Table 2.13.3HARVESTED AREA, YIELD AND PRODUCTION OF MAJOR CROPS IN BWANJE
RDP (1984/85 - 1992/93)

| | L | ocal Maiz | 7.0 | Com | posite M | faize | Hy | brid Ma | ize | N | Aaize Tota | 1 |
|-------------|--------|-----------|------------|--------|----------|------------|--------|---------|------------|--------|------------|------------|
| Year | Area | Yield | Production | Area | Yield | Production | Area | Yield | Production | Area | Yield | Production |
| | (ha) | (kg/ha) | (ton) | . (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) |
| 1984/85 | 19,661 | 1,512 | 29,727 | 0 | | 0 | 452 | 1,513 | 684 | 20,113 | 1,512 | 30,411 |
| 1985/86 | 17,337 | 923 | 16,002 | 204 | 653 | 133 | 408 | 2,103 | 858 | 17,949 | 947 | 16,993 |
| 1986/87 | 19,568 | 1,003 | 19,626 | 254 | 740 | 188 | 1,017 | 1,967 | 2,000 | 20,839 | 1,047 | 21,814 |
| 1987/88 | 19,329 | 1,268 | 24,509 | 840 | 1,862 | 1,564 | 1,121 | 1,914 | 2,146 | 21,290 | 1,325 | 28,219 |
| 1988/89 | 31,614 | 1,167 | 36,893 | 182 | 1,233 | 224 | 1,192 | 1,949 | 2,323 | 32,988 | 1,196 | 39,440 |
| 1989/90 | 28,500 | 838 | 23,870 | 2,410 | 1,344 | 3,240 | 2,550 | 3,300 | 8,415 | 33,460 | 1,062 | 35,525 |
| 1990/91 | 28,972 | 927 | 26,871 | 2,896 | 1,512 | 4,379 | 13,154 | 1,124 | 14,791 | 45,022 | 1,023 | 46,041 |
| 1991/92 | 30,015 | 116 | 3,481 | 1,590 | 135 | 214 | 4,969 | 582 | 2,891 | 36,574 | 180 | 6,586 |
| 1992/93 | 24,442 | 1,296 | 30,096 | na | na | na | 6,496 | 3,018 | 20,757 | 30,938 | 4,314 | 50,853 |
| RDP Ave. | 24,382 | 1,006 | 23,453 | 1,047 | 1,068 | 1,243 | 3,484 | 1,941 | 6,096 | 28,797 | 1,401 | 30,654 |
| ADD Avc. | 45,094 | 1,071 | 46,086 | 3,497 | 1,492 | 4,556 | 7,699 | 1,871 | 16,101 | 55,901 | 1,494 | 66,237 |
| RDP/ADD (%) | 54.1 | - | 50.9 | 29.9 | · . | 27.3 | 45.3 | - | 37.9 | 51.5 | - | 46.3 |

| | Ric | e (unhus) | (ted) | | Pulses | | C | iroundnu | its | | Sorghum | |
|-------------|-------|-----------|------------|--------|---------|------------|-------|----------|------------|------|---------|------------|
| Year | Area | Yield | Production | Area | Yield | Production | Area | Yield | Production | Arca | Yield | Production |
| | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) |
| 1984/85 | 1,130 | 1,100 | 1,243 | 226 | - | 0 | 1,808 | 335 | 606 | 226 | - | . – |
| 1985/86 | . 0 | | 0 | 612 | - | 0 | 1,836 | 458 | 841 | 204 | • | - |
| 1986/87 | 762 | 2,377 | 1,811 | 1,779 | 1,360 | 2,419 | 3,953 | 405 | 1,600 | 254 | - | - |
| 1987/88 | 840 | 1,970 | 1,655 | 280 | 306 | 86 | 6,723 | 347 | 2,332 | 200 | - | - |
| 1988/89 | 649 | 1,974 | 1,281 | 504 | 399 | 201 | 4,222 | 210 | 887 | 65 | - | - |
| 1989/90 | 1,085 | 951 | 1,032 | 1,742 | 547 | 953 | 446 | 482 | 215 | 300 | 530 | 159 |
| 1990/91 | 1,160 | 1,490 | 1,728 | 2,127 | 716 | 1,522 | 530 | 734 | 389 | 750 | 708 | 531 |
| 1991/92 | 2,610 | 512 | 1,336 | 1,138 | 160 | 179 | 598 | - 48 | 29 | 735 | 56 | 41 |
| 1992/93 | 1,105 | 1,183 | 1,382 | -1,824 | 2,270 | 1,022 | 1,120 | 521 | 587 | -443 | 622 | 272 |
| RDP Ave. | 1,038 | 1,445 | 1,274 | 1,137 | 822 | 709 | 2,360 | 393 | 832 | 353 | 213 | 111 |
| ADD Ave. | 4,556 | 1,656 | 7,011 | 1,850 | 1,149 | 1,045 | 7,160 | 529 | 3,781 | 417 | 202 | 125 |
| RDP/ADD (%) | 22.8 | | 18.2 | 61.5 | | 67.9 | 33.0 | - | 22.0 | 84.7 | | 89.2 |

| | | Millet | | | Cassava | 1 | Sw | eet Pota | loes | S | eed Cotto | n |
|-------------|-------|---------|--------------|-------|---------|------------|-------|----------|------------|--------|-----------|------------|
| Year | Arca | Yield | Production | Area | Yield | Production | Area | Yield | Production | Area | Yield | Production |
| | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) | (ha) | (kg/ha) | (ton) |
| 1984/85 | 612 | | · · - | 678 | 2,200 | 1,491 | 452 | 2,200 | 994 | 5,647 | 800 | 4,518 |
| 1985/86 | 452 | - | | 408 | 2,200 | 898 | 816 | 2,200 | 1,795 | 1,632 | 800 | 1,306 |
| 1986/87 | 1,017 | 1,360 | 1,383 | 508 | 2,200 | 1,117 | 762 | 2,200 | 1,676 | 1,779 | 800 | 1,424 |
| 1987/88 | 2,521 | | | 1,401 | 2,200 | 3,082 | 560 | 2,200 | 1,232 | 1,121 | 800 | . 898 |
| 1988/89 | 2,233 | 420 | 938 | 1,114 | 2,200 | 2,450 | 1,015 | 2,200 | 2,233 | 4,129 | 800 | 3,303 |
| 1989/90 | 225 | 444 | 100 | 900 | 2,778 | 2,500 | 580 | 2,100 | 1,218 | 5,220 | 800 | 3,568 |
| 1990/91 | 940 | 577 | 542 | 1,330 | 3,528 | 4,692 | 1,145 | 3,180 | 3,641 | 5,502 | 800 | 6,533 |
| 1991/92 | 1,005 | | · · <u>-</u> | 935 | 2,337 | 2,185 | 273 | 160 | 43 | 7,015 | - 800 | 2,096 |
| 1992/93 | 258 | 598 | 154 | 218 | 2,370 | 519 | 584 | 2,029 | 1,196 | 5,052 | 1,153 | 5,860 |
| RDP Ave. | 1,029 | 378 | 346 | 832 | 2,446 | 2,104 | 687 | 2,052 | 1,559 | 4,122 | 839 | 3,279 |
| ADD Ave. | 1,030 | 377 | 347 | 7,971 | 2,687 | 23,639 | 1,215 | 2,276 | 2,909 | 12,141 | 768 | 9,001 |
| RDP/ADD (%) | 99.9 | - | 99.8 | 10.4 | 2 | 8.9 | 56.6 | · . | 53.6 | 34.0 | · · · | 36.4 |

| · _ | Tob | acco (sun | -air) | С | ashewnu | ls | . 5 | Sunflowe | r | | Chillies | |
|-------------|--------------|------------------|---------------------|----------------|--------------------|---------------------|----------------|------------------|---------------------|--------------|------------------|---------------------|
| Year | Area (ha) | Yield (kg/ha) | Production (ton) | Tree (nos.) | Yield (kg/tree) | Production (ton) | Area (ha) | Yield (kg/ha) | Production (ton) | Area (ha) | Yield (kg/ha) | Production (ton) |
| 1988/89 | 157 | - | | na | па | па | na | na | na | na | na | na |
| 1989/90 | 16 | 300 | 5 | 1,096 | 7.5 | 8.2 | · . | - | | 210 | 640 | 134 |
| 1990/91 | 20 | .400 | 8 | 1,096 | 2.0 | 2.2 | | • | · | | • | - |
| 1991/92 | 48 | 220 | . 11 | 1,096 | 2.0 | 2.2 | 18.0 | 50 | 0.9 | 118 | 160 | 29 |
| 1992/93 | 43 | 800 | 27 | 1,096 | 2.0 | 3.0 | 20.0 | 500 | 10.0 | - 114 | 497 | 74 |
| RDP Ave. | 57 | 430 | 10 | 1,096 | 3.4 | 3.9 | 19.0 | 275 | 5.5 | 147 | 432 | 79 |
| ADD Ave. | 68 | 430 | 10 | 4,164 | 2.3 | 9.3 | 40.6 | 309 | 14.2 | 164 | 519 | 90 |
| RDP/ADD (%) | 83.5 | | 100.0 | 26.3 | | 42.0 | 46.8 | · · · . | 38.4 | 89.8 | - | 87.8 |

TABLE 2.13.4 AVERAGE YIELD OF PADDY AND MAIZE IN THE PROJECT AREAS

| odo v | | Upper Nadzipulu project | Lower Namilokwe and Mtandamula projects | Upper Namikokwe Lower Livulezi project project | Lower Livulezi project | All project areas |
|-------|--|----------------------------|--|---|---------------------------|----------------------|
| Aaize | Maize sample size average vield (Kg/ha) | 23 | 36 | 40 | 61 | 160 |
| | whole | 1,393 | 1,133 | 1,915 | 930 | 1,246 |
| | Local variet | 1,435 | 1,269 | 1,640 | 906 | 1,239 |
| • | Hybrid | 1,218 | 916 | 2,565 | 966 | 1,256 |
| Rice | sample size | 23 | 36 | 40 | 61 | 160 |
| | average yield (Kg/ha) | 1,113 | 1,319 | 1,545 | 624 | 1,154 |

Data source: the farmer's interview survey conducted by JICA team in 1992/93

| Number | male or | Number | paddy | Amount of | Total income | Remaining | Kg/bag | Total | Unit |
|------------|------------|--------------|------------|--------------|--------------|-----------|-----------|----------------|--------------|
| of farmers | female* | | | | from ADMARC | | | production | Yield |
| | | 1 | | ADMARC(bag | | home(bag) | | (kg) | (Ton/ha) |
| | 0 | • | 0.4 | 1 | 85 | 2 | 85 | 255 | 0.64 |
| 2 | 1 | | 0.4 | 4 | 376 | 12 | 94 | 1,504 | 3.76 |
| 3 | 1 | 677 | 0.4 | . 5 | 375 | 5 | 75 | 750 | 1.88 |
| 4 5 | 0 1 | b2 b1 | 0.4 0.8 | 3.5 32 | 36 2,560 | 9 0 | 10 80 | 129 2,560 | 0.32 3.20 |
| 6 | 0 | b63 | 0.4 | 0.5 | 40 | 6 | 80 | 520 | 1.30 |
| Ť | ŏ | b14 | 0.4 | 0 | 0 | 18 | 80 | 1,440 | 3.60 |
| 8 | 0 | b42 | 0.4 | 1.5 | 145 | 8 | 97 | 918 | 2.30 |
| 9 | 1 | b43 | 0.4 | 2.5 | 263 | 13 | 105 | 1,631 | 4.08 |
| 10 | 1 | b36 | 0.8 | 6 | 564 | 26 | 94 75 | 3,008 | 3.76 |
| 11 12 | 1 1 | Ь72 Ь88 | 0.4 0.6 | 3 8 | 225 796 | 17 17 | .100 | 1,500 2,488 | 3.75 4.15 |
| 13 | 1 | 635 | 0.4 | 10 | 1,000 | 7 | 100 | 1,700 | 4.25 |
| 13 | 1 | b91 | 0.6 | 2 | 185 | 28 | 93 | 2,775 | 4.63 |
| 15 | 1 | c64 | 0.6 | 2.5 | 230 | 8 | 92 | 966 | 1.61 |
| 16 | 1 | d53 | 0.8 | 0 | 0 | 2 | 80 | 160 | 0.20 |
| 17 | 1 | b28 | 0.8 | 3.5 | 230 | 20 | 66 | 1,544 | 1.93 |
| - 18 | 0 | c37 | 0.6 | 0 2 | 0 185 | 6 38 | 80 93 | 480 3,700 | 0.80 4.63 |
| 19 20 | 1 1 | ° c5 c134 | 0.8 0.8 | 0.5 | 41 | 3 | 93 82 | 287 | 0.36 |
| 21 | i | c130 | 0.8 | 5 | 463 | 27 | 93 | 2,963 | 3.70 |
| 22 | Ō | c85 | 0.4 | 5 | 465 | 5 | 93 | 930 | 2.33 |
| 23 | 0 | c120 | 0.4 | 0 | 0 | 20 | 80 | 1,600 | 4.00 |
| 24 | 0 | c23 | 0.4 | 7 | 614 | 13 | 88 | 1,754 | 4.39 |
| 25 | 1 | c57 | 0.4 | 2 | 200 40 | 10 | 100 80 | 1,200 1,800 | 3.00 4.50 |
| 26 27 | 1 | c30 c9 | 0.4 0.4 | 0.5 | 300 | 7 | 86 | 1,800 | 2.25 |
| 28 | 1 | c78 | 0.4 | 19 | 1,600 | 18 | 84 | 3,116 | 3.89 |
| 29 | 1 | c16 | 0.4 | 3 | 240 | 3 | 80 | 480 | 1.20 |
| .30 | 1 | c141 | 1.2 | 3 | 240 | 17 | 80 | 1,600 | 1.33 |
| 31 | . I | c44 | 0.8 | 0 | 0 | 28 | 80 | 2,240 | 2.80 |
| 32 | 1 | c71 | 0.4 | 5 | 465 | 15 | 93 | 1,860 | 4.65 |
| 33 34 | 1 | c14 c99 | 0.4 0.6 | 1 6 | 66 510 | 17 20 | 66 85 | 1,188 2,210 | 2.97 3.68 |
| 35 | 0 | c113 | 0.8 | 1.5 | 150 | 10 | 100 | 1,150 | 1.44 |
| 36 | 0 | c127 | 0.4 | 4 | 360 | 5 | 90 | 810 | 2.03 |
| 37 | 0 | d60 | 0.4 | · 0 · | 0 · | 3 | 80 | 240 | 0.60 |
| 38 | - 1 | b56 | 0.4 | 4.5 | 420 | 9 | 93 | 1,213 | 3.03 |
| 39 | 0 | d144 | 0.4 | 7 | 657 27 | 8 18 | 94 54 | 1,408 | 3.52 1.67 |
| 40 41 | 1 1 | d32 d102 | 0.6 0.4 | 0.5 0 | 0 | 2 | 34 80 | 999 160 | 0.40 |
| 42 | 0 | d116 | 0.4 | Ő | ŏ | 15 | 80 | 1,200 | 2.00 |
| 43 | õ | 698 | 0.4 | Š | 375 | 3 | 75 | 600 | 1.50 |
| 44 | 1 . | d4 | 0.4 | 2.5 | 250 | 6 | 100 | 850 | 2.13 |
| 45 | - 1 | d123 | 0.4 | 0 | 0 | 16 | 80 | 1,280 | 3.20 |
| 46 | 1 | d67 | 0.4 | 0 | 0 | 20 | 80 | 1,600 | 4.00 |
| 47 | 1 | d37 | 0.8 | 0 | 0 | 30 | 80 | 2,400 | 3.00 |
| 48 49 | 0 | d109 d95 | 0.8 0.4 | 0 4 | 0 305 | 35 8 | 80 76 | 2,800 915 | 3.50 2.29 |
| 49 50 | 0 | d18 | 0.4 | 4 0 | 0 | 12 | 80 | 960 | 2.40 |
| 51 | ő | d137 | 0.4 | ŏ | . Ŏ | 6 | 80 | 480 | 1.20 |
| 52 | 0 | d88 | 0.4 | 0.5 | 40 | 20 | 80 | 1,640 | 4.10 |
| 53 | 1 | d130 | 0.4 | 2 2.5 | 168 | 16 | 84 | 1,512 | 3.78 |
| 54 | 1 | c43 | 0.8 | 2.5 | 218 | 28 | 87 | 2,616 | 3.27 |
| 55 56 | 1 | d120 c88 | 0.8 0.4 | 3 3.5 | 252 302 | 27 9 | 84 86 | 2,520 | 3.15 2.59 |
| 57 | 1 | b48 | 0.4 | 10 | 838 | 15 | 84 | 2,095 | 2.62 |
| 58 | 1 | d74 | 0.4 | 1 | 88 | 12 | 88 | 1,144 | 2.86 |
| . 59 | 1 | c74 | 0.8 | 7 | 525 | 33 | 75 | 3,000 | 3.75 |
| 60 | 0 | b84 | 0.4 | 0 | 0 | 16 | 80 | 1,280 | 3.20 |
| 61 | 1 | c2 | 0.4 | 2.5 | 183 | 17 | 73 | 1,391 | 3.48 |
| 62 | · · 0 | ь70 | 0.6 | 10 | 850 | 10 | 85 | 1,700 | 2.83 |
| 63 | 0 | d25 | 0.4 | 2.5 | 215 | 14 | 86 | 1,376 | 3.44 |

