66,448 | |

Table 2-21 Conditions of Income and Expenditure of National Bank

Boletín Estadístico No. 293

Unit: 1,000,000 GS

| Item | 1981 | | | | | 1982 | | | | | | | |
|--|--|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|---------|--|
| | Mar. | Jun. | Sep. | Dec. | Mar. | Jun. | Sep. | | | | | | |
| Income and expenditure account of Paraguay Central Bank | Asset | | | | | | | | | | | | |
| | International asset (Gold, foreign currency, etc.) | 33,594 | 56,471 | 77,223 | 96,622 | 97,706 | 101,451 | 99,900 | 102,175 | 97,555 | 100,717 | 93,566 | |
| | Loans and investments | 5,617 | 5,760 | 7,375 | 11,610 | 12,289 | 11,880 | 11,619 | 12,560 | 12,650 | 12,845 | 12,658 | |
| | Private institutions (other banks, etc.) | 6,314 | 7,216 | 8,953 | 11,626 | 13,814 | 12,947 | 11,811 | 14,874 | 13,753 | 16,979 | 15,698 | |
| | Exchange dealing with other banks | 3 | 3 | 1 | 2 | 6 | 28 | 24 | 20 | 26 | 23 | 20 | |
| | Other asset account, etc. | 3,254 | 5,313 | 4,551 | 6,152 | 6,680 | 5,656 | 5,794 | 7,058 | 8,048 | 9,810 | 17,476 | |
| | Total | 48,882 | 74,783 | 98,103 | 126,012 | 130,495 | 131,962 | 129,148 | 136,687 | 132,032 | 140,374 | 139,418 | |
| | Liability | | | | | | | | | | | | |
| | Deposits, savings, etc. | 39,144 | 57,343 | 73,676 | 90,336 | 93,703 | 94,303 | 87,930 | 90,224 | 23,542 | 89,773 | 85,839 | |
| | Deposit, reserve and allowance funds | 1,668 | 2,600 | 5,795 | 8,630 | 9,646 | 10,065 | 12,338 | 14,234 | 15,241 | 16,125 | 18,936 | |
| Foreign loan, etc. | 976 | 1,154 | 2,195 | 2,246 | 2,141 | 1,950 | 2,221 | 3,736 | 4,852 | 4,046 | 5,476 | | |
| Exchange debt against other banks | 811 | 1,055 | 2,443 | 3,727 | 3,699 | 3,710 | 3,678 | 4,615 | 3,894 | 4,510 | 3,107 | | |
| Deposit money, etc., to international agency | 2,284 | 3,741 | 4,354 | 5,557 | 5,641 | 4,211 | 4,092 | 3,851 | 3,809 | 3,563 | 3,326 | | |
| Asset and reserve fund | 1,036 | 1,538 | 2,211 | 5,958 | 8,936 | 12,123 | 12,929 | 9,639 | 14,723 | 16,008 | 16,844 | | |
| Other liability accounts | 2,966 | 7,352 | 7,429 | 9,528 | 6,529 | 5,500 | 5,960 | 10,388 | 5,971 | 6,399 | 5,700 | | |
| Income and expenditure account of National Hypothec Bank | Asset | | | | | | | | | | | | |
| | Reserve fund | 3,658 | 4,275 | 4,839 | 5,348 | 7,163 | 8,769 | 6,777 | 6,226 | 5,980 | 7,901 | 5,876 | |
| | Foreign currency holdings | 259 | 54 | 152 | 124 | 77 | 80 | 59 | 68 | 39 | 115 | 431 | |
| | Private financing amount | 15,633 | 17,555 | 19,036 | 20,764 | 21,309 | 20,531 | 22,332 | 26,087 | 26,855 | 25,273 | 26,582 | |
| | Other asset accounts | 4,839 | 5,348 | 5,940 | 7,587 | 8,799 | 8,596 | 6,104 | 6,674 | 7,145 | 7,613 | 7,151 | |
| | Others | 32 | 13 | 27 | 30 | 26 | 40 | 39 | 45 | 16 | 144 | 55 | |
| | Total | 24,421 | 27,243 | 29,994 | 33,853 | 37,374 | 38,116 | 35,311 | 39,100 | 40,035 | 41,046 | 40,095 | |
| | Liability | | | | | | | | | | | | |
| | Deposits, savings, etc. | 6,229 | 6,989 | 6,752 | 8,060 | 10,245 | 11,284 | 9,926 | 8,951 | 9,588 | 9,967 | 9,672 | |
| | Debts to Central Bank | 3,685 | 3,093 | 3,350 | 3,024 | 3,037 | 2,538 | 2,216 | 3,743 | 3,771 | 4,014 | 6,038 | |
| Foreign bonds | 7,904 | 8,472 | 9,484 | 9,289 | 10,135 | 8,353 | 8,919 | 9,675 | 9,684 | 9,624 | 8,713 | | |
| Loans, etc., from country | 5 | 6 | 1 | 512 | 521 | 1,101 | 1,510 | 3,022 | 3,005 | 2,568 | 1,583 | | |
| Asset and reserve fund | 3,060 | 4,713 | 5,464 | 6,252 | 6,561 | 6,976 | 7,151 | 8,040 | 8,257 | 8,564 | 8,777 | | |
| Other liability accounts | 3,530 | 3,967 | 4,943 | 6,716 | 6,875 | 7,864 | 5,579 | 5,669 | 5,730 | 6,309 | 5,312 | | |

Table 2-22 "Stock-Farming Fund", "Issuance of Coinage" and "Setup of Currency"

Boletín Estadístico No. 293
Unid: 1.000.000 CS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 | | | 1982 | | | | | |
|-----------------------------|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | | | Mar. | Jun. | Sep. | Dec. | Mar. | Jun. | Sep. | | |
| Asset | Reserve fund | 350 | 228 | 41 | 132 | 280 | 328 | 312 | 173 | 208 | 251 | 423 | |
| | Fixed asset | 91 | 106 | 106 | 119 | 123 | 126 | 128 | 140 | 141 | 142 | 140 | |
| | Floating asset | - | - | - | - | - | - | - | - | - | - | - | - |
| | Loan | 4,042 | 5,042 | 6,244 | 7,893 | 8,026 | 8,118 | 8,477 | 9,757 | 10,417 | 11,037 | 11,499 | 11,499 |
| | Other assets | 14 | 20 | 19 | 53 | 46 | 56 | 90 | 61 | 85 | 81 | 101 | 101 |
| Total | 4,856 | 5,396 | 6,410 | 8,197 | 8,425 | 8,628 | 9,007 | 10,132 | 10,851 | 11,511 | 12,183 | 12,183 | |
| Liability | From foreign countries | 3,779 | 3,999 | 4,572 | 5,438 | 5,550 | 5,598 | 5,628 | 5,565 | 6,644 | 6,859 | 7,324 | |
| | Loaned asset for stock-farming | 187 | 187 | 218 | 386 | 234 | 218 | 199 | 266 | 269 | 253 | 251 | |
| | Total | 3,966 | 4,186 | 4,790 | 5,824 | 5,784 | 5,816 | 5,827 | 5,831 | 6,913 | 7,212 | 7,575 | |
| | Asset and reserve fund | 890 | 1,210 | 1,620 | 2,373 | 2,641 | 2,812 | 3,180 | 3,180 | 4,300 | 4,299 | 4,588 | |
| | Total | 14,757 | 20,158 | 26,423 | 33,712 | 33,912 | 34,942 | 32,035 | 34,369 | 31,000 | 35,218 | 33,501 | |
| Issuance of coinage | Bank deposit | 17,717 | 32,782 | 24,850 | 31,153 | 32,838 | 35,767 | 36,495 | 39,952 | 38,812 | 41,849 | 41,849 | |
| | Official deposit | 766 | 1,396 | 1,377 | 1,643 | 2,098 | 2,891 | 3,089 | 4,429 | 1,809 | 2,570 | 1,987 | |
| | Self-governing bodies | 5,372 | 12,153 | 19,044 | 21,184 | 21,600 | 18,020 | 13,338 | 9,226 | 8,306 | 9,799 | 6,684 | |
| | Total | 532 | 854 | 1,982 | 2,644 | 3,206 | 2,743 | 2,973 | 2,208 | 1,692 | 1,374 | 1,808 | |
| | Total | 59,144 | 57,343 | 73,676 | 90,336 | 92,703 | 94,303 | 87,930 | 90,224 | 83,542 | 89,773 | 85,829 | |
| Civilian possessed currency | Central Bank | 13,344 | 18,692 | 24,316 | 31,181 | 30,646 | 30,801 | 28,313 | 31,161 | 29,479 | 31,036 | 30,287 | |
| | National Hypothec Bank Business Department | 5,904 | 13,007 | 21,026 | 23,928 | 24,806 | 20,763 | 16,311 | 11,434 | 10,498 | 11,173 | 8,492 | |
| | Public deposit | 317 | 716 | 735 | 958 | 1,329 | 1,174 | 1,033 | 966 | 1,192 | 1,109 | 1,157 | |
| | Commercial bank | 790 | 662 | 750 | 750 | 834 | 806 | 774 | 1,052 | 672 | 686 | 836 | |
| | Subtotal | 7,011 | 14,385 | 22,511 | 25,516 | 26,969 | 22,743 | 18,118 | 13,452 | 12,362 | 12,968 | 10,485 | |
| Private deposit | 13,583 | 18,922 | 21,807 | 26,877 | 29,292 | 30,530 | 27,566 | 27,258 | 26,290 | 26,056 | 25,676 | | |
| Total | 20,594 | 33,307 | 44,318 | 52,393 | 56,261 | 53,273 | 45,684 | 40,710 | 38,652 | 39,024 | 36,161 | | |
| Currency total | 33,938 | 51,999 | 68,634 | 83,574 | 86,907 | 84,074 | 73,997 | 71,871 | 68,131 | 70,060 | 66,448 | | |

Table 2-23 Loan to Activities in Agriculture by Financial Organ

Boletín Estadístico No. 293

Unit: 1,000,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 | | | 1982 | | | | |
|--|--------------------|--------|---------|---------|---------|--------|--------|--------|---------|---------|---------|---------|
| | | | | | Mar. | Jun. | Sep. | Dec. | Mar. | Jun. | Sep. | |
| Paraguay Central Bank | Loan | 760 | 2,581 | 179 | 1,893 | 332 | 265 | 61 | 2,400 | 161 | 96 | 4,899 |
| | Balance | 3,927 | 4,602 | 4,983 | 5,129 | 5,163 | 4,663 | 4,136 | 5,488 | 5,305 | 5,316 | 7,373 |
| | Loan Balance | 229 | 61 | 658 | 8.2 | - | - | 1.5 | - | - | - | - |
| National Hypothec Bank and private banks | Loan | 7,214 | 9,608 | 10,598 | 12,158 | 2,588 | 3,675 | 5,235 | 6,680 | 3,176 | 2,980 | 4,508 |
| | Balance | 11,771 | 14,835 | 15,380 | 16,424 | 17,504 | 16,267 | 17,609 | 20,582 | 21,742 | 18,962 | 19,754 |
| | Loan Balance | 2,810 | 3,158 | 4,315 | 4,230 | 5,075 | 1,162 | 1,375 | 1,187 | 1,597 | 1,289 | 1,848 |
| Export | Loan | 2,897 | 2,832 | 3,072 | 3,453 | 3,272 | 3,438 | 3,669 | 4,039 | 4,493 | 4,493 | 4,940 |
| | Balance | 9,810 | 18,149 | 24,048 | 35,645 | 11,628 | 9,201 | 7,449 | 7,861 | 6,534 | 6,393 | 4,960 |
| | Loan Balance | 3,362 | 6,597 | 10,159 | 15,225 | 19,184 | 18,617 | 15,823 | 13,770 | 14,385 | 14,512 | 13,269 |
| Agriculture | Loan | 5,262 | 5,981 | 6,496 | 7,585 | 1,441 | 2,663 | 3,705 | 4,621 | 1,627 | 2,237 | 3,347 |
| | Balance | 9,893 | 11,450 | 11,811 | 12,892 | 13,684 | 12,626 | 13,892 | 16,335 | 17,123 | 14,817 | 15,990 |
| | Loan Balance | 412 | 307 | 464 | 609 | 112 | 188 | 193 | 251 | 164 | 240 | 155 |
| Stock-farming | Loan | 1,082 | 994 | 962 | 1,085 | 1,102 | 1,112 | 1,130 | 1,311 | 1,358 | 1,415 | 1,428 |
| | Balance | 371 | 397 | 259 | 600 | 324 | 223 | - | 186 | - | - | 10 |
| | Loan Balance | 92 | 121 | 83 | 194 | 483 | 276 | 148 | 334 | 266 | 147 | 144 |
| Forestry | Loan | 16 | 9 | 10 | 21 | 2 | 8 | 14 | 12 | 1 | 5 | 3 |
| | Balance | 40 | 36 | 39 | 57 | 55 | 54 | 64 | 74 | 74 | 65 | 62 |
| | Loan Balance | 19.5 | 22.2 | 17.9 | 10.0 | 2.1 | 2.0 | 2.0 | 2.0 | 3.5 | 2.4 | 2.3 |
| * Former Paraguay Bank | Collection | 205.2 | 183.0 | 165.1 | 155.1 | 153.0 | 151.0 | 649.0 | 147.0 | 143.5 | 141.3 | 139.0 |
| | Balance | 4.7 | 5.2 | 4.4 | 2.3 | 0.4 | 0.5 | 0.5 | 0.4 | 0.8 | 0.5 | - |
| | Collection Balance | 49.1 | 43.9 | 39.5 | 37.2 | 36.7 | 36.2 | 35.7 | 35.3 | 34.4 | 34.0 | - |
| Stock-farming fund | Loan | 1,097 | 1,461.3 | 1,962.1 | 2,368.5 | 349.5 | 394.2 | 872.7 | 1,206.2 | 944.6 | 940.8 | 872.8 |
| | Adjustment | 84 | 140.5 | 353.4 | 462.0 | 42.4 | - | - | 488.9 | - | - | - |
| | Balance | 4,401 | 5041.7 | 6244.0 | 7893.5 | 8026.3 | 8117.8 | 8476.8 | 9756.6 | 10030.1 | 11037.0 | 11499.0 |
| Private banks | Loan | 1,952 | 3,627 | 4,102 | 4,573 | 1,147 | 1,012 | 1,530 | 2,061 | 1,488 | 744 | 1,161 |
| | Balance | 1,673 | 3,202 | 3,404 | 3,377 | 3,667 | 3,490 | 3,568 | 4,100 | 4,475 | 4,003 | 3,624 |
| | Loan Balance | 2,397 | 2,811 | 3,851 | 3,621 | 3,63 | 973 | 1,181 | 936 | 1,433 | 1,049 | 1,892 |
| Export | Loan | 1,466 | 1,793 | 2,070 | 2,310 | 2,134 | 2,290 | 2,443 | 2,713 | 3,101 | 3,078 | 3,479 |
| | Balance | 13,949 | 17,752 | 23,788 | 35,045 | 11,304 | 8,977 | 7,449 | 7,675 | 6,534 | 6,394 | 4,950 |
| | Loan Balance | 4,901 | 6,416 | 10,074 | 15,032 | 18,700 | 18,342 | 15,675 | 13,436 | 14,119 | 14,365 | 13,124 |

Table 2-24 Foreign Currency Incomings and Outgoings of Bank

Boletín Estadístico No. 293

Unit: 1,000,000 GS

| Year | Receipts | | | | Payments | | | | |
|------------------------|----------------------|--------|---------------------|----------------------|--------------|--------|------------------------|-----------------------------------|-------------------------------|
| | Total receipt amount | Export | Foreign asset, etc. | Total payment amount | Import (CIF) | Total | Payment breakdown | | |
| | | | | | | | Capital transfer, etc. | Government and private remittance | Communication and sightseeing |
| 1977 | 64,562 | 35,759 | 28,803 | 51,030 | 41,443 | 9,587 | 6,261 | 332 | 2,995 |
| 1978 | 78,748 | 32,422 | 46,325 | 61,573 | 45,863 | 15,710 | 11,138 | 432 | 4,140 |
| 1979 | 105,405 | 39,574 | 65,231 | 84,436 | 61,750 | 22,686 | 16,148 | 571 | 5,968 |
| 1980 | 129,586 | 41,285 | 88,302 | 111,343 | 74,537 | 36,807 | 28,704 | 661 | 7,442 |
| 1981 total | 138,911 | 35,034 | 103,877 | 132,617 | 85,499 | 47,117 | 35,388 | 633 | 11,096 |
| Up to March term | 33,930 | 11,832 | 22,098 | 31,648 | 20,734 | 10,916 | 8,480 | 141 | 2,293 |
| Up to June term | 36,431 | 14,687 | 21,744 | 32,348 | 21,648 | 10,700 | 8,239 | 170 | 2,292 |
| Up to September term | 28,377 | 4,271 | 24,107 | 32,756 | 21,481 | 11,274 | 8,483 | 162 | 2,628 |
| Up to December term | 40,174 | 4,245 | 35,929 | 35,866 | 21,637 | 14,229 | 10,186 | 160 | 3,884 |
| Up to March term, 1982 | 36,372 | 5,923 | 30,449 | 43,870 | 21,970 | 21,901 | 13,412 | 225 | 8,263 |
| Up to June term | 57,323 | 19,115 | 38,208 | 51,838 | 22,939 | 28,899 | 8,933 | 175 | 19,792 |
| August present | 25,860 | 5,080 | 20,779 | 22,562 | 9,548 | 13,014 | 6,305 | 99 | 6,620 |

Table 2-25 National Income

Boletín Estadístico No. 293

Unit: 1,000,000 GS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 | Up to October 1982 |
|--|----------|----------|----------|----------|----------|--------------------------|
| Export and import tariff | 4,407.3 | 6,161.4 | 8,411.8 | 9,225.6 | 9,211.8 | 6,427.3 |
| Domestic general tax | 8,672.3 | 10,042.6 | 12,825.9 | 14,520.8 | 16,758.8 | 15,520.5 |
| Liquor tax | 1,012.6 | 1,466.4 | 1,612.4 | 1,767.5 | 1,885.1 | 1,744.2 |
| Income tax | 3,207.1 | 4,936.7 | 6,493.1 | 8,837.1 | 11,103.8 | 11,845.3 |
| Real estate tax | 893.5 | 1,024.4 | 1,190.9 | 1,451.5 | 1,951.7 | 2,398.7 |
| Postal fee | 41.6 | 83.6 | 68.8 | 74.5 | 72.3 | 52.5 |
| Annuity and pension | 1,257.1 | 1,511.2 | 1,845.7 | 2,358.9 | 3,357.7 | 3,511.8 |
| Trade commission | 1,060.6 | 1,261.7 | 1,568.0 | 1,659.7 | 1,328.4 | 766.7 |
| Sales tax | 1,592.6 | 2,127.6 | 2,878.1 | 3,518.7 | 3,742.7 | 2,974.6 |
| Export tax | 211.5 | 196.7 | 187.4 | 182.3 | 126.3 | 131.6 |
| Other incomes | 677.5 | 1,390.6 | 1,554.6 | 2,521.8 | 3,080.9 | 7,442.8 |
| Currency exchange commission (import rate difference) | 1,239.6 | 1,569.6 | 1,997.0 | 1,951.1 | 1,858.8 | 1,512.1 |
| Total | 24,277.3 | 31,772.3 | 40,633.7 | 48,069.5 | 54,478.3 | 54,328.1 |

Table 2-26 National Annual Expenditure

Boletín Estadístico No. 293

Unit: 1,000,000 CS

| Item | 1977 | 1978 | 1979 | 1980 | 1981 | Up to October 1982 |
|--|----------|----------|----------|----------|----------|--------------------------|
| Presidential Office | 153.6 | 170.4 | 209.5 | 246.9 | 294.6 | 267.6 |
| Ministry of Interior | 2,093.5 | 2,466.7 | 2,995.6 | 3,823.4 | 5,986.3 | 6,596.8 |
| Ministry of Foreign Affairs | 284.8 | 343.9 | 377.6 | 508.9 | 495.1 | 569.2 |
| Ministry of Finance | 955.8 | 932.1 | 1,523.6 | 1,801.0 | 2,208.4 | 1,589.3 |
| Education Ministry | 3,484.9 | 4,348.4 | 5,160.3 | 7,565.9 | 8,372.4 | 8,655.3 |
| Ministry of Agriculture and Livestock | 535.3 | 759.6 | 1,013.5 | 1,400.2 | 2,020.8 | 1,724.5 |
| Ministry of Public Works and Communication | 1,821.4 | 2,620.8 | 3,684.2 | 4,210.4 | 6,314.9 | 4,397.9 |
| Ministry of National Defense | 4,204.2 | 4,891.5 | 5,793.0 | 7,644.0 | 10,580.9 | 9,640.4 |
| Ministry of Health and Welfare | 624.5 | 794.7 | 1,169.5 | 2,173.1 | 3,434.7 | 2,753.9 |
| Ministry of Justice and Labor | 178.2 | 242.2 | 324.9 | 332.3 | 391.5 | 308.5 |
| Ministry of Commerce and Industry | 67.1 | 76.5 | 92.2 | 111.6 | 133.5 | 138.3 |
| Ministry without portfolio | 4.7 | 5.1 | 5.9 | 6.7 | 8.1 | 6.6 |
| Government bonds | 1,742.7 | 2,086.2 | 2,810.6 | 6,808.8 | 6,162.3 | 4,957.7 |
| Courts | 237.9 | 267.5 | 314.4 | 364.0 | 494.3 | 513.2 |
| House of Representatives | 156.5 | 172.4 | 196.0 | 237.0 | 300.3 | 282.5 |
| Other liabilities | 5,765.7 | 6,518.8 | 10,337.2 | 14,369.2 | 23,932.5 | 17,277.9 |
| Total | 22,310.8 | 26,696.8 | 36,008.0 | 50,603.4 | 71,085.6 | 59,679.6 |

Table 2-27 National Budget of Paraguay in 1983

| Income | | Expenditure | |
|---|-----------------|---|-----------------|
| 1. Government offices | | 1. Government offices | |
| Customs | 11,734,400,000 | (1) House of Representatives | 344,784,400 |
| Inland tax | 26,385,000,000 | (2) Executive Office | 69,307,704,204 |
| Alcohol tax | 4,707,000,000 | Presidential Office | 371,022,200 |
| Consular income | 1,250,000,000 | Ministry of Interior | 9,680,598,494 |
| Income tax | 14,956,000,000 | Ministry of Foreign Affairs | 785,048,160 |
| Sales tax | 4,347,000,000 | Ministry of Finance | 2,343,034,200 |
| Real estate tax | 3,240,000,000 | Education Ministry | 14,214,939,364 |
| Postal incomes | 175,000,000 | Ministry of Agriculture and Livestock | 5,554,781,686 |
| Annuity and pension installments | 5,177,000,000 | Ministry of Public Works and Communication | 13,022,733,900 |
| Export exchange tax | 2,213,000,000 | Ministry of National Defense | 16,188,157,260 |
| Export duty | 169,000,000 | Ministry of Health and Welfare | 5,745,355,200 |
| Miscellaneous income | 2,608,300,000 | Ministry of National Justice and Labor | 1,064,682,040 |
| Special laws | 1,051,000,000 | Ministry of Commerce and Industry | 310,073,600 |
| Overseas loan incomes | 6,464,585,540 | Ministry without portfolio | 10,312,800 |
| Miscellaneous Special accounts | 6,351,165,140 | Inquiry Commission | 16,965,300 |
| Contributions | 174,820,000 | (3) Judicial Office | 1,120,349,545 |
| 2. Governmental agencies (Public utilities, etc.) | 254,940,619,494 | (4) Other Liabilities | 23,607,402,675 |
| | | Total of (1) to (4) | 94,380,240,824 |
| | | (5) Governmental Agencies (public corporations) | 242,000,055,726 |
| | 349,285,284,295 | | 336,380,296,550 |
| in 1982 | 291,898,297,422 | | 284,902,514,241 |

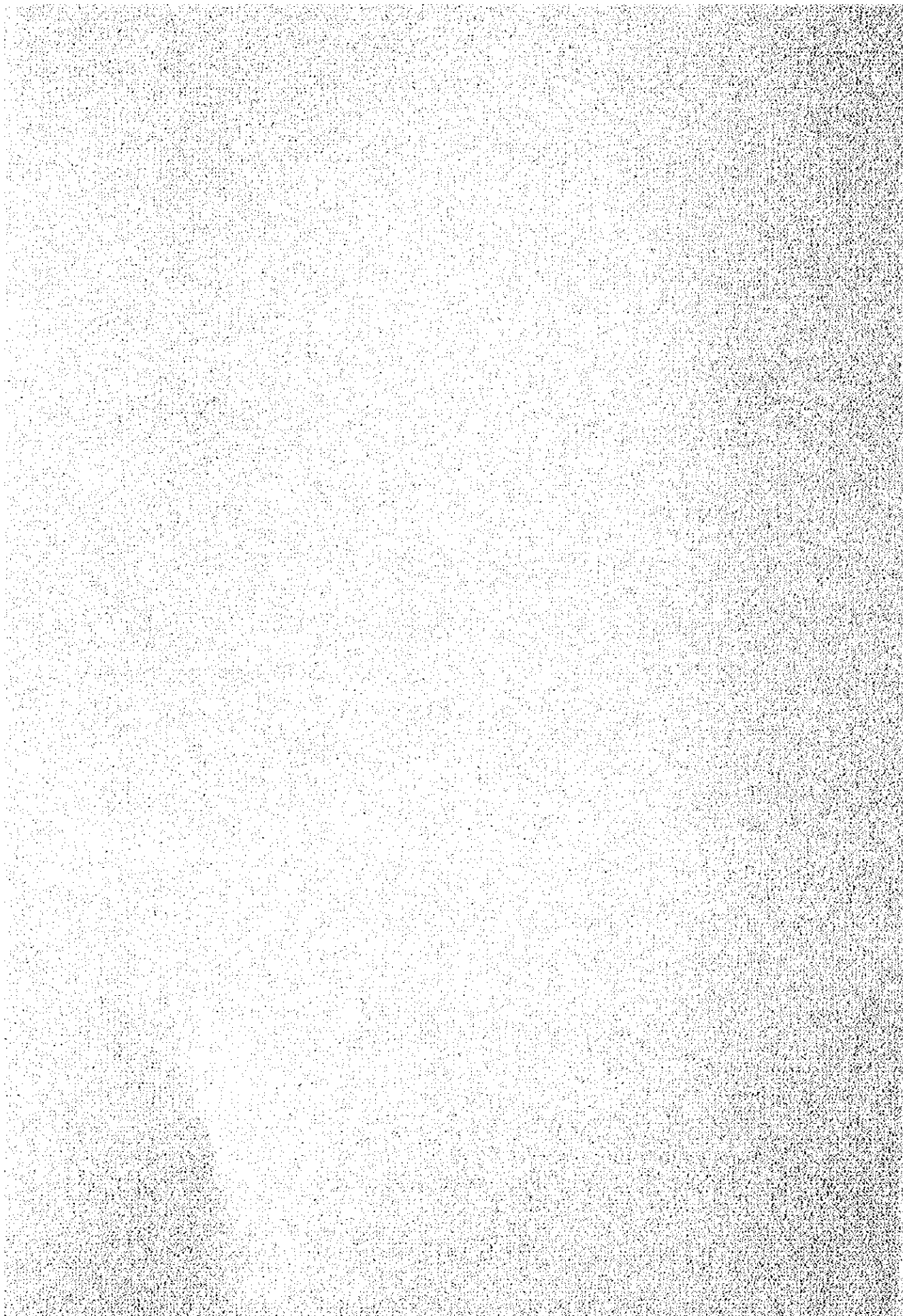


Table 3-1 Transition of Yield by Years (Soybean)
Unit 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 150.2 | 220.1 | 173.4 | 283.5 | 228.8 | 376.9 | 272.2 | 333.1 | 360.3 | 549.2 | 475.3 | 737.3 |
| Concepción | 0.7 | 0.7 | 0.8 | 0.9 | 1.1 | 1.2 | 1.8 | 1.8 | 2.4 | 2.7 | 2.9 | 3.6 |
| San Pedro | 6.1 | 8.9 | 6.9 | 11.3 | 7.5 | 12.9 | 12.2 | 15.7 | 16.2 | 25.8 | 19.3 | 31.7 |
| Cordillera | 1.3 | 1.4 | 1.5 | 2.0 | 2.2 | 3.0 | 1.6 | 1.8 | 2.2 | 2.7 | 4.2 | 5.5 |
| Guaira | 3.0 | 3.8 | 3.4 | 4.8 | 3.6 | 5.0 | 3.9 | 4.9 | 5.0 | 8.2 | 7.0 | 10.3 |
| Caaguazu | 3.9 | 5.2 | 4.4 | 6.6 | 6.4 | 10.3 | 12.3 | 14.3 | 16.2 | 23.6 | 19.3 | 30.3 |
| Caazapa | 2.5 | 3.3 | 2.7 | 4.1 | 3.4 | 4.9 | 3.2 | 3.4 | 4.3 | 5.5 | 5.1 | 6.7 |
| Itapúa | 85.5 | 124.2 | 97.3 | 156.7 | 124.9 | 205.4 | 131.1 | 163.7 | 173.8 | 269.9 | 232.0 | 361.1 |
| Misiones | 18.6 | 25.4 | 15.3 | 23.2 | 13.1 | 20.3 | 6.3 | 8.8 | 8.0 | 4.3 | 11.0 | 18.2 |
| Paraguari | 4.6 | 5.5 | 5.2 | 7.0 | 4.4 | 5.6 | 5.1 | 5.7 | 6.8 | 9.3 | 8.5 | 11.8 |
| Alto Parana | 13.5 | 24.2 | 21.5 | 41.6 | 38.4 | 67.4 | 50.7 | 58.2 | 67.0 | 96.2 | 91.3 | 141.0 |
| Central | 0.3 | 0.3 | 0.3 | 0.3 | 0.1 | 0.1 | - | - | - | - | - | - |
| Neembucu | 0.6 | 0.6 | 0.7 | 0.8 | 1.3 | 1.5 | 2.6 | 2.5 | 3.6 | 4.4 | 4.3 | 5.6 |
| Anambay | 7.6 | 12.6 | 8.6 | 15.9 | 10.6 | 18.7 | 16.9 | 21.2 | 22.4 | 35.2 | 28.9 | 46.0 |
| Canendiyu | 2.0 | 3.6 | 4.8 | 8.3 | 11.7 | 20.4 | 24.5 | 31.0 | 32.4 | 51.1 | 41.5 | 66.2 |
| Oriental | 150.2 | 220.1 | 173.4 | 283.5 | 228.8 | 376.9 | 272.2 | 333.1 | 360.3 | 459.2 | 475.3 | 737.3 |
| Occidental | - | - | - | - | - | - | - | - | - | - | - | - |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock

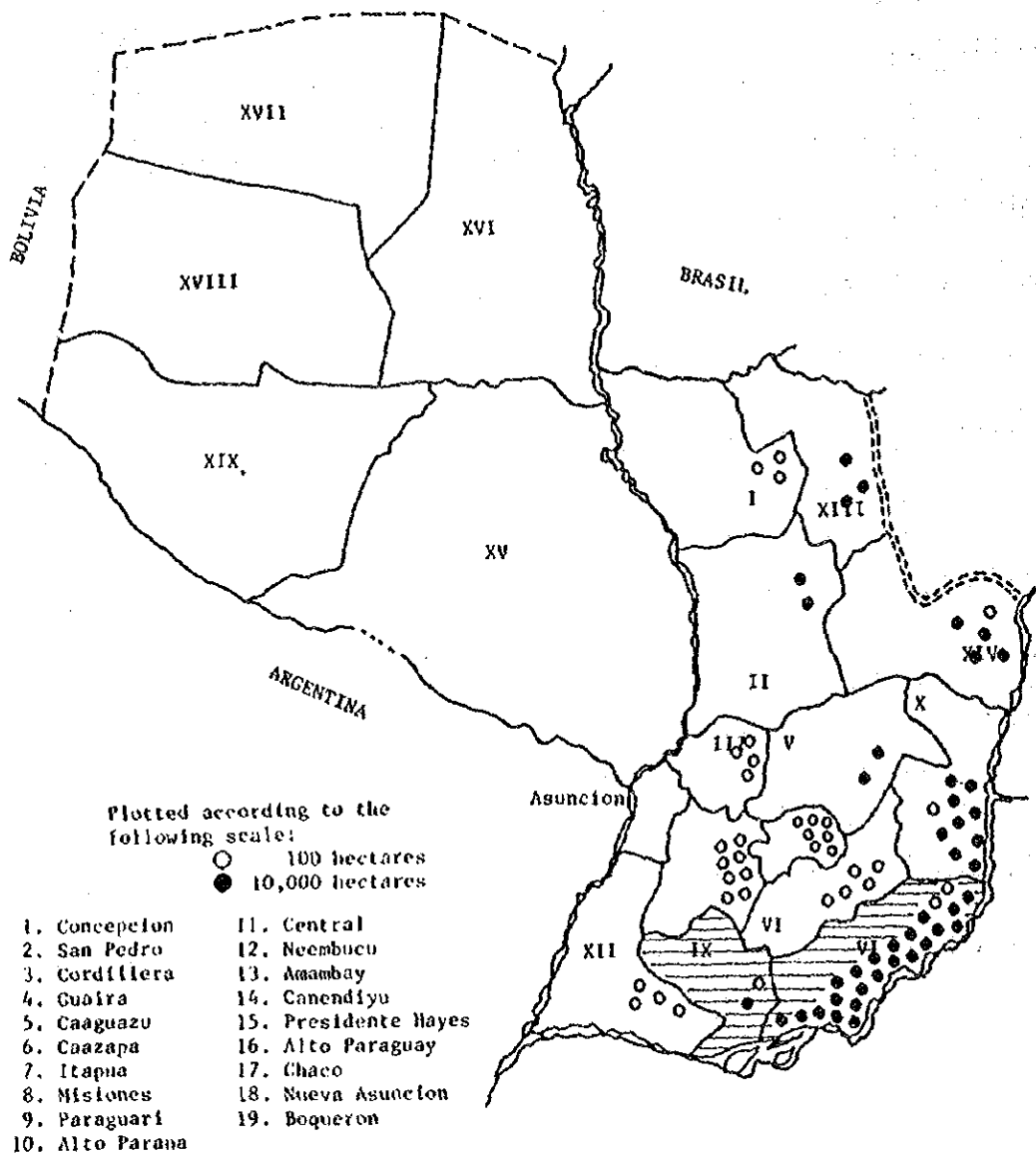


Fig. 3-1 Geographical Distribution of Soybean Harvested Area (1980)

Table 3-2 Transition of Yield by Years (Cotton)
Unit 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 100.0 | 99.6 | 109.9 | 107.5 | 200.2 | 227.4 | 284.9 | 283.7 | 312.5 | 234.7 | 258.1 | 227.5 |
| Concepción | 6.2 | 5.9 | 6.9 | 6.4 | 12.2 | 13.2 | 13.6 | 14.1 | 14.7 | 11.3 | 12.2 | 10.9 |
| San Pedro | 6.4 | 6.9 | 7.2 | 7.6 | 18.6 | 22.8 | 28.8 | 29.3 | 31.6 | 24.2 | 26.2 | 23.4 |
| Cordillera | 11.5 | 10.8 | 12.1 | 11.1 | 20.1 | 21.4 | 23.6 | 21.7 | 25.9 | 18.1 | 21.2 | 17.5 |
| Guaira | 4.3 | 4.2 | 4.9 | 4.7 | 8.0 | 8.9 | 11.7 | 10.8 | 12.8 | 8.9 | 10.5 | 8.6 |
| Gaaguazu | 16.9 | 19.2 | 18.8 | 21.1 | 33.9 | 40.7 | 66.8 | 72.2 | 73.4 | 59.8 | 60.9 | 58.0 |
| Caazapa | 4.4 | 3.6 | 4.7 | 3.8 | 9.2 | 9.7 | 11.0 | 10.5 | 12.2 | 8.7 | 10.1 | 8.4 |
| Itapúa | 11.1 | 12.2 | 12.6 | 13.5 | 18.9 | 23.5 | 22.0 | 24.0 | 24.1 | 19.9 | 20.0 | 19.3 |
| Misiones | 5.6 | 5.4 | 6.1 | 5.9 | 11.1 | 11.9 | 14.7 | 13.5 | 16.3 | 11.3 | 13.3 | 10.9 |
| Paraguari | 21.5 | 20.0 | 23.0 | 21.0 | 41.4 | 44.0 | 53.0 | 49.2 | 58.1 | 40.8 | 48.0 | 29.6 |
| Alto Parana | 2.9 | 3.2 | 3.2 | 3.6 | 6.0 | 7.3 | 7.1 | 7.2 | 7.8 | 5.9 | 6.5 | 5.7 |
| Central | 1.3 | 1.4 | 1.5 | 1.6 | 3.7 | 4.0 | 7.7 | 7.2 | 8.4 | 5.9 | 6.9 | 5.7 |
| Necembucu | 3.7 | 4.3 | 4.2 | 4.7 | 7.6 | 9.3 | 12.3 | 11.9 | 13.4 | 9.6 | 11.1 | 9.6 |
| Amambay | 0.1 | 0.1 | 0.1 | 0.1 | 0.9 | 0.9 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 |
| Canendiyu | 0.2 | 0.2 | 0.2 | 0.2 | 2.4 | 2.6 | 4.0 | 3.6 | 4.4 | 3.1 | 3.7 | 3.0 |
| Oriental | 96.1 | 97.5 | 105.6 | 105.2 | 194.0 | 220.3 | 276.6 | 275.5 | 303.4 | 217.9 | 250.8 | 220.9 |
| Occidental | 3.9 | 2.1 | 4.3 | 2.3 | 6.2 | 7.1 | 8.3 | 8.2 | 9.1 | 6.8 | 7.3 | 6.6 |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock

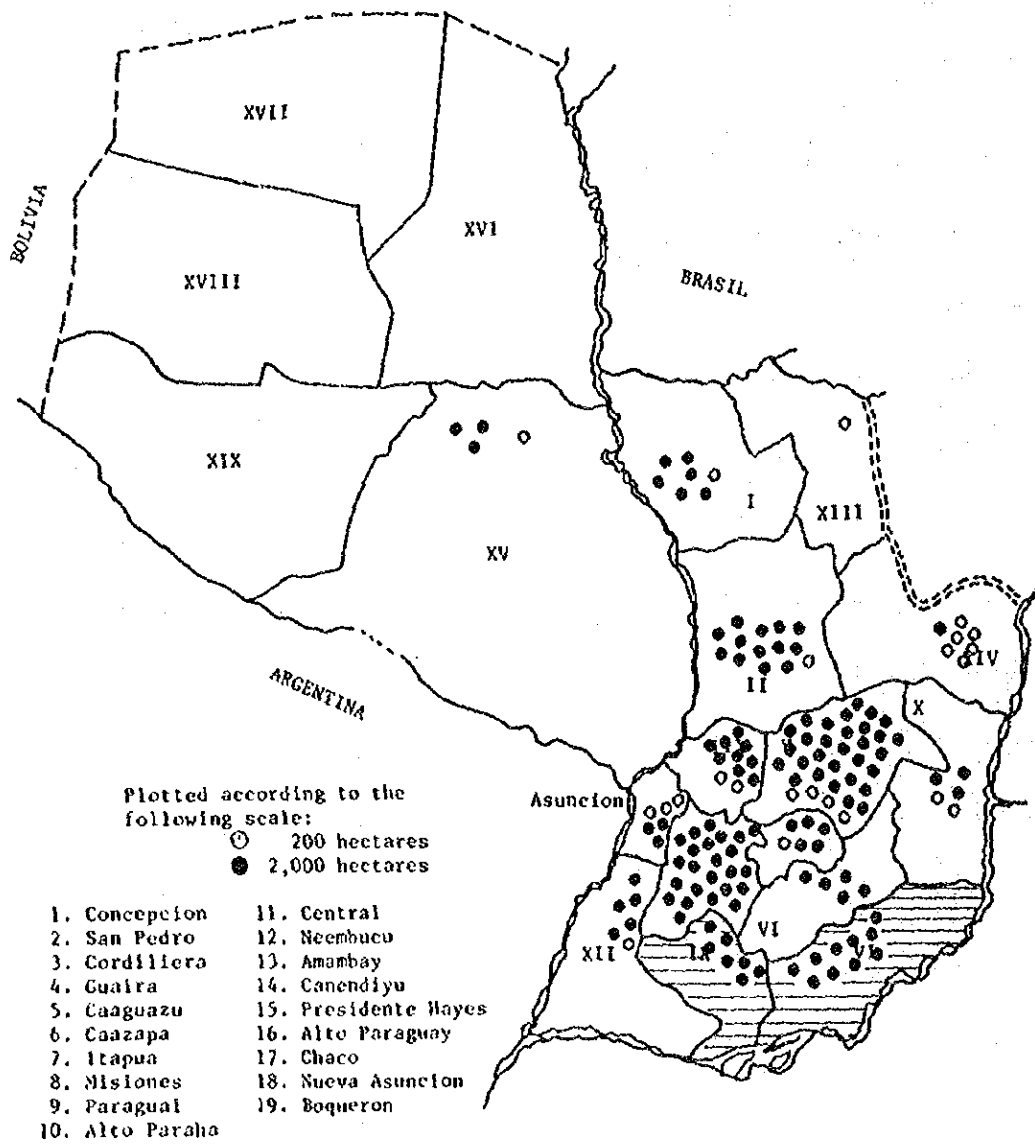


Fig. 3-2 Geographical Distribution of Cotton Harvested Area (1980)

Table 3-3 Transition of Yield by Years (Maize)

Unit 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 222.6 | 300.8 | 257.3 | 351.5 | 282.1 | 401.0 | 275.9 | 355.4 | 352.7 | 550.4 | 376.6 | 584.7 |
| Concepción | 10.3 | 14.4 | 11.8 | 16.3 | 12.9 | 18.0 | 12.5 | 16.0 | 16.0 | 22.4 | 16.0 | 22.4 |
| San Pedro | 17.1 | 26.7 | 19.6 | 31.8 | 22.3 | 36.8 | 23.0 | 33.6 | 31.3 | 53.1 | 31.3 | 53.0 |
| Cordillera | 17.2 | 19.6 | 19.9 | 22.4 | 20.2 | 23.0 | 19.5 | 20.0 | 21.2 | 26.9 | 23.6 | 30.0 |
| Guaira | 14.3 | 18.1 | 16.4 | 20.7 | 17.0 | 22.0 | 16.4 | 19.3 | 22.4 | 31.0 | 25.0 | 34.6 |
| Caaguazu | 26.1 | 32.6 | 31.0 | 39.1 | 35.5 | 46.0 | 34.0 | 41.4 | 40.3 | 61.6 | 45.6 | 69.6 |
| Caazapa | 12.5 | 16.0 | 14.4 | 18.2 | 15.1 | 19.3 | 14.6 | 17.6 | 17.3 | 24.1 | 19.1 | 26.6 |
| Itapúa | 35.0 | 53.7 | 40.0 | 63.6 | 41.8 | 67.9 | 40.4 | 58.5 | 50.9 | 87.7 | 54.8 | 94.3 |
| Misiones | 11.0 | 13.3 | 12.7 | 15.8 | 12.9 | 16.2 | 12.5 | 15.2 | 18.4 | 25.6 | 18.4 | 25.6 |
| Paraguari | 33.7 | 40.3 | 38.0 | 45.3 | 38.7 | 47.5 | 37.4 | 43.1 | 41.2 | 55.0 | 48.6 | 64.9 |
| Alto Parana | 13.8 | 29.1 | 15.9 | 33.1 | 21.9 | 45.9 | 21.2 | 38.2 | 32.5 | 70.0 | 32.5 | 70.0 |
| Central | 8.6 | 8.0 | 9.7 | 8.6 | 8.8 | 8.2 | 7.5 | 6.2 | 7.8 | 7.7 | 8.4 | 8.3 |
| Neembucu | 11.4 | 11.0 | 12.4 | 12.0 | 12.7 | 13.6 | 12.3 | 10.9 | 15.2 | 16.9 | 15.2 | 16.9 |
| Amambay | 7.9 | 12.4 | 8.8 | 14.5 | 10.1 | 17.1 | 10.8 | 15.7 | 15.7 | 27.6 | 15.7 | 27.6 |
| Canendiyu | 2.9 | 4.7 | 5.8 | 9.4 | 11.1 | 18.6 | 12.6 | 18.8 | 20.5 | 38.3 | 20.5 | 38.3 |
| Oriental | 221.8 | 300.1 | 256.4 | 350.8 | 281.0 | 400.0 | 274.7 | 354.4 | 350.8 | 548.6 | 374.7 | 582.9 |
| Occidental | 0.8 | 0.7 | 0.9 | 0.7 | 1.1 | 1.0 | 1.2 | 1.0 | 1.9 | 1.8 | 1.9 | 1.8 |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock

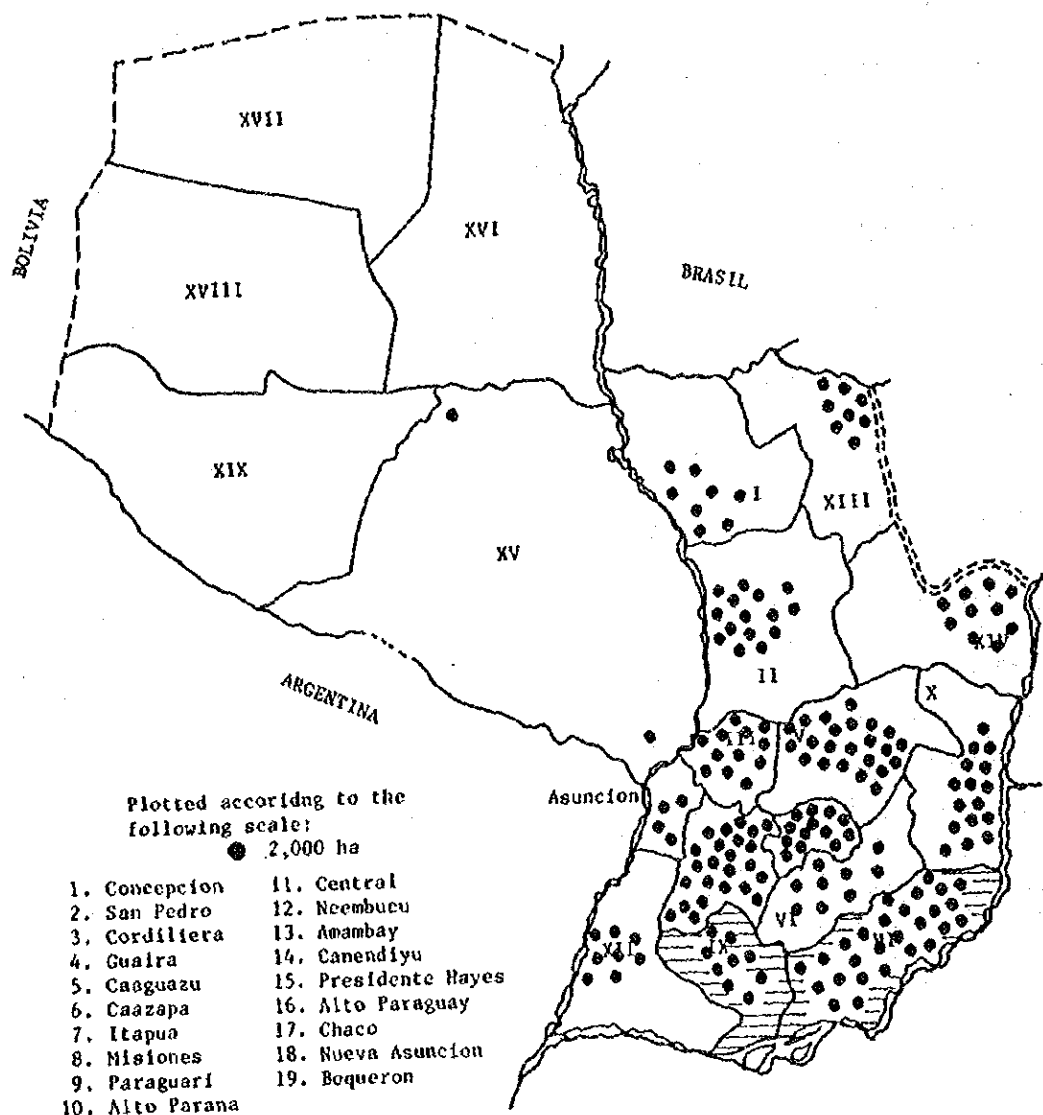


Fig. 3-3 Geographical Distribution of Maize Harvested Area (1980)

Table 3-4 Transition of Yield by Years (Wheat)
Unit 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 26.2 | 17.9 | 24.2 | 29.3 | 28.5 | 28.3 | 31.5 | 37.8 | 52.3 | 58.3 | 47.0 | 43.0 |
| Concepción | - | - | - | - | - | - | - | - | - | - | - | - |
| San Pedro | 4.6 | 3.8 | 4.6 | 6.1 | 8.3 | 8.6 | 7.3 | 9.0 | 8.3 | 9.7 | 7.5 | 7.2 |
| Cordillera | 1.7 | 1.3 | 1.7 | 1.9 | 0.5 | 0.6 | 0.5 | 0.5 | 0.7 | 0.7 | 0.6 | 0.5 |
| Guaira | 0.3 | 0.3 | 0.3 | 0.4 | 0.1 | 0.1 | 0.8 | 0.4 | 0.5 | 0.5 | 0.4 | 0.4 |
| Caaguazu | 1.0 | 0.6 | 1.0 | 1.2 | 2.7 | 2.9 | 2.1 | 2.5 | 8.2 | 3.4 | 2.9 | 2.5 |
| Caazapa | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - |
| Itapúa | 8.4 | 5.7 | 8.0 | 9.1 | 10.4 | 9.7 | 12.5 | 14.6 | 23.2 | 25.5 | 20.8 | 18.9 |
| Misiones | 5.5 | 3.6 | 5.1 | 6.4 | 2.8 | 3.2 | 3.2 | 3.7 | 6.5 | 7.4 | 5.8 | 0.5 |
| Paraguari | 2.5 | 1.6 | 2.0 | 2.0 | 0.7 | 0.6 | 0.7 | 0.7 | 1.4 | 1.3 | 1.3 | 1.0 |
| Alto Parana | 0.5 | 0.4 | 0.5 | 0.7 | 0.5 | 0.4 | 0.7 | 1.0 | 1.4 | 1.6 | 1.3 | 1.7 |
| Central | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | - | - | - | - | - | - |
| Neembucu | 0 | 0 | 0 | 0 | - | - | - | - | - | - | - | - |
| Amambay | 0.4 | 0.4 | 0.6 | 1.0 | 1.1 | 0.8 | 0.8 | 1.2 | 2.3 | 2.6 | 2.1 | 1.9 |
| Canendiyu | 0.2 | 0.2 | 0.3 | 0.4 | 1.3 | 1.2 | 3.4 | 4.3 | 4.8 | 5.4 | 4.3 | 4.0 |
| Oriental | 26.2 | 17.9 | 24.2 | 29.3 | 28.5 | 28.3 | 31.5 | 37.8 | 52.3 | 58.3 | 47.0 | 43.0 |
| Occidental | - | - | - | - | - | - | - | - | - | - | - | - |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock

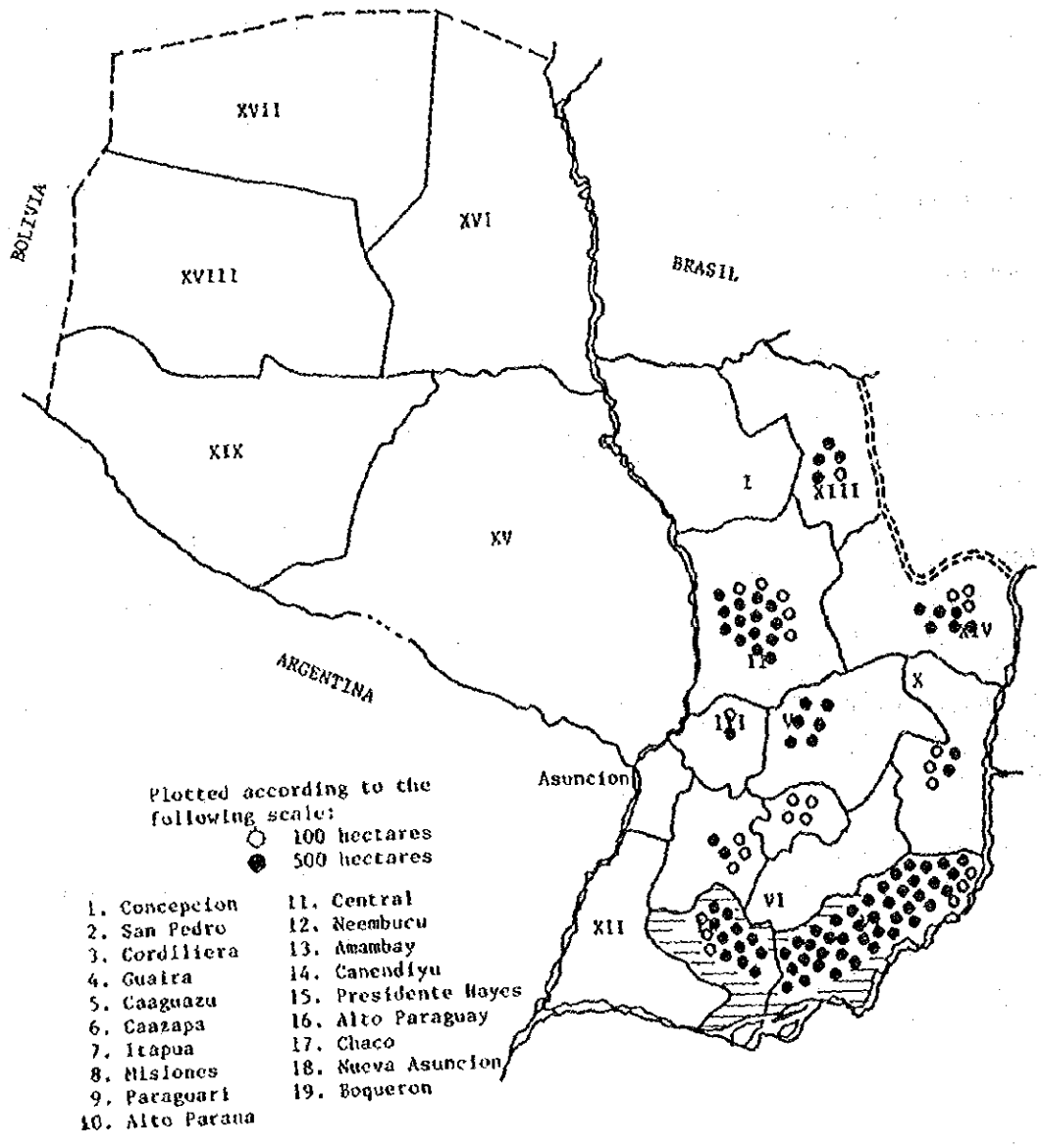


Fig. 3-4 Geographical Distribution of Wheat-Harvested Area (1980)

Table 3-5 Departments of Itapúa and Misiones
Production of Cassava Compared with National Production.

| Year | Paraguay | | | Itapúa and Misiones Department | | |
|------|---------------------------|-----------------------|----------------|--------------------------------|-----------------------|----------------|
| | Harvested Area 1000 ha | Production 1000 MT | Yield MT/ha | Harvested Area 1000 ha | Production 1000 MT | Yield MT/ha |
| 1971 | 94.5 | 1195.8 | 12.7 | | | |
| 1972 | 93.3 | 1208.2 | 12.9 | | | |
| 1973 | 79.6 | 1707.9 | 13.9 | | | |
| 1974 | 90.1 | 1395.1 | 15.5 | | | |
| 1975 | 96.5 | 1427.6 | 14.8 | 14.7 | 197.97 | 13.86 |
| 1976 | 106.5 | 1573.3 | 14.8 | 16.2 | 218.17 | 13.86 |
| 1977 | 116.1 | 1718.6 | 14.8 | 17.1 | 233.31 | 13.57 |
| 1978 | 120.3 | 1837.5 | 15.3 | 18.1 | 241.96 | 13.17 |
| 1979 | 126.4 | 1887.9 | 14.9 | 19.0 | 248.60 | 13.16 |
| 1980 | 135.7 | 2049.8 | 15.1 | 19.4 | 250.28 | 12.20 |

Source: Prepared by GT - MAG, based on DEC data.

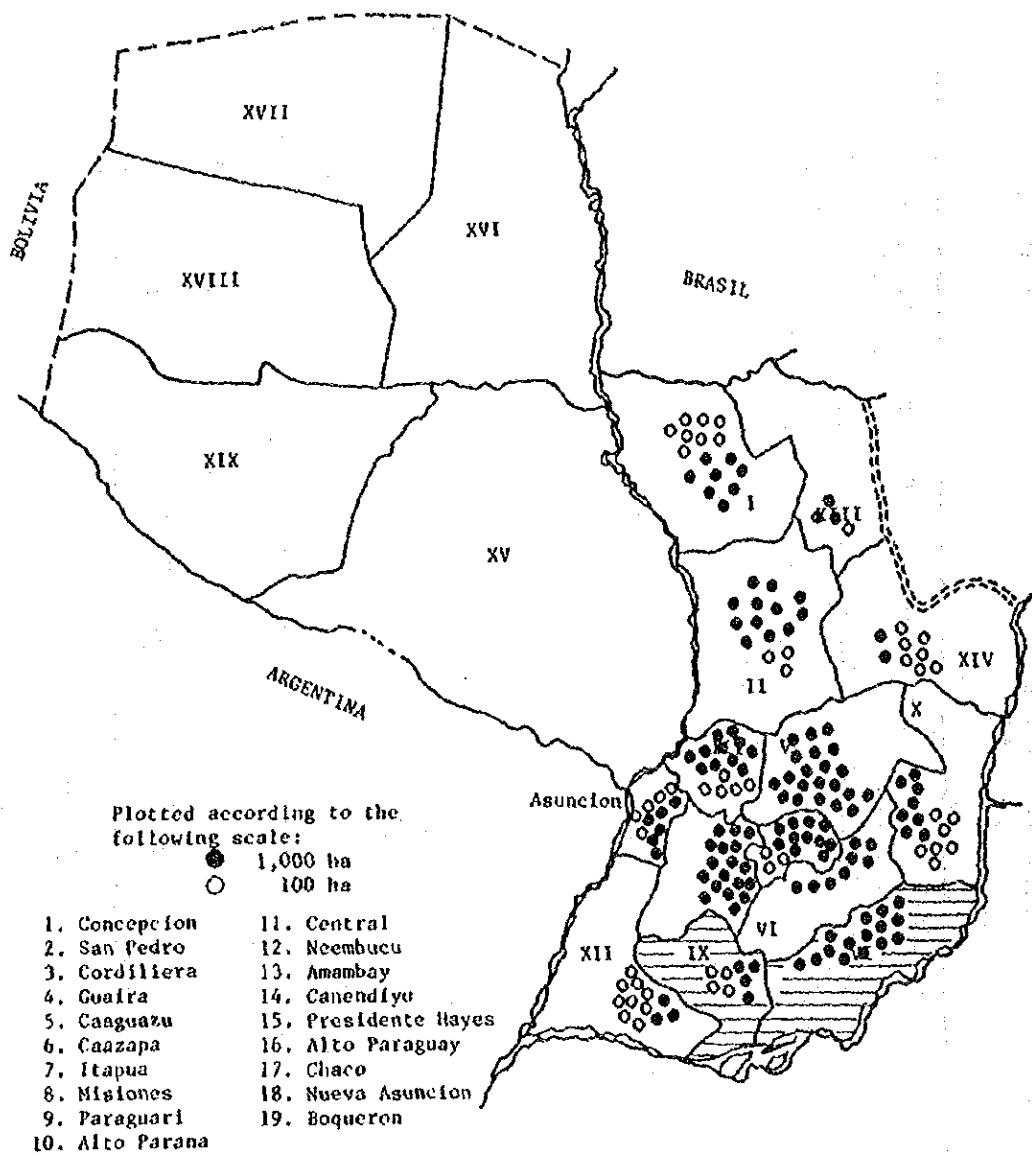


Fig. 3-5 Geographical Distribution of Cassava Harvested Area (1980)

Table 3-6 Transition of Yield by Years (Paddy Rice)

Unit 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 17.3 | 44.2 | 17.1 | 40.7 | 18.3 | 45.6 | 20.7 | 43.4 | 22.0 | 47.4 | 24.1 | 53.9 |
| Concepción | 0.1 | 0.2 | 0.1 | 0.3 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | 0.1 | 0.3 |
| San Pedro | 0 | 0.1 | 0.5 | 1.4 | 0.6 | 1.8 | 0.7 | 1.6 | 0.7 | 1.7 | 0.8 | 2.0 |
| Cordillera | 1.4 | 2.1 | 1.3 | 1.9 | 1.5 | 2.7 | 1.7 | 2.5 | 1.8 | 2.7 | 2.0 | 3.1 |
| Guaira | 0.1 | 0.3 | 0.1 | 0.3 | 0.3 | 1.0 | 0.3 | 0.9 | 0.3 | 0.9 | 0.3 | 1.1 |
| Caaguazu | 0.4 | 1.7 | 0.4 | 1.6 | 0.6 | 2.5 | 0.7 | 2.3 | 0.8 | 2.5 | 0.8 | 2.8 |
| Caazapa | 0.3 | 0.5 | 0.3 | 0.5 | 0.4 | 0.7 | 0.4 | 0.6 | 0.4 | 0.6 | 0.4 | 0.7 |
| Itapúa | 6.1 | 19.8 | 5.9 | 17.5 | 6.2 | 18.9 | 7.0 | 18.1 | 7.5 | 19.7 | 8.2 | 22.5 |
| Misiones | 7.1 | 15.8 | 6.8 | 14.0 | 6.3 | 13.2 | 7.3 | 12.9 | 7.8 | 14.1 | 8.5 | 16.1 |
| Paraguari | 1.8 | 3.7 | 1.7 | 3.3 | 2.3 | 4.7 | 2.5 | 4.4 | 2.7 | 0.5 | 3.0 | 5.4 |
| Alto Parana | - | - | - | - | - | - | - | - | - | - | - | - |
| Central | - | - | - | - | - | - | - | - | - | - | - | - |
| Neembucu | - | - | - | - | - | - | - | - | - | - | - | - |
| Amambay | - | - | - | - | - | - | - | - | - | - | - | - |
| Canendiyu | - | - | - | - | - | - | - | - | - | - | - | - |
| Oriental | 17.3 | 44.2 | 17.1 | 40.7 | 18.3 | 45.6 | 20.7 | 43.4 | 22.0 | 47.4 | 24.1 | 53.9 |
| Occidental | - | - | - | - | - | - | - | - | - | - | - | - |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock.