TABLE 2.13.5 PADDY YIELD SURVEY IN THE MTANDAMURAIRRIGRION SCHEME

| | | | | | | | | | | | | | | | | | | | | | | | | | - |
|--------------------------------|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------|--------|--------|--------|----------|--------|--------|--------|--------|--------|--------|--------|-------|
| Degree of | 1001 BITIS (70) | | | | | 100 | 95 | | | | | 100 | | | | | | | | 100 | | | | | |
| Paddy yield | bei IIIz (Ng) | 4,471 | 3,884 | 4,317 | 5,665 | 5,589 | 6,407 | 4,019 | 5,265 | 5,619 | 2,947 | 5,211 | 2,699 | 4,467 | 4,259 | 3,722 | 2,770 | 3,220 | 3,238 | 6,019 | 3,104 | 4.345 | 6.407 | 2,699 | 1,129 |
| Weight of 1000 ripened | granus (gr) | 29 | - 26 | 29 | 30 | 29 | 29 | 30 | . 30 | 30 | 29 | 30 | 29 | 29 | 29 | 30 | 29 | 30 | 29 | 30 | 28 | 29 | 30 | 26 | 1 |
| Percentage of ripened 1 | (0/) SIITE | 86 | 87 | 80 | 91 | 86 | 16 | 91 | - 06 | 87 | 89 | 68 | <u>93</u> | 82 | 94 | 93 | <u>6</u> | 16 | 91 | 85 | 64 | 88 | 94 | 2 | 9 |
| No.of spikelets | | 18,080 | 16,866 | 18,743 | 21,196 | 22,568 | 24,600 | 15,037 | 19,567 | 21,576 | 11,430 | 19,872 | 10,138 | 18,765 | 15,752 | 13,553 | 10,535 | 11,900 | 12,403 | 23,893 | 17,539 | 17.201 | 24,600 | 10,138 | 4,364 |
| No.of spikelets | her partere | 156 | 131 | 132 | 137 | 149 | 153 | 137 | 178 | 128 | 138 | 102 | 75 | 97 | 107 | 148 | 61 | 114 | 124 | 136 | 137 | 128 | 178 | 75 | 24 |
| No.of panicles | 7111 121 | 116 | 129 | 142 | 155 | 151 | 161 | 110 | 110 | 165 | 83 | 195 | 136 | 194 | 147 | 92 | 116 | 105 | 100 | 176 | 128 | 136 | 195 | 83 | 32 |
| planting density per | | 13 | 15 | 12 | 18 | 13 | 17 | 21 | 14 | 19 | . 14 | 21 | 16 | 26 | 20 | 16 | 20 | 11 | 15 | 22 | 14 | 17 | 26 | 11. | 4 |
| No. of | COLE | ¥4 | 6 | ςΩ | 4 | ŝ | 9 | L | 00 | 6 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | Avg. | Max. | Min. | CILS |

TABLE 2.13.6 YIELD AND YIELD COMPONENTS

| TABLE 2.13.7 | CORRELATION COEFFICIENT BETWEEN |
|---------------------|---------------------------------|
| | YIELD AND YIELD COMPONENTS |

| | Components | | r |
|-----------------------|-----------------|--------------|--------|
| Number of panicles p | er unit area : | Yield | 0.65** |
| Number of spikelets p | per panicle : | Yield | 0.46* |
| Number of spikelets p | ber unit area : | Yield | 0.94** |
| Percentage of ripened | grains : | Yield | 0.07 |
| Weight of 1000 ripen | ed grains : | Yield | 0.31 |
| Planting density | : | Spikelets/m2 | -0.08 |
| Number of panicles p | er unit area : | Spikelets/m2 | 0.69** |
| Number of spikelets | er panicle : | Spikelets/m2 | 0.48* |

*,** : Significant at 5% and at 1% each

| | | Farmers in Mtandamula scheme area | 0 | ther farme | rs | For total farmer |
|----|--------------------------------------|-----------------------------------|------|------------|------|--------------------------|
| | Type of farmer | Both*** | MHH* | FHH** | Both | ⁻ respondent: |
| | Participated to farmer's club or not | yes | NOT | NOT | yes | |
| 1. | Expansion of cultivated land | | | | | ÷ |
| | 1.1 Expansion of paddy land | · . | | | | |
| | present acreage (ha) | 0.7 | 0.3 | 0.3 | 0.3 | |
| | additional land that farmers | 0.6 | 0.2 | 0.2 | 0.3 | |
| | expect to expand (ha) | · . | | • | | |
| | 1.2 Expansion of upland | | | | | |
| | present acreage (ha) | 0.5 | 0.8 | 0.5 | 1.0 | |
| | additional land that farmers | 0.5 | 0.8 | 0.5 | 1.0 | |
| | expect to expand (ha) | | | 1. L | | |
| 2. | Desires that famers contribute their | 100.0 | 40.0 | 33.3 | 47.8 | |
| | labour services for construction of | | : | | | |
| | expansion of paddy land (%) | | | | | |
| 3. | Kinds of crops that famers desire | | | | | |
| | to cultivate on new additional land | | | | | |
| | to be expaned (%) | | | | | |
| | vegetables | | | | | 74.0 |
| | rice | | | | | 21.0 |
| | maize | | | | | 15.0 |
| | others**** | | | | | 34.0 |
| | Sample size | 17 | 61 | 52 | 26 | 156 |

TABLE 2.14.1 FARMER'S VIEW ON INCREASE OF FARM INCOME

: female headed household **: other crops are beans, groundnuts and cotton

***: both of male and female headed household

| TABLE 2.14.2 FARMER'S VIEW ON SHORTAGE OF LABOUR FORCE IN FARMING | ON SHORTAGE OF | LABOUR | FORCE IN FAF | SMING | |
|--|--------------------------|---------------------------|---------------|-------|--------------------|
| Item Group Farr | Farmers in Mtandamula | | Other farmers | | For all |
| | scheme are | | | | farmer respondents |
| Type of farmer | Both*** | WHH* | FHIH** | Both | |
| Participated to farmer's club or not | yes | not | not | yes | |
| | | | - | - | |
| (1) shortage of labour force for farming (%) | 52.9 | 60.7 | 59.6 | 53.8 | |
| | | | · | | |
| | | | | | |
| (2) Countermeasure that farmers expect to solve shortage of lobour force (%) | ortage of lobour force (| (<i>d</i> ₀) | | | |
| (a) reducing a scale of the cultivated land | 43.7 | 7.8 | 28.9 | 17.6 | 21.1 |
| (b) employing casual labour | 18.7 | 29.4 | 10.5 | 58.8 | 26.9 |
| (c) introducing draft animals | 18.7 | 23.6 | 23.8 | 0.0 | 18.6 |
| (d) introducing small machinery | 6.3 | 0.0 | 0.0 | 0.0 | 0.6 |
| (e) alleviating female's houseworks | 12.6 | 39.2 | 36.8 | 23.6 | 32.8 |
| construction of water wells for drin | 6.3 | 31.4 | 34.2 | 17.6 | 27.6 |
| construction of rice/maize mills | 6.3 | 7.8 | 2.6 | 9 | 5.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| sample size | 17 | 61 | 52 | 26 | 156 |
| *: male headed household | | | | | |

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***: both of male and female headed households **: female headed household

| Item Group | Farmers in Mtandamula | | Other farmers | s | For all farmers |
|--|-----------------------------|-------|---------------|-------|-----------------|
| | scheme area | | | | |
| Type of farmer | Both*** | *HHIM | FHH** | Both | |
| Participated to farmer's club or not | yes | ou | ou | yes | |
| 1. % of the farmers who satisfy extension services from Salima | prod | 51.6 | 40.4 | 100.0 | 60.0 |
| 2. Reasons why the farmers do not participate to farmers club | ••• | | | | |
| a. Farmer's conditions | | 23 | | | |
| b. Fear on credit conditions | | 35 | | | |
| c. Disapproval with SACA's thought | | 12 | | | |
| d. Shortage of extension activities | | 30 | | | |
| | | | | | |
| 3. Farmer's view on Credit Package (%) | | | | · | |
| troublesome the entrance formalities | 58.8 | 58.1 | 44.2 | 40.0 | |
| difficult receiving Credit | 82.4 | 41.9 | 26.9 | 20.0 | |
| difficult repayment of Credit | 94.1 | 67.7 | 55.8 | 40.0 | |
| no merits of Credit for farmer | 94.1 | 64.5 | 51.9 | 64.0 | |
| difficult repayment in unforeseen accident | 94.1 | 67.7 | 59.6 | 56.0 | |
| troublesome obligation of farmers club | 35.3 | 27.4 | 25.0 | 12.0 | |
| Sample size | 17 | 61 | 52 | 26 | 156 |
| *: male headed houselhold | **: female headed household | ehold | | | |
| الله الم من الله الله من الم المناطق المناطق المناطق المناطق المناطع الله من المناطق المناطق المناطق المناطق ا | | | - | | |

TABLE 2.14.3 FARMER'S VIEW ON AGRICULTURAL EXTENSION AND SACA'S SHORT TERM CREDIT

***: both of male and female headed households

Data source: the interview survey conducted by JICA team in 1993

TABLE 2.14.4 FARMER'S VIEW ON ROAD CONDITIONS

| Items | Lower Nadzinulu project Lower Namikokwe and Upper Namikokwe project Lower Livulezi project | Jzipulu | nroiect | Lower | Vamiko | we and | Upper N | Jamikok | we proje | x Lower I | ivulezi | project |
|---|--|---------|---------|----------|-----------------------|-----------|----------|---------|----------|-----------|---------|---------|
| | arca | L | ר ק | Mtamda | Mtamdamula project at | roject ar | area | : | | area | | |
| 1. Distance from farmer's home (km) | | | | | | | | | | | | |
| 1) to market (ADMARC) | | 7.2 | | ÷ | 4 8. | | | 8.9 | | | 4.3 | • |
| 2) to school | | 3.6 | | | 2.3 | | | 3.7 | | | 2.3 | |
| 3) to shopping | | 3.2 | · | | 3.2 | | | 9,4 | | | 4.7 | |
| 4) to hospital | | 69 | | | 11.3 | | | 1.0 | | | 6.0 | |
| 5) to drinking water well | | 0.8 | | • | 0.9 | | | 1.2 | | | 0.6 | |
| 6) to field | | 1.6 | · | • | 1.5 | | | 1.4 | | | 1.6 | • |
| 2. Perception of farmers to present road condition | ditio very bad | bad | poog | very bac | bad | good | very bac | bad | good | very bac | bad | poog |
| in the rainy season (%) | | | ł | | | | | | | | 1 | |
| 1) to market (ADMARC) | | 77.3 | 0.0 | 47.1 | 38:2 | 14.7 | 72.5 | 17.5 | 10.0 | 8.6 | 56.9 | 32.8 |
| 2) to school | 22.7 | 40.9 | 27.3 | 47.1 | 38.2 | 14.7 | 52.5 | 20.0 | 27.5 | 0.0 | 34.5 | 63.8 |
| 3) to shopping | . : | 68.2 | 9.1 | 47.1 | 38.2 | 14.7 | 65.0 | 17.5 | 17.5 | 8.6 | 53.4 | 32.8 |
| 4) to hospital | | 72.7 | 4.5 | 47.1 | 50.0 | 2.9 | 52.5 | 22.5 | 22.5 | 10.3 | 34.5 | 53.4 |
| 5) to drinking water well | | 54.5 | 1.6 | 47.1 | 38.2 | 14.7 | 65.0 | 22.5 | 10.0 | 13.8 | 39.7 | 44.8 |
| 6) to field | | 50.0 | 0.0 | 47.1 | 52.9 | 0.0 | 60.0 | 30.0 | 5.0 | 51.7 | 31.0 | 17.2 |
| 3. Farmer's expectation for road repairing $(\%)^*$ | * | | ÷ | | | | | | • | • | | · |
| | | | | | 1.6 | | | | | | | |
| 2) Secondary road | | | | | 12.4 | | | | | | | • |
| 3) District road | | | | | 9.2 | | ÷ | | | | | |
| 4) Village road (tracks) | | | | | 37.3 | | | | | | | |
| 5) Agricultural road (farm lane) | | | | | 39.5 | | | | | | | |
| Sample size | | 22 | | | 34 | | | 40 | | | 58 | |
| *: for all the farmers | | | | | | | | | | | | |

1.72

Table 3.21 FARM LABOUR BALANCE UNDER WITH- AND WITHOUT PROJECT CONDITIONS

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| Crophennes Produces Work Work | Work Work | November | | December | ber | Ju | Junary | щ | February | _ | Minch | | μ. V | - | À | - | , and | | | 4 | ¥ | August | 3 | Soptember | | October | |
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| 1. IRRIGATED PADDY (0.4 by) | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | Γ |
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| 6. Bindle scaring | | | | | | | Ĺ | | | - | | | | 100 | | 01 421 MIC | 50 LGT 153 | 198 | - | | | - | _ | | - | | ľ |
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| 1. INSTORTED PADOY (0.4 hs) | 1 | | | | | | | | | | | |] | - | | | | | L | | | | | | 1 | | |
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| 2. Breaking clock | 7 | | Ŕ | F | | | † | ľ | | ╞ | ╞ | | | | | ļ | | | ╞ | | | | | | | | T |
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| 2. DRIGATED MAIZE (0.00%) | (mq)0 | . , | | | | | | | | | | | | | | | | | | _ | | | | | | | 1 | ┢╌ | | | 4 | đ. | 1 |
| 1. Claring | 5 | 8 | | | | ŀ | ╞ | | ŀ | ŀ | F | Ĺ | | - | ╞ | F | | ŀ | | ╞ | | | ╞ | ŀ | E | | F | ╉ | ŀ | | + | | F |
| 2. Ridging | 14 | ă | | | L | | F | Ľ | E | | L | F | F | F | ŀ | ╞ | F | ļ- | ŀ | ╞ | | 312123 | - | | ╞ | F | t | t | | | ╉ | ŀ | l |
| 3. Ridging & soming | 4- 3 | 51 | | | Ē | | | L | | | | | L | | - | | | ŀ | ŀ | | | | | ╞ | ŀ | F | t | +- | - | | ╞ | Į. | T |
| 4. Warding | 19 19 | 190 | | | ŀ | | | _ | - | | ╞ | ╞ | F | ţ. | | | Γ | - | | ╞ | | İ | | 13 | 10120120011 | 91 X X | 191 - FL 20 | | - | | ╁ | ╞ | |
| 5. Hervering | | 5 | | | | | | | | | | L | | - | | | | F | | . - | E | ľ | ŀ | | | Ľ | F | 1422/246 | 9 | F | | | F |
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| B. Maire (0.05ha) | - | 19 0 | 0 0 0 | 0 0 0 | 0 | 0 | 0 0 | ō | 0 0 0 | 0 | 0 0 | 0 0 | 0 | 0 | 0 | 000 | 0 | 0 0 | 0 | 0 0 | 1 | ÷ | | | Ē | - | - | - | 0 | 0 | 0 | ē | ā |
| 3. IRRIGATED VECETABLES (0.03br) | 11.23 (0.03h | 7 | | • • • | | | | | | | | - | | | | | | | | ┝ | | | - | | | | | ŀ | | | 1 |]. | |
| 1. Land Properties | 8 | 808 | | F | L | | ╞ | L | Ē | E | ŀ | | F | F | ŀ | | È | - | 8 | ALC: NO | The sector build and the first | 198 | - | | E | E | | t | | | ╞ | - | Ē |
| 2. Pertiner Application | 2 I | 10 | | | | | | Ĺ | | | - | | F | F | | | | | - | - | | | | | Ļ | | t | + | | | | - | T |
| 3. Truckylening | 30-1,500 | 8 | | | F | - | ╞ | ſ | - | ł | ŀ | ŀ | Ì | F | | ļ | T | | + | ╞ | | | ╞ | | APAT Sector Sector | | 1 | t | | | ╈ | ╁ | Ī |
| A Pare Control | 2 16 | 9 | | | F | 1 | - | E | | t | ╞ | l | | t | ╞ | ╞ | T | t | ╞ | ╞ | | ļ | | | | | | ţ | | | + | | |
| 5. Harverice | 99 81 | 8 | ╞ | Ē | F | þ | | ŀ | F | t | ŀ | ŀ | ľ | t | ╞ | ╞ | T | t | ╞ | ╞ | T | t | ╞ | + | | T | | Summer of the second | New York | | ╁ | | Ī |
| Vogestides (? h.) | 104 2020 | 0 | 0 0 | 0 0 | 0 | 0 | 0 0 | 0 | â | 0 | 0 | 0 | 6 | 6 | 0 | 6 | C | - | 0 | 111 221 2 | 57.1 22.1 | 4 | 2 | 1 | ACC SEC. SEC. | • | | A NAME AND ADDRESS OF ADDRES | 1 | | | | |
| C. Vegetables (0.03bs) | - | 0 | 000 | 0 | ō | | 0 | fa | | ι- | ė | | , | te | e | i e | 1 | - | 1 | 3 | | 3 | t | ۲ | | - | | | 1 | • | 5 | 5 | |
| 4. RAINTHED MAIZE (0.86 tm) | î | | | | 1 · | | L | | | (| | 1- | | | | | | | | 1 | | | 1 | 1 | 1 | 5 | 5 | | 5 | 5 | | 5 | 5 |
| 1. Chering | 5 | 9 | ╞ | | F | ŀ | - | | E | F | ŀ | L | F | Ľ | | - | t | F | F | | | F | ╞ | | | | | ╞ | | 10.000 | ╁ | ŀ | |
| 2. Ridging | 14 23 | ลี | ┝╸ | F | F | | ╞ | L | | - | | L | | | | - | T | t | ╞ | ╞ | | T | | + | | | ╈ | ļ | ╁ | | ╉ | ľ | and a second |
| 3. Ridging & source | - | 5 | | Ê | | 日間 | ╞ | | | ŀ | | Ļ | | - | t | ╞ | | ŀ | ╞ | ╞ | | Ť | t | ╀ | ĺ | ľ | | ļ | + | - | ╋ | 1 | |
| 4. Wanting | 19 19 | 8 | | | | Ĺ | 教育の商業 | Sec. 105. | | - | | L | F | t | ŀ | ╞ | | t | t | ╞ | 1 | t | | | Ļ | | 1 | ╀ | | | ╁ | | |
| 5. Harvestag | 6 | 66 | | | | | | | | F | - | E | | F | L | ╞ | | | 1002700 | Ļ | ľ | ŀ | | | L | ŀ | t | ╞ | ╞ | | ╞ | ╞ | T |
| Maine (ta) | 2 2 | 0 | | 0 0 0 | | 16 16 16 20 20 | 0 20 33 | 56 | 6 | 0 | 0 0 | 0 0 0 | 0 | 0 | 0 | 0 0 | 0 | 0 | 0 46 27 | 7 0 0 | 0 | 0 | 0 | 0 | 0 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 0 76 | 76 74 |
| D. Maine (0.86he) | 8 | 53 | 000 | 000 | 5 | 14 14 14 17 | 17 28 | 1 34 34 | 10 | 0 | 0 0 | 0 0 0 | 0 0 | 0 0 | 0 | 0 0 | 00 | 0 | 8 9 0 | 0 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | õ | Ŀ | fe | ľ | T |
| TOTAL (A+B+C+D) | 13,1 | 3,180 79 79 | 9 75 75 91 | 34 14 | 95 94 | 96 94 97 | r yr 92 | 2 92 92 | 8 | \$ 8 | 44 72 68 | 8 68 68 | 98 8 9 | 23 | 85 65 6 | 64 64 64 | 3 | 0 0 | 0 AS | 4 4 | 4 | • | - | 1 | 1 32 33 | - | - | 1 | 1 | ¥ | P | 8 | T |
| AVAB. LABOUR | 17.1 | 7,154 90 90 | | 26 26 26 | * | * * * | 8 | 8 8 | 86 86 | 5 25 | 36 66 36 | 86 86 3 | 36 36 | 5 36 25 | 6 66 56 | 5 5 5 S | 36 36 | 8 8 | 5 5 55 | 50 70 ¥ | 80 50 | 8 | 0 00 00 | 0x 00 00 | 5 5 5 | 8 | 10 | 0 00 00 | 8 | 8 | 8 | 8 | 1 |
| BALANCE | 2,6 | 974 10 | 19 19 | 7 64 84 | 3 4 | * | - | 6 6 | | 8 | 8 8 8 | | 8 | 10 | Ē | R | | 8 | 1 | 8 | 3 | 3 | : 8 | 5 | 2 | ŧ s | 8 | 5 | k | 1 1 1 | s F | 2 | |
| (Working Rana) | 4 | 44 | | | F | ŀ | | | | t | | t | ┢ | ŀ | t | | 5 | | L | ¢ | | ł | ſ | t | 1 | ŧ | t | R) | | | Ţ | ŧ | |
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| TABLE 3.2.2 | REQUIRED | CAPACITY | AND | NUMBERS | 0F | RICE MILLS | |
|-------------|----------|----------|-----|---------|----|------------|--|
| | | | | | | | |

| | Item | Unit | Lower Nadzipulu Irrigation Project | Namikokwe Integrated Irrigation Project | Lower Livulezi Irrigation Project |
|---|-------------------------------------|-------------|---------------------------------------|--|--------------------------------------|
| 1 | Irrigation Area | (ha) | 250 | 800 | 520 |
| 2 | Production (4.0/ha) | (tons) | 1,000 | 3,200 | 2,080 |
| 3 | Numbers of Farmers | | 625 | 2,000 | 1,300 |
| 4 | Self Consumption Rice | | | | |
| | (1) Annual | | | | |
| | (320 kg/Year/household)) | (tons) | 200 | 640 | 416 |
| | (2) Required cap[acity of rice mill | | | | |
| | -10 months x 20 days | (ton/day) | 1.0 | 3.2 | 2.1 |
| | -6 hours/day | (ton/hr) | 0.17 | 0.54 | 0.35 |
| 5 | Marketing Rice | | | | |
| | (1) Max. possible amount | (tons) | 800 | 2,560 | 1,664 |
| | (2) Milling amount (50 % of (1) |) (tons) | 400 | 1,280 | 832 |
| | (3) Required capacity og rice mill | • | | | |
| | -3 months x 20 days | (ton/day) | 6.7 | 21.4 | 13.9 |
| | −6 hours∕day | (ton/hr) | 1.12 | 3.57 | 2.32 |
| 6 | Required Capacity and Numbers of | of Rice Mil | 1 | | |
| | (1) Required Capacity (4 + 5) | (ton/hr) | 1.29 | 4.11 | 2.67 |
| | (2) Required Nos. (1.0 ton/hr) | (set) | 2 | 5 | 3 |