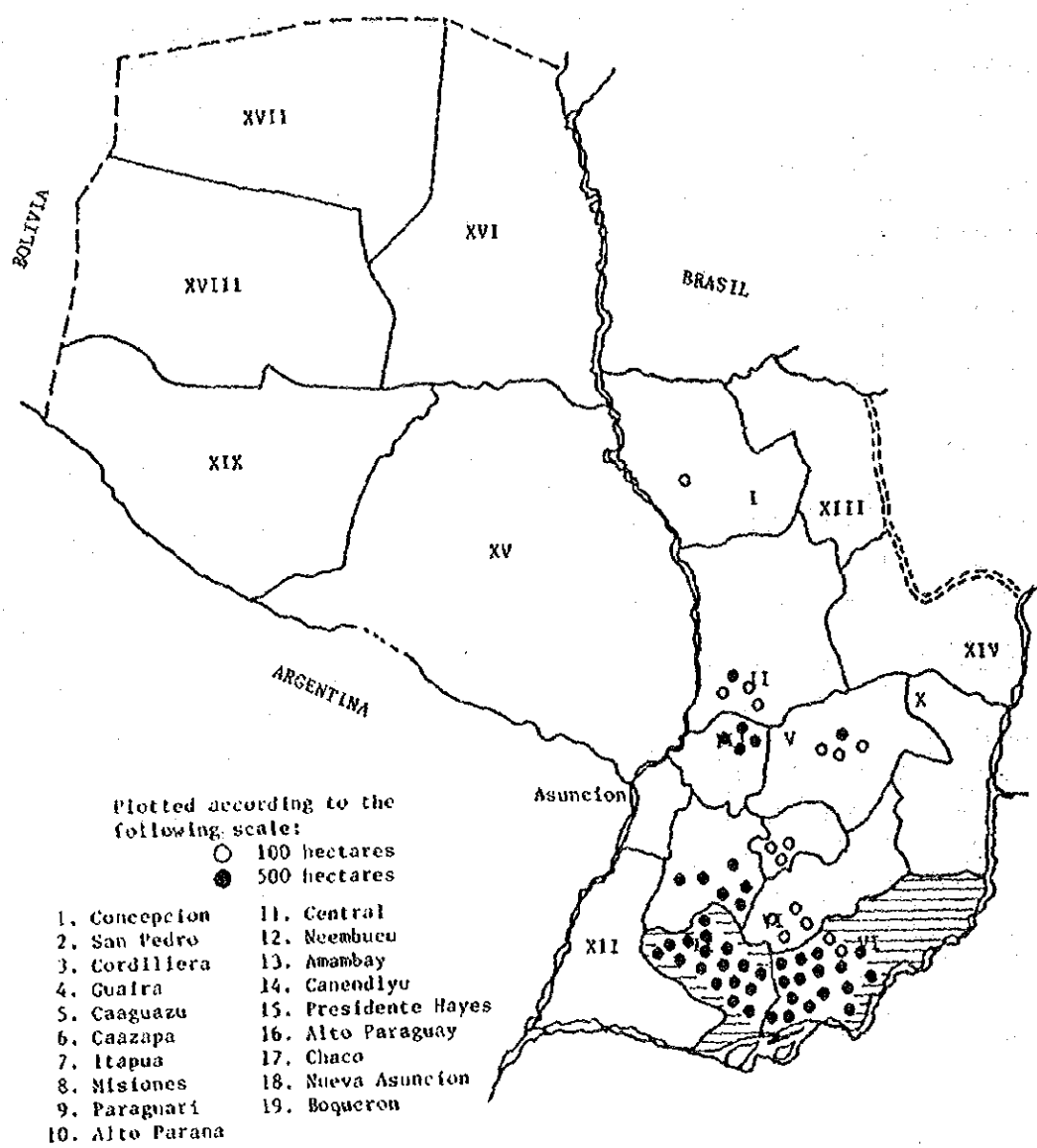


Fig. 3-6 Geographical Harvested Area of Irrigated Rice (1980)

Table 3-7 Transition of Yield by Years (Upland Rice)
Unit: 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 7.3 | 11.7 | 11.0 | 16.1 | 15.3 | 23.1 | 11.1 | 14.2 | 8.1 | 9.5 | 14.2 | 18.8 |
| Concepción | 0 | 0 | - | 0 | - | - | - | - | - | - | - | - |
| San Pedro | 0 | 0 | 0 | 0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 |
| Cordillera | 0 | 0 | 0 | 0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Guaira | 0.1 | 0 | 0.1 | 0 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0 | 0.1 | 0.1 |
| Caaguazu | 0.5 | 0.6 | 0.5 | 0.6 | 0.6 | 0.7 | 0.4 | 0.5 | 0.3 | 0.3 | 0.5 | 0.7 |
| Caazapa | 0.3 | 0.5 | 0.3 | 0.4 | 0.3 | 0.5 | 0.2 | 0.3 | 0.1 | 0.2 | 0.2 | 0.4 |
| Itapoá | 1.0 | 2.0 | 0.9 | 1.8 | 0.8 | 1.7 | 0.6 | 1.0 | 0.4 | 0.7 | 0.8 | 1.3 |
| Misiones | 0.4 | 0.9 | 0.4 | 0.8 | 0.5 | 1.1 | 0.4 | 3.7 | 0.3 | 0.4 | 0.5 | 0.9 |
| Paraguari | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 | 0.2 |
| Alto Parana | 1.2 | 1.5 | 1.2 | 1.3 | 1.3 | 1.7 | 0.9 | 1.1 | 0.7 | 0.7 | 1.2 | 1.4 |
| Central | 0 | 0 | - | - | - | - | - | - | - | - | - | - |
| Neembucu | - | - | - | - | - | - | - | - | - | - | - | - |
| Amanbay | 1.8 | 2.9 | 3.5 | 5.4 | 4.7 | 6.9 | 3.4 | 4.5 | 2.5 | 2.9 | 4.4 | 5.7 |
| Canendiyu | 1.7 | 2.9 | 3.8 | 5.6 | 6.5 | 9.8 | 4.7 | 6.3 | 3.4 | 4.0 | 6.0 | 8.0 |
| Oriental | 7.3 | 11.7 | 11.0 | 16.1 | 15.3 | 23.1 | 11.1 | 14.2 | 8.1 | 9.5 | 14.2 | 18.8 |
| Occidental | - | - | - | - | - | - | - | - | - | - | - | - |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock.

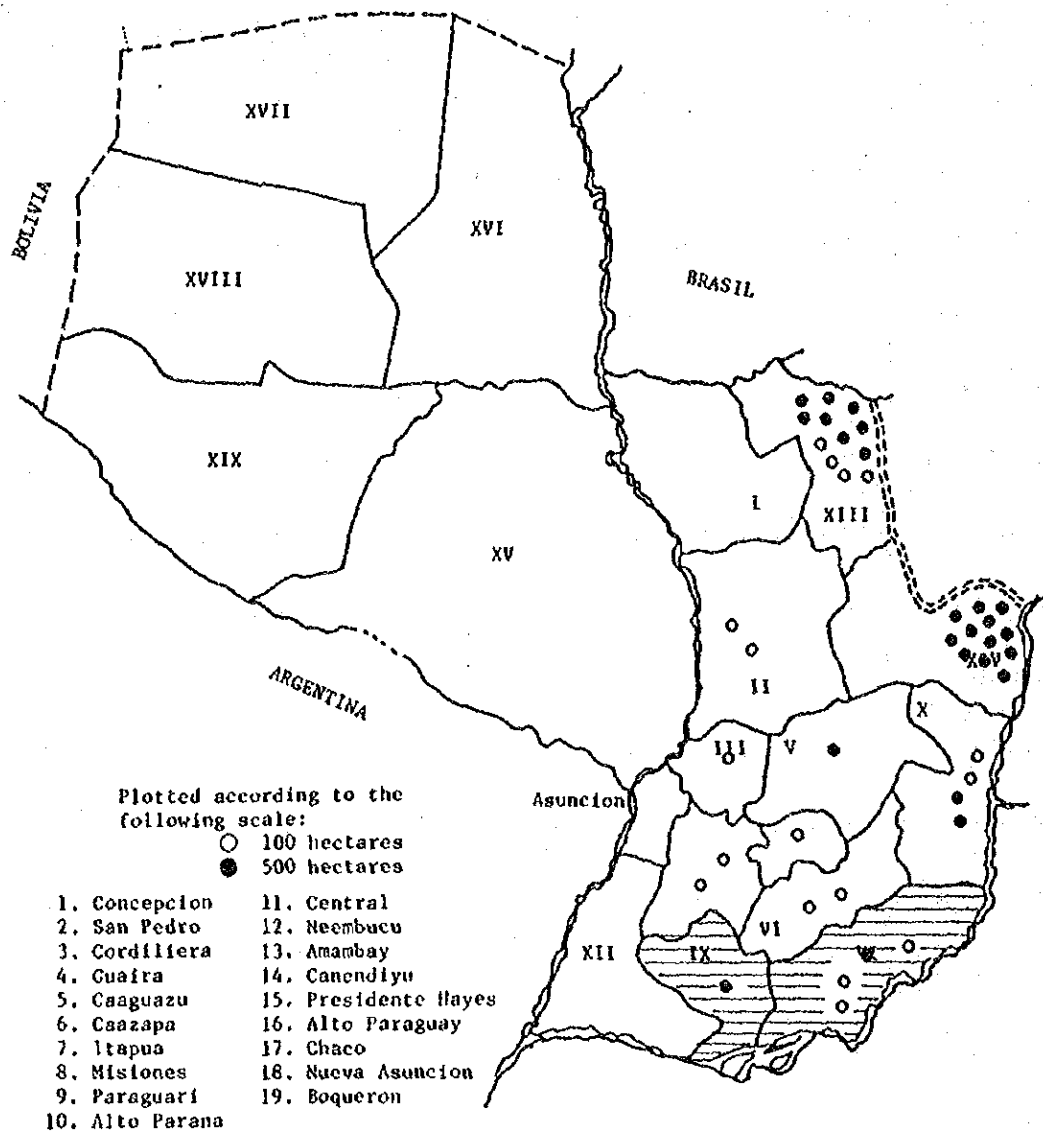


Fig. 3-7 Geographical Distribution of Area of Dry Land Harvested Rice (1980)

Table 3-8 Transition of Yield by Years (Tobacco)

Unit 1,000ha : 1,000 tons

| | 1975 | | 1976 | | 1977 | | 1978 | | 1979 | | 1980 | |
|-------------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield | Area | Yield |
| All Total | 20.6 | 28.3 | 27.8 | 38.6 | 29.8 | 41.4 | 21.5 | 26.9 | 20.5 | 25.9 | 15.0 | 20.5 |
| Concepción | 0.6 | 0.6 | 0.8 | 0.9 | 0.8 | 0.9 | 0.6 | 0.6 | 0.5 | 0.6 | 0.4 | 0.5 |
| San Pedro | 4.1 | 6.5 | 5.6 | 8.9 | 6.0 | 9.4 | 4.4 | 6.4 | 4.2 | 6.1 | 3.1 | 4.8 |
| Cordillera | 1.9 | 2.3 | 2.6 | 3.2 | 2.8 | 3.5 | 2.1 | 2.3 | 2.0 | 2.2 | 1.5 | 1.8 |
| Guaira | 0.6 | 1.0 | 0.8 | 1.3 | 0.9 | 1.4 | 0.6 | 0.9 | 0.6 | 0.8 | 0.4 | 0.7 |
| Caaguazu | 6.8 | 8.5 | 9.0 | 11.3 | 9.6 | 12.4 | 7.0 | 8.1 | 6.7 | 7.8 | 4.9 | 6.2 |
| Caazapa | 1.5 | 2.0 | 2.0 | 2.8 | 2.2 | 3.0 | 1.6 | 2.0 | 1.5 | 1.9 | 1.1 | 1.5 |
| Itapúa | 0.4 | 0.6 | 0.5 | 0.9 | 0.6 | 1.0 | 0.4 | 0.7 | 0.4 | 0.6 | 0.3 | 0.5 |
| Misiones | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 |
| Paraguari | 1.5 | 1.8 | 2.0 | 2.5 | 2.2 | 2.8 | 1.6 | 1.8 | 1.5 | 1.8 | 1.1 | 1.4 |
| Alto Parana | 2.6 | 4.2 | 3.5 | 5.7 | 3.4 | 5.5 | 2.2 | 3.1 | 2.1 | 3.0 | 1.5 | 2.4 |
| Central | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0 |
| Neembucu | 0.1 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.1 |
| Amambay | 0.2 | 0.2 | 0.3 | 0.2 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 |
| Canandiyu | - | - | 0.2 | 0.3 | 0.4 | 0.6 | 0.3 | 0.4 | 0.3 | 0.4 | 0.2 | 0.3 |
| Oriental | 20.6 | 28.3 | 27.8 | 38.6 | 29.8 | 41.4 | 21.5 | 26.9 | 20.5 | 25.9 | 15.0 | 20.5 |
| Occidental | - | - | - | - | - | - | - | - | - | - | - | - |

(Note): In accordance with statistical data of Ministry of Agriculture and Live-Stock.

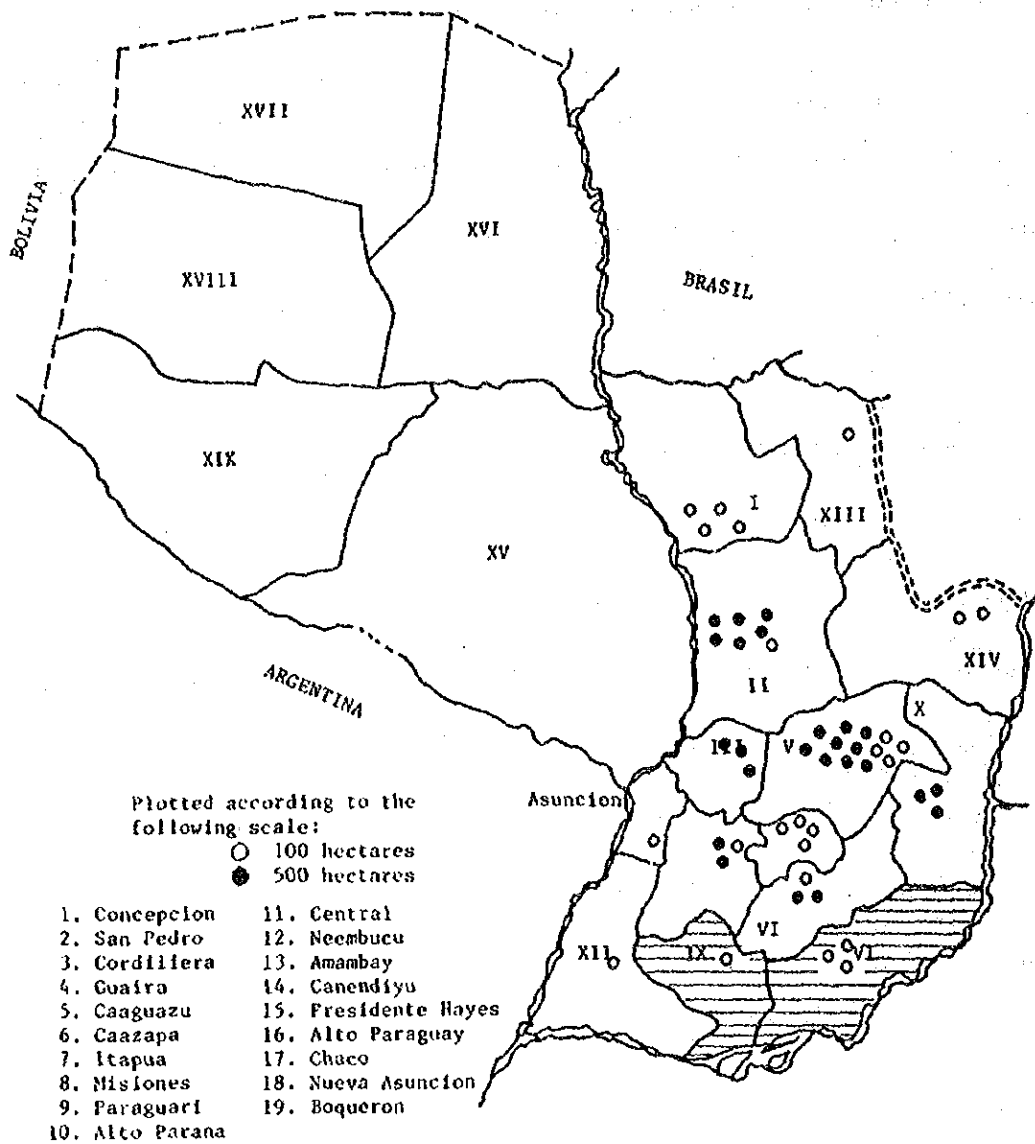


Fig. 3-8 Geographical Distribution of Harvested Area of Tobacco (1980)

Table 3-9 Departments of Itapúa and Misiones
Production of Sugar Cane (for sugar) Compared with
National Production.

| | Paraguay | | | Itapúa and Misiones Department | | |
|------|-------------------|---------------|-------------|--------------------------------|---------------|-------------|
| | Harvested Area ha | Production MT | Yield MT/ha | Harvested Area ha | Production MT | Yield MT/ha |
| 1975 | 20,621 | 764,555 | 37.0 | 49 | 427 | 8.7 |
| 1976 | 20,772 | 774,052 | 37.2 | 49 | 441 | 9.0 |
| 1977 | 21,036 | 789,699 | 27.5 | 50 | 443 | 8.8 |
| 1978 | 22,143 | 863,280 | 38.9 | 53 | 548 | 10.3 |
| 1979 | 22,270 | 890,140 | 39.9 | 53 | 566 | 10.6 |
| 1980 | 23,940 | 969,210 | 40.4 | 57 | 616 | 10.8 |

Source: Prepared by GT - MAG, based on DEC data.

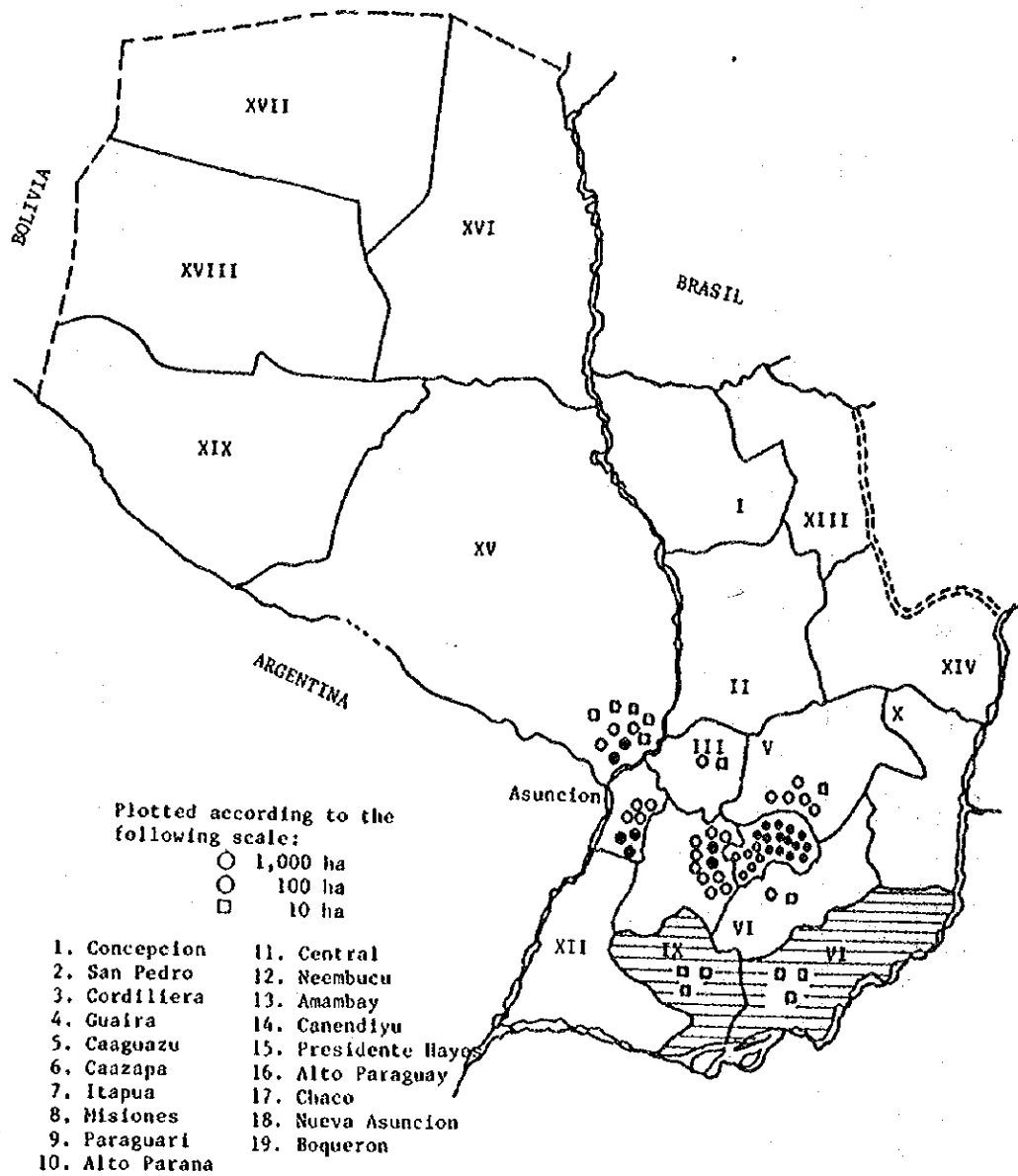


Fig. 3-9 Geographical Distribution of Sugar Cane (for Sugar) Harvested Area (1980)

Table 3-10 Departments of Itapúa and Misiones
Production of Sugar Cane (for Molasses) Compared with
National Production

| Year | Paraguay | | | Itapúa and Misiones Department | | |
|------|-------------------|---------------|-------------|--------------------------------|---------------|-------------|
| | Harvested Area ha | Production MT | Yield MT/ha | Harvested Area ha | Production MT | Yield MT/ha |
| 1975 | 9,701 | 273,998 | 28.2 | 163 | 3,088 | 18.9 |
| 1976 | 10,271 | 302,861 | 29.5 | 173 | 3,413 | 19.7 |
| 1977 | 12,038 | 370,051 | 30.7 | 197 | 4,393 | 22.2 |
| 1978 | 12,730 | 396,732 | 31.2 | 219 | 4,944 | 22.5 |
| 1979 | 12,570 | 396,889 | 31.6 | 216 | 4,945 | 22.8 |
| 1980 | 12,700 | 403,733 | 31.7 | 218 | 5,030 | 23.0 |

Source: Prepared by GT - MAG, based on DEC data.

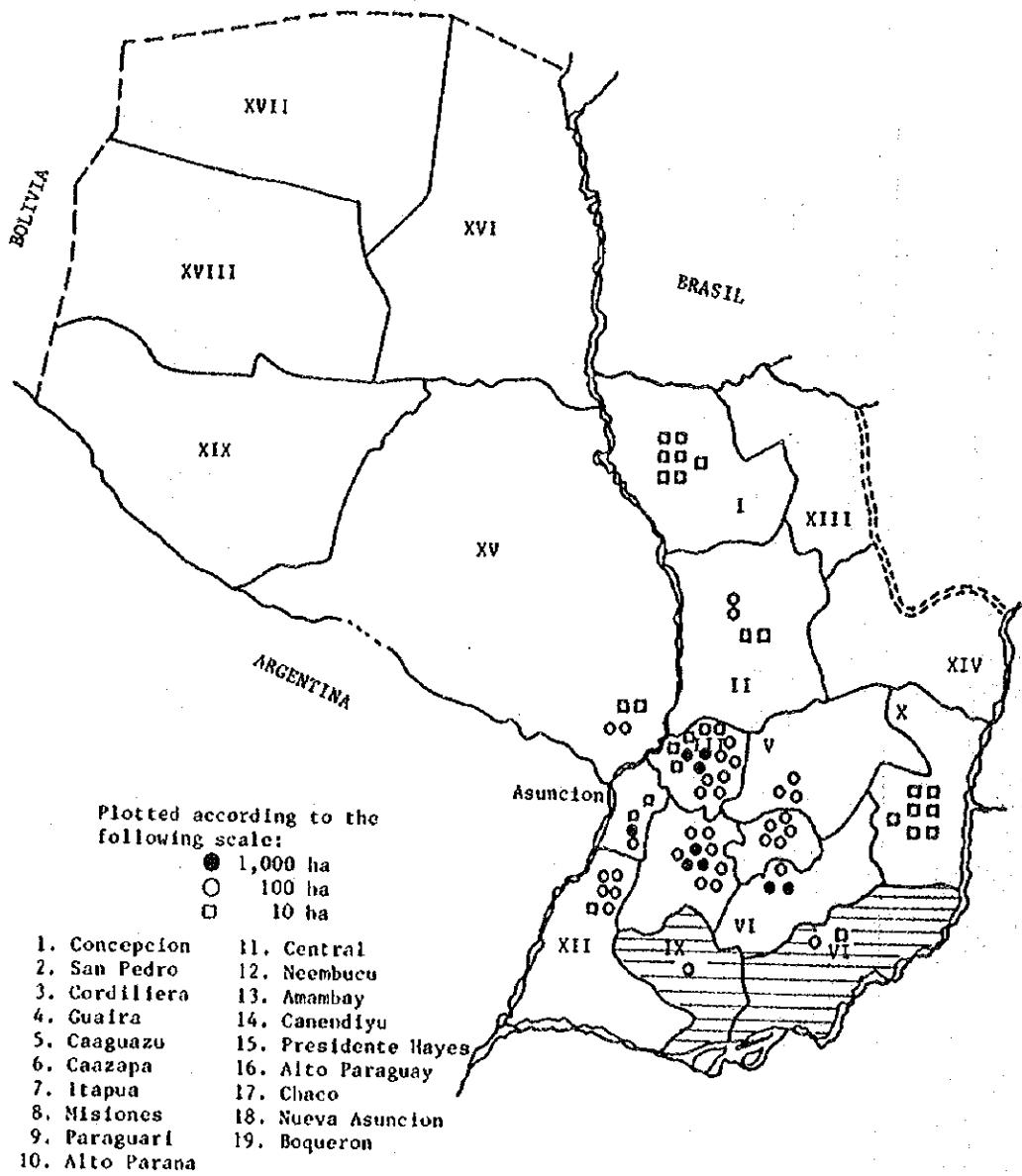


Fig. 3-10 Geographical Distribution of Sugar Cane (for Molasses) Harvested Area (1980)

Table 3-11 Annual Yield of Fruits

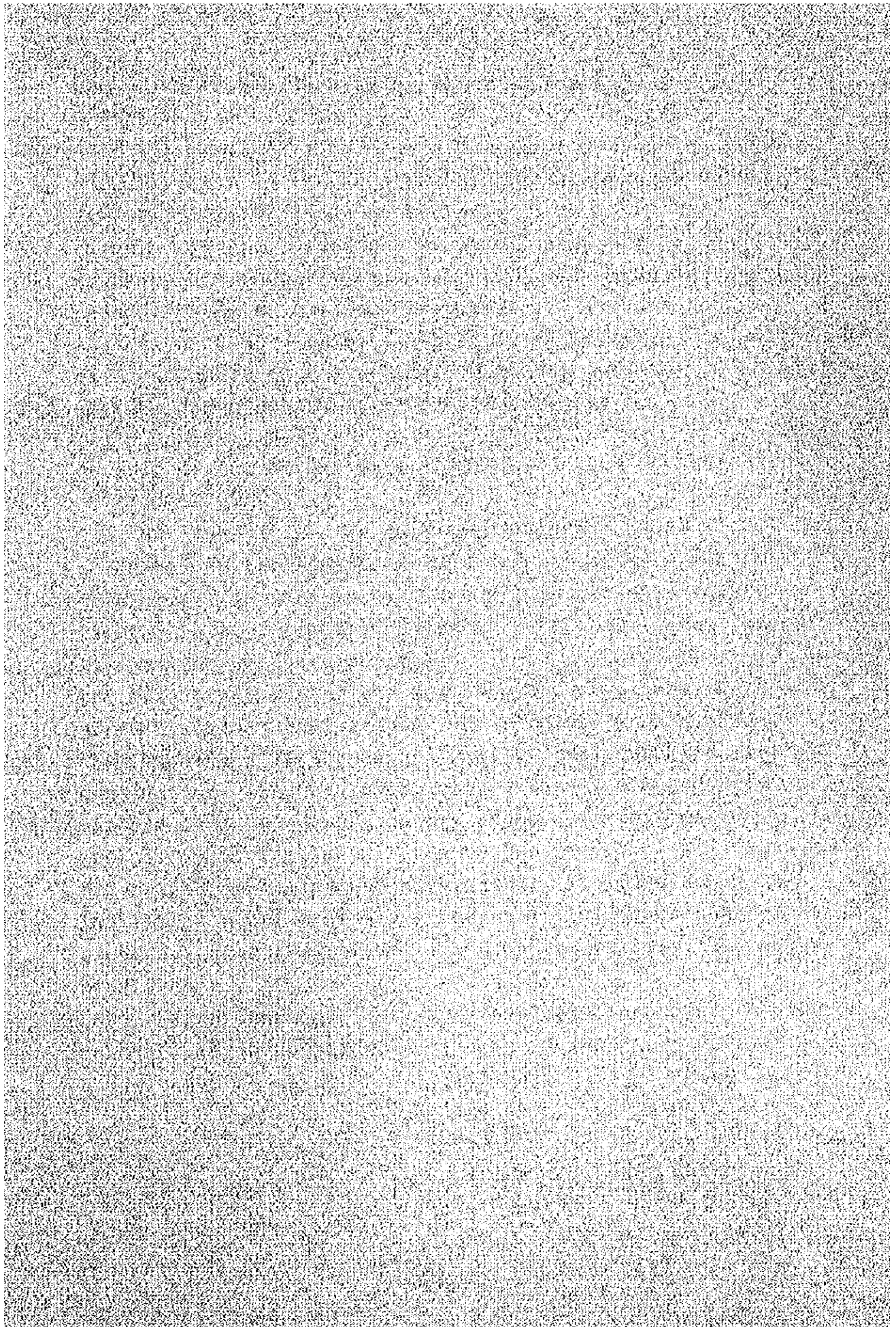
| | | Banana | | | Orange | | | Grape fruits | | Pine | | |
|----------|----------|---------------------------|------------------------|----------------------------|--------------|----------------------------|-----------------------------|----------------------------|-----------------------------|----------|----------------|-------|
| | | Carape 1,000 pieces | Oro 1,000 pieces | Natives 1,000 pieces | Agrio ton | Seeding 1,000 fruits | Grafting 1,000 fruits | Seeding 1,000 fruits | Grafting 1,000 fruits | Abacachi | Cayena Lina | |
| Paraguay | 1975 | 4,350.9 | 3,222.7 | 95.0 | 588.1 | 954,286 | 150,275 | 138,294 | 33,235 | 12,239.0 | 3,192.5 | |
| | 76 | 7,127.7 | 5,401.5 | 182.8 | 718.1 | 1,112,596 | 183,391 | 143,264 | 34,981 | 20,391.0 | 4,856.4 | |
| | 77 | 9,432.9 | 5,085.4 | 307.8 | 690.8 | 1,118,822 | 202,696 | 148,455 | 35,455 | 28,739.0 | 5,613.7 | |
| | 78 | 9,812.1 | 4,728.3 | 423.1 | 449.0 | 1,007,125 | 203,913 | 147,850 | 35,696 | 27,615.0 | 7,410.2 | |
| | 79 | 11,622.0 | 5,754.6 | 567.2 | 530.0 | 1,127,876 | 325,933 | 165,448 | 38,611 | 34,909.0 | 9,613.3 | |
| 1) | Itapúa | 1975 | 514.6 | 129.5 | 36.1 | 2.1 | 165,556 | 82,185 | 10,343 | 7,925 | 255.6 | 94.1 |
| | | 76 | 863.2 | 181.6 | 60.5 | 2.6 | 180,642 | 96,668 | 12,516 | 8,847 | 407.3 | 176.2 |
| | | 77 | 998.0 | 173.2 | 77.4 | 2.5 | 180,866 | 96,907 | 12,537 | 9,164 | 637.4 | 221.0 |
| | | 78 | 1,038.1 | 161.0 | 106.4 | 1.6 | 162,810 | 97,489 | 12,512 | 9,226 | 612.5 | 291.7 |
| | | 79 | 1,220.2 | 195.7 | 142.4 | 1.9 | 182,332 | 155,825 | 14,001 | 9,980 | 789.6 | 378.4 |
| 2) | Misiones | 1975 | 201.4 | 242.4 | 1.0 | 0.7 | 76,719 | 1,614 | 3,473 | 183 | 22.2 | 19.9 |
| | | 76 | 329.4 | 408.6 | 3.7 | 0.9 | 85,210 | 2,664 | 3,640 | 224 | 34.9 | 46.6 |
| | | 77 | 461.8 | 344.4 | 6.7 | 0.9 | 86,003 | 2,879 | 3,678 | 254 | 55.0 | 53.0 |
| | | 78 | 480.4 | 320.2 | 9.2 | 0.6 | 77,417 | 2,897 | 3,670 | 255 | 52.9 | 70.0 |
| | | 79 | 573.3 | 391.3 | 12.5 | 0.7 | 86,699 | 4,630 | 4,107 | 276 | 69.1 | 90.8 |
| 1) + 2) | | 1975 | 716.0 | 371.9 | 37.1 | 2.8 | 242,275 | 83,799 | 13,816 | 8,108 | 277.8 | 114.0 |
| | | 76 | 1,192.6 | 590.2 | 64.2 | 3.5 | 265,852 | 99,332 | 16,156 | 9,071 | 442.2 | 222.8 |
| | | 77 | 1,459.8 | 517.6 | 84.1 | 3.4 | 266,869 | 99,786 | 16,216 | 9,418 | 692.4 | 274.0 |
| | | 78 | 1,518.5 | 481.2 | 115.6 | 2.2 | 240,227 | 100,386 | 16,182 | 9,481 | 665.4 | 361.7 |
| | | 79 | 1,793.5 | 587.0 | 154.9 | 2.6 | 269,031 | 160,455 | 18,108 | 10,256 | 858.7 | 469.2 |

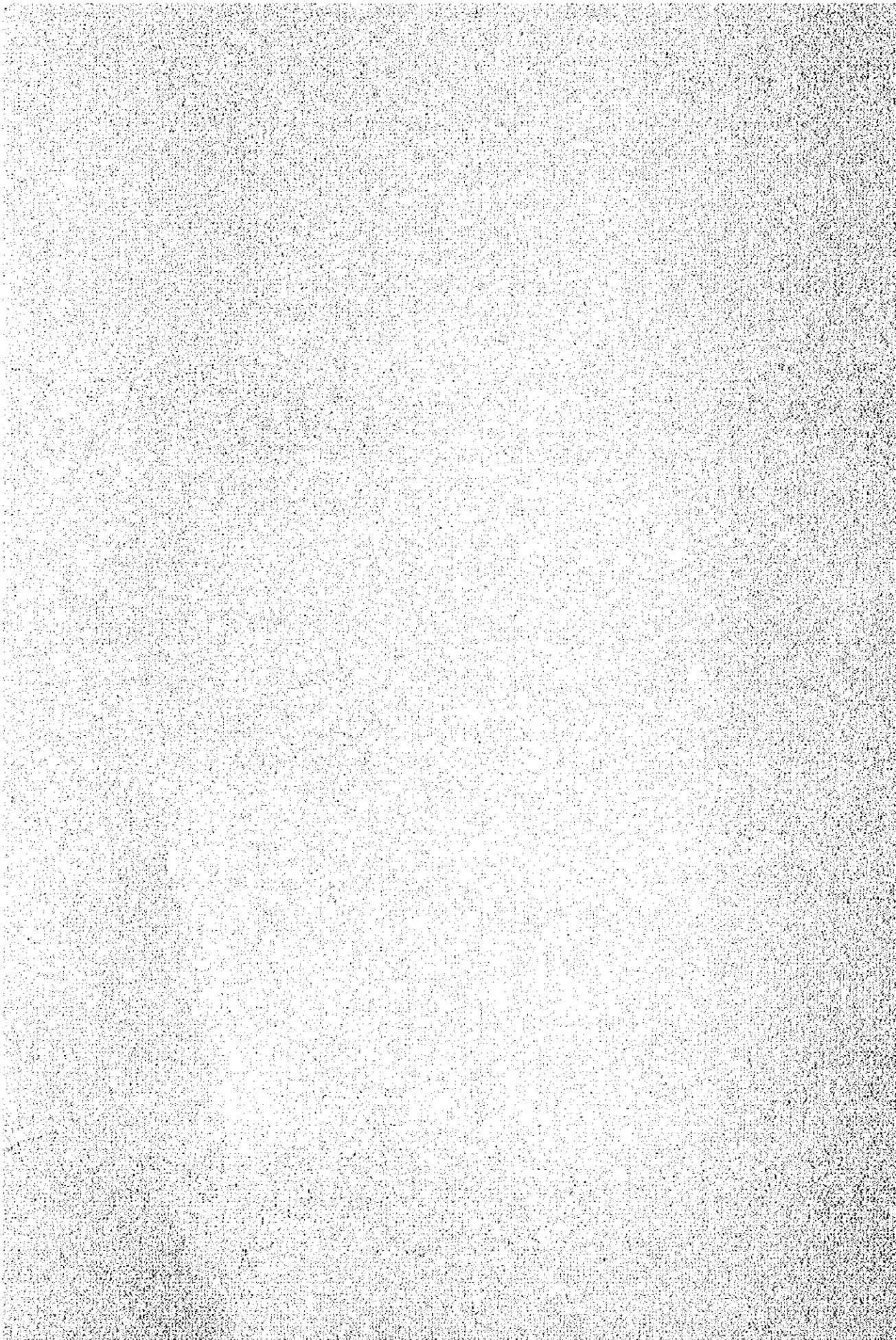
(Note): Data of Agricultural Statistics by MAG.

Table 3-12 Number of Fruit Tree

| | | Banana | | | Orange | | | Grape fruits | | Pine | |
|----------------|------|-----------|---------|---------|---------|---------|----------|--------------|----------|----------|-------------|
| | | Carape | Oro | Nativee | Agria | Seeding | Grafting | Seeding | Grafting | Abacachi | Cayena Lisa |
| | | per 1,000 | | | | | | | | | |
| Paraguay | 1975 | 10,476.0 | 8,830.8 | 267.5 | 102,956 | 6,608.6 | 2,183.8 | 790.0 | 193.5 | 41,701 | 7,877.6 |
| | 76 | 11,940.0 | 9,151.3 | 275.2 | 104,217 | 6,745.7 | 2,239.1 | 805.0 | 202.8 | 42,535 | 7,928.1 |
| | 77 | 14,197.0 | 9,225.9 | 405.4 | 104,336 | 6,835.9 | 2,277.9 | 810.1 | 207.5 | 43,858 | 8,574.6 |
| | 78 | 14,446.0 | 9,068.9 | 535.2 | 104,164 | 6,832.9 | 2,289.5 | 810.5 | 213.5 | 42,166 | 11,318.6 |
| | 79 | 15,239.0 | 9,069.2 | 711.1 | 104,169 | 6,900.5 | 2,326.7 | 853.7 | 235.2 | 44,146 | 14,158.0 |
| 1) Itepuá | 1975 | 892.1 | 246.1 | 84.8 | 30.6 | 565.6 | 458.5 | 50.2 | 40.4 | 1,168.2 | 436.9 |
| | 76 | 1,035.4 | 251.6 | 85.6 | 30.6 | 576.0 | 474.6 | 51.2 | 43.6 | 1,191.1 | 338.4 |
| | 77 | 1,202.2 | 252.0 | 98.7 | 34.3 | 581.8 | 482.3 | 52.2 | 44.2 | 1,221.6 | 383.0 |
| | 78 | 1,223.3 | 247.7 | 130.3 | 34.3 | 581.5 | 484.7 | 52.2 | 45.5 | 1,197.7 | 512.2 |
| | 79 | 1,295.3 | 246.9 | 172.8 | 36.3 | 587.2 | 492.6 | 55.0 | 50.1 | 1,253.8 | 640.6 |
| 2) Misiones | 1975 | 614.8 | 721.6 | 4.8 | 91.7 | 325.1 | 41.7 | 25.1 | 1.5 | 66.8 | 62.7 |
| | 76 | 697.4 | 737.8 | 4.8 | 92.8 | 331.0 | 43.2 | 25.6 | 1.7 | 68.1 | 63.0 |
| | 77 | 797.0 | 750.5 | 9.4 | 93.0 | 332.8 | 45.2 | 25.8 | 2.0 | 89.9 | 70.2 |
| | 78 | 811.0 | 737.7 | 12.4 | 92.8 | 332.7 | 45.4 | 25.8 | 2.1 | 86.4 | 92.7 |
| | 79 | 853.4 | 736.1 | 16.4 | 92.8 | 336.0 | 46.1 | 27.2 | 2.3 | 90.5 | 115.9 |
| 1) + 2) | 1975 | 1,506.9 | 967.7 | 89.6 | 122.3 | 890.7 | 500.2 | 75.3 | 41.9 | 1,235.0 | 399.6 |
| | 76 | 1,732.8 | 989.4 | 90.4 | 123.4 | 907.0 | 517.8 | 76.8 | 45.3 | 1,259.2 | 401.4 |
| | 77 | 1,999.2 | 1,002.5 | 108.1 | 127.3 | 914.6 | 527.5 | 78.0 | 46.2 | 1,311.5 | 453.2 |
| | 78 | 2,034.3 | 985.4 | 142.7 | 127.1 | 914.2 | 530.1 | 78.0 | 47.6 | 1,284.1 | 604.9 |
| | 79 | 2,148.7 | 983.0 | 189.2 | 127.1 | 923.2 | 538.7 | 82.2 | 52.4 | 1,344.3 | 756.5 |

(Note): Data of Agricultural Statistic by MAG.





Farming Circumstances in the Area of Japanese Immigration

The basic outline of the investigation of the farming circumstances in the area to which many Japanese have immigrated is as shown in Table 5-4. As a typical example, we will describe the Suzuki Farm which raises soybeans and wheat as its main crops and these two may be considered to be the important crops in the entire agricultural development. Also, as a reference, we will give a summary of the southern Paraguay immigration area where mixed cropping is the major activity.

Outline of the Suzuki Farm (Location: Alto Parana Immigration Area)

Mr. Suzuki is from Kochi Prefecture in Japan. He emigrated in the August of 1960 and is now a farmer in this area. The land area which Mr. Suzuki uses for farming is approximately 1,000 ha, and this is the largest farm in the Immigration area.

The main crops raised are soybeans and wheat and the rest of the land is uncultivated land such as forests. There are 13 members in the Suzuki family. Mr. Suzuki's wife and son form the core work force with 6-7 other family members also being permanently employed. In addition, another 50 or more people are temporarily employed in busy times such as sowing and harvesting. The farming facilities consist of 5 warehouses (total space 668 m), 2 garages (total area 216 m), and a work building (total area 72 m).

The farming machinery and the implements owned by the farm are as shown below.

| | | |
|--------------|--------|--------|
| Tractors (5) | 158 HP | 1 unit |
| | 128 HP | 1 unit |
| | 103 HP | 1 unit |
| | 70 HP | 1 unit |

| | | |
|-------------------|-------------|--------|
| Attachments | Fertilizing | |
| | machine | 2 unit |
| | Drill | 2 unit |
| | Trailer | 4 unit |
| | Plow | 2 unit |
| | Harrow | 2 unit |
| Combine Harvester | | 3 unit |
| Power Sprayer | | 3 unit |
| Truck | | 2 unit |
| Bulldozer | | 1 unit |

The conditions of cultivation are as follows. The planting area for soybeans (having a yield of 2,000kg/ha) is 550 ha and that of wheat (having a yield of 1,500kg/ha), is 300 ha, and this makes the farm the largest in the immigration area. The gross profit is about 50,000,000 Gs. Since the annual housekeeping expenses are about 1,000,000 - 1,200,000 Gs, a large net profit of about 13,000,000 Gs remains. Planting is carried out as follows. The cultivation pattern consists of soybeans as the first crop and wheat as the second. Troubles due to consecutive planting continue to be affecting the farm.

This is one of the farms most important problems. The cultivation system is large and mechanized. Unfortunately, Mr. Suzuki's son was absent so it was not possible to hear the specific details. However, details of the cultivation system obtained from verbal information from the farmers in the immigration area is as shown in Table 5-1.

The basic data for Chavez, Fram and Alto Parana Japanese immigration areas in south Paraguay are as shown in Table 5-4.

Table 5-1 Outline of Hearing Investigation on Farming Condition in Japanese Migration Area

| No. of farms scales | Location | Land area(ha) | | | Livestock raising (Heads, wings) | Crop planting condition (ha) | Farming each gross income (1,000 GS) | Remarks |
|------------------------|----------------|----------------|-------------------------|-------|---|--|--|--------------|
| | | Tilled land | Grassland and others | Total | | | | |
| 1 | Alto parana | 550 | 450 | 1,000 | - | Soybean 550, Wheat 300 | 50,000 | |
| 2 | Chavez | 370 | 79 | 449 | - | Soybean 330, Wheat 330 | 32,000 | |
| 3 | Yguazu | 200 | 160 | 360 | - | Soybean 200, Wheat 170, Melon 1 | 14,000 | |
| 4 | Fram | 216 | 134 | 350 | - | Soybean 163, Wheat 135, Oil paulownia 15, paddy rice 1.5 | 15,000 | |
| 5 | Chavez | 165 | 95 | 260 | - | Soybean 160, Wheat 160 | 14,000 | |
| 6 | Chavez | 116 | 91 | 207 | - | Soybean 90, Wheat 115 | 9,600 | |
| 7 | Fram | 69 | 31 | 100 | Pigs 10 | Soybean 53, Wheat 50, Sericulture | 6,600 | |
| 8 | Chavez | 50 | 78 | 128 | - | Soybean 50, Wheat 50 | 4,600 | |
| 9 | Chavez | 49 | 126 | 175 | - | Soybean 30, Wheat 10 | 2,500 | |
| 10 | Colmena | 22 | 113 | 235 | Cattle for beef 70 | Grape 6.5, Plum 2.0 Shaddock 5.5, Manjoca 2 Cotton 3, Corn 3 | 8,500 | |
| 11 | Colmena | 62 | 18 | 80 | - | Grape 8.5, Plum 4 Tangerine 1.5, Corn 8, Cotton 5 | 7,000 | |
| 12 | Colmena | 10 | 30 | 40 | - | Grape 5, Tomato 0.8, Melon 1.5, Vegetable 2.8 | | |
| 13 | Yguazu | 165 | 5,535 | 5,700 | Cattle for beef(breed- ing 500, fattening 3000) | Oats (winter feed) 165 | During the planning, no income | |
| 14 | Yguazu | - | 174 | 174 | Adult chicken 1000 Medium and large chicks 2000 | - | 3,300 | Settled 1977 |
| 15 | Yguazu | 4 | 182 | 186 | - | Melon 1.5, Tomato 2.0, Green pepper 0.4 | 8,000 | |
| 16 | Yguazu | 35 | 145 | 180 | - | Soybean 32, Melon 1.5, Tomato 1.5 | 9,500 | |

(Note) Farming condition investigation period (1982, Dec. 29 ~ 1993 Jan. 21)

| | | |
|-------------|-------------------------------|----|
| (Reference) | Number of farms investigated: | 16 |
| | Mixed farming | |
| | { Over 1000 ha | 1 |
| | { 200 ~ 1000 ha | 5 |
| | { 50 ~ 200 ha | 3 |
| | Fruit crop | 3 |
| | Vegetables | 2 |
| | Livestock | |
| | { Beef cattle | 1 |
| | { Chicken farm | 1 |

Table 5-2 Large Mechanized Cultivation on System for Soybean and Wheat

| Operation name | Soybean | Wheat |
|---|---|---|
| | Technical and operating details | Technical and operating details |
| Turn over | (8 up ~ 10 up) Tractor(disc plow, disc harrow) | (3 down ~ 5 middle) Tractor(disc plow) (Or, disc harrow, nibeadra) " (disc harrow) |
| Crushing, land readjustment | | |
| Fertilization | Tractor (seeder) Work performed simultaneously with sowing of seeds, blending 50 ~ 150 kg (7:28:7) | Tractor (seeder) Work performed simultaneously with the sowing of seeds, Blending (18:46:0) 100 ~ 160 kg |
| Sowing seeds | Tractor (seeder) Seeds 60 ~ 100 kg | Tractor (seeder) Seeds 100 ~ 150 kg |
| Weeding | Tractor (Cultivator 2 times) | - (The spraying of the weed removing chemical also performed) |
| Elimination of plant diseases and harmful insects | Tractor(Power sprayer attached directly) {Asodrin, apadrin, sebin, metastocks, etc. | Tractor (Power sprayer attached directly) {Topjin, bitoreen, metastocks, asodrin, rolsban, byhoran (sprayed on leaves) |
| Harvest, transportation and adjustment | (3 up ~ 4 up) Combine, truck (or a trailer), Silo | (9 middle ~ 10 middle) Combine, truck (or a trailer) Silo |

(Note) Compiled from the farming condition hearing investigation and others.

At present, one of the problems of soybean and wheat raising in the immigration area is the maintenance of the soil fertility and the prevention of soil erosion. This kind of damage is difficult to avoid, and continues to be one of the most important problems for the future. As one countermeasure, the use of the contour line planting method as was used and popularized in Brazil, and the use of green manure is also proposed. However, the application of these methods to actual farming methods are not yet common. On the other hand, farmer's liabilities form another serious problem for farm management. In the 1970's, especially with the rise in price of soybeans in 1973, farm mechanization advanced rapidly and it is now being said that the interest burden accompanying the purchase of farming implements is creating a large pressure on the actual farm management. Soybeans and wheat are particularly affected by market price fluctuations since they are international commodities and this tends to make farm management unstable. Crop diversification and the introduction of stock is desirable from the standpoint of economic stability in farm management.

Table 5-3 Farming Conditions (per Farm)

| | Chavez | Fram | Alto Parana |
|------------------------------------|--------------|--------------|--------------|
| Farming cash income | 6,825,000(G) | 5,128,000(G) | 4,167,000(G) |
| Cash income outside farming | 494,000 | 312,000 | 1,051,000 |
| Farming expense | 3,675,000 | 3,116,000 | 2,748,000 |
| Cash housekeeping expense | 745,000 | 709,000 | 761,000 |
| Fluid circulation assets | 1,335,000 | 1,558,000 | 1,278,000 |
| Liabilities | 6,127,000 | 4,578,000 | 5,468,000 |
| Annual borrowed amount | 3,227,000 | 3,307,000 | 3,192,000 |
| Amount of borrowed money paid back | 3,914,000 | 3,440,000 | 3,121,000 |
| Number of farms investigated | 31 | 141 | 228 |
| Number of family members | 6 | 6 | 6 |
| Land | 117 ha | 137 ha | 192 ha |
| Crop Soybean | 74 ha | 63 ha | 62 ha |
| Condition Wheat | 71 ha | 54 ha | 22 ha |

Reference data: Farming Investigation (1981.9 ~ 1982.11.1)
(JICA Encalacion Branch 1982.11.1)

At present the number of farmhouses is 38 in Chavez, 150 for Fram and 244 for Alto Parana. The farming scale is as follows. The land area per farm in Chavez is 117 ha (soybeans 74 ha and wheat 71 ha), 137 ha in Fram (soybeans 63 ha and wheat 54 ha), and 192 ha in Alto Parana (soybeans 62 ha and wheat 22 ha). In addition to soybeans and wheat; oil paulownia, corn, mulberries and Taiwanese paulownia are also grown. The farming conditions are as shown below.

Table 5-4 Outline of Colony in Southern Paraguay

(1982.11.1)

| Item | Chavez | Fram | Alto Parana |
|--|--|--|---|
| | IBR | JICA | JICA |
| Setting organ | | | |
| Total area | 68,000 ha (of these about 4000 ha farmed by those of Japanese descent) | 16,000 ha | 84,000 ha |
| One plot average area | 20 ha | 25 ha | 30ha, 60ha, 300ha |
| 1 ha selling price | ¥6,286 | ¥6,400 ~ 8,080 | ¥11,667 ~ 14,100 |
| Commencement for settlement | 1953 | 1955 | 1960 |
| Number of settled families () settled on the spot | 170 (37) | 229 (83) | 328 (18) |
| Present number of farms () number of farmhouses | 38 (38) | 178 (150) | 313 (244) |
| Paraguayans | 220 (Estimate) | 60 (Estimate) | 200 (Estimate) |
| Farm management | | | |
| Number of farms investigated | 31 | 141 | 228 |
| Area owned | 3,628 ha (117ha/farm) | 19,350ha (137ha/farm) | 43,687ha (192ha/farm) |
| Soybean cropping area | 2,283 ha | 8,924 ha | 14,185 ha |
| Amount sold | 4,092 t | 14,577 t | 27,757 t |
| Wheat cropping area | 2,185 ha | 7,603 ha | 4,946 ha |
| Amount sold | 3,213 t | 9,635 t | 5,717 t |
| Farmer's Cooperative Association Fram Branch | Farmer's Cooperative Association Fram Branch | Fram Farmer's Cooperative Association (Number of members 131) (Including Chavez) | Pirapo Farmer's Cooperative Association (Number of members 189) Akakaraja Farmer's Cooperative Association (Number of members 20) Alto Parana Agricultural Experimental Station |
| Others | - | - | |

Reference data: JICA Encalcion Branch Checking

Table 5-5 The Result of Hearing Investigation (Jan. 13~14, 1982)

| Farm | Atrocera Balb | Lopez Bordon | Julken Johansen |
|----------------------------------|--|---|---|
| Location | San Cosme | San Cosme | Santiago |
| 1. Land ownership | | | |
| Upland field | | | |
| Orchard | | | |
| Paddy field | 600 ha | | |
| Grassland(improved) | | 8,000 ha | 7,000 ha |
| Forest | 11,000 ha (700) | | |
| Others | | | |
| Total | 17,000 ha | 8,000 ha | 7,000 ha |
| 2. Livestock feeding | | | |
| a. Beef cattle | | | |
| Variety | Nerol(90%), Angus (10%) | Brauman, Nerol | Angus (mainly), Nerol |
| Number of heads | 13,000 heads | 5,000 heads | 3,000 heads |
| Number of heads produced | 3,000 heads | 1,500 heads | 600 heads |
| Number of heads sold | 2,500 heads | 500 heads | 300 heads |
| Average price | 30,000 CS | 32,000 CS | 31,000 CS |
| 3. Cropping | | | |
| Paddy rice | | | |
| Cropping area | 600 ha | | |
| Yield | 2,400 t | | |
| Amount sold | Paddy 2,400 t Cleansed 240 t rice | | |
| Unit price | Paddy 40CS/kg Cleansed 75CS/kg rice | | |
| 4. Manager and others | | | |
| | Full-time 40 persons At the harvest time 50 persons (90 days) (Wage 1,000CS/day) | Full-time 6 persons Temporary (Pasture fence repair) (Wage 30,000CS/month) | Full-time 9 persons Temporary 10 persons (18,000CS/month) |
| 5. Farm machinery owner- ship | | | |
| | Tractor 20 units { 150 PS 4 units 70/90 PS 6 units 50 PS 10 units Disc harrow Leveler and others Combine 8 units | | |
| 6. Farm economics | Gross incomes 149,000,000CS | Gross incomes 16,000,000CS | Gross incomes 9,300,000CS |

Table 5-6 (1) Investigation of Farms in Agolas (Dec. 13 ~ 19, 1982)

| No. | Farmhouse | 1. Delio Rios Ayolas Coc Ya | 2. DeGama Roverso Ayolas Atandy | 3. Aristeo Romero Ayolas Guatepán | 4. Bernardo Jara M. Ayolas Costa Pucú | 5. Brígido Espinola Ayolas Compania. Xoc Yá | 6. Tiburcio Quiroz Ayolas Coc-Yu | |
|------------------------------------|---|---|--|--|--|--|---------------------------------------|-----|
| Location | | | | | | | | |
| 1. | Land ownership | 0 (ha) | 0 (ha) | 0 (ha) | 0 (ha) | 7.0 (ha) | 7.0 (ha) | |
| | Upland field | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Paddy field | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Grassland (Approved grassland) | 120 ~ 110 (0) | 1,582+ leased land 800 0 (32,000GS/year) | 150 + 70 = 220 110,000GS, 80,000GS Per year lease Land (733/ha/year) (1143/ha/year) | 0 | 0 | 0 | 0 |
| | Forest | 30 ~ 60 | 19 (600 ha/year) | (733/ha/year) (1143/ha/year) | 0 | 0 | 0 | 9.0 |
| Swamp and others | 80 | Practically all swamp | | 0 | 0 | 0 | 0 | |
| Total | 249 (The government disposed the land at the price of 1,500GS/ha) | 1,404 | 220 (land price 70,000 GS/ha) | 15 | 7.0 | 22.7 (Settled 1970) 7,500GS/ha migration land | | |
| 2. Livestock feeding | | | | | | | | |
| a. Cattle for beef : | | | | | | | | |
| Variety | Criollo (hecto) zebu type | 300 | 1,100 | Criollo Milk Nettle Juru line | Criollo | Criollo | Criollo | |
| Number of heads | | | | 11 heads (5 of these give milk) | 16 heads (Only grow cattle Grazing fee 1,500GS/month) | 12 heads (of these, 5 give milk) | 10 heads (of these 3 give milk) | |
| (Full for breeding) | (N. 12) | | (N. 17) | 0 | 0 | | | |
| Number of heads produced yearly | 60 ~ 70 (Fall dead 12) | 250 | | milk 22/heads/108/ day | 12 heads | | | |
| Number of heads sold yearly | 50 ~ 60 | 150 F 350kg N 400kg 5 years old | 12 years old | | 0 | * For own use Milk Cheese | | |
| Average price per head | 17,000GS/head N 450-500kg Old cattle 350 380 | N 29,600GS, F 22,750GS 74GS/kg 65GS/kg | | Milk 500GS/2 Shipped every other day. Cheese is made here. | | | | |
| b. Horse | Number of heads | 0 | 0 | 0 | 12 heads | 1 | 0 | |
| c. Sheep | Number of heads | 70 heads Coridall hecto | 250 heads (Shipped 4 months after birth) | 0 | 0 | 0 | 0 | |
| | Number of heads | 15 heads sold 5,000GS/Per head | 5,000GS/Per head | | | | | |

Table 5-6 (2)

| No. | Farmhouse | 1. Delio Rios | 2. Deidamia Romero | 3. Aristonaco Romero | 4. Bernardo Jera M. | 5. Brigido Espinola | 6. Tiburcio Quiroz |
|-----|-----------------------------------|---|---|--|--|--|--|
| | Location | Ayolas Coe YG | Ayolas Sarandy | Ayolas Guarepia | Ayolas Costa Pueli | Ayolas Compania Koe YG | Ayolas Coe-YG |
| 4. | Domestic fowls: Kind, Number | 50 (chicken) | 0 | 0 | 0 | 50 (chicken) Three dozens of eggs can be ob- tained. | 4 (chicken) 45 chicks |
| 3. | Cropping cultivating condition | | | | | | |
| | Corn | 0 | 0 | 0 | 2.5 + 2.5 = 5 ha (Planted in August -harvested in April) | 2.5 ha for ewe consumption or feed | 2.5 ha |
| | Rice | 0 | 120,000kg/35 ha | 0 | 1.5 + 2.5 = 4 ha (Planted in July -harvested from April) | 2.0 ha | 1.0 ha |
| | Cassava | 0 | 0 | 0 | | | |
| | Cotton | 0 | 0 | 0 | | 1,000kg/ha 3.0 ha 1,500kg sold | 3.5 ha (2ha is not planted) |
| | Red bean | 0 | 0 | 0 | | 0.5 ha 500kg/kg (August-April) | 2.5 " |
| | Peanut | 0 | 0 | 0 | * Corn 2x3 times weeding in much rainfall year. * Manjoka 3x4 times weeding in much rainfall year. | 50 GS/kg | 0.5 " |
| | Sweet potato | 0 | 0 | 0 | | | 0.25 " |
| | Fruits | 0 | 0 | 0 | | | Banana 200 (pieces) Tobacco 600 (") |
| 4. | Manager and others | 5 family members 3 workers | Normally, 1 person (couple), with meals 40 persons at the time of preventive injections | Family members 10 | Family members 7 (Son and his wife and 2 children) Plasterer 1200GS/ hour | Old couple 2 (1+ children gone away) | Family members 10 |
| 5. | Farm machinery own- ship | 0 | 0 | 0 | 0 | 0 | 0 |
| 6. | Farming economic | Expenditure: Salt 25 bags 1,000GS/bag Preventive injec- tion 45,000GS/year Medicines 30,000GS 100,000GS/year | Annual income 2,500,000GS | Costs out and work as a worker 1,000GS/day 1,500GS/day (Horse furnished by him) | Score + Officior (Tax office) = 28,000GS/month Son-plasterer 1,000GS/2000GS/day | Let's the son culti- vate One cropping 5,000GS Disinfection of cotton 2x3 times cropping/20,000GS | Cotton 1,500kg/ ha x 2.5 ha x 48 50 GS = 187,500 180,000GS |

Table 5-6 (3)

| No. | Farmhouse | 7 Hermilio Ojuna Ayolas Coe-YE | 8 Guacraíndo Pleydas Ayolas Alejo Garcia | 9 Evaristo Carvallo Ayolas Alejo Garcia | 10 Ramon Ojeda Ayolas Alejo Garcia | 11 Lere Isauru Ayolas Puerto N21 (Partnership with a brother) | 12 Vicente P. Imas Ayolas Cura Canal (An old man of 81) | 13 |
|------------------------------------|--------------------------|--|---|--|---|---|---|----|
| 1. Land ownership (ha) | | | | | | | | |
| | Upland field | 8 ha | 2 ha (Settled six months before) | 3 ha | 6.0 ha | 5.5 ha | 7.752 ha (100 ha is available for feeding) | |
| | Field | 0 | | | | | | |
| | Crossland | 110 | | | | | | |
| | (Improved glass-land) | 1.0 | | | | 40 (Jiant stars) | | |
| | Forest | 10 | | 10 ha | (There is a 0.75 ha swamp) | (There is a 550 ha swamp) | Practically swamp | |
| | Swamp, others | | | | 7.0 ha | 1,520 ha | 7,752 ha | |
| | Total | 128 (Parent's land) | 2 ha | 13 ha | | | | |
| 2. Livestock feeding | | | | | | | | |
| a. Beef cattle: | | | | | | | | |
| | Variety | Criollo | 0 | 0 | Sebu line, Criollo | Criollo | Criollo | |
| | Number of heads | 230 (20 heads good) | | | 8 heads | 700 (Artificial insemination) | 1,000 | |
| | (Bulb for breeding) | 8 | | | | 200 (10% loss) | 200 | |
| | Number produced annually | 50 7kg of cheese weekly | | | 3 | 180 | 200 | |
| | Average price per head | 20,000GS/head Cheese @ 370GS x 7 heads = 2,590 GS | | | Calf 14,000GS/head | 33,750 ~ 31,500GS/head 75 ~ 70GS x 450% (4 year) | 15,000 ~ 25,000GS/head | |
| b. Horse: Number of heads | | | | | | | | |
| | | 10 | 0 | 0 | Produced 2010 heads 3 heads sold 8,000 GS/head | (Preventive injection: Bulsalter Tuberculosis, foot-mouth disease) | 80 heads | |
| c. Sheep: Number of heads | | | | | | | | |
| | | 40 | 0 | 0 | 700 persons x 41 GS x 3 times = 86,100GS | | 120 heads 5,000-6,000GS/head | |
| d. Domestic fowls: Kind and number | | | | | | | | |
| | | Chicken 35 | 0 | 0 | 0 | | 0 | |