| Oracle Mattering Variable Water Topical Constant of Mark Topical Constant (mail) Mark Topical Constant (mail) Mark Topical Constant (mail) Mark Topical Mark Topical Constant (mail) Mark Topical Mark Topi | | | (1) | 3 | (2) | (†) | (5) | 9 | e | (8) | | (01) | (11) | (12) | (13) | (14) | (15) |
|--|------------|---------|-------------------------------|------------------------|-----------------------------|----------------|---------------|-----------------|----------------|---------------|---------------|----------------|---------------|------------|----------|--------------|-----------|
| Alternetistic for all character of a charac | | | River | | Irrigation | | Water re- | Imigat- | Gross | Effective | Puddling | Gross puddling | Gross | Calculated | | Area | |
| (mode) (mode)< | | | discharge | | days | | quirement | ٠. | Water require | rainfall | Water require | | Water require | Imigable | | intencity of | |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Month | | (m3/sec) | (m3/sec) | | (m3) | (EEE) | sciency | ment (mm) | (m u) | - 1 | | ment (m3/ba) | Area (ba) | puddling | С. В | Area (ha) |
| 113.57.8 0.0 0.720 0.00 | | 10 | 0.270 | 0.179 | 'n | 23,587 | 0.3 | 0.720 | 0.39 | 0.0 | | 0.0 | 4 | 6,027 | 0.000 | 0.000 | 0 |
| 113/37 0.0 0.720 0.00 2000 0. | Nov Nov | 2 | 0.325 | 0.179 | 0 | 126,058 | 0.0 | 0.720 | 0.00 | 0.0 | | 0.0 | 0 | | 0.000 | 0.000 | 0 |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | | 10 | 0.200 | 0.179 | 0 | 18,317 | 0.0 | 0.720 | 0.00 | 0.0 | | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| 1,237,446 0.0 0.720 0.00 210.6 0.0 0.00 | | 10 | 3.485 | 0.179 | 0 | 1,128,578 | 0.0 | 0.720 | 0.00 | 48.3 | | 0.0 | 0 | • | 0:000 | 0.000 | 0 |
| 223-330 0.0 0.720 0.00 38.9 4.71 65.5 3.413 0.314 0.000 1.0 | ដ្ឋី | 10 | 1.669 | 0.179 | 0 | 1.287,446 | 0.0 | 0.720 | 0.00 | 210.6 | | 0.0 | 0 | , | 0.000 | 0.000 | e |
| 5560360 146 0.720 52.35 64.1 4.29 55.55 0.167 0.117 0.125 0.127 0.126 0 | | | 2.530 | 0.179 | 11 | 2,234,380 | 0.0 | 0.720 | 0.00 | 38.9 | | 65.5 | 655 | 3,413 | 0.314 | 0.000 | 521 |
| 5.403,566 43.8 0.700 0.013 71.6 4.2.9 9.5.7 9.078 0.236 0.500 1.0000 | | | 6.696 | 0.179 | 10 | 5,630,990 | 14.6 | 0.720 | 20.26 | 68.1 | | 59.5 | 595 | 9.460 | 0.286 | 0.167 | 250 |
| 6:338,387 8:17 0.770 113.45 117.3 77.3 0.00 11.00 < | Ian | 1 | 6.433 | 0.179 | 10 | 5,403,866 | 43.8 | 0.720 | 60.78 | 71.6 | | 5.05 | \$95 | 6 M 8 | 0.286 | Sec. | 200 |
| 13.053.850 86.2 0.720 119.75 77.5 0.00 0.00 4.23 36.877 0.000 1.000 | | | 1.050 | 0.179 | | 6 538 847 | 81.7 | 0.720 | 113.45 | 112.3 | | 23.8 | 250 | 26 163 | 0 114 | 0 248 | X. |
| 6,618,110 86.2 0.720 119.75 3.3 0.0 0.1164 5.635 0.000 1.000 3,456,068 6.4 0.720 133.11 0.0 0.0 0.000 1.0 | | 9 | 15.288 | 0.179 | ļ | 13.053.830 | 86.2 | 0.720 | 119.75 | 71.5 | | 0.0 | 423 | 30.877 | 0.000 | 1,000 | 1 658 |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | 5 | a. | 7.839 | 0.179 | | 6.618.110 | 86.2 | 0.720 | 119.75 | 3.3 | | 0.0 | 1.164 | 5.683 | 0.000 | 1,000 | 1 658 |
| 3,462,398 87.4 0,720 121.4 0.0 0.0 1.214 2,852 0.000 1.000 <th< td=""><th>-</th><td></td><td>5.324</td><td>0.179</td><td></td><td>3,556,063</td><td>69.0</td><td>0.720</td><td>95.80</td><td>6.8</td><td></td><td>0.0</td><td>698</td><td>4.092</td><td>0000</td><td>1.000</td><td>1.658</td></th<> | - | | 5.324 | 0.179 | | 3,556,063 | 69.0 | 0.720 | 95.80 | 6.8 | | 0.0 | 698 | 4.092 | 0000 | 1.000 | 1.658 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | OR. | 4,187 | 0.179 | | 3,462,998 | 87.4 | 0.720 | 121.41 | 0.0 | | 0.0 | 1.214 | 2.852 | 0.000 | 1.000 | 1.658 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | War | a | 3.740 | 0.179 | | 3.076.358 | 88.1 | 0.720 | 122.31 | 0.0 | | 0.0 | 1333 | 2.515 | 0.000 | 1.000 | 1 658 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | | 2,890 | 0.179 | 11 | 2.576.946 | 95.8 | 0.720 | 133.11 | 0.0 | | 0.0 | 1.331 | 1.936 | 0000 | 1.000 | 1 658 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | | 9 | 2.274 | 0.179 | 10 | 1 810 166 | 78.5 | 0.720 | 109.18 | 0.0 | ĺ | 0.0 | 1 (197) | 1 658 | 0000 | 1 (200 | 1 6 4 2 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | Apr | E CA | 3.112 | 0.179 | 10 | 2.534.198 | 80.4 | 0.720 | 111 70 | \$7.0 | | 0.0 | 55 | 3.916 | 0000 | 1 (20) | 1 658 |
| 1,395/706 34.1 0.720 47.40 0.0 0.0 4.74 2.945 0.000 0.500 1.17 1,074.91 0.0 0.720 16.44 0.0 0.0 0.0 0.0 0.00 | • | | 2.179 | 0.179 | 10 | 1.728.302 | 62.9 | 0.720 | 91.56 | 0.0 | | 0.0 | 916 | 1.888 | 00000 | 0.833 | 1.382 |
| 1218.672 11.8 0.720 16.44 0.0 0.0 1.41 0.000 0.167 1.074.911 0.0 0.720 0.00 0.0 0.0 0.0 0.000 0.167 1.074.911 0.0 0.720 0.00 0.0 0.0 0.0 0.000 0.000 873.901 2.0 0.720 3.07 0.0 0.0 0.0 0.000 </td <th></th> <td>- 10 M</td> <td>1.794</td> <td>0.179</td> <td>10</td> <td>1,395,706</td> <td>34.1</td> <td>0.720</td> <td>47.40</td> <td>0.0</td> <td></td> <td>0.0</td> <td>474</td> <td>2,945</td> <td>0:000</td> <td>0.500</td> <td>829</td> | | - 10 M | 1.794 | 0.179 | 10 | 1,395,706 | 34.1 | 0.720 | 47.40 | 0.0 | | 0.0 | 474 | 2,945 | 0:000 | 0.500 | 829 |
| I.(7/4.911 0.0 0.720 0.00 | May | 10 | 1.589 | 0.179 | 10 | 1,218,672 | 11.8 | 0.720 | 16.44 | 0.0 | | 0.0 | 164 | 7,411 | 0.000 | 0.167 | 276 |
| 788.486 0.0 0.720 0.00 0.0 0.0 0.0 0.00 <th< td=""><th></th><td>11</td><td>1.310</td><td>0.179</td><td>¢</td><td>1,074,911</td><td>0.0</td><td>0.720</td><td>0.00</td><td>0.0</td><td></td><td>0.0</td><td>¢</td><td>•</td><td>0.000</td><td>0.000</td><td>0</td></th<> | | 11 | 1.310 | 0.179 | ¢ | 1,074,911 | 0.0 | 0.720 | 0.00 | 0.0 | | 0.0 | ¢ | • | 0.000 | 0.000 | 0 |
| 811.901 2.2 0.720 3.07 0.0 0.0 31 $25,441$ 0.000 $\frac{592,2772}{555}$ 6.6 0.720 9.21 0.0 0.0 92 6,429 0.000 $\frac{592,2772}{555}$ 11.6 0.720 35.14 0.0 0.0 28.64 0.000 $\frac{402,797}{515}$ 17.0 0.720 35.14 0.0 0.0 26.6 1.707 0.000 $\frac{402,797}{512}$ 35.6 0.720 35.14 0.0 0.0 0.0 26.6 1.707 0.000 $\frac{312,854}{512}$ 36.6 0.720 35.14 0.0 0.0 0.0 0.0 0.0 0.0 0.00 | | 10 | 1.092 | 0.179 | 0 | 788,486 | 0.0 | 0.720 | 0.00 | 0.0 | | 0.0 | 0 | | 0.000 | 0.000 | 0 |
| S92.272 6.6 0.720 9.21 0.00 0.00 9.2 6.429 0.000 434,550 11.5 0.720 16.04 9.0 0.0 0.0 2.834 0.000 434,550 11.5 0.720 16.04 9.0 0.0 0.0 2.834 0.000 432,551 0.720 35.14 0.0 0.0 0.0 356 1.707 0.000 382,65 0.720 35.14 0.0 0.0 0.0 351 1.087 0.000 310,522 43.5 0.720 58.231 0.0 0.0 0.0 0.0 0.00 351 1.087 0.000 310,522 43.5 0.720 94.23 0.0 0.0 0.0 0.0 0.00 0.000 10.000 10.00 10.00 0.00 0.000 10.00 0.00 0.000 10.00 0.00 0.000 10.00 0.00 10.00 11.00 10.00 10.00 10.00 10 | ۲Щ. | 20 | 1.119 | 0.179 | 10 | 811,901 | 22 | 0.720 | 3.07 | 0.0 | | 0.0 | 31 . | 26,441 | 0.000 | 0.167 | ¢ |
| 454,550 11.5 0.720 16.04 0.0 0.0 160 2.834 0.000 402,771 17.0 0.720 23.560 0.0 0.0 0.0 236 1,707 0.000 312,554 36.5 0.720 53.514 0.0 0.0 0.0 536 0.700 312,552 43.5 0.720 50.82 0.0 0.0 0.0 0.0 0.00 310,522 43.5 0.720 52.31 0.0 0.0 0.0 0.0 0.0 242,447 59.3 0.720 92.31 0.0 0.0 0.0 922 166 0.000 242,447 59.3 0.720 92.19 0.0 0.0 0.0 922 166 0.000 10,584 66.1 0.720 93.71 0.0 0.0 0.0 922 166 0.000 10,038 67.0 0.720 93.61 67.1 0.00 923 166 0.000 10,038 67.0 0.720 93.74 0.0 0.0 0.0 0.0 1.055 97 0.000 10,032 67.0 0.720 35.44 0.0 0.0 0.0 0.0 <th></th> <td>10</td> <td>0.864</td> <td>0.179</td> <td>10</td> <td>592,272</td> <td>6.6</td> <td>0.720</td> <td>9.21</td> <td>0.0</td> <td></td> <td>0.0</td> <td>8</td> <td>6,429</td> <td>0.000</td> <td>0.500</td> <td>0</td> | | 10 | 0.864 | 0.179 | 10 | 592,272 | 6.6 | 0.720 | 9.21 | 0.0 | | 0.0 | 8 | 6,429 | 0.000 | 0.500 | 0 |
| 402,77 17.0 0.720 23.60 0.0 0.0 236 1,707 0.000 382,674 25.3 0.720 35.14 0.0 0.0 0.0 351 1089 0.000 312,854 35.6 0.720 35.14 0.0 0.0 0.0 351 1089 0.000 312,854 35.6 0.720 50.82 0.0 0.0 0.0 508 616 0.000 312,854 59.3 0.720 80.42 0.0 0.0 0.0 90 923 166 0.000 242,470 67.8 0.720 95.19 0.0 0.0 0.0 92 166 0.000 25,610 67.18 0.7720 95.19 0.0 0.0 92 166 0.000 10,1088 68.5 0.7200 93.07 0.0 0.0 0.0 92 166 0.000 10,102.288 76.0 0.7720 93.07 0.0 0.0 0.0 1.055 97 0.000 10,032.25 0.7720 35.41 0.0 0.0 0.0 1.055 97 0.000 10,032.25 0.7720 35.41 0.0 0.0 <t< td=""><th></th><td>2</td><td>0.705</td><td>0.179</td><td>10</td><td>454,550</td><td>11.5</td><td>0.720</td><td>16.04</td><td>0.0</td><td></td><td>0.0</td><td>160</td><td>2,834</td><td>0.000</td><td>0.833</td><td>0</td></t<> | | 2 | 0.705 | 0.179 | 10 | 454,550 | 11.5 | 0.720 | 16.04 | 0.0 | | 0.0 | 160 | 2,834 | 0.000 | 0.833 | 0 |
| 382.674 25.3 0.720 35.14 0.0 0.0 0.0 351 1,089 0.000 331 1,089 0.000 331 1,089 0.000 331 1,089 0.000 331 1,089 0.000 331 332.67 335 0.770 53.82 0.0 0.0 0.0 0.0 0.00 333 1,089 0.000 333 314 0.0 0.00 333 0.00 0.00 333 0.00 0.00 333 0.00 0.00 333 334 0.00 0.00 333 0.00 0.00 334 0.00 0.0 | Jul | 91 0 | 0.645 | 0.179 | 10 | 402,797 | 17.0 | 0.720 | 23.60 | 0.0 | | 0.0 | 236 | 1 707 | 0.000 | 1.000 | 0 |
| 312,854 36.6 0.720 50.82 0.0 0.0 506 616 0.000 242,447 59.3 0.720 60.42 0.0 0.0 0.0 604 514 0.000 242,447 59.3 0.720 60.42 0.0 0.0 0.0 823 295 0.000 156,66 0.720 95.19 0.0 0.0 0.0 922 166 0.000 156,66 0.720 93.07 0.0 0.0 0.0 931 62 0.000 101,088 68.5 0.720 93.07 0.0 0.0 0.0 931 62 0.000 101,088 68.5 0.720 93.07 0.0 0.0 0.0 931 62 0.000 101,088 68.5 0.720 93.07 0.0 0.0 0.0 931 62 0.000 0 53.44 0.0 0.0 0.0 0.0 0.0 741 0 0.000 105,558 76.0 0.720 35.44 0.0 0.0 741 0 0.000 10 61.080 0.0 0.0 0.0 0.0 0.0 741 9 0.00 | | 11 | 0.582 | 0.179 | 11 | 382,674 | 25.3 | 0.720 | 35.14 | 0.0 | | 0.0 | 351 | 1,089 | 0.000 | 1.000 | 0 |
| 310,522 43.5 0.720 60.42 0.0 0.0 604 514 0.000 242,447 59.3 0.720 82.31 0.0 0.0 90 823 235 0.000 10,108 65.5 0.720 94.23 0.0 0.0 90 922 166 0.000 10,108 65.5 0.720 93.07 0.0 0.0 931 62 0.000 10,108 65.1 0.720 93.07 0.0 0.0 931 62 0.000 10,238 76.0 0.720 93.07 0.0 0.0 0.0 0.0 0.00 | | 10 | 0.541 | 0.179 | 10 | 312,854 | 36.6 | 0.720 | 50.82 | 0.0 | | 0.0 | 508 | 616 | 0.000 | 1.000 | 0 |
| 222,447 59.3 0.7720 82.31 0.0 0.0 823 235 0.000 156,470 67.18 0.720 95.19 0.0 0.0 922 166 0.000 156,470 67.18 0.720 95.19 0.0 0.0 922 166 0.000 105,618 68.5 0.720 93.71 0.0 0.0 931 62 0.000 107,298 76.0 0.720 93.53 0.0 0.0 0.0 931 62 0.000 0 53.46 0.0 0.0 0.0 0.0 0.0 741 0 0.000 107,298 76.0 0.720 35.44 0.0 0.0 0.0 0.0 741 0 0.000 107,298 76.0 0.720 35.44 0.0 0.0 0.0 0.0 0.0 0.000 16.5 0.720 35.44 0.0 0.0 0.0 0.0 0.0 0.000 | Aug | 10 | 0.538 | 0.179 | 10 | 310,522 | 43.5 | 0.720 | 60.42 | 0.0 | | 0.0 | <u>Ş</u> | 514 | 0.000 | 0.998 | 0 |
| 156,470 67.8 0.720 94.23 0.0 0.0 0.0 9.0 0.0 <t< td=""><th></th><td>=</td><td>0.434</td><td>0.179</td><td>11</td><td>242,447</td><td>59.3</td><td>0.720</td><td>82.31</td><td>- 0'0</td><td></td><td>0.0</td><td>823</td><td>295</td><td>0.000</td><td>0.954</td><td>0</td></t<> | | = | 0.434 | 0.179 | 11 | 242,447 | 59.3 | 0.720 | 82.31 | - 0'0 | | 0.0 | 823 | 295 | 0.000 | 0.954 | 0 |
| 101,088 68.5 0.7720 95.19 0.0 0.0 952 106 0.000 58,061 67.0 0.7720 105.53 93.07 0.0 0.0 931 62 0.000 101,088 68.5 0.7720 105.53 0.0 0.0 0.0 931 62 0.000 102,298 76.0 0.720 105.53 0.0 0.0 0.0 741 0 0.000 0 53.4 0.720 35.44 0.0 0.0 0.0 741 0 0.000 1,653 (ha) 1 6.0 0.0 0.0 0.0 0.00 1.055 97 0.000 15.080 25.5 0.720 35.44 0.0 0.0 0.0 0.000 1.055 97 0.000 16 (ha) 1 0 0.0 0.0 0.0 0.000 178 0.000 16 (ha) 5 5 5 5 </td <th></th> <td>2</td> <td>0.360</td> <td>0.179</td> <td>10</td> <td>156,470</td> <td>67.8</td> <td>0.720</td> <td>£7,53</td> <td>0.0</td> <td></td> <td>0.0</td> <td>545 745</td> <td>166</td> <td>0.000</td> <td>0.767</td> <td>0</td> | | 2 | 0.360 | 0.179 | 10 | 156,470 | 67.8 | 0.720 | £7,53 | 0.0 | | 0.0 | 545 745 | 166 | 0.000 | 0.767 | 0 |
| 58,061 67.0 0.7220 93.07 0.0 0.0 0.0 931 62 0.000 102.298 76.0 0.7220 135.44 0.0 0.0 0.0 1.055 97 0.000 | Nep Nep | 9 | 0.296 | 0.179 | 10 | 101,088 | 68.5 | 0.720 | 95.19 | 0.0 | | 0.0 | 952 | 18 | 0.000 | 0.433 | 0 |
| 107.258 76.0 0.720 105.53 0.0 0.0 0.0 1.055 97 0.000 0 53.4 0.720 74.11 0.0 0.0 741 0 0.000 63.080 25.3 0.720 35.44 0.0 0.0 0.0 741 0 0.000 63.080 25.5 0.720 35.44 0.0 0.0 0.0 35.4 178 0.000 fs considered is the river maintenance discharge 0 (ha) 1 6.0 0.00 178 0.000 fs considered is the river maintenance discharge e during the inigation period 1 1 0 0.000 followings : -Pandding for main field 150 mm 2 0.000 | | 2 | 0.246 | 0.179 | 10 | 58,061 | 67.0 | 0.720 | 93.07 | 0.0 | | 0.0 | 931 | 62 | 0.000 | 0.107 | 0 |
| 0 53.4 0.720 74.11 0.0 0.0 74.1 0 0.000 6 63.080 25.5 0.720 35.44 0.0 0.0 0.0 74.1 0 0.000 6 1.4658 (ha) 35.44 0.0 0.0 0.0 354 178 0.000 6 1.4658 (ha) 35.44 0.0 0.0 0.0 354 178 0.000 6 fs considered as the river maintenance discharge 6 (ha) 6 (ha) 6 (ha) 0 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 0.000 6 6 0.000 6 0.000 6 6 0.000 6 6 0.000 6 0.000 6 0.000 6 0. | | 2 | 0.297 | 0.179 | 10 | 102,298 | 76.0 | 0.720 | 105.53 | 0.0 | 0.0 | 0.0 | 1,055 | 66 | 0.000 | 0.000 | 0 |
| 1,65% (ha) 1,65% (ha) 0 (ha) is considered as the river maintenance discharge e during the impation period followings : -Pudding for main field 150 mm -Durrul triver becar is 2 mm/m | ŏ | 2= | 0.179 | 0.179 | 0 | 080 63 | 53.4 | 0,120 | 74,11 | 000 | 0.0 | 0.0 | 741 | 0 2 | 0.00 | 800 | 0 |
| for the second s | | | Imostice an | res in mirv's | L S S O | | 1 65% | (Pa) | | | 20 | 2.2 | t | | 200 | 3 | , |
| U (na) is considered as the river maintenance discharge e during the imigation period followings : Pudding for main field 150 followings : Domolofic for main field 20 | | | | | | | | | | | | | | | | | |
| is considered as the river maintenance discharge e during the imigation period followings : | | Ē | MULTINGALONC BU | ara in ary sea | | : | . د | (80) | | | | | | | | | |
| Puddling for main field 150 | Note) | The nu | knimum river ble dieskanse | r discharge in th | be year is co in-home du | Masidered as 1 | the river the | aintenance ' | dischange | | | | | | | | |
| Percolotion breeze is 3 | | Water | the mount of the | is relationable to the | seed on follo | surg we mig | NUM DOLLO | u -Druddlino | for main field | | | | | | | | |
| | | | | | | | | Paraletic | a locar i | | | | | | | | |