Table 5-6 (4)

| No. | Farhouse | 7 Herrinio Ozuna Ayolas Coe-Yú | 8 Cumerindo Fleytas Ayolas Alejo Garcia | 9 Evaristo Carvallo Ayolas Alere Garcia | 10 Ramon Ojeda Ayolas Alejo Garcia | 11 Lave Isauró Ayolas Puerto N ^o 1 | 12 Vicente F Imbis Ayolas Cara Carai |
|-----|--------------------------|---|--|---|---|--|--|
| 3. | Cropping | | | | | | |
| | Corn | 5 ha | 1 ha, 000kg harvested per ha | 0.5 | 4.0 ha Sold in some cases 25GS/kg | 3.0 ha | 0 |
| | Rice | 3 ha 1 stem produces 3 kg (Planted in Aug., Sept., and Oct. -Harvest starting in Mar.) | 0.5 ha For own consumption | 0.25 | 1.0 | 1.0 ha | |
| | Cassava | | | | | | |
| | Cotton | | 0.5 ha 800kg harvested from 0.5 ha | | | | |
| | Red bean | | (0.5) Corn and mixed cropping | | 1.0 Sold in some cases 50GS/kg | 1.0 | |
| | Peanut | | | 0.25 | Vegetable (tomato, lettuce, onion, etc.) | Pumpkin 0.5 ha (Aug. - Nov.) | |
| | Sweet potato | | | | | | |
| | Fruits | | | | | | |
| 4. | Manager and others | 4 Laborers (Number of family members 10) | Family members 4 | Family members 6 | Family members 7 | 2 manager, employe 7 | Couples (hired) |
| 5. | Farm machinery ownership | 0 | 0 | 0 | 0 | 0 | 0 |
| 6. | Farm economics | Monthly income 20,000GS Living expense 3,000GS/month (cash) (income from cheese 11,100GS/month) | Cotton 800kg x 46 GS = 36,800GS Living expense 3,000GS/month Meat of 3 kg is eaten weekly. | Fishing: 100GS x 30kg = 3,000GS/month Living expense 3,500GS/month | Store 1,500GS/month Vegetable 2,000GS/day Living expense 35,000GS/month | Expenditure: Preventive injection 410GS x 3 times Salt + powdered bone = 150,000GS/year Living expense 100,000GS/month | Wages 9,600GS/month (with meals) Living expense 15,000GS/month (old couple) |

Table 5-7 Land Ownership (Local Farms)

| | | (ha) | | | | |
|---------------|--------------------|-----------------|--------|--------|--------|---------|
| Name of ranch | Grass- land | Upland field | Forest | Others | Total | |
| 1. | DELIO RIOS | 120 | - | - | 130 | 250 |
| 2. | DEIDAMIA ROMEO | 1,380 | - | 20 | - | 1,400 |
| 3. | ARISTOZOCO ROMEO | 220 | - | - | - | 220 |
| 4. | BERNARDO JARAM | 15 | - | - | - | 15 |
| 5. | BERIGIDO ESPINOLA | - | 7 | - | - | 7 |
| 6. | TIBURCO QUIROZ | - | 7 | 9 | 7 | 23 |
| 7. | HERNINIO OZUNA | 110 | 8 | 10 | - | 128 |
| 8. | GUMERSONDO FLEYTAS | - | 2 | - | - | 2 |
| 9. | EVARISTO CARVALLO | - | 3 | 10 | - | 13 |
| 10. | RAMON OJEDA | - | 6 | - | 1 | 7 |
| 11. | LARE ISAURO | 40 | 6 | - | 1,474 | 1,520 |
| 12. | VINCENTE F IMAS | 7,750 | - | - | - | 7,750 |
| 13. | SANTA CORNELIA | 4,000 | - | - | 8,500 | 12,500 |
| 14. | GENERAL CABELLO | 1,800 | - | - | - | 1,800 |
| 15. | ARRECHEA | 950 | - | - | - | 950 |
| 16. | NOLBERTO ARRECHEA | 7,000 | - | - | - | 7,000 |
| 17. | NUFORA | 2,200 | - | - | 1,400 | 3,600 |
| 18. | STANTAANA | 6,000 | - | - | 1,000 | 7,000 |
| 19. | JUAN MARIN | 640 | - | - | - | 640 |
| 20. | GUAVIRA-Y | 1,300 | - | - | - | 1,300 |
| 21. | ROMEO-CUE | 8,000 | - | - | - | 8,000 |
| 22. | LOS CEDROS | 1,200 | (200) | - | - | 1,400 |
| 23. | SARANDY | 680 | - | - | 120 | 800 |
| 24. | SELELAD JOHANSEN | 5,990 | (10) | - | 1,000 | 7,000 |
| 25. | PONCE | 180 | - | - | 420 | 600 |
| 26. | MBOCAY | 400 | - | - | 1,600 | 2,000 |
| 27. | SAN FRANCISCO | 240 | - | - | 560 | 800 |
| 28. | QUINONEZ | 400 | - | - | 600 | 1,000 |
| 29. | FAUSTINA-SA | 4,000 | - | - | 6,000 | 10,000 |
| 30. | SAN JUAN | 1,500 | - | - | 500 | 2,000 |
| 31. | RENE MORA | 2,000 | - | - | 1,300 | 3,300 |
| 32. | SANTO DOMINGO | 3,600 | - | - | - | 3,600 |
| 33. | JORGE BOLF | 16,400 | (600) | - | - | 17,000 |
| 34. | ROPEZ BOLDON | 8,000 | - | - | - | 8,000 |
| | Total | 86,115 | 849 | 49 | 24,612 | 111,625 |

Table 5-8 Monthly Maximum Average Temperature

| Encarnacion | | (Unit : °C) | | | | | | | | | | | | |
|-------------|-------|-------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
| | | 1971 | 30.6 | 30.0 | 29.0 | 24.8 | 21.9 | 19.0 | 22.7 | 23.1 | 27.2 | 26.3 | 31.5 | 32.9 |
| 1972 | 33.0 | 31.9 | 30.9 | 25.7 | 26.7 | 24.1 | 21.5 | 20.7 | 26.5 | 26.9 | 27.6 | 29.7 | 27.1 | |
| 1973 | 31.1 | 32.0 | 29.4 | 28.1 | 22.7 | 21.4 | 19.9 | 20.2 | 23.2 | 27.2 | 28.3 | 30.2 | 26.1 | |
| 1974 | 31.7 | 30.6 | 29.5 | 27.3 | 24.1 | 19.4 | 24.4 | 22.8 | 25.5 | 26.8 | 28.7 | 29.9 | 26.7 | |
| 1975 | 30.9 | 31.2 | 28.8 | 26.3 | 24.0 | 22.6 | 20.1 | 22.7 | 24.0 | 25.6 | 28.0 | 31.3 | 26.3 | |
| 1976 | 31.3 | 30.9 | 28.8 | 26.0 | 22.5 | 21.0 | 22.0 | 22.8 | 24.0 | 27.2 | 29.5 | 31.1 | 26.4 | |
| 1977 | 31.0 | 33.2 | 31.6 | 27.9 | 23.5 | 23.4 | 25.5 | 22.4 | 28.0 | 30.1 | 29.5 | 31.9 | 28.1 | |
| 1978 | 33.3 | 32.5 | 33.4 | 28.3 | 24.7 | 23.0 | 24.0 | 22.1 | 25.9 | 29.2 | 29.4 | 32.1 | 28.1 | |
| 1979 | 35.0 | 33.0 | 29.1 | 25.3 | 22.0 | 22.0 | 22.2 | 25.1 | 23.5 | 28.0 | 29.6 | 31.4 | 27.2 | |
| 1980 | 32.4 | 31.9 | 32.4 | 30.0 | 25.0 | 21.8 | 22.7 | 25.3 | 24.1 | 27.0 | 28.7 | 31.6 | 27.7 | |
| Average | 32.0 | 31.7 | 30.3 | 27.0 | 23.7 | 21.8 | 22.6 | 22.7 | 25.2 | 27.4 | 29.1 | 31.2 | 27.1 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-9 Monthly Maximum Average Temperature

San Juan Bautista

(Unit : °C)

| Year | Month | | | | | | | | | | | | Annual Average |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1971 | 31.0 | 30.8 | 29.2 | 25.5 | 22.6 | 19.3 | 23.7 | 23.3 | 27.4 | 26.1 | 31.2 | 32.8 | 26.9 |
| 1972 | 33.0 | 32.4 | 31.0 | 25.9 | 27.2 | 25.3 | 21.2 | 21.4 | 26.7 | 25.3 | 27.8 | 30.0 | 27.3 |
| 1973 | 32.0 | 33.8 | 31.2 | 29.4 | 23.9 | 22.9 | 19.8 | 20.6 | 24.3 | 27.6 | 29.1 | 30.8 | 27.1 |
| 1974 | 32.7 | 31.2 | 30.1 | 27.3 | 24.7 | 19.7 | 24.6 | 23.2 | 25.1 | 27.4 | 30.2 | 31.1 | 27.3 |
| 1975 | 31.7 | 31.4 | 29.9 | 27.6 | 24.9 | 23.3 | 21.0 | 22.8 | 24.2 | 25.8 | 28.0 | 32.0 | 26.9 |
| 1976 | 32.4 | 31.4 | 29.1 | 27.1 | 23.2 | 22.3 | 22.8 | 23.5 | 25.5 | 28.1 | 29.9 | 32.7 | 27.3 |
| 1977 | 31.2 | 33.6 | 32.6 | 29.1 | 23.9 | 24.6 | 26.2 | 23.6 | 29.0 | 30.3 | 29.8 | 32.1 | 28.8 |
| 1978 | 33.2 | 31.7 | 32.9 | 28.7 | 25.3 | 24.8 | 25.1 | 22.8 | 26.2 | 30.0 | 30.2 | 32.7 | 28.6 |
| 1979 | 35.0 | 34.2 | 29.6 | 26.6 | 23.3 | 23.1 | 23.8 | 26.1 | 23.6 | - | 30.2 | - | 27.6 |
| 1980 | 32.8 | 31.7 | 32.6 | 31.0 | 27.1 | 22.2 | 22.5 | 25.4 | 24.2 | 27.4 | 27.8 | 31.4 | 28.0 |
| Average | 32.5 | 32.2 | 30.8 | 27.8 | 24.6 | 22.8 | 23.1 | 23.3 | 25.6 | 27.6 | 29.5 | 31.7 | 27.6 |

Date of Meteorological Department, Ministry of National Defence

Table 5-10 Monthly Maximum Average Temperature

Yacyreta

| Year | Month | | | | | | | | | | | | Annual Average |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1971 | 32.4 | 30.4 | 29.8 | 25.6 | 22.5 | 19.1 | 23.5 | 23.7 | 28.0 | 27.4 | 32.0 | 33.7 | 27.3 |
| 1972 | 33.3 | 33.1 | 30.7 | 26.1 | 26.7 | 24.3 | 20.5 | 20.1 | 25.8 | 24.4 | 27.0 | 28.9 | 26.7 |
| 1973 | 30.6 | 31.5 | 29.4 | 27.8 | 22.6 | 21.5 | 19.2 | 19.5 | 22.6 | 26.3 | 27.9 | 30.3 | 25.8 |
| 1974 | 32.1 | 30.5 | 29.5 | 26.9 | 24.0 | 19.2 | 23.8 | 22.2 | 24.4 | 26.5 | 28.4 | 29.9 | 26.4 |
| 1975 | 31.3 | 31.8 | 29.6 | 26.6 | 23.9 | 22.4 | 20.1 | 21.4 | 22.9 | 25.7 | 27.4 | 31.3 | 26.2 |
| 1976 | 31.8 | 31.2 | 28.4 | 26.0 | 22.4 | 21.0 | 21.9 | 22.5 | 24.2 | 27.7 | 29.4 | 31.8 | 26.5 |
| 1977 | 30.9 | 33.4 | 31.7 | 28.6 | 23.3 | 23.3 | 24.7 | 21.7 | 27.8 | 29.3 | 29.5 | 31.7 | 28.0 |
| 1978 | 33.2 | 31.9 | 32.7 | 27.9 | 24.3 | 22.8 | 23.6 | 21.4 | 25.8 | 28.7 | 28.9 | 31.7 | 27.7 |
| 1979 | 34.2 | 32.9 | 29.2 | 25.2 | 22.0 | 21.6 | 21.6 | 24.2 | 22.4 | 27.4 | 28.2 | 30.3 | 26.6 |
| 1980 | 32.1 | 31.6 | 32.1 | 29.8 | 24.7 | 20.5 | 21.6 | 23.7 | 23.1 | 26.3 | 27.5 | 31.0 | 27.0 |
| Average | 32.2 | 31.8 | 30.3 | 27.0 | 23.6 | 21.6 | 22.1 | 22.0 | 24.7 | 27.0 | 28.6 | 31.1 | 26.8 |

Data of Meteorological Department, Ministry of National Defence

Table 5-11 Monthly Minimum Average Temperature

| Encarnacion | | (Unit : °C) | | | | | | | | | | | | |
|-------------|-------|-------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year.. | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
| | | 1971 | 20.6 | 20.4 | 18.8 | 12.0 | 10.2 | 7.1 | 11.4 | 11.0 | 13.9 | 13.1 | 15.4 | 18.4 |
| 1972 | 19.8 | 19.0 | 18.3 | 12.8 | 14.7 | 16.5 | 11.3 | 11.6 | 13.9 | 14.1 | 17.6 | 18.3 | 15.6 | |
| 1973 | 21.5 | 22.3 | 18.4 | 17.7 | 12.6 | 12.4 | 11.9 | 8.5 | 12.2 | 14.6 | 14.0 | 17.9 | 15.3 | |
| 1974 | 21.1 | 20.9 | 18.5 | 13.4 | 12.5 | 7.8 | 11.5 | 9.4 | 11.9 | 11.3 | 13.8 | 18.1 | 14.2 | |
| 1975 | 18.8 | 20.0 | 19.0 | 15.0 | 12.7 | 11.9 | 9.3 | 12.7 | 14.7 | 13.6 | 15.6 | 18.4 | 15.1 | |
| 1976 | 21.2 | 18.0 | 17.1 | 12.6 | 10.6 | 9.5 | 10.2 | 8.9 | 11.3 | 14.0 | 16.0 | 18.2 | 14.0 | |
| 1977 | 21.1 | 21.7 | 20.3 | 14.2 | 12.2 | 11.5 | 14.5 | 11.2 | 14.3 | 16.9 | 18.1 | 20.8 | 16.4 | |
| 1978 | 21.1 | 19.6 | 19.6 | 10.1 | 7.6 | 9.4 | 12.3 | 10.4 | 13.1 | 16.4 | 17.6 | 19.2 | 14.7 | |
| 1979 | 19.7 | 20.0 | 18.1 | 14.2 | 10.7 | 7.4 | 9.8 | 14.0 | 11.1 | 17.0 | 16.7 | 20.5 | 14.9 | |
| 1980 | 18.2 | 19.5 | 21.3 | 17.5 | 14.8 | 9.0 | 8.0 | 11.1 | 9.6 | 15.9 | 16.7 | 19.0 | 15.1 | |
| Average | 20.3 | 20.1 | 18.9 | 14.0 | 11.9 | 10.3 | 11.0 | 10.9 | 12.6 | 14.7 | 16.2 | 18.9 | 15.0 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-12 Monthly Minimum Average Temperature

San Juan Bautista

(Unit : °C)

| Year | Month | | | | | | | | | | | | Annual Average |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1971 | 21.5 | 21.0 | 19.7 | 15.1 | 12.1 | 8.8 | 13.2 | 12.6 | 15.9 | 16.1 | 18.8 | 20.4 | 16.3 |
| 1972 | 20.9 | 20.9 | 19.1 | 15.8 | 16.6 | 16.8 | 11.5 | 11.4 | 15.1 | 15.0 | 18.6 | 20.0 | 16.8 |
| 1973 | 22.1 | 22.7 | 20.2 | 18.3 | 14.1 | 12.0 | 11.3 | 10.3 | 13.8 | 16.3 | 16.3 | 19.5 | 16.4 |
| 1974 | 22.0 | 21.5 | 19.5 | 16.7 | 14.7 | 10.2 | 13.2 | 11.6 | 13.1 | 14.0 | 16.9 | 19.8 | 16.1 |
| 1975 | 20.7 | 21.2 | 20.0 | 17.0 | 12.8 | 13.8 | 10.3 | 12.2 | 15.0 | 15.9 | 17.5 | 19.6 | 16.3 |
| 1976 | 22.3 | 19.7 | 17.9 | 15.0 | 12.4 | 11.1 | 11.4 | 11.1 | 13.1 | 15.9 | 18.3 | 19.8 | 15.7 |
| 1977 | 20.7 | 21.9 | 21.1 | 16.1 | 14.0 | 12.8 | 14.7 | 12.2 | 15.9 | 18.0 | 18.8 | 21.5 | 17.3 |
| 1978 | 21.1 | 20.5 | 21.1 | 14.9 | 11.9 | 11.6 | 13.7 | 11.4 | 15.2 | 18.2 | 19.0 | 20.9 | 16.6 |
| 1979 | 22.4 | 21.6 | 18.4 | 14.7 | 11.8 | 9.9 | 10.6 | 15.0 | 12.9 | - | 17.9 | - | 15.5 |
| 1980 | 19.6 | 20.5 | 21.1 | 19.0 | 15.7 | 10.6 | 9.4 | 12.1 | 9.9 | 15.5 | 16.3 | 18.9 | 15.7 |
| Average | 21.3 | 21.2 | 19.8 | 16.3 | 13.6 | 11.8 | 11.9 | 12.0 | 14.0 | 16.1 | 17.8 | 20.0 | 16.3 |

Data of Meteorological Department, Ministry of National Defence

Table 5-13 Monthly Minimum Average Temperature

| Yacyreta | | (Unit : °C) | | | | | | | | | | | | |
|----------|-------|-------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
| Year | Month | 20.9 | 20.8 | 19.9 | 14.3 | 11.7 | 8.4 | 12.5 | 12.3 | 15.1 | 15.0 | 16.7 | 19.4 | 15.6 |
| 1971 | | 20.2 | 20.3 | 19.5 | 14.9 | 16.2 | 16.9 | 11.8 | 12.2 | 14.7 | 15.1 | 18.5 | 19.4 | 16.6 |
| 1972 | | 22.1 | 22.1 | 19.8 | 18.6 | 14.2 | 12.7 | 11.5 | 9.8 | 13.5 | 16.1 | 15.7 | 19.3 | 16.3 |
| 1973 | | 22.0 | 21.3 | 19.2 | 15.7 | 13.9 | 9.6 | 12.2 | 11.4 | 12.8 | 13.6 | 15.5 | 19.5 | 15.6 |
| 1974 | | 20.4 | 21.0 | 20.0 | 16.9 | 14.0 | 12.8 | 9.3 | 12.3 | 14.5 | 14.9 | 17.4 | 19.9 | 16.1 |
| 1975 | | 21.9 | 19.8 | 17.9 | 14.5 | 11.6 | 9.6 | 9.9 | 10.2 | 12.1 | 15.3 | 17.5 | 19.0 | 14.9 |
| 1976 | | 21.7 | 22.3 | 20.6 | 15.1 | 13.6 | 11.9 | 14.0 | 11.5 | 14.9 | 17.3 | 18.2 | 21.0 | 16.9 |
| 1977 | | 20.9 | 19.7 | 19.7 | 12.3 | 9.8 | 9.9 | 12.2 | 10.7 | 13.5 | 16.5 | 17.8 | 19.9 | 15.2 |
| 1978 | | 20.0 | 20.0 | 18.0 | 14.9 | 11.0 | 8.3 | 10.3 | 14.5 | 12.2 | 17.3 | 17.6 | 20.2 | 15.4 |
| 1979 | | 19.4 | 20.3 | 22.1 | 18.2 | 15.4 | 10.6 | 9.1 | 12.1 | 10.4 | 15.8 | 17.1 | 19.9 | 15.9 |
| Average | | 21.0 | 20.8 | 19.7 | 15.5 | 13.1 | 11.1 | 11.3 | 11.7 | 13.4 | 15.7 | 17.2 | 19.8 | 15.9 |

Data of Meteorological Department, Ministry of National Defence

Table 5-14 Monthly Average Temperature

| Encarnacion | | (Unit : °C) | | | | | | | | | | | | |
|-------------|-------|-------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
| | | 1971 | 25.0 | 24.7 | 23.1 | 18.1 | 15.4 | 12.7 | 16.3 | 17.0 | 20.2 | 19.9 | 23.4 | 25.3 |
| 1972 | 25.7 | 25.2 | 24.1 | 18.9 | 20.1 | 19.6 | 15.8 | 15.9 | 20.1 | 19.5 | 22.6 | 24.3 | 21.0 | |
| 1973 | 26.6 | 26.7 | 23.7 | 22.2 | 17.3 | 16.1 | 15.4 | 13.9 | 17.8 | 21.2 | 21.7 | 24.3 | 20.6 | |
| 1974 | 26.4 | 25.4 | 23.9 | 20.2 | 18.1 | 13.6 | 17.5 | 16.1 | 18.8 | 19.7 | 21.8 | 24.4 | 20.5 | |
| 1975 | 24.8 | 25.7 | 23.4 | 20.2 | 17.6 | 16.9 | 14.1 | 17.1 | 19.0 | 19.7 | 22.2 | 25.1 | 20.3 | |
| 1976 | 26.0 | 24.4 | 22.3 | 18.9 | 16.0 | 14.7 | 15.4 | 15.8 | 17.4 | 20.5 | 23.0 | 24.9 | 19.9 | |
| 1977 | 25.5 | 26.8 | 25.3 | 20.7 | 17.3 | 17.2 | 19.5 | 16.6 | 20.8 | 23.0 | 23.4 | 26.0 | 21.8 | |
| 1978 | 27.3 | 25.8 | 26.0 | 18.8 | 15.3 | 15.9 | 18.0 | 15.8 | 19.5 | 22.5 | 23.2 | 25.7 | 21.1 | |
| 1979 | 27.6 | 26.0 | 23.2 | 19.1 | 16.0 | 14.4 | 15.7 | 19.1 | 17.2 | 22.2 | 23.0 | 25.5 | 20.7 | |
| 1980 | 25.5 | 25.5 | 26.3 | 23.3 | 19.4 | 15.6 | 14.9 | 17.7 | 16.5 | 21.0 | 22.4 | 25.2 | 21.1 | |
| Average | 26.0 | 25.6 | 24.1 | 20.0 | 17.2 | 15.7 | 16.3 | 16.5 | 18.7 | 20.9 | 22.7 | 25.1 | 20.7 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-15 Monthly Average Temperature

San Juan Bautista

| | | (Unit : °C) | | | | | | | | | | | | |
|---------|-------|-------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year. | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
| | | 1971 | 25.8 | 25.4 | 23.9 | 19.8 | 16.6 | 13.4 | 17.4 | 17.3 | 21.1 | 21.0 | 24.7 | 26.7 |
| 1972 | 26.3 | 26.0 | 24.8 | 20.2 | 21.2 | 20.3 | 15.9 | 15.8 | 20.6 | 19.9 | 22.8 | 24.8 | 21.5 | |
| 1973 | 26.7 | 27.0 | 24.6 | 23.0 | 18.2 | 16.9 | 14.9 | 14.7 | 18.4 | 21.6 | 22.4 | 25.0 | 21.1 | |
| 1974 | 27.0 | 25.6 | 24.1 | 21.2 | 18.9 | 14.5 | 18.2 | 16.7 | 18.5 | 20.6 | 23.0 | 24.9 | 21.1 | |
| 1975 | 26.1 | 26.2 | 24.1 | 21.5 | 18.4 | 17.6 | 14.7 | 16.5 | 18.7 | 20.5 | 22.6 | 26.0 | 21.1 | |
| 1976 | 26.7 | 25.4 | 22.9 | 20.3 | 17.0 | 15.8 | 16.7 | 17.1 | 18.6 | 21.6 | 23.9 | 25.9 | 21.1 | |
| 1977 | 25.6 | 27.3 | 26.1 | 21.7 | 18.2 | 17.8 | 19.3 | 17.0 | 21.4 | 23.3 | 23.8 | 26.4 | 22.3 | |
| 1978 | 27.1 | 25.6 | 26.0 | 20.5 | 17.5 | 17.3 | 18.6 | 16.1 | 19.8 | 23.2 | 24.1 | 26.8 | 21.9 | |
| 1979 | 28.4 | 27.2 | 23.6 | 19.8 | 16.7 | 15.4 | 16.1 | 19.5 | 17.3 | 22.5 | 23.3 | 25.5 | 21.3 | |
| 1980 | 26.1 | 25.9 | 26.3 | 23.6 | 20.2 | 15.3 | 14.9 | 18.3 | 17.1 | 22.1 | 22.6 | 25.9 | 21.5 | |
| Average | 26.6 | 26.2 | 24.6 | 21.2 | 18.3 | 16.4 | 16.7 | 16.9 | 19.2 | 21.6 | 23.3 | 25.8 | 21.4 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-16 Monthly Average Temperature

Yacyreta

| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | | 1971 | 26.5 | 25.4 | 24.2 | 19.1 | 16.2 | 12.8 | 16.8 | 16.9 | 20.5 | 20.7 | 23.8 | |
| 1972 | 25.9 | 25.9 | 24.5 | 20.2 | 20.8 | 19.9 | 15.7 | 15.8 | 20.0 | 19.5 | 22.6 | 24.6 | 21.3 | |
| 1973 | 26.3 | 26.5 | 24.4 | 22.9 | 18.1 | 16.7 | 15.1 | 14.3 | 17.7 | 21.2 | 22.2 | 24.7 | 20.8 | |
| 1974 | 26.8 | 25.5 | 24.0 | 21.1 | 18.6 | 14.3 | 17.4 | 16.2 | 18.4 | 20.1 | 22.3 | 24.6 | 20.8 | |
| 1975 | 25.6 | 25.9 | 24.2 | 21.1 | 18.5 | 17.0 | 14.4 | 16.5 | 18.6 | 20.2 | 22.5 | 25.4 | 20.8 | |
| 1976 | 26.4 | 25.2 | 22.7 | 19.8 | 16.7 | 14.7 | 15.6 | 16.3 | 17.6 | 21.2 | 23.5 | 25.4 | 20.4 | |
| 1977 | 25.8 | 27.0 | 25.6 | 21.3 | 18.2 | 17.4 | 19.1 | 16.4 | 20.9 | 23.2 | 23.8 | 26.1 | 22.1 | |
| 1978 | 27.0 | 25.5 | 25.7 | 19.7 | 16.6 | 16.1 | 17.6 | 15.6 | 19.4 | 22.4 | 23.3 | 25.8 | 21.2 | |
| 1979 | 27.2 | 26.0 | 23.3 | 19.5 | 16.3 | 14.5 | 15.7 | 18.9 | 17.2 | 22.3 | 22.8 | 25.3 | 20.8 | |
| 1980 | 25.9 | 25.8 | 26.6 | 23.6 | 19.8 | 15.3 | 14.9 | 17.7 | 16.9 | 21.0 | 22.3 | 25.6 | 21.3 | |
| Average | 26.3 | 25.9 | 24.5 | 20.8 | 18.0 | 15.9 | 16.2 | 16.6 | 18.7 | 21.2 | 22.9 | 25.4 | 21.0 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-17 Monthly Absolute Maximum Temperature

| Encarnacion | | (Unit : °C) | | | | | | | | | | | | |
|-------------|-------|-------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual maximum |
| | | 1971 | 36.8 | 36.2 | 33.8 | 33.4 | 31.0 | 28.6 | 30.4 | 31.0 | 34.2 | 33.0 | 36.6 | 37.4 |
| 1972 | 37.5 | 37.4 | 37.5 | 30.0 | 33.0 | 31.0 | 29.4 | 32.0 | 34.0 | 35.8 | 36.0 | 36.0 | 37.5 | |
| 1973 | 36.0 | 37.0 | 34.4 | 35.0 | 30.6 | 27.0 | 31.0 | 28.0 | 28.5 | 36.0 | 34.4 | 35.0 | 37.0 | |
| 1974 | 36.0 | 35.0 | 34.0 | 33.2 | 31.8 | 26.0 | 30.0 | 33.4 | 36.6 | 33.4 | 36.4 | 34.8 | 36.6 | |
| 1975 | 35.0 | 37.0 | 34.0 | 31.8 | 30.0 | 28.0 | 30.4 | 34.0 | 33.0 | 34.6 | 36.0 | 35.0 | 37.0 | |
| 1976 | 35.5 | 36.0 | 36.0 | 33.4 | 30.4 | 30.4 | 31.0 | 33.0 | 33.4 | 34.4 | 35.0 | 36.0 | 36.0 | |
| 1977 | 33.6 | 35.8 | 37.5 | 35.0 | 31.4 | 31.0 | 32.4 | 31.0 | 36.0 | 37.2 | 34.0 | 37.0 | 37.5 | |
| 1978 | 38.4 | 37.0 | 38.2 | 35.0 | 33.0 | 30.0 | 31.0 | 30.2 | 33.4 | 37.0 | 35.0 | 37.0 | 38.4 | |
| 1979 | 40.5 | 39.4 | 34.0 | 29.5 | 29.0 | 29.2 | 32.0 | 32.0 | 35.4 | 35.4 | 35.0 | 37.4 | 40.5 | |
| 1980 | 36.6 | 35.4 | 36.6 | 33.6 | 31.6 | 30.6 | 30.4 | 33.0 | 33.8 | 35.4 | 34.4 | 38.4 | 38.4 | |
| Average | 40.5 | 39.4 | 38.2 | 35.0 | 33.0 | 31.0 | 32.4 | 34.0 | 36.6 | 37.2 | 36.6 | 38.4 | 40.5 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-18 Monthly Absolute Maximum Temperature

San Juan Bautista

(Unit: °C)

| Year | Month | | | | | | | | | | | | Annual Maximum |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1971 | 36.8 | 36.8 | 34.2 | 33.6 | 30.4 | 28.4 | 31.2 | 31.2 | 34.2 | 32.6 | 35.8 | 38.4 | 38.4 |
| 1972 | 38.0 | 37.8 | 37.0 | 30.6 | 33.0 | 31.0 | 29.0 | 31.6 | 33.8 | 36.0 | 36.0 | 35.4 | 38.0 |
| 1973 | 36.4 | 38.4 | 36.4 | 34.6 | 32.0 | 29.2 | 31.6 | 28.8 | 29.8 | 36.6 | 35.0 | 35.2 | 38.4 |
| 1974 | 35.8 | 35.0 | 34.4 | 33.2 | 31.8 | 26.6 | 30.2 | 33.4 | 36.0 | 34.4 | 36.4 | 35.6 | 36.4 |
| 1975 | 37.4 | 37.4 | 35.0 | 32.2 | 31.0 | 29.0 | 31.2 | 33.6 | 32.4 | 35.4 | 36.0 | 36.0 | 37.4 |
| 1976 | 38.0 | 36.6 | 35.6 | 34.2 | 31.4 | 32.2 | 32.2 | 33.2 | 34.4 | 34.4 | 34.0 | 37.6 | 38.0 |
| 1977 | 34.6 | 37.0 | 38.6 | 36.0 | 32.0 | 31.0 | 33.2 | 32.0 | 37.2 | 38.0 | 34.0 | 37.0 | 38.6 |
| 1978 | 37.0 | 36.0 | 37.6 | 35.0 | 34.0 | 31.6 | 31.0 | 31.0 | 34.0 | 38.0 | 34.4 | 38.0 | 38.0 |
| 1979 | 39.0 | 39.4 | 35.0 | 31.0 | 50.0 | 30.0 | 32.0 | 33.0 | 35.4 | 35.0 | 37.0 | 37.0 | 39.4 |
| 1980 | 36.4 | 35.2 | 36.2 | 34.6 | 31.6 | 30.4 | 31.4 | 34.2 | 33.4 | 36.4 | 33.6 | 37.8 | 37.8 |
| Average | 39.0 | 39.4 | 38.6 | 36.0 | 34.0 | 32.2 | 33.2 | 34.2 | 37.2 | 38.0 | 37.0 | 38.4 | 39.4 |

Data of Meteorological Department, Ministry of National Defence

Table 5-19 Monthly Absolute Maximum Temperature

Yacyreta

| Year | Month | | | | | | | | | | | | Annual Maximum |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1971 | 37.3 | 37.0 | 34.0 | 35.0 | 30.5 | 28.3 | 30.8 | 31.5 | 34.0 | 34.5 | 37.2 | 40.5 | 40.5 |
| 1972 | 38.9 | 38.3 | 37.7 | 30.9 | 32.4 | 30.8 | 27.8 | 31.2 | 33.9 | 35.2 | 35.8 | 35.0 | 38.9 |
| 1973 | 36.0 | 36.5 | 34.0 | 34.5 | 31.3 | 28.1 | 31.6 | 27.6 | 28.5 | 36.4 | 34.4 | 35.0 | 36.5 |
| 1974 | 36.4 | 34.8 | 34.4 | 33.0 | 32.0 | 26.2 | 29.4 | 33.2 | 35.2 | 33.2 | 36.4 | 34.8 | 36.4 |
| 1975 | 36.0 | 37.2 | 34.4 | 31.8 | 30.2 | 28.2 | 30.0 | 32.8 | 31.2 | 35.0 | 35.4 | 34.6 | 37.2 |
| 1976 | 35.0 | 36.0 | 35.2 | 34.0 | 30.8 | 31.2 | 30.4 | 32.6 | 35.0 | 35.2 | 34.8 | 36.8 | 36.8 |
| 1977 | 34.8 | 36.2 | 38.2 | 36.8 | 31.6 | 30.4 | 32.0 | 30.8 | 36.4 | 37.2 | 35.2 | 37.4 | 38.2 |
| 1978 | 38.2 | 37.2 | 37.8 | 35.8 | 33.4 | 31.0 | 31.0 | 30.2 | 33.2 | 38.4 | 34.4 | 36.2 | 38.4 |
| 1979 | 38.4 | 39.2 | 35.0 | 32.0 | 28.8 | 29.0 | 31.8 | 31.6 | 35.4 | 35.0 | 35.4 | 36.6 | 34.0 |
| 1980 | 35.8 | 35.2 | 36.4 | 33.2 | 31.4 | 29.0 | 30.2 | 31.0 | 32.6 | 34.6 | 32.6 | 37.4 | 33.3 |
| Average | 38.9 | 39.2 | 38.2 | 36.8 | 33.4 | 31.2 | 32.0 | 33.2 | 36.4 | 38.4 | 37.2 | 40.5 | 40.5 |

Date of Meteorological Department, Ministry of National Defence

Table 5-20 Monthly Absolute Minimum Temperature

| Encarnacion | | (Unit: °C) | | | | | | | | | | | | |
|-------------|-------|------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Minimum |
| | | 1971 | 14.2 | 12.0 | 15.2 | 2.4 | 0.0 | -2.8 | 2.0 | 2.8 | 6.0 | 3.0 | 8.0 | 8.6 |
| 1972 | 12.4 | 11.6 | 9.0 | 4.4 | 4.4 | 4.8 | -0.2 | -0.4 | 0.0 | 6.2 | 11.4 | 13.0 | -0.4 | |
| 1973 | 14.0 | 18.0 | 13.6 | 10.2 | 3.0 | 3.0 | 4.0 | 3.0 | 0.0 | 7.0 | 8.0 | 12.4 | 0.0 | |
| 1974 | 17.6 | 16.4 | 11.0 | 5.6 | 6.8 | -2.0 | 5.4 | -2.0 | 2.0 | 4.6 | 7.0 | 11.4 | -2.0 | |
| 1975 | 11.0 | 12.8 | 14.6 | 5.2 | 4.8 | 0.6 | -3.8 | 5.4 | 8.2 | 6.0 | 10.0 | 10.4 | -3.8 | |
| 1976 | 16.6 | 12.0 | 5.4 | 4.5 | 3.5 | -1.6 | -3.3 | -1.0 | 2.5 | 5.6 | 8.0 | 12.4 | -3.3 | |
| 1977 | 17.4 | 14.2 | 15.4 | 5.0 | 1.0 | 0.0 | 0.0 | 0.0 | 0.5 | 10.4 | 11.4 | 16.4 | 0.0 | |
| 1978 | 13.0 | 14.8 | 14.0 | 3.4 | -1.7 | -3.8 | 6.8 | -0.4 | 4.8 | 7.6 | 10.0 | 14.2 | -3.8 | |
| 1979 | 12.4 | 17.4 | 12.0 | 6.6 | -0.8 | -2.0 | -2.0 | 6.0 | -0.6 | 7.8 | 7.8 | 13.0 | -2.0 | |
| 1980 | 11.0 | 15.0 | 18.0 | 3.0 | 3.4 | -1.5 | -2.4 | -1.6 | -0.2 | 8.0 | 9.8 | 13.4 | -2.4 | |
| Average | 11.0 | 11.6 | 5.4 | 2.4 | -1.7 | -3.8 | -3.8 | -2.0 | -0.6 | 3.0 | 7.0 | 8.6 | -3.8 | |

Data of Meteorological Department, Ministry of National Defence

Table 5-21 Monthly Absolute Minimum Temperature

San Juan Bautista

(Unit : °C)

| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Minimum |
|---------|-------|------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| | | 1971 | 16.8 | 11.0 | 15.0 | 6.0 | 3.0 | 2.8 | 2.8 | 4.8 | 5.6 | 10.4 | 7.6 | 15.0 |
| 1972 | 13.8 | 15.0 | 13.6 | 9.0 | 9.8 | 9.4 | 9.4 | 4.0 | 1.4 | 5.0 | 6.4 | 11.8 | 15.2 | 1.4 |
| 1973 | 16.0 | 18.0 | 16.0 | 12.2 | 5.4 | 4.6 | 4.6 | 5.0 | 5.4 | 5.4 | 10.2 | 11.6 | 14.6 | 4.6 |
| 1974 | 18.0 | 18.0 | 11.4 | 9.0 | 9.6 | 2.4 | 2.4 | 4.4 | 3.0 | 5.0 | 7.8 | 9.4 | 13.0 | 2.4 |
| 1975 | 14.0 | 15.0 | 15.2 | 10.0 | 6.4 | 5.0 | 5.0 | 0.0 | 6.0 | 10.0 | 10.4 | 10.0 | 11.4 | 0.0 |
| 1976 | 16.6 | 15.0 | 9.6 | 6.8 | 5.4 | 4.0 | 4.0 | 1.8 | 4.6 | 6.6 | 8.4 | 13.0 | 14.0 | 1.8 |
| 1977 | 17.0 | 16.2 | 14.0 | 6.6 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | 9.0 | 14.0 | 18.0 | 4.0 |
| 1978 | 15.0 | 18.0 | 15.0 | 9.0 | 2.0 | 3.0 | 3.0 | 7.0 | 2.0 | 9.0 | 12.0 | 11.0 | 18.0 | 2.0 |
| 1979 | 18.0 | 19.0 | 14.0 | 8.0 | 4.0 | 2.0 | 2.0 | 4.0 | 10.0 | 5.2 | 14.2 | 9.8 | 15.0 | 2.0 |
| 1980 | 13.2 | 15.2 | 19.4 | 6.4 | 8.2 | 2.8 | 2.8 | 0.0 | 1.2 | 1.6 | 8.4 | 9.2 | 14.2 | 0.0 |
| Average | | 13.2 | 11.0 | 9.6 | 6.0 | 2.0 | 2.0 | 0.0 | 1.2 | 1.6 | 6.4 | 9.2 | 9.4 | 0.0 |

Data of Meteorological Department, Ministry of National Defence

Table 5-22 Monthly Absolute Minimum Temperature

Yacyreta
(Unit : °C)

| Month Year | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Minimum |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| | 1971 | 15.2 | 12.2 | 15.4 | 5.6 | 3.6 | 0.0 | 4.0 | 7.2 | 10.4 | 7.4 | 11.1 | 10.7 |
| 1972 | 13.8 | 13.8 | 12.2 | 6.0 | 9.1 | 7.4 | 2.0 | 3.5 | 4.0 | 7.7 | 13.1 | 14.3 | 2.0 |
| 1973 | 16.5 | 18.0 | 17.0 | 11.0 | 7.0 | 5.0 | 5.5 | 3.9 | 5.6 | 11.5 | 12.0 | 13.7 | 3.9 |
| 1974 | 17.0 | 18.0 | 12.6 | 9.8 | 9.0 | 3.0 | 5.4 | 1.4 | 6.0 | 6.6 | 9.2 | 13.8 | 1.4 |
| 1975 | 14.5 | 13.5 | 16.8 | 9.2 | 7.4 | 3.0 | -1.4 | 7.0 | 9.4 | 9.0 | 12.0 | 13.6 | -1.4 |
| 1976 | 16.0 | 14.5 | 6.8 | 9.4 | 3.0 | 0.8 | 1.0 | 3.0 | 4.4 | 10.4 | 8.4 | 14.2 | 0.8 |
| 1977 | 17.6 | 19.0 | 13.4 | 5.2 | 4.2 | 2.0 | 1.6 | 2.0 | 4.4 | 10.0 | 14.0 | 16.0 | 2.0 |
| 1978 | 15.4 | 17.0 | 13.6 | 8.0 | 1.6 | -1.0 | 5.2 | 2.4 | 4.2 | 9.6 | 11.0 | 15.4 | -1.0 |
| 1979 | 15.5 | 16.5 | 12.8 | 8.4 | -1.0 | 1.6 | 1.6 | 9.0 | 5.4 | 10.4 | 10.4 | 13.0 | -1.0 |
| 1980 | 14.5 | 15.5 | 19.4 | 8.6 | 4.0 | 2.0 | 2.0 | 1.2 | 3.0 | 9.0 | 9.4 | 16.0 | 1.2 |
| Average | 13.8 | 12.2 | 6.8 | 5.2 | -1.0 | -1.0 | -1.4 | 1.4 | 3.0 | 6.6 | 9.2 | 10.7 | -1.4 |

Data of Meteorological Department, Ministry of National Defence

Table 5-23 Monthly Average Humidity

| Encarnacion | | (Unit : %) | | | | | | | | | | | | |
|-------------|-------|------------|------|------|------|------|------|------|------|------|------|------|------|----------------|
| Year | Month | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
| | | 1971 | 82 | 96 | 85 | 80 | 83 | 86 | 80 | 77 | 75 | 75 | 64 | 66 |
| 1972 | 71 | 73 | 77 | 81 | 84 | 88 | 87 | 84 | 77 | 78 | 81 | 76 | 80 | |
| 1973 | 81 | 82 | 84 | 87 | 88 | 87 | 86 | 86 | 82 | 76 | 72 | 77 | 82 | |
| 1974 | 79 | 82 | 82 | 80 | 85 | 85 | 81 | 78 | 72 | 71 | 73 | 79 | 79 | |
| 1975 | 79 | 83 | 87 | 85 | 83 | 83 | 78 | 78 | 80 | 77 | 75 | 75 | 80 | |
| 1976 | 82 | 77 | 81 | 80 | 85 | 79 | 79 | 76 | 73 | 71 | 69 | 70 | 77 | |
| 1977 | 81 | 76 | 77 | 77 | 85 | 85 | 77 | 84 | 71 | 71 | 77 | 74 | 78 | |
| 1978 | 69 | 73 | 69 | 66 | 71 | 74 | 80 | 74 | 74 | 73 | 73 | 70 | 72 | |
| 1979 | 57 | 72 | 78 | 83 | 83 | 79 | 80 | 81 | 73 | 77 | 70 | 76 | 76 | |
| 1980 | 68 | 76 | 81 | 77 | 85 | 76 | 75 | 76 | 71 | 76 | 76 | 72 | 76 | |
| Average | | 75 | 79 | 80 | 80 | 83 | 82 | 80 | 79 | 75 | 75 | 73 | 74 | 78 |

Date of Meteorological Department, Ministry of National Defence

Table 5-24 Monthly Average Humidity

San Juan Bautista

(Unit : %)

| Month Year | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| | 71 | 70 | 74 | 67 | 68 | 70 | 66 | 66 | 61 | 59 | 51 | 53 | |
| 1971 | 71 | 70 | 74 | 67 | 68 | 70 | 66 | 66 | 61 | 59 | 51 | 53 | 65 |
| 1972 | 63 | 62 | 70 | 72 | 74 | 85 | 80 | 81 | 72 | 71 | 76 | 70 | 73 |
| 1973 | 75 | 74 | 73 | 81 | 81 | 82 | 82 | 76 | 73 | 69 | 63 | 70 | 75 |
| 1974 | 75 | 79 | 78 | 73 | 80 | 80 | 74 | 67 | 63 | 57 | 58 | 66 | 71 |
| 1975 | 73 | 70 | 73 | 71 | 72 | 74 | 65 | 72 | 71 | 65 | 64 | 62 | 68 |
| 1976 | 68 | 61 | 68 | 66 | 74 | 71 | 71 | 65 | 63 | 61 | 62 | 61 | 66 |
| 1977 | 75 | 68 | 68 | 66 | 77 | 77 | 72 | 73 | 63 | 65 | 66 | 70 | 70 |
| 1978 | 72 | 72 | 66 | 56 | 67 | 71 | 75 | 69 | 69 | 68 | 68 | 65 | 68 |
| 1979 | 56 | 65 | 75 | 80 | 81 | 74 | 78 | 79 | 71 | 75 | 79 | 75 | 73 |
| 1980 | 65 | 71 | 78 | 74 | 82 | 76 | 68 | 74 | 63 | 68 | 74 | 69 | 72 |
| Average | 68 | 69 | 72 | 71 | 76 | 76 | 73 | 72 | 67 | 66 | 66 | 66 | 70 |

Data of Meteorological Department, Ministry of National Defence

Table 5-25 Monthly Average Humidity

Yacyreta

(Unit : %)

| Month Year | Jan. | Feb. | Mar. | Apr. | May. | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual Average |
|---------------|------|------|------|------|------|------|------|------|------|------|------|------|-------------------|
| 1971 | 77 | 78 | 83 | 80 | 82 | 82 | 81 | 77 | 65 | 73 | 66 | 65 | 76 |
| 1972 | 70 | 69 | 72 | 75 | 80 | 87 | 81 | 79 | 73 | 73 | 76 | 73 | 76 |
| 1973 | 80 | 78 | 78 | 84 | 82 | 84 | 73 | 79 | 77 | 72 | 63 | 71 | 78 |
| 1974 | 75 | 79 | 78 | 74 | 82 | 80 | 77 | 73 | 69 | 67 | 67 | 76 | 75 |
| 1975 | 72 | 76 | 81 | 81 | 79 | 82 | 72 | 78 | 78 | 73 | 72 | 73 | 76 |
| 1976 | 79 | 73 | 77 | 75 | 81 | 76 | 76 | 73 | 69 | 68 | 70 | 68 | 74 |
| 1977 | 79 | 74 | 76 | 73 | 83 | 81 | 77 | 80 | 68 | 71 | 74 | 74 | 76 |
| 1978 | 70 | 73 | 69 | 65 | 68 | 73 | 80 | 73 | 74 | 75 | 74 | 70 | 72 |
| 1979 | 64 | 74 | 77 | 81 | 82 | 77 | 81 | 82 | 75 | 81 | 75 | 77 | 77 |
| 1980 | 69 | 76 | 78 | 75 | 84 | 78 | 75 | 79 | 74 | 77 | 77 | 75 | 76 |
| Average | 74 | 75 | 77 | 76 | 80 | 80 | 77 | 77 | 72 | 73 | 71 | 72 | 75 |

Data of Meteorological Department, Ministry of National Defence

Table 5-26 Monthly Evaporation 1/

Eucaruacion

(Unit: mm)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|-------|------|-------|-------|------|------|------|------|-------|-------|-------|-------|-------|
| 1971 | 101.8 | 70.5 | 58.4 | 71.9 | 48.6 | 32.1 | 52.2 | 64.5 | 90.2 | 82.5 | 126.4 | 141.8 | 940.9 |
| 1972 | 104.3 | 98.1 | 86.2 | 80.25 | 59.8 | 24.6 | 36.8 | 25.4 | 79.0 | 86.2 | 60.1 | 84.5 | 825.2 |
| 1973 | 66.7 | 89.5 | 48.0 | 54.6 | 34.3 | 39.4 | 53.1 | 67.5 | 76.7 | 74.8 | 98.4 | 100.8 | 803.8 |
| 1974 | 90.3 | 66.7 | 85.7 | 68.8 | 77.2 | 51.8 | 64.2 | 61.6 | 100.8 | 90.9 | 101.4 | 110.0 | 978.4 |
| 1975 | 97.2 | 72.0 | 57.8 | 55.8 | 67.5 | 48.3 | 86.5 | 72.2 | 79.1 | 64.6 | 73.9 | 79.0 | 853.9 |
| 1976 | 62.5 | 72.4 | 64.0 | 61.1 | 46.9 | 49.0 | 59.5 | 68.1 | 72.4 | 117.5 | 96.3 | 94.5 | 864.2 |
| 1977 | 76.8 | 73.2 | 80.1 | 62.3 | 43.4 | 40.8 | 70.5 | 48.7 | 83.0 | 86.0 | 58.2 | 85.3 | 808.3 |
| 1978 | 86.1 | 78.2 | 114.6 | 81.8 | 75.3 | 52.9 | 33.8 | 64.5 | 54.0 | 59.5 | 78.6 | 94.1 | 873.4 |
| 1979 | 124.2 | 71.6 | 63.7 | 47.5 | 44.8 | 54.3 | 52.7 | 51.1 | 67.7 | 55.5 | 79.5 | 78.1 | 790.7 |
| 1980 | 84.8 | 62.3 | 63.6 | 70.0 | 39.6 | 58.6 | 62.0 | 66.8 | 66.7 | 62.2 | 66.5 | 87.6 | 790.7 |
| Average | 89.5 | 75.4 | 72.2 | 65.4 | 53.7 | 45.2 | 57.1 | 59.0 | 77.0 | 78.0 | 83.9 | 96.5 | 852.9 |

Data of Meteorological Department, Ministry of National Defence

1/ : Evaporation by balance type evaporimeter

Table 5-27 Monthly Evaporation 1/

San Juan Bautista

(Unit: mm)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|-------|------|------|------|------|------|-------|------|-------|-------|-------|-------|---------|
| 1971 | 84.8 | 75.4 | 60.1 | 83.0 | 62.6 | 41.4 | 76.2 | 83.4 | 116.9 | 104.6 | 158.0 | 171.2 | 1,117.6 |
| 1972 | 140.4 | 98.4 | 89.6 | 65.6 | 69.6 | 43.1 | 39.5 | 46.2 | 94.0 | 108.8 | 72.4 | 91.7 | 959.3 |
| 1973 | 78.1 | 79.4 | 78.4 | 53.1 | 48.8 | 40.1 | 48.9 | 79.7 | 79.5 | 105.2 | 103.0 | 95.1 | 889.2 |
| 1974 | 91.3 | 63.4 | 63.5 | 58.8 | 54.5 | 38.0 | 109.9 | 78.3 | 95.9 | 98.0 | 121.2 | 101.9 | 974.7 |
| 1975 | 98.7 | 75.7 | 72.8 | - | - | - | - | - | - | - | - | - | - |
| 1976 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1977 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1978 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1979 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 1980 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Average 2/ | 98.7 | 79.2 | 72.9 | 65.1 | 58.9 | 40.7 | 68.6 | 71.9 | 96.6 | 104.2 | 113.7 | 115.0 | 985.5 |

Data of Meteorological Department, Ministry of National Defence

1/ : Evaporation by balance type evaporimeter

2/ : The monthly average value is according to the data from 1971 to 1974.

Table 5-28 Monthly Rainfall

Eucaruaación

| Month Year | (Unit: mm) | | | | | | | | | | | | Total |
|---------------|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1971 | 305.7 | 143.9 | 244.2 | 80.8 | 144.8 | 213.3 | 93.7 | 54.1 | 36.4 | 30.0 | 20.7 | 136.1 | 1,503.7 |
| 1972 | 53.0 | 87.1 | 108.3 | 99.5 | 62.6 | 330.3 | 127.2 | 263.9 | 268.8 | 259.5 | 354.3 | 85.8 | 2,100.3 |
| 1973 | 263.9 | 71.8 | 264.3 | 187.4 | 199.2 | 121.6 | 145.1 | 132.9 | 280.3 | 196.9 | 30.8 | 260.0 | 2,154.2 |
| 1974 | 114.8 | 113.0 | 74.9 | 81.2 | 206.2 | 179.3 | 31.3 | 183.8 | 19.4 | 70.7 | 182.2 | 211.8 | 1,468.6 |
| 1975 | 205.0 | 171.5 | 226.6 | 256.7 | 59.6 | 165.6 | 60.0 | 147.8 | 223.8 | 250.5 | 96.0 | 187.2 | 2,049.3 |
| 1976 | 237.4 | 78.6 | 135.0 | 73.9 | 114.6 | 68.9 | 123.0 | 64.4 | 101.6 | 220.4 | 157.6 | 128.5 | 1,503.9 |
| 1977 | 212.3 | 110.1 | 91.4 | 43.0 | 150.2 | 123.6 | 123.0 | 56.0 | 69.4 | 77.5 | 196.2 | 178.2 | 1,430.9 |
| 1978 | 75.6 | 114.0 | 100.4 | 25.6 | 43.8 | 66.5 | 143.2 | 60.3 | 78.8 | 105.6 | 154.4 | 129.8 | 1,098.0 |
| 1979 | 27.4 | 320.8 | 125.4 | 220.6 | 143.6 | 46.8 | 64.2 | 193.6 | 195.2 | 365.2 | 109.0 | 315.4 | 2,127.2 |
| 1980 | 66.0 | 165.6 | 136.8 | 119.4 | 321.8 | 49.2 | 43.8 | 96.8 | 140.4 | 213.0 | 100.8 | 68.0 | 1,521.6 |
| Average | 156.1 | 137.6 | 150.7 | 118.8 | 144.6 | 136.5 | 95.4 | 125.3 | 141.4 | 178.9 | 140.2 | 170.1 | 1,695.6 |

Data of Meteorological Department, Ministry of National Defence

Table 5-29 Monthly Rainfall

San Juan Bautista

(Unit: mm)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1971 | 359.7 | 79.7 | 345.7 | 174.3 | 136.5 | 101.1 | 144.8 | 45.2 | 39.8 | 83.3 | 42.7 | 96.9 | 1,649.7 |
| 1972 | 81.4 | 92.8 | 84.6 | 105.8 | 47.8 | 359.9 | 44.2 | 261.7 | 141.4 | 229.8 | 289.0 | 244.6 | 1,983.0 |
| 1973 | 241.1 | 30.7 | 320.6 | 169.5 | 203.9 | 106.0 | 151.3 | 66.7 | 72.1 | 210.7 | 102.0 | 347.5 | 2,022.1 |
| 1974 | 70.6 | 161.1 | 176.8 | 79.8 | 231.3 | 135.9 | 17.2 | 128.5 | 56.6 | 100.9 | 144.5 | 264.2 | 1,565.4 |
| 1975 | 200.4 | 113.6 | 126.5 | 158.9 | 31.0 | 72.4 | 101.6 | 153.0 | 154.6 | 148.9 | 159.5 | 55.8 | 1,476.2 |
| 1976 | 141.9 | 89.2 | 132.7 | 69.0 | 49.4 | 53.7 | 46.2 | 68.6 | 45.1 | 121.6 | 133.3 | 107.0 | 1,057.7 |
| 1977 | 391.6 | 83.0 | 66.8 | 73.8 | 157.3 | 67.2 | 82.4 | 53.8 | 25.8 | 197.2 | 208.2 | 207.2 | 1,614.3 |
| 1978 | 101.8 | 170.4 | 45.6 | 43.4 | 48.4 | 31.6 | 126.0 | 34.6 | 89.4 | 166.0 | 144.4 | 103.4 | 1,105.0 |
| 1979 | 60.6 | 128.0 | 62.9 | 180.0 | 132.6 | 84.2 | 51.2 | 178.6 | 179.0 | 461.4 | 242.6 | 152.8 | 1,913.9 |
| 1980 | 246.2 | 137.6 | 287.2 | 159.5 | 185.8 | 85.8 | 29.4 | 90.8 | 115.2 | 269.6 | 422.2 | 28.8 | 2,058.1 |
| Average | 189.5 | 108.7 | 164.9 | 121.4 | 122.4 | 109.6 | 79.4 | 108.1 | 91.9 | 198.9 | 188.8 | 160.8 | 1,644.4 |

Data of Meteorological Department, Ministry of National Defence

Table 5-30 Monthly Rainfall

Yacyreta

(Unit: mm)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| | 1971 | 207.0 | 310.3 | 228.7 | 107.6 | 86.7 | 113.3 | 154.7 | 52.0 | 36.9 | 49.1 | 42.8 | 98.9 |
| 1972 | 80.0 | 63.8 | 121.2 | 84.9 | 65.1 | 517.8 | 82.9 | 169.5 | 154.4 | 247.7 | 170.8 | 196.4 | 1,954.5 |
| 1973 | 166.1 | 82.6 | 268.9 | 285.1 | 290.3 | 108.7 | 177.6 | 118.7 | 244.3 | 133.8 | 58.5 | 195.9 | 2,130.5 |
| 1974 | 149.8 | 125.3 | 99.7 | 118.6 | 103.3 | 154.4 | 37.2 | 92.2 | 44.8 | 63.0 | 100.8 | 204.9 | 1,294.0 |
| 1975 | 109.8 | 87.7 | 188.9 | 245.0 | 54.2 | 93.0 | 55.2 | 134.6 | 139.0 | 257.2 | 130.2 | 61.6 | 1,556.4 |
| 1976 | 189.8 | 106.8 | 150.0 | 44.2 | 68.8 | 102.8 | 36.2 | 38.2 | 57.8 | 236.8 | 104.6 | 74.6 | 1,210.6 |
| 1977 | 262.5 | 44.2 | 26.8 | 94.2 | 167.0 | 51.4 | 83.6 | 37.8 | 80.2 | 81.6 | 191.6 | 146.2 | 1,267.1 |
| 1978 | 71.2 | 123.7 | 51.8 | 38.2 | 46.8 | 48.6 | 84.4 | 32.6 | 71.8 | 176.2 | 180.8 | 23.3 | 949.4 |
| 1979 | 25.0 | 183.5 | 54.2 | 91.5 | 87.9 | 36.2 | 165.6 | 287.4 | 113.8 | 276.0 | 183.8 | 218.4 | 1,723.3 |
| 1980 | 46.6 | 175.8 | 127.4 | 107.4 | 278.8 | 68.0 | 27.2 | 126.4 | 135.8 | 118.2 | 237.8 | 136.6 | 1,580.0 |
| Average | 130.8 | 130.5 | 131.7 | 121.7 | 124.3 | 129.4 | 90.5 | 108.9 | 107.9 | 164.0 | 140.2 | 135.7 | 1,515.6 |

Data of Meteorological Department, Ministry of National Defence

Table 3-31 Monthly Rainfall Days

Yacyreta

(Unit: days)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|------|------|------|------|-----|------|------|------|------|------|------|------|-------|
| 1971 | 7 | 5 | 10 | 5 | 5 | 9 | 5 | 5 | 3 | 5 | 7 | 8 | 74 |
| 1972 | 10 | 5 | 5 | 6 | 7 | 15 | 6 | 13 | 6 | 8 | 11 | 7 | 99 |
| 1973 | 14 | 7 | 6 | 10 | 8 | 8 | 10 | 9 | 12 | 7 | 6 | 9 | 106 |
| 1974 | 7 | 8 | 9 | 4 | 8 | 8 | 4 | 6 | 4 | 5 | 8 | 8 | 79 |
| 1975 | 6 | 5 | 8 | 10 | 4 | 4 | 2 | 8 | 11 | 7 | 7 | 5 | 77 |
| 1976 | 12 | 6 | 3 | 6 | 3 | 3 | 4 | 5 | 4 | 7 | 7 | 7 | 67 |
| 1977 | 14 | 6 | 8 | 2 | 9 | 6 | 12 | 5 | 4 | 7 | 11 | 7 | 91 |
| 1978 | 6 | 5 | 5 | 3 | 2 | 6 | 11 | 4 | 7 | 12 | 6 | 6 | 73 |
| 1979 | 3 | 11 | 5 | 5 | 5 | 3 | 8 | 9 | 9 | 11 | 5 | 9 | 83 |
| 1980 | 5 | 4 | 8 | 7 | 9 | 7 | 4 | 5 | 5 | 10 | 13 | 6 | 83 |
| Average | 8 | 6 | 7 | 6 | 6 | 7 | 7 | 7 | 5 | 8 | 8 | 7 | 82 |

Data of Meteorological Department, Ministry of National Defence

Table 5-32 Monthly Rainfall Days

San Juan Bautista

(Unit: days)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|------|------|------|------|-----|------|------|------|------|------|------|------|-------|
| 1971 | 13 | 9 | 14 | 10 | 6 | 10 | 7 | 9 | 3 | 7 | 4 | 5 | 97 |
| 1972 | 11 | 6 | 6 | 6 | 7 | 14 | 5 | 9 | 6 | 8 | 10 | 7 | 95 |
| 1973 | 13 | 5 | 6 | 8 | 11 | 10 | 11 | 10 | 7 | 9 | 7 | 10 | 107 |
| 1974 | 7 | 11 | 8 | 4 | 8 | 10 | 4 | 8 | 2 | 4 | 6 | 9 | 81 |
| 1975 | 11 | 7 | 9 | 8 | 3 | 8 | 5 | 10 | 14 | 10 | 7 | 6 | 98 |
| 1976 | 12 | 5 | 8 | 5 | 5 | 3 | 3 | 6 | 5 | 8 | 5 | 8 | 73 |
| 1977 | 14 | 3 | 7 | 6 | 8 | 5 | 8 | 9 | 3 | 8 | 11 | 6 | 88 |
| 1978 | 7 | 7 | 3 | 4 | 2 | 4 | 11 | 2 | 5 | 10 | 8 | 5 | 68 |
| 1979 | 5 | 9 | 6 | 12 | 11 | 5 | 5 | 8 | 8 | 14 | 8 | 10 | 101 |
| 1980 | 5 | 5 | 9 | 6 | 10 | 5 | 3 | 3 | 6 | 10 | 14 | 8 | 84 |
| Average | 10 | 7 | 8 | 7 | 7 | 7 | 6 | 7 | 6 | 9 | 8 | 7 | 89 |

Data of Meteorological Department, Ministry of National Defence

Table 5-33 Monthly Rainfall Days 1/

| Eucarnacion | | (Unit: days) | | | | | | | | | | | |
|---------------|------|--------------|------|------|-----|------|------|------|------|------|------|------|-------|
| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
| | 1971 | 14 | 11 | 12 | 9 | 7 | 13 | 9 | 6 | 5 | 8 | 7 | 8 |
| 1973 | 10 | 6 | 9 | 6 | 8 | 14 | 13 | 16 | 9 | 8 | 11 | 7 | 117 |
| 1973 | 15 | 9 | 5 | 9 | 10 | 11 | 15 | 9 | 9 | 10 | 4 | 8 | 114 |
| 1974 | 9 | 8 | 8 | 4 | 7 | 9 | 3 | 6 | 2 | 5 | 7 | 6 | 74 |
| 1975 | 8 | 7 | 12 | 11 | 5 | 6 | 3 | 11 | 13 | 8 | 9 | 8 | 101 |
| 1976 | 14 | 4 | 11 | 5 | 6 | 4 | 5 | 7 | 7 | 9 | 10 | 6 | 88 |
| 1977 | 13 | 6 | 8 | 4 | 6 | 6 | 10 | 7 | 5 | 7 | 12 | 7 | 91 |
| 1978 | 5 | 6 | 4 | 3 | 2 | 6 | 12 | 6 | 7 | 10 | 8 | 7 | 76 |
| 1979 | 1 | 10 | 5 | 12 | 8 | 5 | 8 | 9 | 6 | 13 | 7 | 12 | 96 |
| 1980 | 4 | 7 | 11 | 6 | 10 | 6 | 3 | 6 | 8 | 10 | 11 | 7 | 89 |
| Average | 9 | 7 | 8 | 7 | 7 | 8 | 8 | 8 | 7 | 9 | 9 | 8 | 95 |

Data of Meteorological Department, Ministry of National Defence

1/ : Rainfall of more than 1mm/day

Table 5-34 Monthly Frosting Days

Eucarnacion (Unit: days)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|------|------|------|------|-----|------|------|------|------|------|------|------|-------|
| 1971 | 0 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 5 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 6 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 0 | 0 | 0 | 6 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 5 | 4 | 3 | 0 | 0 | 0 | 0 | 12 |
| 1977 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1978 | 0 | 0 | 0 | 0 | 6 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 12 |
| 1979 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 | 1 | 0 | 0 | 0 | 6 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Average | 0 | 0 | 0 | 0 | 0.9 | 2.7 | 1.6 | 0.9 | 0.2 | 0 | 0 | 0 | 6.3 |

Data of Meteorological Department, Ministry of National Defence

Table 5-35 Monthly Frosting Days

San Juan Bautista

(Unit: days)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|------|------|------|------|-----|------|------|------|------|------|------|------|-------|
| | 1971 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Average | 0 | 0 | 0 | 0 | 0.1 | 0.2 | 0.4 | 0 | 0 | 0 | 0 | 0 | 0.7 |

Data of Meteorological Department, Ministry of National Defence

Table 5-36 Monthly Frosting Days

| Yacyreta | | (Unit: days) | | | | | | | | | | | |
|---------------|------|--------------|------|------|-----|------|------|------|------|------|------|------|-------|
| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
| | 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1973 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1974 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1976 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1978 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 1979 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1980 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Average | 0 | 0 | 0 | 0 | 0.1 | 0.1 | 1.1 | 0.1 | 0 | 0 | 0 | 0 | 1.4 |

Data of Meteorological Department, Ministry of National Defence

Table 5-37 Monthly Sunshine Duration

Eucaruacion

(Unit: Hours)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 1974 | - | - | 225.1 | 228.7 | 172.4 | 158.3 | 190.9 | 161.1 | 217.7 | 241.7 | 253.6 | 234.3 | - |
| 1975 | 217.1 | 219.0 | 126.8 | 185.9 | 190.4 | 158.2 | 180.1 | 132.4 | 117.7 | 212.1 | 222.2 | 280.7 | 2,242.6 |
| 1976 | 241.8 | 243.2 | 194.1 | 238.0 | 161.1 | 154.0 | 187.5 | 200.5 | 160.1 | 259.3 | 256.3 | 283.7 | 2,584.6 |
| 1977 | 211.8 | 235.5 | 186.2 | 210.6 | 168.6 | 177.6 | 142.1 | 150.2 | 219.2 | 229.1 | 218.8 | 248.5 | 2,398.2 |
| 1978 | - | 208.7 | 243.4 | 247.0 | 237.3 | 139.2 | 130.4 | 164.7 | 171.2 | 183.6 | 214.9 | 264.8 | - |
| 1979 | - | - | - | 159.2 | 168.0 | 187.5 | 184.2 | 146.0 | 192.9 | 189.5 | 238.2 | 220.8 | - |
| 1980 | 306.0 | 262.4 | 225.2 | 212.6 | 159.2 | 176.4 | 176.4 | 233.2 | 194.1 | 169.1 | 180.1 | 252.7 | 2,547.4 |
| Average 1/ | 244.2 | 241.3 | 183.1 | 211.8 | 169.8 | 166.6 | 171.5 | 179.1 | 172.8 | 217.4 | 219.4 | 266.4 | 2,443.4 |

Data of Meteorological Department, Ministry of National Defence

1/ : The average is according to the data from 1975 to 1977 and 1980.