Table 3.3.1 WATER BALANCE CALCULATION FOR NADZEPULU RIVER BASIN (PATTERN-1)

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| 1 WATER BALANCE CALCULATION FOR NAMIKOKWE RI | |
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|---|--------|---------------|---------------|-------------------|---------------|------------------|--------------|---------------|----------------|-------|-----------|---------------|--------------|----------------|----------|-------|--------------|
| Answer Fortune Fortune <th< th=""><th></th><th></th><th>3</th><th>8.</th><th>(C) (C)</th><th>(4)</th><th>() ()</th><th>9</th><th>εį</th><th>(8)</th><th>(6)</th><th>(10)</th><th>E,</th><th>(12)</th><th>(13)</th><th>(14)</th><th>(32) (32)</th></th<> | | | 3 | 8. | (C) (C) | (4) | () () | 9 | εį | (8) | (6) | (10) | E, | (12) | (13) | (14) | (32) (32) |
| (Childer) (Childer) <t< th=""><th></th><th></th><th>Alcohanna</th><th></th><th>nonsgint</th><th>Avauatio</th><th>-or mana</th><th>•</th><th>2010 1</th><th></th><th>ruoung</th><th>Cross pucuing</th><th>10000</th><th></th><th>Net 1</th><th></th><th></th></t<> | | | Alcohanna | | nonsgint | Avauatio | -or mana | • | 2010 1 | | ruoung | Cross pucuing | 10000 | | Net 1 | | |
| 10 0.231 0.066 0 0.13 0.067 0.13 0.060 0.0 0.0 0.0 0.00 0.0 0.00 0.0 0.00< | Month | | (m3/sec) | | | (m3) | (uuu) | | ment (mm) | | ment (mm) | ment (mm) | ment (m3/ha) | | puddling | | |
| 0 0.133 0.066 0 3.347 0.060 0.0 0.0 0 0.000 | | 10 | 0.261 | 0.066 | e) | 50,629 | 0.3 | 0.720 | 0.39 | 0.0 | 0.0 | 0:0 | 4 | 12.936 | 000.0 | 0.015 | 0 |
| 10 0.237 0.066 0 13.644 0.0 0.00 0.0 0 0.00< | Nov | 10 | 0.128 | 0.066 | 0 | 53,382 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | Ð | • | 0.000 | 0.000 | 0 |
| 10 2.436 0.066 0 7.75,158 0.00 0.05 0.0 0.00 <t< th=""><th>1</th><th>10</th><th>0.203</th><th>0.066</th><th>0</th><th>118,044</th><th>0.0</th><th>0.720</th><th>0.00</th><th>0'0</th><th>0.0</th><th>0.0</th><th>0</th><th>•</th><th>0.000</th><th>0.000</th><th>0</th></t<> | 1 | 10 | 0.203 | 0.066 | 0 | 118,044 | 0.0 | 0.720 | 0.00 | 0'0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | | 10 | 0.390 | 0.066 | 0 | 279,618 | 0.0 | 0.720 | 0.00 | 48.3 | 0'0 | 0.0 | 0 | 1 | 0.000 | 0.000 | 0 |
| III 3.307 0.066 11 3.616.10 0.720 0.00 3.71 0.55 5.55 5.56 5.76 0.56 0.13 5.71 0.06 0.13 5.61.13 7.13 7.13 7.13 7.13 7.13 7.13 7.13 7.13 7.13 7.13 7.13 7.13 7.14 0.00 | 30 | 0 | | 0.066 | 0 | 2,023,056 | 0.0 | 0.720 | 0.00 | 210.6 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| 8 5:00 0:066 10 2:07:19 5:17:31 10:30 10:30 10: | | | | 0.066 | 11. | 3,166,130 | 0.0 | 0.720 | 0.00 | 38.9 | 47.1 | 65.5 | 655 | 4,836 | 0.314 | 0.000 | 347 |
| 1 2.568 0.066 10 2.450/48 4.58 7.73 0.05 10 4.97 0.256 0.060 10 2.450/48 4.58 0.730 1051/13 0.060 10 2.450 0.060 10 2.56 0.000 1000 | | 01 | | 0.066 | 01 | 4,608,196 | 14.6 | 0.720 | 20.26 | 68.1 | 42.9 | 59.5 | 595 | 7,742 | 0.286 | 0,167 | 500 |
| 1 1,1;0 0.066 11 7,61;7;0 0,15;3 11:2;1 17:1 23:8 0,075 0;114 0,036 10 4,773;238 86:2 0,700 11;3;3 11:1 0,154 0,154 0,000 1000 | Jan | | 2.868 | 0.066 | 10 | 2,420,748 | 43.8 | 0.720 | 60.78 | 71.6 | 42.9 | 59.5 | 595 | 4,067 | 0.286 | 0.500 | 868 |
| 0 10443 0066 10 \$5393 853 0700 11373 713 000 1000 | | | 8.149 | 0.066 | 11 | 7,681,789 | 81.7 | 0.720 | 113.45 | 112.3 | 17.1 | 23.8 | 250 | 30,736 | 0.114 | 0.848 | 1,063 |
| 0 5591 0066 1 4,712,012 650 0,700 11,64 4,995 0,000 1,000 </th <th></th> <th>04 00</th> <th>10.413</th> <th>0.066</th> <th>10</th> <th>8,939,931</th> <th>86.2</th> <th>0.720</th> <th>119.75</th> <th>77.5</th> <th>0.0</th> <th>0:0</th> <th>423</th> <th>21.146</th> <th>0.000</th> <th>1.000</th> <th>1.104</th> | | 04 00 | 10.413 | 0.066 | 10 | 8,939,931 | 86.2 | 0.720 | 119.75 | 77.5 | 0.0 | 0:0 | 423 | 21.146 | 0.000 | 1.000 | 1.104 |
| 3 2.556 0.066 8 1,721,012 6.90 0.700 1.106 0.000 1.106 0.000 1.00 | £ | | 5.591 | 0.066 | 10 | 4,773,228 | 86.2 | 0.720 | 119.75 | 3.3 | 0.0 | 0.0 | 1,164 | 4,099 | 0.000 | 1.000 | 1.104 |
| 00 2.552 0.066 10 2.763 87.4 0.720 12.141 0.00 1.00 < | | R | 2.556 | 0.066 | 80 | 1.721,012 | 69.0 | 0.720 | 95.80 | 8.9 | 0.0 | 0.0 | 698 | 1.980 | 0.000 | 1.000 | 1.104 |
| 10. 2.570 0.066 10 1.990257 88.1 0.720 12.32 1.627 0.000 1. | | 0 4 00 | 2.632 | 0,066 | 10 | 2,216,838 | 87.4 | 0.720 | 121.41 | 0'0 | 0.0 | 0.0 | 1,214 | 1,826 | 0.000 | 1.000 | 1,104 |
| 11 1.768 0.066 11 1.617.246 95.8 0.720 133.11 0.0 0.0 1.215 0.000 1.00 | Mar | | 2.370 | 0.066 | 10 | 1,990,297 | 88.1 | 0.720 | 122.31 | 0.0 | 0.0 | 0.0 | 1,223 | 1.627 | 0.000 | 1.000 | 1,104 |
| 10 1.461 0.066 10 1.2552.1 78.5 0.720 11170 770 0.00 1.092 1.104 0.000 1.000 | | 11 | 1.768 | 0.066 | 11 | 1,617,246 | 95.8 | 0.720 | 133.11 | 0.0 | 0.0 | 0.0 | 1,331 | 1,215 | 0.000 | 1.000 | 1,104 |
| 17.09 0.066 10 1.415/62 8.54 0.720 111.70 47.10 0.00 6.77 2.194 0.000 1.135 0.000 0 | | OI . | 1.461 | 0.066 | 10 | 1,205,521 | 78.5 | 0.720 | 109.18 | 0.0 | 0.0 | 0.0 | 1,092 | 1,104 | 0.000 | 1.000 | 1,104 |
| 10 1.288 0.066 10 1.055.65 6.59 0.770 0.10 0.10 0.10 0.10 0.00 | Apr | 9 | 1.709 | 0.066 | 10 | 1,419,622 | 80.4 | 0.720 | 111.70 | 47.0 | 0.0 | 0.0 | 647 | 2,194 | 0.000 | 1.000 | 1.104 |
| | • | C. | 1.288 | 0.066 | 10 | 1,055,650 | 65.9 | 0.720 | 91.56 | 0.0 | 0.0 | 0.0 | 916 | 1,153 | 0.000 | 0.833 | 920 |
| 0.060 10 0.2500 0.060 10 0.2500 0.0 | | | 0.907 | 0.066 | 10 | 726,553 | 34.1 | 0.720 | 47.40 | 0.0 | 0.0 | 0.0 | 474 | 1,533 | 0.000 | 0.500 | 552 |
| 11 0.667 0 $570,773$ 0.0 0.720 0.00 0.0 | May | | 0.790 | 0.066 | 10 | 625,057 | 11.8 | 0.720 | 16.44 | 0.0 | 0.0 | 0.0 | <u>15</u> | 3,801 | 0.000 | 0.167 | 184 |
| $ \begin{array}{cccccccccccccccccccccccccccccccccccc$ | | 11 | 0.667 | 0.066 | 0 | 570,773 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0'0 | | • | 0.000 | 0.000 | 0 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | 10 | 0.557 | 0.066 | 0 | 424,017 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Iun | 2 | 0.529 | 0.066 | 10 | 169'662 | 2,2 | 0.720 | 3.07 | 0.0 | 0.0 | 0.0 | 31 | 13,017 | 0.000 | 0.167 | o |
| | ļ | <u></u> | 0.431 | 0.066 | 10 | 315,568 | 6.6 | 0.720 | 9.21 | 0.0 | 0.0 | 0.0 | - 92 | 3,426 | 0.000 | 0.500 | 0 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | 01 | 0.418 | 0.066 | 10 | 304,471 | 11.5 | 0.720 | 16.04 | 0.0 | 0.0 | 0.0 | 160 | 1,898 | 0000 | 0.833 | 0 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | Jul | 10 | 0.373 | 0.066 | 10 | 265,484 | 17.0 | 0.720 | 23.60 | 0.0 | 0.0 | 0.0 | 236 | 1,125 | 0.000 | 1.000 | 0 |
| | | H | 0.337 | 0.066 | 11 | 257,042 | 25.3 | 0.720 | 35.14 | 0.0 | 0.0 | 0.0 | 351 | 731 | 0.000 | 1.000 | 0 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | 10 | 0.296 | 0.066 | 10 | 199,053 | 36.6 | 0.720 | 50.82 | 0.0 | 0.0 | 0.0 | 508 | 392 | 0.00 | 1.000 | 0 |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | Aug | 10 | 0.269 | 0.066 | 10 | 175,059 | 43.5 | 0.720 | 60.42 | 0.0 | 0.0 | 0.0 | 604 | 28 28 | 0.000 | 1.000 | 0 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | | H | 0.232 | 0.066 | 11 | 157,662 | 59.3 | 0.720 | 82.31 | 0.0 | 0.0 | 0.0 | 823 | 192 | 0.000 | 1.000 | 0 |
| 10 0.1122 0.066 10 57.365 68.5 0.720 95.19 0.0 0.0 952 60 0.000 1 10 0.107 0.006 10 35.717 67.0 0.720 10.0 10.0 931 38 0.000 1 10 0.107 0.006 10 45.70 75.0 10.553 46 0.000 1 11 0.006 10 15.674 55.4 0.720 74.11 0.0 0.0 0.0 741 22 0.000 1 11 0.006 10 15.674 55.4 0.720 35.44 0.0 0.0 0.0 0.0 0.0 0.00 0 0 0 0 0.00 0.0 0.00 0.00 0.00 0.00 0.000 0 0 0.000 0 0 0 0.000 0 0 0.000 0 0 0 0 0 0 0 | | 01 | 0.166 | 0.066 | 10 | \$6,003 | 67.8 | 0.720 | 94.23 | 0.0 | 0.0 | 0.0 | 942 | 16 | 0.000 | 1.000 | 0 |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | Sept | 10 | 0.132 | 0.066 | 10 | 57,365 | 68.5 | 0.720 | 95.19 | 0.0 | 0.0 | 0.0 | 952 | 8 | 0.00 | 1.000 | 0 |
| 10 0.123 0.066 10 48,770 76.0 0.720 105.53 0.0 0.0 1,055 46 0.000 11 0.085 0.066 10 16,674 53.4 0.720 74.11 0.0 0.0 741 22 0.000 11 0.066 10 16,674 53.4 0.720 35.44 0.0 0.0 741 22 0.000 11 0.066 0.0 0 0.0 0.0 0.0 0.0 0.0 0.0 0.00 0.00 1.00 0 0.00 | | 2 | 0.107 | 0.066 | 10 | 35,717 | 67.0 | 0.720 | 93.07 | 0.0 | 0.0 | 0.0 | 931 | 38 | 0.000 | 1.000 | 0 |
| 10 0.085 0.066 10 16.574 53.4 0.720 74.11 00 0.0 741 22 0.000 11 0.066 0.066 10 0 25.5 0.720 35.44 0.0 0.0 0.0 741 22 0.000 Inigable area in rainy season 1,104 (ha) 1,104 (ha) 0 0.00 0.0 0.0 0.0 0.00 | | 9 | 0.123 | 0.066 | 10 | 48,770 | 76.0 | 0,720 | 105.53 | 0.0 | 0.0 | 0.0 | 1,055 | 4 5 | 0.000 | 0.973 | 0 |
| 11 0.000 0.000 10 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.000 1.000 1.000 1.000 1.000 0.0 0.00 | ช o | 2: | 0.085 | 0.066 | 21 | 16,674 | 53.4 | 0.720 | 74.11 | 0.0 | 0.0 | 0.0 | 741 | 2 | 0.000 | 0.973 | o |
| Irrigable area in rainy season 1,104 (ha) Irrigable area in dry season 0 (ha) : The minimum river discharge in the year is considered as the river maintenance discharge : Available discharge means river discharge during the irrigation period : Vatter requirement is calculated based on followings: -Percolation losses is 3 | | = | 0.066 | 0:000 | 2 | 9 | 25.5 | 0.720 | 35.44 | 00 | 0.0 | 0.0 | 354 | 0 | 0.000 | 0.700 | 0 |
| Irrigable area in dry season 0 (ha) The minimum river discharge in the year is considered as the river maintenance discharge : Available discharge means river discharge during the irrigation period : Water requirement is calculated based on followings : Percolation losses is 3 | | | Imigable a | area in rainy | season | | 1,104 | (ha) | | | | | | | | | |
| The minimum river discharge in the year is considered as the river maintenance discharge Available discharge means river discharge during the irrigation period Water requirement is calculated based on followings: Percolation losses is | | | Imigable : | area in dry se | rason | | 0 | (eq) | | | | | | | | | |
| : Available discharge means river discharge during the irrigation period : Water requirement is calculated based on followings : -Percolation losses is 3 | Note) | : The m | unimum rive | a discharge in | the year is c | onsidered as | the river m | aintenance | discharge | | | | | | | | |
| followings : -Puddling for main field 150 -Percolation losses is 3 | | : Availe | able discharg | ge means river | discharge di | uring the irrig | vation perio | q |) | | | | | | | | |
| ŝ | | : Water | neguiremen. | t is calculated t | | lowings : | | -Pudding | for main field | 50 | JTHTT | | | | | | |
| | | | | | | | | -Percolati | on losses is | | mm/day. | | | | | | |