Table 5-38 Monthly Sunshine Duration

Sun Juan Bautista

(Unit: Hours)

| Month Year | (Unit: Hours) | | | | | | | | | | | | Total |
|---------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | |
| 1973 | - | - | - | - | - | - | 111.3 | - | 165.7 | 248.4 | 270.2 | 250.8 | - |
| 1974 | 279.4 | 185.7 | 237.2 | - | 162.8 | 149.3 | 170.3 | 150.2 | 210.5 | 240.0 | 293.6 | 264.0 | - |
| 1975 | 281.2 | 228.0 | 183.7 | 212.6 | 167.5 | 167.2 | 180.9 | 137.8 | 129.2 | 184.8 | 242.8 | 265.3 | 2,381.0 |
| 1976 | 199.5 | 245.7 | 226.3 | 237.2 | 181.8 | 178.5 | 175.2 | 217.7 | 216.0 | 267.9 | 271.6 | 297.7 | 2,715.1 |
| 1977 | 220.2 | 255.8 | 194.9 | 222.1 | 162.6 | 183.4 | 164.3 | 157.2 | 275.2 | 276.3 | 253.2 | 264.2 | 2,629.4 |
| 1978 | 293.5 | 207.7 | 264.3 | 193.7 | 261.7 | 151.4 | 102.2 | 188.7 | 209.1 | 139.7 | 211.4 | 172.2 | 2,395.6 |
| 1979 | 267.8 | 177.2 | 211.7 | 159.5 | 179.4 | 189.0 | 197.5 | 164.3 | 198.0 | 209.8 | 264.8 | 243.4 | 2,462.4 |
| 1980 | 326.7 | 285.0 | 235.6 | 185.8 | - | 137.4 | 160.0 | - | 246.8 | 189.7 | 198.5 | 244.2 | - |
| Average 1/ | 252.4 | 222.9 | 216.2 | 205.0 | 190.6 | 173.9 | 164.0 | 173.1 | 205.5 | 215.7 | 248.8 | 248.6 | 2,516.7 |

Data of Meteorological Department, Ministry of National Defence

1/ : The average value is according to the data from 1975 to 1979.

Table 5-39 Monthly Average Wind Velocity

| Eucaruacion | | (Unit: Knot) | | | | | | | | | | | |
|---------------|------|--------------|------|------|-----|------|------|------|------|------|------|------|---------|
| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Average |
| | 1971 | 3 | 4 | 3 | 3 | 2 | 3 | 3 | 4 | 4 | 3 | 4 | 5 |
| 1972 | 4 | 4 | 4 | 3 | 3 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 4 |
| 1973 | 4 | 6 | 4 | 4 | 4 | 4 | 5 | 3 | 4 | 4 | 5 | 4 | 4 |
| 1974 | 5 | 5 | 4 | 4 | 5 | 4 | 4 | 5 | 5 | 3 | 6 | 6 | 5 |
| 1975 | 5 | 4 | 5 | 4 | 3 | 5 | 4 | 5 | 5 | 7 | 7 | 6 | 5 |
| 1976 | 6 | 6 | 8 | 5 | 5 | 8 | 7 | 6 | 6 | 5 | 6 | 5 | 6 |
| 1977 | 5 | 5 | 5 | 7 | 5 | 6 | 6 | 5 | 7 | 6 | 5 | 6 | 6 |
| 1978 | 6 | 5 | 6 | 3 | 5 | 6 | 4 | 5 | 6 | 5 | 6 | 5 | 5 |
| 1979 | 5 | 5 | 5 | 5 | 4 | 4 | 6 | 5 | 5 | 4 | 7 | 5 | 5 |
| 1980 | 6 | 4 | 6 | 5 | 4 | 6 | 6 | 5 | 3 | 5 | 6 | 6 | 5 |
| Average | 5 | 5 | 5 | 4 | 4 | 5 | 5 | 5 | 5 | 5 | 6 | 5 | 5 |

Data of Meteorological Department, Ministry of National Defence

Table 5-40 Monthly Average Wind Velocity

San Juan Beutista

(Unit: Knot)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---------------|------|------|------|------|-----|------|------|------|------|------|------|------|
| 1971 | 6 | 5 | 4 | 5 | 5 | 6 | 5 | 7 | 7 | 6 | 6 | 7 |
| 1972 | 5 | 5 | 5 | 5 | 5 | 5 | 7 | 10 | 11 | 10 | 8 | 6 |
| 1973 | 6 | 7 | 6 | 6 | 7 | 7 | 8 | 6 | 8 | 9 | 7 | 6 |
| 1974 | 6 | 5 | 5 | 5 | 6 | 7 | 6 | 7 | 6 | 5 | 6 | 5 |
| 1975 | 4 | 5 | 6 | 4 | 5 | 5 | 5 | 5 | 5 | 8 | 6 | 5 |
| 1976 | 6 | 4 | 5 | 4 | 5 | 5 | 6 | 5 | 5 | 5 | 6 | 6 |
| 1977 | 7 | 6 | 6 | 6 | 5 | 6 | 7 | 7 | 8 | 7 | 7 | 6 |
| 1978 | 5 | 5 | 6 | 4 | 5 | 6 | 6 | 5 | 5 | 5 | 5 | 6 |
| 1979 | 4 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 7 | 4 | 5 | 5 |
| 1980 | 4 | 4 | 5 | 6 | 5 | 5 | 8 | 6 | 4 | 6 | 4 | 4 |
| Average | 5 | 5 | 5 | 5 | 5 | 6 | 6 | 6 | 7 | 7 | 6 | 6 |

Data of Meteorological Department, Ministry of National Defence

Table 5-41 Monthly Average Wind Velocity

Yacyreta

(Unit: Knot)

| Month Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Average |
|---------------|------|------|------|------|-----|------|------|------|------|------|------|------|---------|
| | 1971 | 8 | 7 | 3 | 5 | 7 | 7 | 5 | 6 | 5 | 4 | 5 | 10 |
| 1972 | 4 | 5 | 1 | 5 | 7 | 6 | 6 | 9 | 11 | 9 | 11 | 7 | 7 |
| 1973 | 7 | 7 | 5 | 5 | 6 | 6 | 8 | 6 | 8 | 7 | 8 | 5 | 7 |
| 1974 | 6 | 6 | 4 | 3 | 5 | 5 | 5 | 6 | 7 | 5 | 7 | 6 | 5 |
| 1975 | 4 | 3 | 3 | 4 | 4 | 4 | 6 | 8 | 6 | 5 | 6 | 6 | 5 |
| 1976 | 9 | 5 | 7 | 4 | 7 | 7 | 6 | 6 | 7 | 7 | 6 | 5 | 6 |
| 1977 | 5 | 4 | 5 | 8 | 6 | 7 | 7 | 7 | 8 | 6 | 5 | 5 | 6 |
| 1978 | 6 | 6 | 7 | 5 | 6 | 8 | 6 | 6 | 6 | 5 | 9 | 5 | 6 |
| 1979 | 5 | 6 | 5 | 5 | 5 | 7 | 7 | 8 | 6 | 10 | 7 | 5 | 6 |
| 1980 | 7 | 10 | 7 | 8 | 6 | 5 | 9 | 7 | 8 | 7 | 7 | 7 | 7 |
| Average | 6 | 6 | 5 | 5 | 6 | 6 | 7 | 7 | 7 | 7 | 7 | 6 | 6 |

Data Meteorological Department, Ministry of National Defence

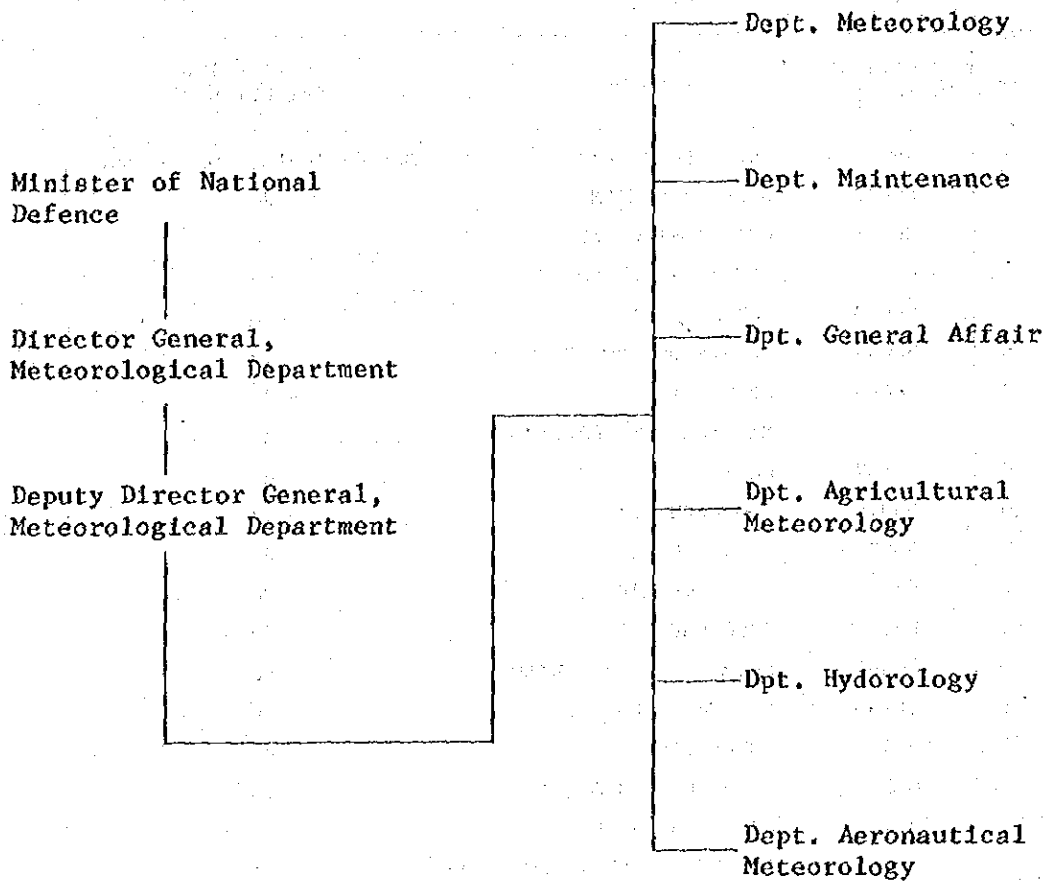


Fig. 5-1 Organization Diagram of Meteorological Department, Ministry of National Defence

Table 5-42 List of Meteorological Observation Stations

| No. | International Indication No. | Location | Institutions Established |
|-----|------------------------------|------------------------------|---|
| 1. | 86060 | POZO HONDO (P) | Meteorological Department |
| 2. | 86017 | NUEVA ASUNCION | - do - |
| 3. | 86011 | GRAL. ADRIAN JARA | - do - |
| 4. | 86027 | PORTIN ANDREGON (P) | - do - |
| 5. | 86033 | BAHIA NEGRA | - do - |
| 6. | 86055 | FUERTE OLIMPO (P) | - do - |
| 7. | 86065 | PRATS GILL | - do - |
| 8. | 86068 | MARISCAL ESTIGARRIBIA | - do - |
| 9. | 86107 | GENERAL DIAZ (P) | - do - |
| 10. | 86074 | BOQUERON (P) | - do - |
| 11. | 86086 | LA VICTORIA | - do - |
| 12. | 86125 | POZO COLORADO (P) | - do - |
| 13. | 86135 | PASO BARRETO | - do - |
| 14. | 86097 | PEDRO JUAN CABALLERO | - do - |
| 15. | 86150 | CAPITAN BADO (P) | - do - |
| 16. | 86134 | CONCEPCION | - do - |
| 17. | 86140 | NUEVA GERMANIA (P) | - do - |
| 18. | 86192 | SAN ESTANISLAO | - do - |
| 19. | 86218 | AEROPUERTO "PTE. STROESSNER" | - do - |
| 20. | 86216 | SAN LORENO (P) | - do - |
| 21. | 86223 | CARAPEGUA | - do - |
| 22. | 86233 | VILLARRICA | - do - |
| 23. | 86260 | SAN JUAN BAUTISTA | - do - |
| 24. | 86255 | PILAR | - do - |
| 25. | 86296 | ISLA YACY-RETA | - do - |
| 26. | 86297 | ENCARNACION | - do - |
| 27. | 86285 | CAPITAN MEZA | - do - |
| 28. | 86245 | P. BARRA | A.N.D.E. (Electric Power Public Corporation) |
| 29. | 86246 | RIO NACUNDA | - do - |
| 30. | 86247 | PTO. PTE. STROESSNER | VIVERO FORESTAL ITAIPU (Itaipu Public Corporation Afforestation Center) |
| 31. | 86248 | PTO. PTE. STROESSNER | Meteorological Department |
| 32. | 86209 | PUERTO ADELA (P) | - do - |
| 33. | 86210 | SALTOS DEL GUAIRA | - do - |

(P) = Project

Table 5-42 Rainfall Observation Stations

| No. | International Indication No. | Location | Institutions Established |
|-----|------------------------------|--------------|-----------------------------------|
| 1. | 86197 | CURUGUATY | |
| 2. | 86198 | BELLA VISTA | - do - |
| 3. | 86187 | SAN JOAQUIN | - do - |
| 4. | 86135 | M. PRUTOS | - do - |
| 5. | 86137 | E. CANGARA | - do - |
| 6. | 86280 | SANTA MARIA | |
| 7. | 86249 | E.SANTA ROSA | Electric Power Public Corporation |
| 8. | 86238 | E. ALARCON | - do - |
| 9. | 86239 | E. PONDEROSA | - do - |
| 10. | 86199 | ITAKY-RY | - do - |
| 11. | 86208 | ITABO | Yacyreta Public Corporation |
| 12. | 86309 | YABEBYRY | Engineering Corps |

Hydrolog Observation Stations

| No. | International Indication No. | Location | Institutions Established |
|-----|------------------------------|----------------------|-----------------------------------|
| 1. | 86860 | POZO HONDO (P) | Meterological Department |
| 2. | 86893 | A. ATINGUY | Yacreta Public Corporation |
| 3. | 86894 | RIO AGUAPEY | - do - |
| 4. | 86895 | A. TACUARY (C.ALTA) | - do - |
| 5. | 86896 | A. TACUARY (C.MEDIA) | - do - |
| 6. | 86847 | RIO YGUAZU | Electric Power Public Corporation |
| 7. | 86849 | P. BECKER | - do - |
| 8. | 86846 | CONFLUENCIA ACARAY | - do - |
| 9. | 86848 | EMBALSE ACARAY | - do - |
| 10. | 86836 | ALTO ACARAY | - do - |

(P) = Project

Table 5-42 Agriculture Meteorological Observation Station

| No. | International Indication No. | Location | Institutions Established |
|-----|------------------------------|----------------------------|-----------------------------|
| 1. | 86061 | POZO MONDO (P) | Meteorological Department |
| 2. | 86004 | SAN ALFREDO | - do - |
| 3. | 86038 | LA PATRIA | - do - |
| 4. | 86090 | SAN CARLOS (P) | - do - |
| 5. | 86112 | KM.220 (P) | - do - |
| 6. | 86136 | CONCEPCION | - do - |
| 7. | 86137 | OCAMPO CUE | - do - |
| 8. | 86184 | PUERTO ANTEQUERA | - do - |
| 9. | 86186 | CHORE | - do - |
| 10. | 86220 | CAACUPE | - do - |
| 11. | 86234 | CORONEL OVIEDO | - do - |
| 12. | 86259 | BARRERITO-CAACUPE (P) | - do - |
| 13. | 86268 | CAAZAPA | - do - |
| 14. | 86294 | CAPITAN MIRANDA | - do - |
| 15. | 86250 | KM.16 RUTA VII | - do - |
| 16. | 86211 | SALTOS DEL GUAIRA | - do - |
| 17. | 86075 | LOMA PLATA | Mennonita Settlement |
| 18. | 86288 | PUERTO ITACORA (CLIMATICA) | Meteorological Department |
| 19. | 86295 | SAN COSME (CLIMATICA) | Yacyreta Public Corporation |

(P) = Project

Table 5-43 List of Main Roads in Area

| No. | Item | Length km | Width | | | Division | | Remarks |
|-----|---|--------------|---------------------|-------------------------|---------------|------------------------------------|---|--------------------------------------|
| | | | Total Width m | Effective Width m | Pavement m | Starting Point | Terminus | |
| 1 | National road route 1 Total length (in area) | 370 (80) | 11.0 | 5.8 | 6.0 | Asuncion (San Ignacio) | Encarnacion. (Access road, West line) | Asphalt pavement, 2 lanes |
| 2 | Access road, east line | 26 | 9.0 | 7.0 | 7.5 | San Cosme | National road Route 1 | " |
| 3 | Access road, west line | 45 | 17.5 | 7.0 | 13.5 | Ayolas | " | " |
| 4 | Access road, proposed line | 48 | - | - | - | Ayolas | Guaina-Crize | |
| 5 | San Ignacio-Yabebyry line | 60 | 10.0 | 7.0 | - | San-Ignacio | Yabebyry | Earth road, (Orthic Acrisols) |
| 6 | Yabebyry-Ayolas line | 30 | 10.0 | 7.0 | - | Yabebyry | Ayolas | Earth road, (Sandy) |
| 7 | Ayolas Atinguy river line | 25 | 10.0 | 7.0 | - | Ayolas | Farm road | Earth road, (Orthic Acrisols) |
| 8 | Road adjacent to dam | 28 | 16.0 | 9.0 | 9.0 | Proposed line of dam, west side | Access road, East line | Gravel road, (Orthic Acrisols) |
| 9 | Ayolas-Santiago old road | - | - | - | - | Ayolas Atinguy river line | National road Route 1 | Earth road, (Orthic Acrisols) |
| 10 | Connection road to farm | - | - | - | - | (Main road) | (Farm) | Mostly earth road, (Orthic Acrisols) |
| 11 | Farm road | - | - | - | - | (In field) | | |

Outline of the plan for the protection of wildlife in relation to the Yacyreta Dam Project

The Yacyreta Public Corporation has continued research on the protection of wildlife in the area to be submerged by the construction of the Yacyreta Dam. The research has now entered an experimental stage and the following is the summary of the plan. Items Yacyreta Public Corporation considers particularly important are: 1) the protection of wild animals in the area to be submerged by the construction of the dam, particularly, animals on Yacyreta Island (42,000 ha (80% of its 50,000 ha will be submerged.) and Talavera Island (The entire island of 15,000 ha will be submerged.), 2) the protection of fish, and 3) afforestation in the vicinity of the dam.

1. Protective measures of animals

(1) List of animals to be protected

The following is the list of animals to be protected. Particularly important animals are deer which live on the swamp land (They are said to live only in Mato Grosso in Brazil and in this project area.), anteaters, large foxes, and alligators.

Tentative list of animals to be protected

Table 5-44 Tentative List of Animals to be Protected

| <u>Common Names</u> | <u>Japanese Names</u> | <u>Remarks</u> |
|---------------------|-------------------------------|--------------------|
| (Mammals) | | |
| 1. Mbihcure | Itachi (Weasel) | |
| 2. Caguare | Ooariku (Large anteater) | |
| 3. Tatu-hu | Arumajiro (Armadillo) | |
| 4. Tatu poyu | Arumajiro (Armadillo) | |
| 5. Guazu vira | Shika (Deer) | |
| 6. Guazu pucu | Shika (Deer) | |
| 7. Anguya pyta | | |
| 8. Anguya tutu | | Rat family |
| 9. Anguya-i | | |
| 10. Kyhya | | Beaver-like animal |
| 11. Acti-paih | | Marmot-like animal |
| 12. Acti | | Marmot-like animal |
| 13. Aperea | Nezumiusagi (Rat rabbit) | |
| 14. Capiyva | Kawanezumi (River rat) | |
| 15. Mbaracaya eira | Kyroyamaneko (Black wild cat) | |
| 16. Aguara-i | Kitsune (Fox) | |
| 17. Cuati | Hanaguma (Coati) | |
| 18. Aguara rope | Kitsune (Fox) | |
| 19. Huron | Shiroitachi (White weasel) | |
| 20. Caraya | Saru (Monkey) | |
| (Birds) | | |
| 1. Ynambu-i | Uzura (Quail) | |
| 2. Ynambu guazu | Uzura (Quail) | |
| 3. Mytu | | Guinea fowl |
| 4. Tortolita | Hato (Dove) | |
| 5. Yeruti | Hato (Dove) | |
| 6. Ciguena | Kounotori (White storks) | |
| 7. Caracara | | Kites |
| 8. Quiri-quiri | | Kites |
| 9. Taguato-i | | Kites |
| 10. Ypaca-a | | Swamp birds |
| 11. Surucu-a | | Small birds |
| 12. Aca-e para | | Small black birds |
| (Reptiles) | | |
| 1. Yacare | Jacare | |

Note: Lista de Animales en el Refugio Provisorio (EBY)

(2) Investigation and research plan on wild animals

The first stage (1982 - 1984)

Ecological study of wildlife, methods for capture and transportation of animals, research on bait while breeding, behavior of animals after capture, classification and stuffing of animals.

The second stage (1985 - 1987)

Establishment of protection areas, capture and transportation, adaptability in the transitional period, research on the stuffing animals.

The third stage (1988)

Maintenance of various wildlife, management and breeding.

(3) Establishment of experimental protection areas

In order to perform investigation and research activities an experimental protection area (Estacion Experimental Hidro Biologia) of about 100 ha was established in the downstream portion of Atingy River (about 2.5 km from the Parana River) based on the above sequential plan in 1982. This is for the study of the ecology of swamp wildlife and for the preparation for the start of the regular protective activities. In this experimental area research will be conducted not only wildlife, but fish spawning culture techniques including hatching fish and nursing of tree seedlings for afforestation. At present, some ten species of mammals (Kyhya, Huron, Aguara, Rope and others) and a few of birds (Caracara, Aca-e para, Quiri-guiri, and others) have been captured and bred since last year and regular research has just begun. (Research on fish and afforestation has not begun.)

2. Fish culture plan

More than 200 species of fish live in the rivers of Paraguay and provide an important meat protein substituting. Fish species which are particularly important for food, are Surubi, Dorado and Pacu. Of these many fish, about 60 species have a habit of migrating in the river for spawning. Once complete, the Yacyreta Dam will stop the flow of the Parana River. The 20 m difference in water level at the dam will not allow fish to go upstream to spawn, thus decreasing the number of fish in the river. Therefore, two plans have been proposed: 1) construction of a fish ladder for fish to go upstream and downstream, 2) artificial hatchery and culture of fish and stocking the reservoir with fish fry. Within the experimental protection area mentioned above an experimental fish culture center is going to be established and research on spawning, hatching and breeding of fish fry will be conducted there. A culture of fish which looks like a crucian is also considered by the use of paddy rice fields.

3. Afforestation plan

Although there is no special plan for the protection of plants, there is a fear that the forests will decrease by the submergence of the land. Therefore, there is a plan to afforest around the dam body. This plan is important not only for the maintenance of the forest area but for the protection of the dam body itself and the conservation of reservoir. There is going to be research performed in the experimental protection area on the selection of suitable tree species for afforestation in this area and on the nursing of seedlings.

(Additional Remark)

As for the protection of wildlife, a plan for the establishment of a wildlife protection area of about 10,000 ha is being examined. Although there is no prospect of this plan being realized at this moment, we hear that there is an appropriate place in the upstream area of Yabébyry River as a wildlife protection area. Thus, it is probable that adjustments will be required to the agricultural development area.

Table 5-45 Coordinate of Control Point

| Control Point | X Coordinate | Y Coordinate | Elevation |
|---------------|---------------|---------------|-----------|
| B10 | 6,973,992,722 | 6,536,024,638 | 65,431 |
| B1 | 6,973,891,052 | 6,537,045,876 | 65,829 |
| 111N4 | 6,973,919,925 | 6,537,882,172 | 67,133 |
| 111N3 | 6,974,326,397 | 6,538,031,511 | 74,623 |
| 111N2 | 6,974,514,130 | 6,538,100,410 | 74,847 |
| B112 | 6,974,576,328 | 6,538,501,044 | 74,930 |
| D | 6,974,230,682 | 6,538,987,341 | 74,621 |
| D' | 6,975,268,555 | 6,539,250,103 | 75,743 |
| A9R | 6,974,934,400 | 6,540,806,987 | 75,150 |
| B13R | 6,975,518,275 | 6,541,367,398 | 75,919 |
| PL7' | 6,975,117,667 | 6,541,988,335 | 75,061 |
| 1113 | 6,975,211,403 | 6,542,593,154 | 72,963 |
| B14R | 6,976,020,955 | 6,542,646,746 | 76,117 |
| PL8' | 6,975,486,078 | 6,543,067,673 | 75,595 |
| PL9' | 6,976,015,334 | 6,543,982,504 | 74,942 |
| A10R | 6,977,102,329 | 6,543,936,876 | 76,947 |
| PL10' | 6,977,204,305 | 6,546,036,768 | 75,672 |
| A11R | 6,977,841,725 | 6,545,858,130 | 77,239 |
| B15R | 6,978,114,986 | 6,546,568,563 | 77,491 |
| 1114 | 6,977,729,254 | 6,546,943,756 | 77,301 |
| B16R | 6,978,387,371 | 6,547,545,255 | 76,214 |
| 1115 | 6,978,193,048 | 6,548,665,593 | 75,493 |
| A12R | 6,978,974,158 | 6,549,062,558 | 75,450 |
| 1116 | 6,979,088,045 | 6,550,341,945 | 75,933 |
| B17R | 6,979,634,806 | 6,550,160,101 | 77,227 |
| A13R | 6,980,078,137 | 6,552,199,566 | 77,545 |
| PL11 | 6,978,964,799 | 6,552,412,298 | 76,049 |
| B18R | 6,980,006,740 | 6,553,221,434 | 77,405 |
| 1117 | 6,978,863,242 | 6,554,124,165 | 76,167 |
| 1118 | 6,979,352,280 | 6,556,177,957 | 75,727 |
| B19R | 6,980,253,437 | 6,556,947,938 | 77,444 |
| PL12' | 6,979,046,586 | 6,557,310,430 | 74,491 |
| A14R | 6,979,872,315 | 6,558,896,808 | 77,969 |
| PL13' | 6,978,518,407 | 6,559,266,945 | 76,373 |
| 1119 | 6,978,153,401 | 6,560,619,127 | 74,953 |
| PL14 | 6,978,948,703 | 6,561,709,224 | 80,986 |
| A15R | 6,979,470,940 | 6,561,408,497 | 82,907 |
| B20R | 6,979,404,763 | 6,561,812,309 | 89,475 |
| 11110' | 6,979,214,295 | 6,562,073,466 | 88,138 |

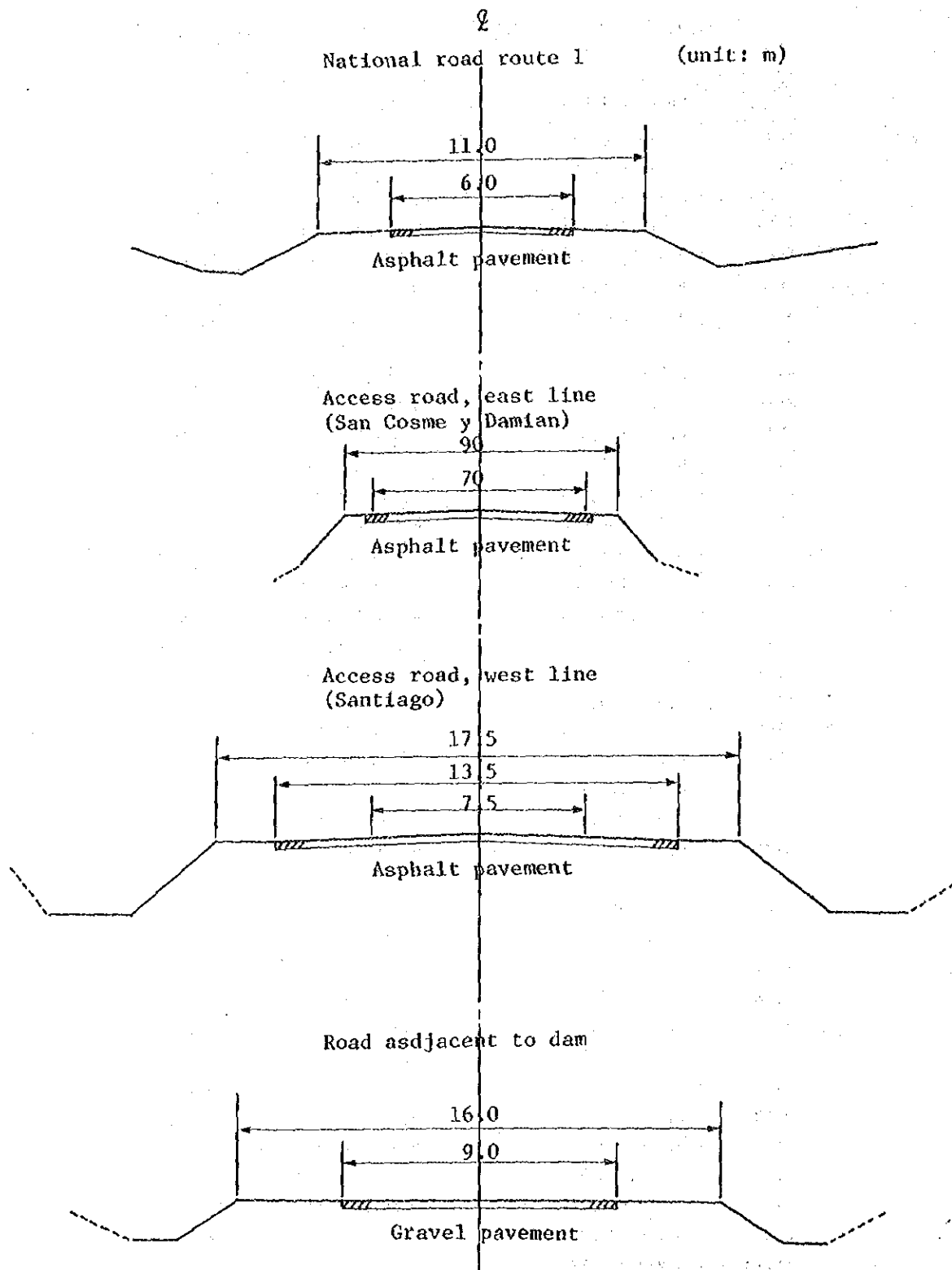


Fig. 5-2 Section of Main Road (1/2)

Unit: mm

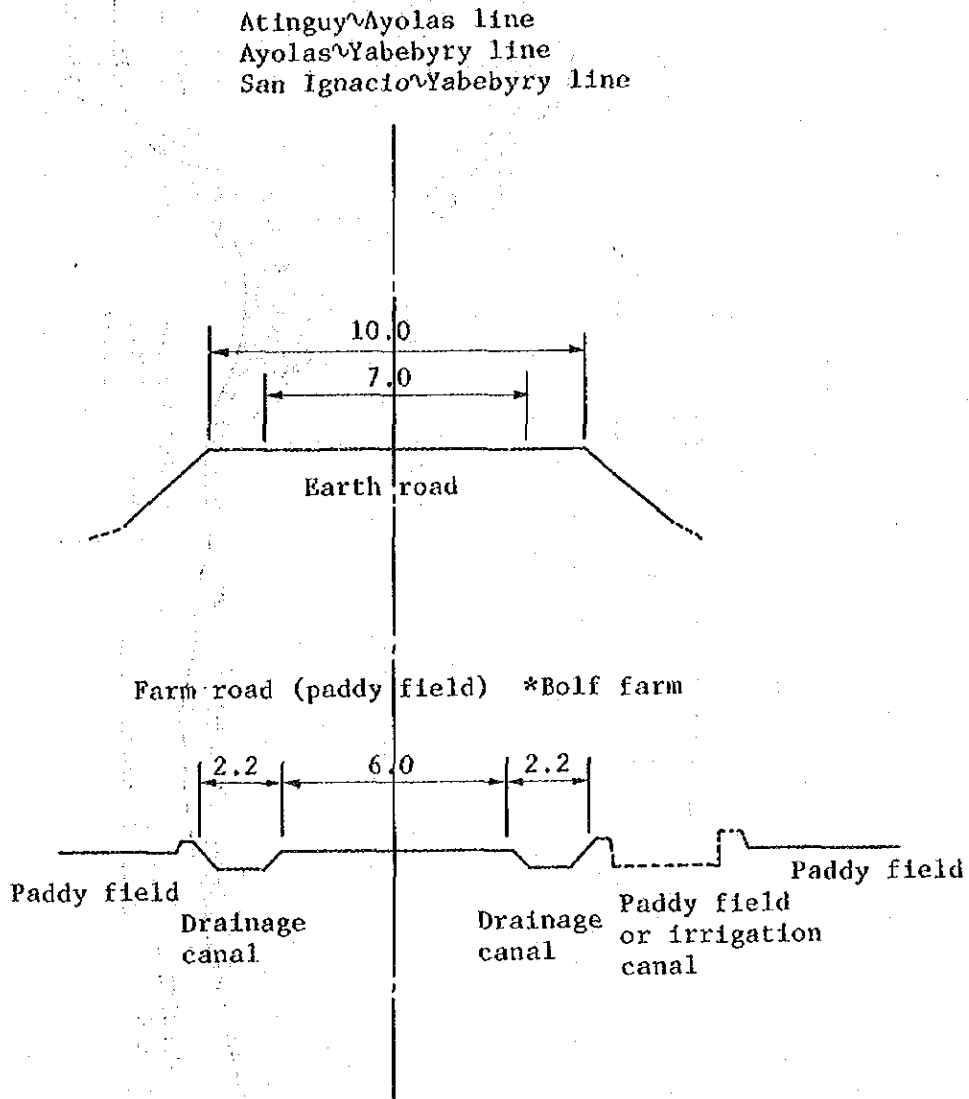


Fig. 5-2 Section of Main Road (2/2)

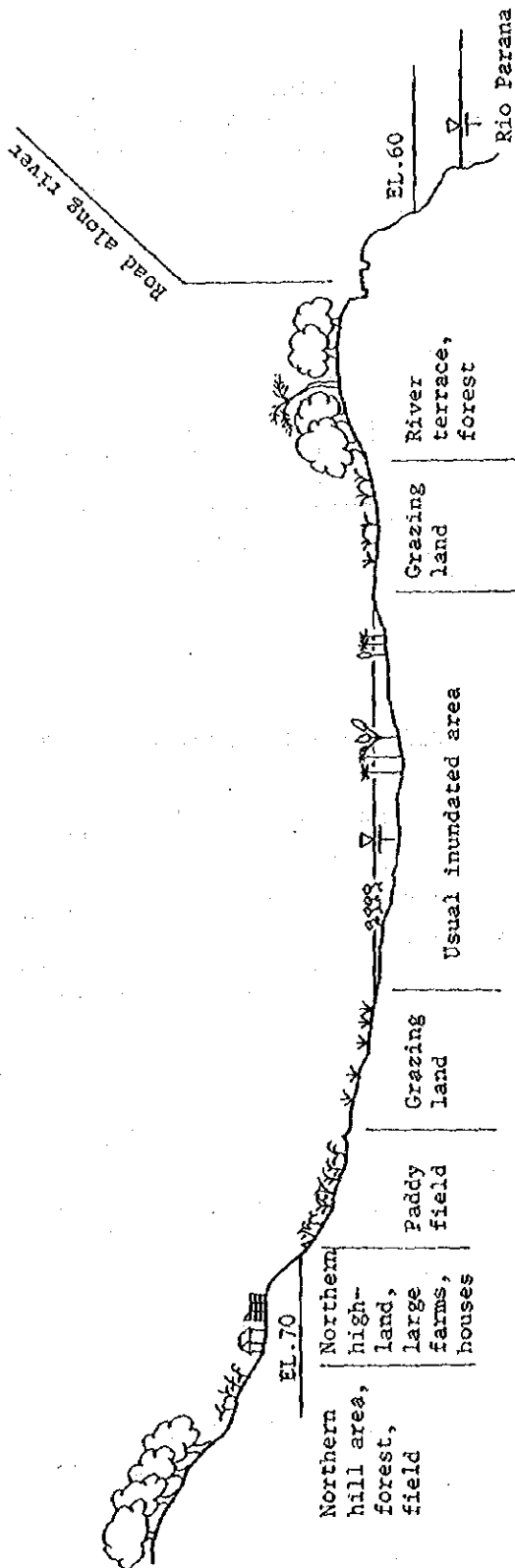


Fig. 5-3 Sectional Sketch of Area

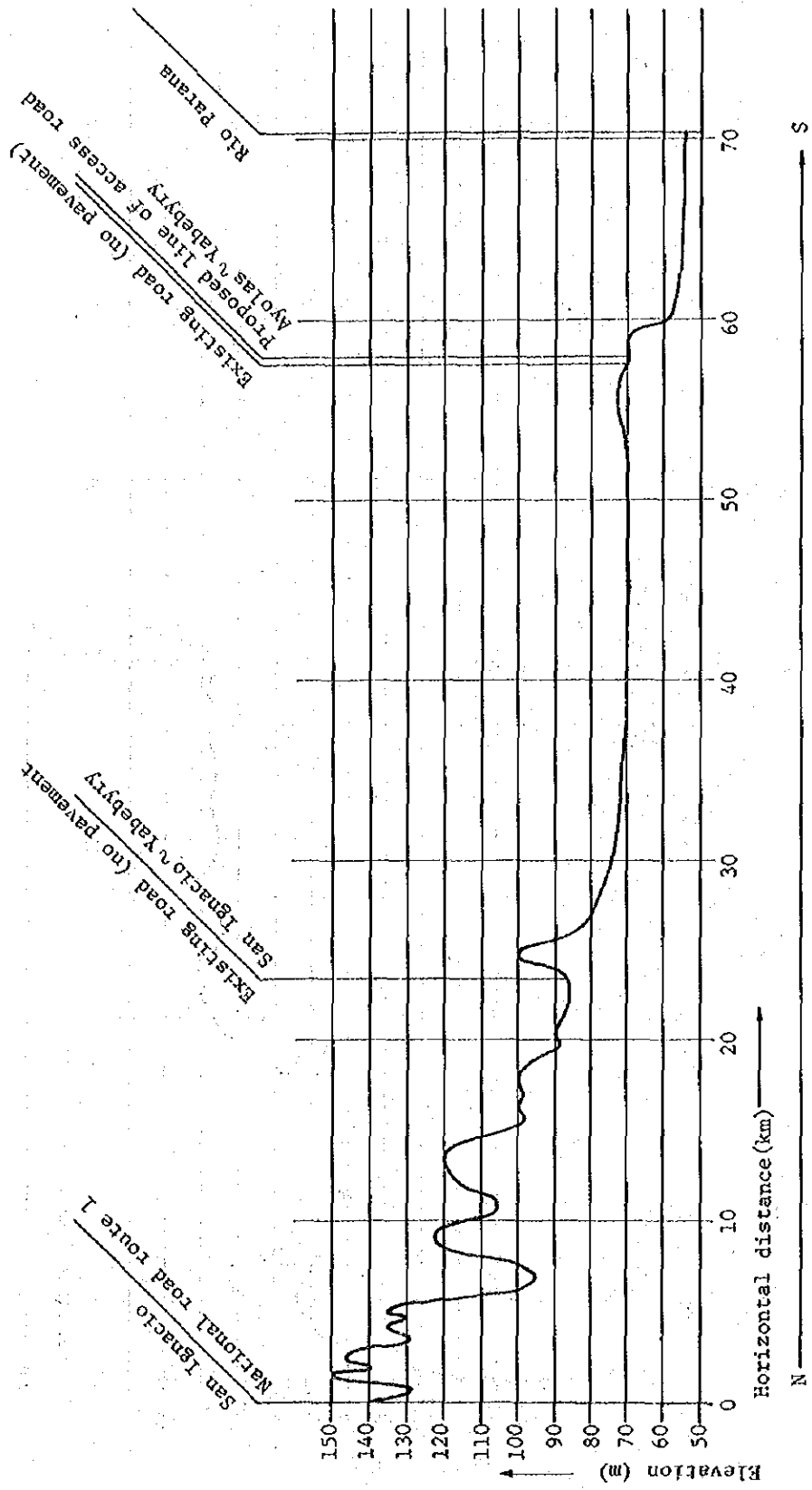


Fig. 5-4 Cross Section of Area (Section A)

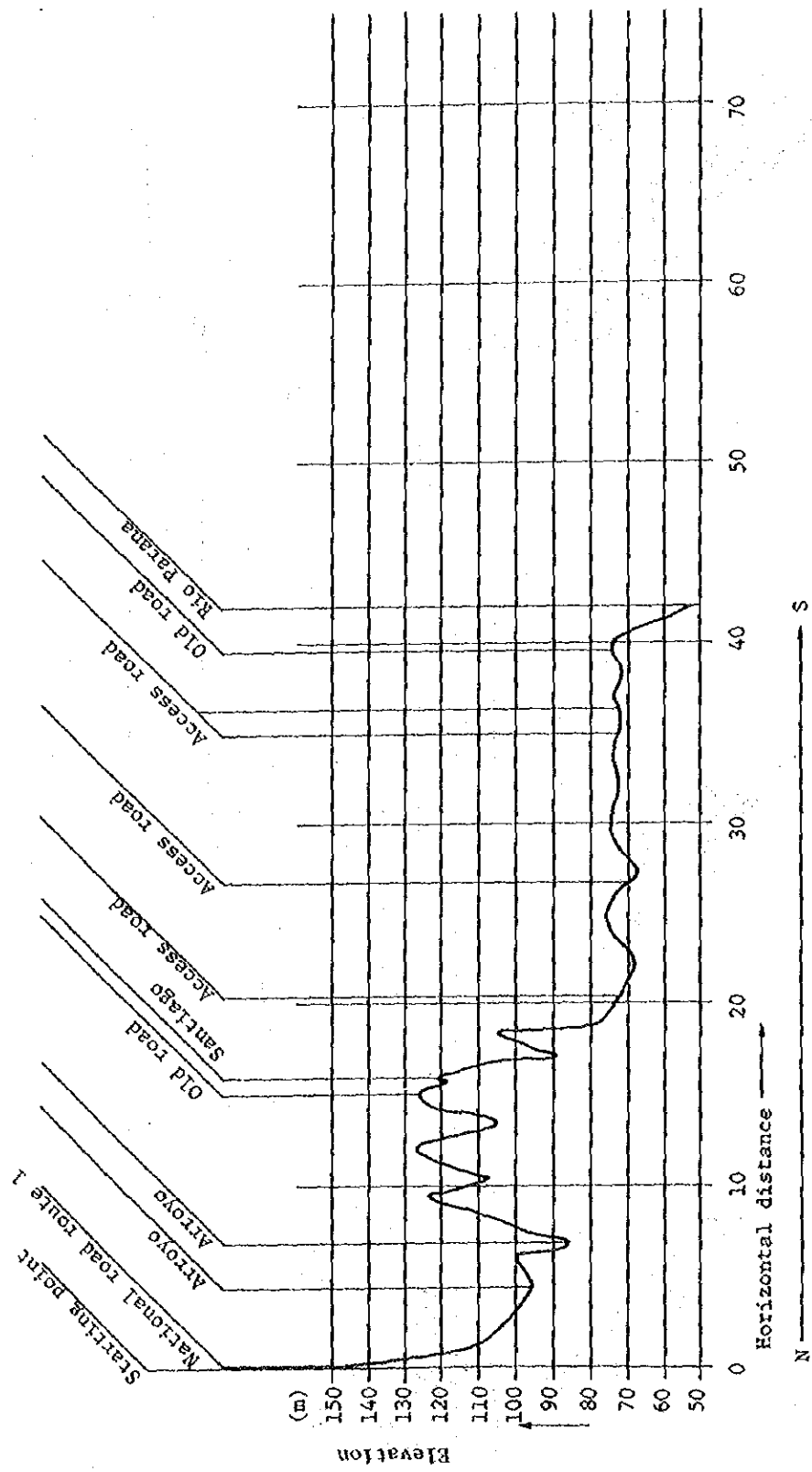


Fig. 5-4 Cross Section of Area (Section B)

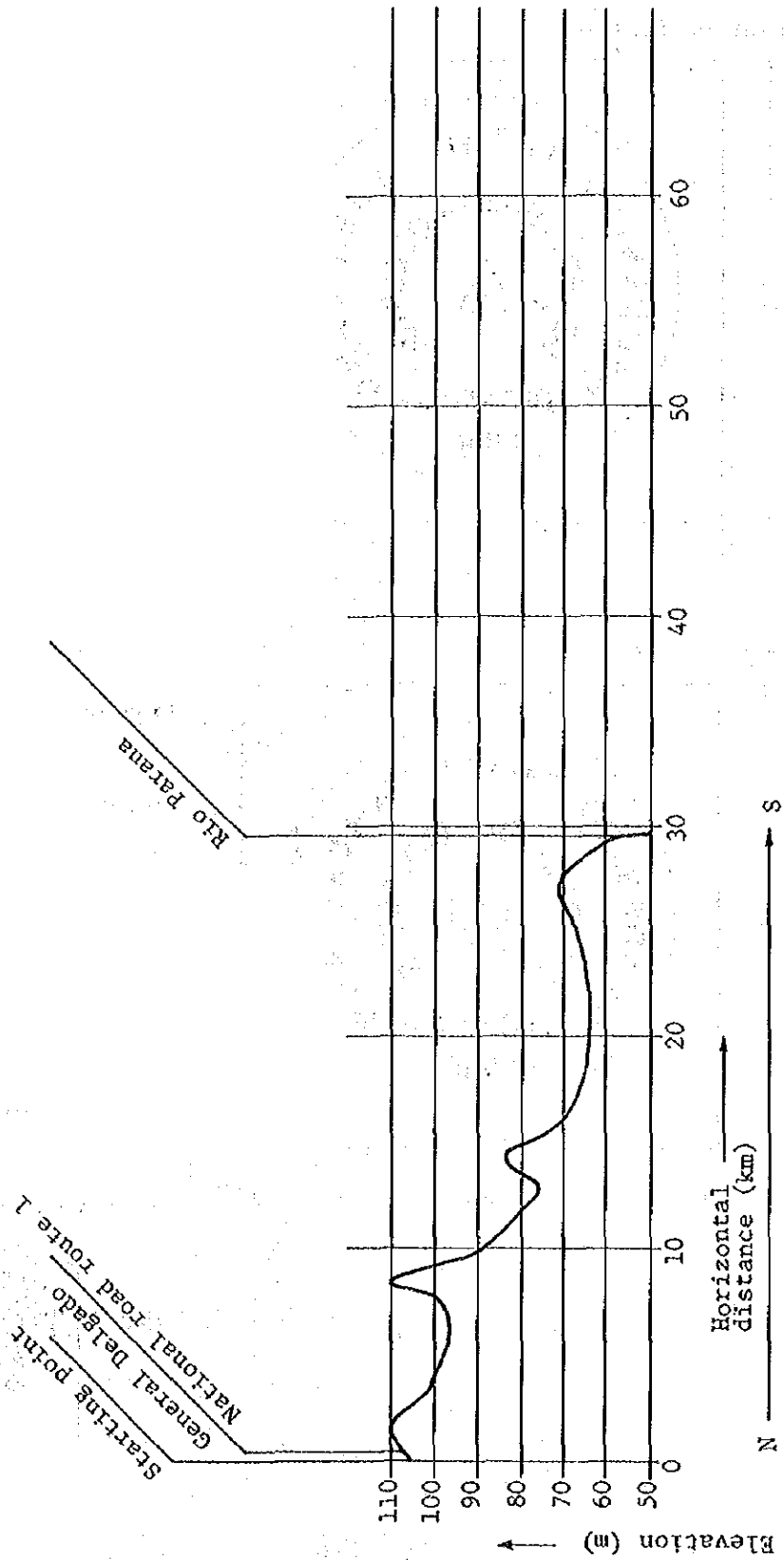
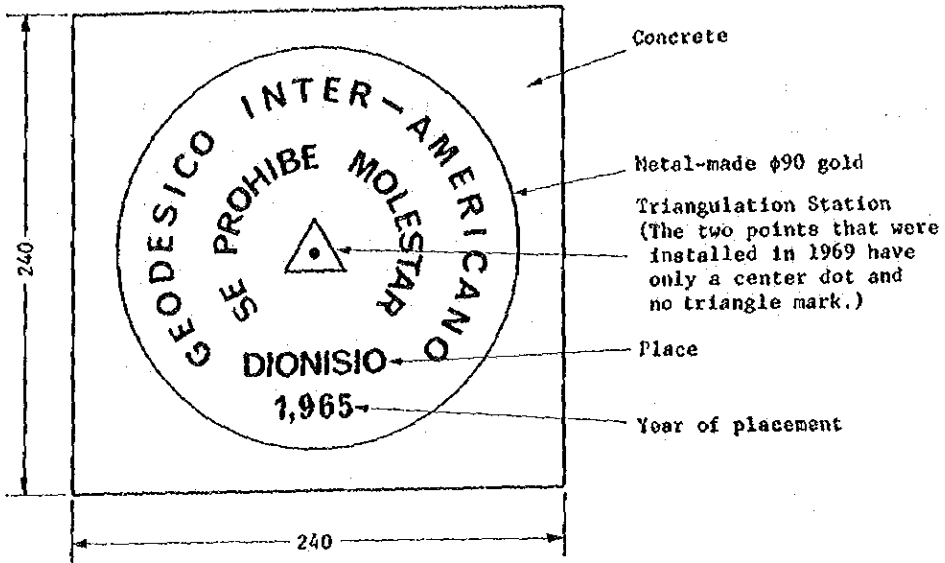
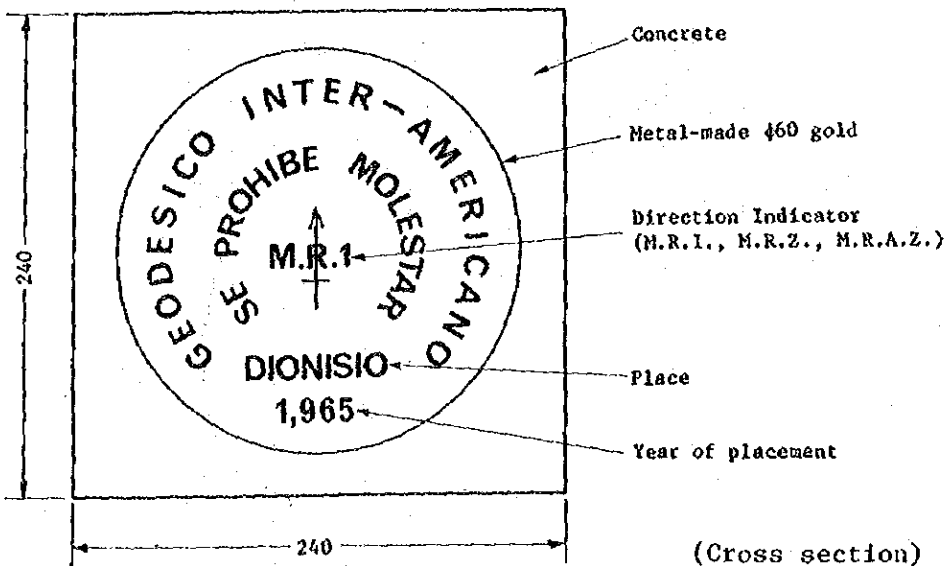


Fig. 5-4 Cross Section of Area (Section C)

Triangulation Station



Preparatory Point



(Cross section)

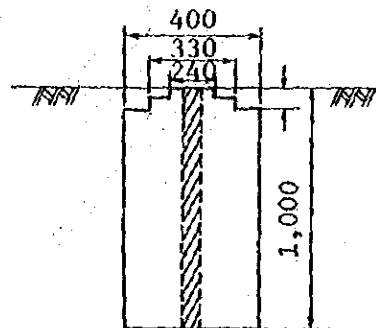
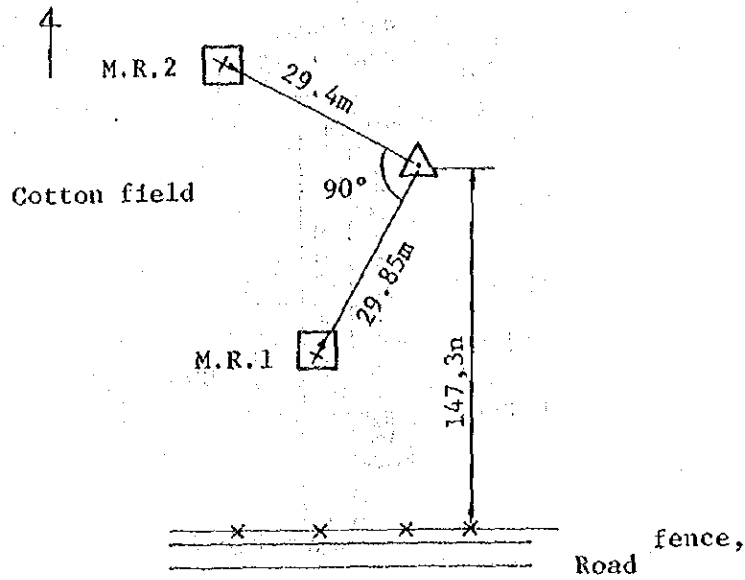


Fig. 5-5

Sketch Map of the Triangulation Station

Dionisio



Francisco

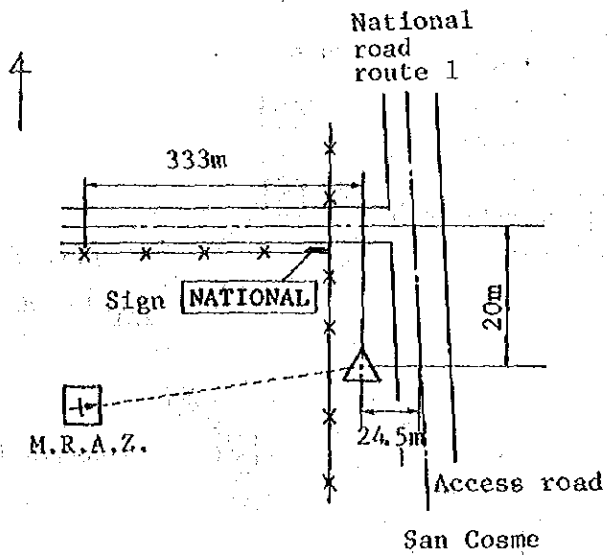
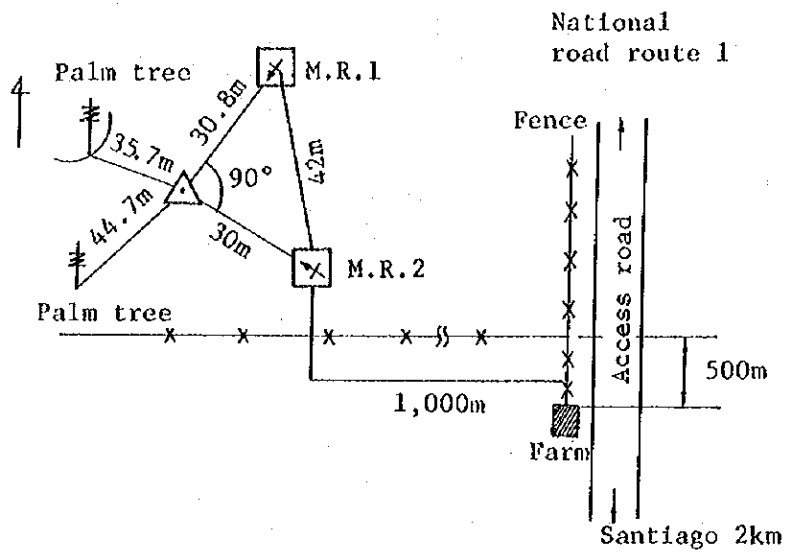


Fig. 5.6

Santiago



Rita

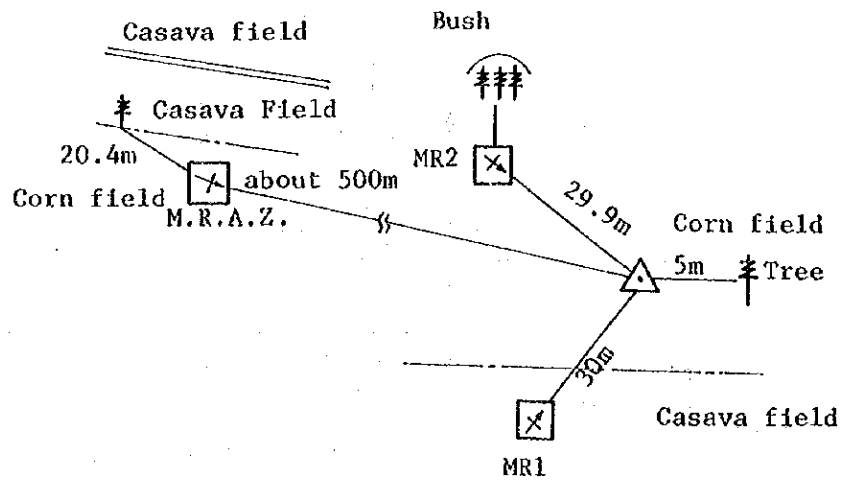


Fig. 5-6

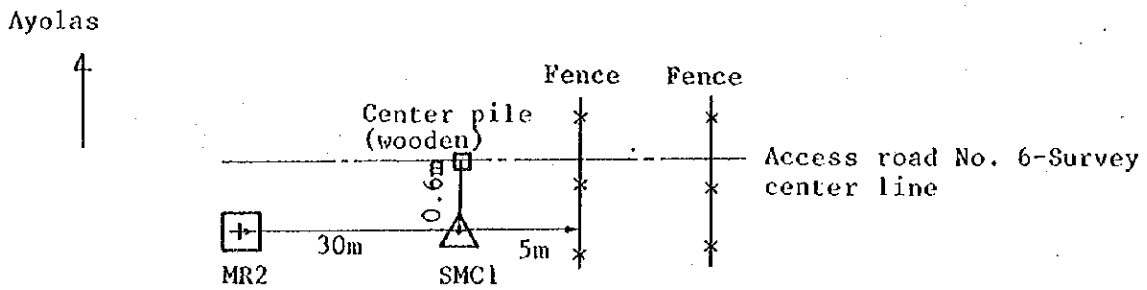
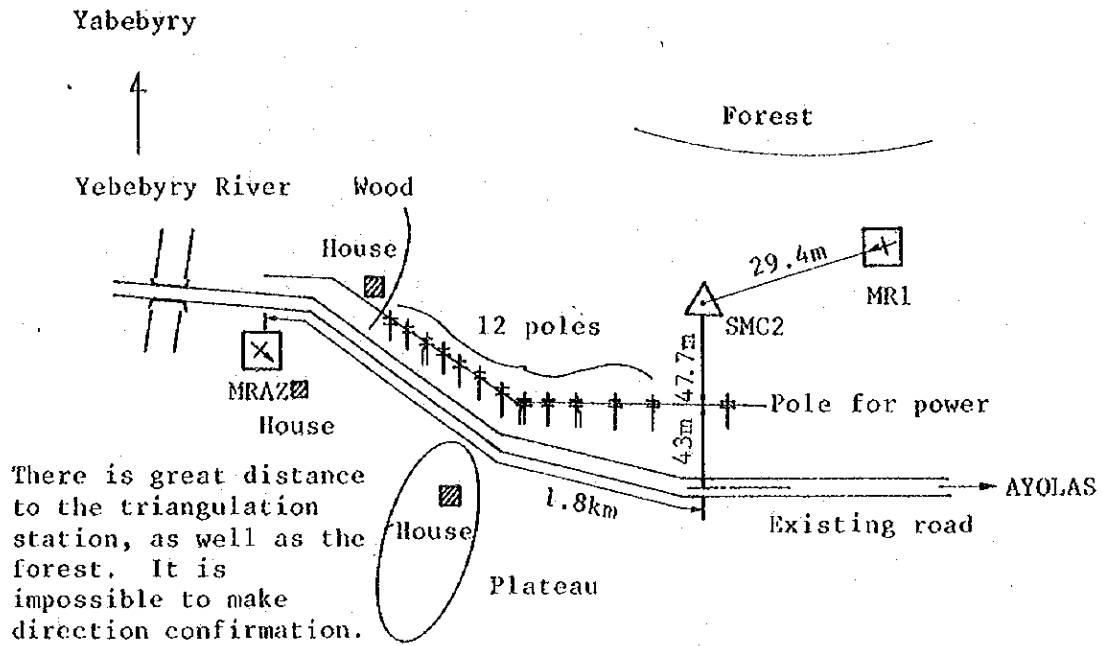


Fig. 5-6

JICA