| | | (1) | 3 | (3) | (4) A 12 Mi | (2) More | (9) 1 | e | (8) Effection | (9) 2014 inc | (10) | (11) 1967 | (12) Calculated | (13) | (14) | (15) Doctrine |
|------------|-------------|---------------|--|----------------|----------------|------------------|------------|------------------------|------------------|-----------------|--------------|---------------|--------------------|---------|--------------|------------------|
| 1-17 | | discharge | 臣 | days | | quirement | | i fé | rainfall | | | Water require | Irrigable | 5 | intencity of | irrigation |
| HICOM | ļ | (pas/cm) | (III:1/sec) | | (cm) | | ~ | ment (mm) | | IDCDI (DDD) | (su/cm) juou | ()B/CUI JUOU | Area (ne) | gunpond | e B | Area (na) |
| N | 2 | 0.165 | 0.102 | in c | 16,433 | 0.3 0.0 | | 0.39 | 0.0 | 0.0 | 0.0 | 4 0 | 4,199 | 0.000 | 0.015 | 0 |
| | 202 | 0.102 | 0.102 | 00 | 00 | 00 | 0.720 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | | 0000 | 0000 | 0 |
| | 10 | 1.214 | 0.102 | 0 | 961,092 | 0.0 | 1_ | 0.00 | 48.3 | 0'0 | 0.0 | 0 | , | 0.000 | 0.000 | 0 |
| å | 10 | 0.287 | 0.102 | 0 | 160,164 | 0.0 | | 0.0 | 210.6 | 0.0 | 0.0 | 0 | | 0.000 | 0.000 | ٥ |
| | | 0.753 | 0.102 | 11 | 619,502 | 0.0 | | 0.00 | 38.9 | 47.1 | 654.8 | 655 | 946 | 0.314 | 0.000 | 262 |
| | | 1.451 | 0.102 | 10 | 1,165,968 | 14.6 | | 20.26 | 68.1 | 42.9 | 595.2 | 595 | 1,959 | 0.286 | 0.167 | 428 |
| Jan J | 0 | 1.343 | 0.102 | | 1,072,980 | 43.8 | | 50.78 | 71.6 | 42.9 | 595.2 | 595 | 1,803 | 0.286 | 0.500 | 743 |
| | R. | 5.417 | 0.102 | 11 | 5,051,851 | 81.7 | | 113.45 | 112.3 | 17.1 | 238.1 | 250 | 20,213 | 0.114 | 0.848 | 116 |
| | 101 | 8.686 | 0.102 | | 7,417,224 | 86.2 | | 119.75 | 71.5 | 0.0 | 0.0 | 423 | 17,544 | 0.000 | 1.000 | 326 |
| 1 2 | 52 | 10.506 | 0.102 | 10 | 8,989,704 | 86.2 | | 119.75 | 3.3 | 0.0 | 0.0 | 1,164 | 7,720 | 0.000 | 1.000 | 346 |
| | | 17.083 | 0.102 | 1 | 11,737,843 | 69.0 | | 95.80 | 8.9 | 0.0 | 0.0 | 869 | 13,506 | 0.000 | 1.000 | 946 |
| | 30 E C | 11.265 | 0.102 | | 9,645,264 | 87.4 | | 121.41 | 0.0 | 0.0 | 0.0 | 1,214 | 7,944 | 0:000 | 1.000 | 346 |
| Mar | A | 4.800 | 0.102 | | 4,059,504 | 88.1 | | 122.31 | 0.0 | 0.0 | 0.0 | 1,223 | 3,319 | 0.000 | 1.000 | £ |
| | | 3.634 | 0.102 | | 3,357,710 | 95.8 | | 133.11 | 0.0 | 0.0 | 0.0 | 1.331 | 2,522 | 0.000 | 1.000 | 3 46 |
| | 10 1 | 2.690 | 0.102 | | 2,236,464 | 78.6 | | 109.18 | 0.0 | 0.0 | 6.0 | 1,092 | 2,048 | 0.000 | 1.000 | 88 |
| Apr | Ħ | 2,129 | 0.102 | | 1,751,544 | 80.4 | | 111.70 | 47.0 | 0.0 | 0.0 | 647 | 2,707 | 0.000 | 1.00 | £ |
| | 10 | 1.596 | 0.102 | | 1,291,464 | 65.9 | 1 | 91.56 | 0.0 | 0.0 | 0.0 | 916 | 1.411 | 0.000 | 0.833 | 788 |
| | 10 | 1.294 | 0.102 | 10 | 1,030,320 | 34.1 | | 47.40 | 0.0 | 0.0 | 0.0 | 474 | 2,174 | 0.000 | 0.500 | 473 |
| May | | 1.214 | 0.102 | | 961,200 | 11.8 | | 16.44 | 0.0 | 0.0 | 0.0 | 2 | 5,846 | 0.000 | 0.167 | 158 |
| | 11 | 1.159 | 0.102 | 0 | 1.005,134 | 0.0 | | 0.00 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | 2 | 0.924 | 0.102 | 0 | 710,986 | 0.0 | | 0.00 | 0.0 | 0.0 | 0.0 | 0 | | 0.000 | 0.000 | 0 |
| Ĩ | 01 | 0.841 | 0.102 | 01 | 638,842 | 2.2 | | 3.07 | 0.0 | 0.0 | 0.0 | 31 | 20,805 | 0.000 | 0.167 | 10 |
| | 2 | 0.753 | 0.102 | 10 | 563,155 | 6.6 | | 9.21 | 0.0 | 0.0 | 0.0 | <u>5</u> 2 | 6,113 | 0.000 | 0.500 | 0° |
| | 2 | 0.604 | 0.102 | 10 | 434,160 | 11.5 | | 16.04 | 0.0 | 0.0 | 0.0 | 160 | 2,706 | 0.000 | 0.833 | 8 |
| Jul | 0 | 0.512 | 0.102 | 10 | 354,672 | 17.0 | | 23.60 | 0.0 | 0.0 | 0.0 | 236 | 1,503 | 0.000 | 1.000 | જ |
| | 11 | 0.392 | 0.102 | 11 | 276,350 | 25.3 | | 35.14 | 0.0 | 0.0 | 0.0 | 351 | 786 | 0.000 | 1.000 | 8 |
| | 10 | 0.501 | 0.102 | 10 | 345,427 | 36.6 | | 50.82 | 0.0 | 0.0 | 0.0 | 508 | 680 | 0.000 | 1 000 | 8 |
| Aug | 10 | 0.382 | 0.102 | 10 | 242,438 | 43.5 | | 60.42 | 0.0 | 0.0 | 0.0 | 56 | 401 | 0.000 | 1.000 | 8 |
| | = | 0.309 | 0.102 | 11 | 197.294 | 59.3 | - 1 | 82.31 | 0.0 | 0.0 | 0.0 | 823 | 240 | 0.000 | 1.000 | 60 |
| | 10 | 0.447 | 0.102 | 10 | 298,080 | 67.8 | | 94.23 | 0.0 | 0.0 | 0.0 | 942 | 316 | 0.000 | 1.000 | જ |
| Sej. | 9 | 0.233 | 0.102 | 10 | 113,184 | 68.5 | | 95.19 | 0.0 | 0.0 | 0.0 | 952 | 119 | 0.000 | 1.000 | 8 |
| | <u>ء</u> | 0.171 | 0.102 | 10 | 59,962 | 67.0 | - 1 | 93.07 | 0.0 | 0.0 | 0.0 | 931 | 2 | 0.000 | 1.000 | 8 |
| | 0 | 0.180 | 0.102 | 2 | 68,170 | 76.0 | | 105.53 | 0.0 | 0.0 | 0.0 | 1,055 | 65 | 0.000 | 0.973 | 58 |
| ಸ ೦ | 2: | 0.153 | 0.102 | 01; | 44,323 | 53.4 | 0.720 | 74.11 | 0.0 | 0.0 | 0.0 | 741 | 8 | 0.000 | 0.973 | 28 28 |
| | 1 | 0.305 | 0.102 | 10 | 886,671 | 25.5 | 0.720 | 35.44 | 0.0 | 0.0 | 0.0 | ж Х | 495 | 0.000 | 91 <u>0</u> | 42 |
| | | Imgable a | lirrigable area in rainy season | icason | | 9 4 6 | (eq) | | | | | | | | | |
| | | Imigable a | Irrigable area in dry season | rson | | 8 | (ba) | | | | | | | | | |
| Note) | : The mi | inimum river | : The minimum river discharge in the year is considered as the river maintenance discharge | he year is con | nsidered as ti | be river ma | intenance | discharge | | | | | | | | |
| | : Availat | ble discharge | : Available discharge means river discharge during the irrigation period | ischarge dur. | ing the irriga | tion period | | 9 | | | | | | | | |
| | Water | requirement | is calculated be | sed on follo | wings : | | | Pudding for main field | ~ | mon | | | | | | |
| | | | | | | | -Percolati | Percolation losses is | 'n | mmu/day. | | | | | | |
| | | | | | | | | | | | | | | | | |

Table 3.3.3 WATER BALANCE CALCULATION FOR LIVULEZI RIVER BASIN (PATTERN-1)

| | | (I) Biver | (2) A | (3) (mication | (4) Avoilahle | (C) | | 6 | (8) Effective | (y) Puddling | (10) Gross widdling | (TI) | (12) Calculated | (13) | (14) | (LJ) Porential |
|----------|-----------|--------------|---|------------------|--|----------------|-----------|-------------------------|------------------|-----------------|------------------------|-----------------|--------------------|--------------|--------------|-------------------|
| | | discharge | maintenance | | discharge | quinement | | Water require | rainfall | Water require | | Water require | Irrigable | intencity of | intencity of | |
| MOBIL | | (Jas/cm) | (mo/sec) | | (c田) | | Ictency | ment (mm) | (uuu) | ment (mm) | במקבער (נתנת) | (MI/CIII) 1000E | ATCH (DR) | buttophd | don | a l |
| 1 | 21 | 0.270 | 0.179 | ומי | 130,52 | 0.0 | 0.720 | 0.0 | 0.0 | 0.0 | 0.0 | | | 0.000 | 0.000 | 5 |
| Nov | 21 | 0.32 | 0.179 | a (| 126,058 | 0.0 | 0.720 | 00.0 | 0.0 | 0.0 | 0,0 | | • | 0.000 | 0.000 | 0. |
| | 2 | 0.200 | 0.179 | 0 | 18,317 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | .• | 0.000 | 000 0 | 0 |
| | 01 | 1.485 | 0.179 | 0 | 1,128,578 | 0.0 | 0.720 | 0.00 | 48.3 | 0'0 | 0.0 | 0 | 1 | 0.000 | 0000 | 0 |
| ខ្ពុំ | 10 | 1.669 | 0.179 | ٥ | 1,287,446 | 0.0 | 0.720 | 0.00 | 210.6 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | | 2.530 | 0.179 | 11 | 2,234,380 | 0.0 | 0.720 | 0.00 | 38.9 | 47.1 | 65.5 | 655 | 3,413 | 0.314 | 0.000 | 521 |
| | 04 | 6.696 | 0.179 | 10 | 5,630,990 | 14.6 | 0.720 | 20.26 | 68.1 | 42.9 | 59.5 | 595 | 9,460 | 0.286 | 0.167 | 750 |
| 5 | | 6.433 | 0.179 | 10 | 5,403,866 | | 0.720 | 60.78 | 71.6 | 42.9 | 59.5 | 595 | 9,078 | 0.286 | 0.500 | 1,303 |
| **** | | 7.059 | 0.179 | 11 | 6,538,847 | | 0.720 | 113.45 | 112.3 | 17.1 | 23.8 | 250 | 26,163 | 0.114 | 0.848 | 1,59 |
| | 10 | 15.288 | 0.179 | 10 | 13,053,830 | | 0.720 | 119.75 | 77.5 | 0.0 | 0.0 | 423 | 30,877 | 0.000 | 1.000 | 1,658 |
| 3. 2. | | 7.839 | 0.179 | 01 | 6,618,110 | | 0.720 | 119.75 | 0.0 | 0.0 | 0.0 | 1,164 | 5,683 | 0.000 | 1.000 | 1,658 |
| | | 5.324 | 0.179 | 8 | 3,556,063 | | 0.720 | 95.80 | 8.9 | 0.0 | 0.0 | 6 98 | 4,092 | 0.000 | 1,000 | 1,658 |
| | | 4.187 | 0.179 | 10 | 3,462,998 | | 0.720 | 121.41 | 0.0 | 0.0 | 0.0 | 1,214 | 2,852 | 0.000 | 1.000 | 1,658 |
| Mar | 10 | 3.740 | 0.179 | 10 | 3,076,358 | | 0.720 | 122.31 | 0.0 | 0.0 | 0.0 | 1,223 | 2,515 | 0.000 | 0001 | 1,658 |
| | | 2.890 | 0.179 | 11 | 2,576,946 | 95.8 | 0.720 | 133.11 | 0.0 | 0.0 | 0.0 | 1,331 | 1,936 | 0.000 | 1.000 | 1,658 |
| ~~~~ | 00 | 2.274 | 0.179 | 10 | 1,810,166 | 78.6 | 0.720 | 109.18 | 0.0 | 0.0 | 0.0 | 1,092 | 1,658 | 0.000 | 1.000 | 1,658 |
| e v | | 3.112 | 0.179 | 0 | 2,534,198 | 80.4 | 0.720 | 111.70 | 47.0 | 0.0 | 0.0 | 647 | 3,916 | 0.000 | 1.000 | 1,658 |
| | 64 | 2.179 | 0.179 | 10 | 1,728,302 | 65.9 | 0.720 | 91.56 | 0.0 | 0.0 | 0.0 | 916 | 1,888 | 0.000 | 0.833 | 1.382 |
| | | 1.794 | 0.179 | 10 | 1,395,706 | 34.1 | 0.720 | 47.40 | 0.0 | 0.0 | 0'0 | 474 | 2,945 | 0.000 | 0.500 | 829 |
| May | £ | 1.589 | 0.179 | 0 | 1,218,672 | 11.3 | 0.720 | 16.44 | 0,0 | 0.0 | 0.0 | 164 | 7,411 | 0.000 | 0.167 | 276 |
| | 11 | 1.310 | 0.179 | 0 | 1.074,911 | 0.0 | 0.720 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | ន្ត | 1.092 | 0.179 | ¢ | 788,486 | 0.0 | 0.720 | 0.0 0 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| lim | 10 | 1.119 | 0.179 | 01 | 811,901 | 2.2 | 0.720 | 3.07 | 0.0 | 0.0 | 0'0 | 31 | 26,441 | 0.000 | 0.167 | 37 |
| | 2 | 0.864 | 0.179 | 10 | 592,272 | 6.4 | 0.720 | 8.92 | 0.0 | 0.0 | 0.0 | 89 | 6,643 | 0.000 | 0.500 | 112 |
| | 2 | 0.705 | 0.179 | 10 | 454,550 | 14.4 | 0.720 | 20.05 | 0.0 | 0.0 | 0.0 | 201 | 2,267 | 0.000 | 0.833 | 186 |
| Jul | 10 | 0.645 | 0.179 | 01 | 402,797 | 23.4 | 0.720 | 32.52 | 0.0 | 0.0 | 0.0 | 325 | 1,239 | 0.000 | 1.000 | 84 |
| | 1 | 0.582 | 0.179 | 11 | 382,674 | 33.7 | 0.720 | 46.75 | 0.0 | 0.0 | 0.0 | 467 | 819 | 0.000 | 1.000 | 224 |
| | 10 | 0.541 | 0.179 | ğ | 312,854 | 48.3 | 0.720 | 67.11 | 0.0 | 0,0 | 0.0 | 1/9 | 466 | 0.000 | 1.000 | 224 |
| Aug | 10 | 0.538 | 0.179 | 10 | 310,522 | 53.8 | 0.720 | 74.66 | 0.0 | 0.0 | 0.0 | 747 | 416 | 0.000 | 0.998 | 223 |
| | 1 | 0.434 | 0.179 | 11 | 242,447 | 59.5 | 0.720 | 82.62 | 0'0 | 0.0 | 0,0 | 826 | 293. | 0.000 | 0.994 | 222 |
| , | 2 | 0.360 | 0.179 | 10 | 156,470 | 50.4 | 0.720 | 69.95 | 0.0 | 0.0 | 0.0 | 669 | 57 | 0.000 | 0.767 | 172 |
| Sept. | 93 | 0.296 | 0.179 | 23 | 101,058 | 26.1 2 | 0.720 | 36.25 | 0.0 | 0.0 | 0.0 | 362 | 516 | 0.000 | 0.433 | 8 |
| | 2 | 0.246 | 0.179 | 01 | 58,061 | 5.3 | 0.720 | 7.35 | 0.0 | 0.0 | 0.0 | 73 | 790 | 0.000 | 0.107 | 8 |
| | 9 9 | 0.297 | 0.179 | 8 | 102,298 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | i | 0.000 | 0.000 | 0 |
| ช ว | 9 5 | 0.179 | 0.179 | 22 | 0 63 080 | 0.0 | 0.720 | 88 | 0.0 | 0.0 | 0.0 | 00 | • | 0000 | 0.00 | 00 |
| | ľ | | | 2 | 20100 | 110 | 1-1 | 35 | ~~~ | 212 | 22 | × | | 0000 | 20010 | > |
| | | ungaose a | ungable area in rainy season | scason | | 9 50 ,1 | (02) | | | | | | | | | |
| | Ţ | mgable s | Irrigable area in dry season | | | 224 | (ad) | | | | | | | | | |
| Nole) | : The min | mum rive | : The minimum river discharge in the year | | is considered as the river maintenance discharge | the river m | sintenano | e discharge | | | | | | | | |
| | Availabl | e discharg | Available discharge means river discharge during the imigation period | discharge di | tring the imi | gation peric | d d | | | | | | | | | |
| | al Talk W | agurement. | IS CALCULATED . | Dased on IOL | : sgutwo | | unoon | -rudding for main field | | | | | | | | |
| | | | | | | | 5 | | | 12 | | | | | | |

Table 3.3.4 WATER BALANCE CALCULATION FOR NADZIPULU RIVER BASIN (PATTERN-2)

ІІ - Т - 63

| | | Ξ, | 0 (3) (3) | (3) Irricoticon | (4) Availahin | (5) Weiter m | (6) Inicel | (L) | (8) Effactive | (9) Diddling | (10) Grove ruddhing | لینڈ (11) | (12) Calculated | (I3) Ame | (14) Area | (15) Potentiat |
|-----------|----------|--------------|--|--------------------|--|-----------------|---------------|------------------------|------------------|----------------------------|------------------------|---------------|------------------------|--------------|--------------|-------------------------|
| Month | | discharge | maintenance (m3/cac) | days | discharge | quirement | ion Eff- | Water require | rainfell | | | Water require | Irrigable Area (ha) | intencity of | intencity of | Irrigation Area (he) |
| THINKY | | (and (may | (analoga) | ľ | | (mini) | 2000 | | (mm) | | 1000 (mm) | | | Purunda A | 3 | |
| Nov | 2 5 | 0.126 | 0.066 | n c | 53,382 | 0.0 | 0.720 | 88 | 200 | 0.0 | 0.0 | | | 0.000 | 0000 | |
| | 9 | 0.203 | 0.066 | 0 | 118,044 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | ٠ | 0.000 | 0.000 | • • |
| | 10 | 0.390 | 0.066 | 0 | 279,618 | 0.0 | 0.720 | 0.00 | 48.3 | 0.0 | 0.0 | 0 | . | 0.000 | 0.000 | 0 |
| Å | 10 | 2.408 | 0.066 | 0 | 2,023,056 | 0.0 | 0.720 | 0.00 | 210.6 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | | 3.397 | 0.066 | | 3,166,130 | 0.0 | 0.720 | 0.00 | 38.9 | 47.1 | 65.5 | 655 | 4,836 | 0.314 | 0.000 | 347 |
| | 03 | 5.400 | 0.066 | | 4,608,196 | 14.6 | 0.720 | 20.26 | 68.1 | 42.9 | 59.5 | 595 | 7,742 | 0.286 | 0.167 | 500 |
| 18 | A | 2.868 | 0.066 | | 2,420,748 | 43.8 | 0.720 | 60.78 | 71.6 | 42.9 | 59.5 | 595 | 4,067 | 0.286 | 0.500 | 868 |
| | | 8.149 | 0.066 | | 7,681,789 | 81.7 | 0.720 | 113.45 | 112.3 | 17.1 | 23.8 | 250 | 30,736 | 0.114 | 0.848 | 1,063 |
| | 0 | 10.413 | 0.066 | | 8,939,931 | 86.2 | 0.720 | 119.75 | 71.5 | 0.0 | 0.0 | 423 | 21,146 | 0.000 | 1.000 | 1,104 |
| fe Lef | 9 | 5.591 | 0.066 | _ | 4,773,228 | 86.2 | 0.720 | 119.75 | 3.3 | 0.0 | 0.0 | 1,164 | 4,099 | 0.000 | 1.000 | 1,104 |
| | | 2.556 | 0.066 | | 1.721,012 | 69.0 | 0.720 | 95.80 | 8.9 | 0.0 | 0.0 | 869 | 1.980 | 0.000 | 1.000 | 1,104 |
| | A | 2.632 | 0.066 | | 2,216,838 | 87.4 | 0.720 | 121.41 | 0.0 | 0.0 | 0.0 | 1,214 | 1,826 | 0.000 | 1.000 | 1,104 |
| MR | | 2.370 | 0.066 | | 1,990,297 | 88.1 | 0.720 | 122.51 | 0.0 | 0.0 | 0.0 | 1,223 | 1.627 | 0.000 | 1.000 | 1,104 |
| | | 1.768 | 0.066 | 11 | 1,617,246 | 95.8 | 0.720 | 133.11 | 0.0 | 0.0 | 0.0 | 1,331 | 1,215 | 0.000 | 1.000 | 1,104 |
| | 96 | 1.461 | 0.066 | 10 | 1,205,521 | 78.6 | 0.720 | 109.18 | 0.0 | 0.0 | 0.0 | 1,092 | 1,104 | 0.000 | 1,000 | 1,104 |
| Apr | | 1.709 | 0.066 | 10 | 1,419,622 | 80.4 | 0.720 | 111.70 | 47.0 | 0.0 | 0,0 | 647 | 2,194 | 0.000 | 1.000 | 1,104 |
| | | 1.288 | 0.066 | 10 | 1,055,650 | 65.9 | 0.720 | 91.56 | 0.0 | 0.0 | 0.0 | 916 | 1,153 | 0.000 | 0.833 | 920 |
| | | 0.907 | 0.066 | 10 | 726,553 | ¥.1 | 0.720 | 47.40 | 0:0 | 0.0 | 0.0 | 474 | 1,533 | 0.000 | 0.500 | 552 |
| May | | 0.790 | 0.066 | 10 | 625,057 | 11.8 | 0.720 | 16.44 | 0.0 | 0.0 | 0.0 | 164 | 3,801 | 0.000 | 0.167 | 184 |
| | 11 | 0.667 | 0.066 | • | 570,773 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | ÷ | 0.000 | 0.000 | 0 |
| | 10 | 0.557 | 0.066 | 0 | 424,017 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | ¢ | •. | 0.000 | 0.000 | 0 |
| Iun | 2 | 0.529 | 0.066 | 10 | 399,697 | 2.2 | 0.720 | 3.07 | 0.0 | 0.0 | 0.0 | 31 | 13,017 | 0.000 | 0.167 | 8 |
| | 2 | 0.431 | 0.066 | 10 | 315,568 | 6.4 | 0.720 | 8.92 | 0.0 | 0.0 | 0.0 | 89 | 3.539 | 0.000 | 0.500 | 61 |
| | 10 | 0.418 | 0.066 | 10 | 304,471 | 14.4 | 0.720 | 20.05 | 0.0 | 0.0 | 0.0 | 201 | 1.518 | 0.000.0 | 0.833 | 102 |
| Jul | 2 | 0.373 | 0.066 | 10 | 265,484 | 23.4 | 0.720 | 32.52 | 0.0 | 0.0 | 0.0 | 325 | 816 | 0.00 | 1.000 | 123 |
| | 11 | 0.337 | 0.066 | 11 | 257,042 | 33.7 | 0.720 | 46.75 | 0.0 | 0'0 | 0.0 | 467 | 550 | 0.000 | 1.000 | 123 |
| | 9 | 0.296 | 0.066 | 10 | 199,053 | 48.3 | 0.720 | 67.11 | 0.0 | 0.0 | 0.0 | 671 | 162 | 0,000 | 1.000 | 123 |
| Aug | 20 | 0.269 | 0.066 | 10 | 175,059 | 53.8 | 0.720 | 74.66 | 0.0 | 0.0 | 0.0 | 747 | 734 | 0.000 | 866.0 | 53 153 |
| | = | 0.232 | 0.066 | 11 | 157,662 | 59.5 | 0.720 | 82.62 | 0.0 | 0.0 | 0.0 | 826 | 161 | 0.000 | 0.994 | 122 |
| | D D | 0.166 | 0.066 | 10 | 86,003 | S0.4 | 0.720 | 69.95 | 0.0 | 0.0 | 0.0 | 669 | 123 | 0.000 | 0.767 | \$ |
| Sept | 2 | 0.132 | 0.066 | 10 | 57,365 | 26.1 | 0.720 | 36.25 | 0.0 | 0.0 | 0.0 | 362 | 158 | 0000 | 0.433 | ß |
| | 5 | 0.107 | 0.066 | 10 | 35,717 | 5.3 | 0.720 | 7.35 | 9; 0; | 0.0 | 0.0 | 73 | 486 | 0.000 | 0.107 | 13 |
| 1 | 20 | 0.123 | 0.066 | 10 | 48,770 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | • | 0000 | 0.000 | 0 |
| ទី | 2: | 0.085 | 0.066 | 23 | 16,674 | 0.0 | 0.720 | 0.0 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | Ţ | 0000 | 8000 | 10 | , , | 0.0 | N' 'N | 80 | 0.0 | 0'0 | 0.0 | P | | 0.000 | 0.000 | 9 |
| | | Imigable a | Imigable area in rainy season | cason | | 1,104 | (ha) | | | | | | | | | : |
| | | Irrigable a | Irrigable area in dry season | | | 123 | (Faa) | | | | | | | | | |
| Note) | | inimum rive | : The minimum river discharge in the year | | is considered as the river maintenance discharge | the river mu | nintenance | discharge | | | | | | | | |
| | : Availa | ble discharg | : Available discharge means river discharge during the irrigation period | ischarge dur | ing the imig | ation perior | 17 | | | | | | | | | |
| | : Water | requirement | t is calculated by | ased on follo | : sguiw | | -Puddling | Pudding for main field | 150 | Linear Linear Linear | | | | | | |
| | | | | | | | -Percolati | -Percolation losses is | | mm/day. | | | | | | |
| | | | | | | | | | | | | | | | | |

Tabe 3.3.5 WATER BALANCE CALCULATION FOR NAMIKOKWE RIVER BASIN (PATTERN-2)

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| | ļ | (I) (1) | (2) | 6 | (4) (4) | (5) | (9) | εį | (8) | (6) | (10) | (11) | (12) | (13) | (14) | (51) |
|--------|-----------|-----------------------|---|---------------|--|-------------------|---------------|----------------------------|------------------|--|----------------------------|-------------------------------|-----------|--------------------------|--------------|---------------------------------------|
| Month | | discharge (m3/sec) | maintenance (m3/sec) | days | discharge (m3) | quirement (mm) | ion Eff- | Water require ment (mm) | rainfall (mm) | r occurs Water require ment (mm) | Water require ment (mm) | Water require ment (m3/ha) | Irrigable | intencity of muddline | intencity of | r occurul irrigation Arrea (ha) |
| | 01 | 0.165 | 0.102 | 6 | 16,433 | 0.0 | 0.720 | 000 | 0.0 | 0.0 | 0.0 | 0 | | 0000 | 0000 | |
| Nov | 10 | 0.120 | 0.102 | 0 | 15,638 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | 10 | 0.102 | 0.102 | 0. | 0 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | 10 | 1.214 | 0.102 | 0 | 961,092 | 0.0 | 0.720 | 0.00 | 48.3 | 0.0 | 0.0 | 0 | | 0.000.0 | 0.000 | 0 |
| å | 10 | 0.287 | 0.102 | 0 | 160,164 | 0.0 | 0.720 | 0,00 | 210.6 | 0.0 | 0.0 | 0 | • | 0.000 | 0.000 | 0 |
| | | 0.753 | 0.102 | 11 | 619.502 | 0.0 | 0.720 | 0.00 | 38.9 | 47.1 | 65.5 | 655 | 986 9 | 0.314 | 0.000 | 297 |
| Į. | 24 | 1.451 | 0.18 | 2 | 1,165,968 | 14.6 | 0.720 | 20.26 | 68.1 7: 5 | 42.9 | 59,5 20,5 | 595 606 | 1.959 | 0.286 | 0.167 | 83 f |
| | | 5.417 | 0102 | នដ | 5.051.851 | 0. 18 | 0.720 | 113.45 | 112.3 | 17.1 | 23.8 | 250 | 20.213 | 0.114 | 0.848 | 116 |
| | a | 8.686 | 0.102 | R | 7,417,224 | 86.2 | 0.720 | 119.75 | 71.5 | 0.0 | 0.0 | 423 | 17.542 | 0.000 | 1.000 | S. |
| Feb | 92 | 10.506 | 0.102 | 임 (| 8,989,704 | 86.2 | 0.720 | 119.75 | 3.3 | 0.0 | 0.0 | 1,164 | 7,720 | 0.000 | 1.000 | z |
| | | 17.083 | 0.102 | » | 11,757,843 | 0.66 | 0.720 | 95.80 | 8.9 | 0.0 | 0.0 | 698 | 13,506 | 0000 | 1000 | ž |
| Mar | | 4 800 | 0.102 | 2 9 | 9,040,204 A 050 504 | 81.4 | 0.720 | 121.41 | 0.0 | 0.0 | 000 | 1,214 | 446 1 | 00000 | 1,000 | 8 |
| | | 3.634 | 0.102 | 3 5 | 3.357 710 | 95.8 | 0.720 | 11 221 | 000 | | 0.0 | 122 L | CTC'C | 0000 | 1 000 | 23 |
| | 0 | 2.690 | 0.102 | 10 | 2,236,464 | 78.6 | 0.720 | 109.18 | 0.0 | 0.0 | 0.0 | 1.092 | 2,048 | 0.000 | 1.000 | ŧ |
| Apr | 2 | 2.129 | 0.102 | 01 | 1,751,544 | 80.4 | 0.720 | 111.70 | 47.0 | 0.0 | 0.0 | 647 | 2,707 | 0.000 | 1.000 | 35 |
| | | 1.596 | 0.102 | 10 | 1,291,464 | 65.9 | 0.720 | 91.56 | 0.0 | 0.0 | 0.0 | 916 | 1,411 | 0.000 | 0.833 | 788 |
| | | 1.294 | 0.102 | 2 | 1,030,320 | 2.1 | 0.720 | 47.40 | 0.0 | 0.0 | 0.0 | 474 | 2,174 | 0.000 | 0.500 | 473 |
| May | | 1.214 | 0.102 | 2 4 | 961,200 | 11.8 | 0.720 | 16.4 | 0.0 | 0.0 | 0.0 | 164 | 5,846 | 0.00 | 0.167 | 158 |
| | 101 | 0.924 | 201.0 | | 710 986 | | 0.720 | 200 | | | 00 | 5 | • | 000 | | |
| Ĩ | 10 | 0.841 | 0.102 | 10 | 638,842 | 2.2 | 0.720 | 3.07 | 0.0 | 0.0 | 0.0 | 31 | 20,805 | 0.000 | 0.167 | 94 |
| | 10 | 0.753 | 0.102 | 10 | 563.155 | 6.4 | 0.720 | 8.92 | 0.0 | 0.0 | 0.0 | 89 | 6,316 | 0.000 | 0.500 | 119 |
| | 9 | 0.604 | 0.102 | 10 | 434,160 | 14,4 | 0.720 | 20.05 | 0.0 | 0.0 | 0.0 | 201 | 2,165 | 0.000 | 0.833 | 661 |
| Inf | 2: | 0.512 | 0.102 | 91 | 354,672 | 7 F. 5 | 0.720 | 32.52 | 0.0 | 0.0 | 0.0 | 325 | 1.091 | 0.00 | 1.000 | 539 |
| | | 0.501 | 0100 | 10 | 245 277 | 48.3 | 0.720 | 67 11 | | | 0.00 | 40/ | 140 | 0.000 | 1 000 | 407 022 |
| Aug | 2 2 | 0.382 | 0.102 | 10 | 242,438 | 53.8 | 0.720 | 74 64 | 000 | 000 | | 747 | 202 | 0000 | 200 | 200 |
| 3 | 11 | 0.309 | 0.102 | 11 | 197,294 | 59.5 | 0.720 | 82.62 | 0.0 | 0.0 | 0.0 | 826 | 239 | 0.000 | 46.0 | ន៍ន |
| | 10 | 0.447 | 0.102 | 10 | 298,080 | 50.4 | 0.720 | 69.95 | 0.0 | 0.0 | 0.0 | 669 | 426 | 0.000 | 0.767 | 183 |
| Sept | 2 | 0.233 | 0.102 | 10 | 113,184 | 26.1 | 0.720 | 36.25 | 0.0 | 0.0 | 0.0 | 362 | 312 | 0.000 | 0.433 | 103 |
| | 2 | 0.171 | 0.102 | 10 | 59,962 | 5.3 | 0.720 | 7.35 | 0.0 | 0.0 | 0.0 | 73 | 816 | 0.000 | 0.107 | ห |
| ¢ | 2 ; | 0.180 | 0.102 | 91 | 68,170 | 0.0 | 0.720 | 0.00 | 0.0 | 0.0 | 0.0 | Ċ) | | 0.000 | c.000 | ø |
| 8 2 | 31 | 0.305 | 0.102 | 22 | 175,588 | 0.0 | 0.720 | 88 | 0.0 | 0.0 | 0.0 | 00 | | 0.000 | 000 | 00 |
| | | Imgable a | lmgable area in rainy season | season | | 946 | (pa) | | | | | | | | | |
| | | Imgable a | Imgable area in dry season | ason | | 239 | (ha) | | | | | | | | | |
| Note) | | nimum rive | : The minimum river discharge in the year | the year is c | is considered as the river maintenance discharge | the river m | aintenance | discharge | | | | | | | | |
| | : Aveilal | ble discharg | Available discharge means river discharge | discharge a | e during the irrigation period | gation perso | 7 | | | | | | | | | |
| | TY BLUE | Country of the | : Wale requrrences is calculated based on | based on fol | lowings : | | -Puddling | Puddling for main field | 150 | 2012 | | | | | | |

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Table 5.2.1 CONSTRUCTION COST FOR THE LOWER NADZIPULU IRRIGATION PROJECT

| | ni i premi zapremi na primova na končini di nime na koncepto premi na koncepto premi na premi na premi na premi | Local Portion | Foreign Portion | Total |
|----------|---|---------------|-----------------|---------------------------------------|
| | Work Item | (M.Kwacha) | (J.Yen) | (J.Yen) |
| | an a | | | (01101) |
| 1 | PREPARATORY WORKS | 623,000 | 19,141,000 | 34,093,000 |
| | | | | |
| 2 | HEAD WORKS | 1,610,000 | 37,970,000 | 76,610,000 |
| | 2.1 Earth Works | 406,000 | 27,982,000 | 37,726,000 |
| | 2.2 Concrete Works | 985,000 | 4,571,000 | 28,211,000 |
| | 2.3 Metal Works | 3,000 | 5,416,000 | 5,488,000 |
| | 2.4 Others | 216,000 | 1,000 | 5,185,000 |
| | | | 00.000.000 | |
| 3.1 | MAIN CANAL (ND-MC-1) | 1,525,000 | 32,903,000 | 69,503,000 |
| | 3.1 Earth Works | 516,000 | 24,292,000 | 36,676,000 |
| | 3.2 Lining Works | 839,000 | 6,820,000 | 26,956,000 |
| · | 3.3 Structural Works | 157,000 | 1,714,000 | 5,482,000 |
| | 3.4 Others | 13,000 | 77,000 | 389,000 |
| 3.2 | MAIN CANAL (ND-MC-2) | 721,000 | 11,798,000 | 29,102,000 |
| <u> </u> | 3.5 Earth Works | 218,000 | 8,397,000 | 13,629,000 |
| | 3.6 Lining Works | 381,000 | 2,977,000 | 12,121,000 |
| | 3.7 Structural Works | 118,000 | 395,000 | · · · · · · · · · · · · · · · · · · · |
| [| 3.8 Others | 4,000 | 29,000 | 125,000 |
| | | | | |
| 4 | BRANCH CANALS | 160,000 | 2,568,000 | 6,408,000 |
| | 4.1 Earth Works | 49,000 | 1,875,000 | 3,051,000 |
| | 4.2 Lining Works | 70,000 | 549,000 | 2,229,000 |
| | 4.3 Structural Works | 39,000 | 131,000 | 1,067,000 |
| | 4.4 Others | 2,000 | 13,000 | 61,000 |
| <u> </u> | | | | |
| 5 | INSPECTION ROADS | 744.000 | 40.000.000 | |
| | 5.1 Earth Works | 741,000 | 43,650,000 | 61,434,000 |
| <u>-</u> | FLOOD DIKES/ROADS | | | ······ |
| <u> </u> | 6.1 Earth Works | 845,000 | AG 652 000 | 66.022.000 |
| | | 645,000 | 46,653,000 | 66,933,000 |
| 7 | CONNECTING ROADS | 873,000 | 46,583,000 | 67,535,000 |
| · · · · | 7.1 Earth Works | 811,000 | 46,1,88,000 | 65,652,000 |
| | 7.2 Structural Works | 46,000 | 288,000 | 1,392,000 |
| | 7.3 Others | 16.000 | 107.000 | |
| | | | | <u> </u> |
| 8 | TERTIARY DEVELOPMENT | 1,544,000 | 71,714,000 | 108,770,000 |
| | 8.1 Earth Works | 922,000 | 34,919,000 | 57,047,000 |
| | 8.2 Land Reclamation | 622,000 | 36,795,000 | 51,723,000 |
| | | | | |
| 9 | DRAINAGE CANALS | 106,000 | 3,649,000 | 6,193,000 |
| L | 9.1 Earth Works | 38,000 | 3,199,000 | 4,111,000 |
| | 9.2 Structural Works | 32,000 | 201,000 | 969,000 |
| | 9.3 Others | 36,000 | 249,000 | 1,113,000 |
| | | | 10 505 202 | |
| 10 | RICE MILL | 356,000 | 18,566,000 | 27,110,000 |
| | 10.1 Milling Machine | 5,000 | 13,723,000 | 13,843,000 |
| | 10.2 Drying Yard | 156,000 | 943,000 | 4,687,000 |
| | 10.3 Storage & Mill House | 195,000 | 3,900,000 | 8,580,000 |
| | Total Direct Cost | 9,104,000 | 335,195,000 | 553,691,000 |
| | | 5,104,000 | 555,155,000 | 333,031,000 |
| L | | L | | |

(1) Direct Construction Cost

Table 5.2.1 CONSTRUCTION COST FOR THE LOWER NADZIPULU IRRIGATION PROJECT

| | | | | والمتحدية والمتكاف والتركين والمراقب والمراجع والمراجع والمراجع |
|---------|---------------------------------------|--------------------|-----------------|---|
| | | Local Portion | Foreign Portion | Total |
| - | Work Item | (M.Kwacha) | (J.Yen) | (J.Yen) |
| | | ÷ | | |
| l | ENGINEERING SERVICES COS | <u> </u> | | |
| -1 | (DESIGN STAGE) | 556,000 | 55,600,000 | 68,944,000 |
| 1-1 | (DESIGN STAGE) | 550,000 | 33,000,000 | 00,544,000 |
| 1 | REMMUNERATION | 48,000 | 44,400,000 | 45,552,000 |
| | 1.1 Foreign Consultants | 0 | 44,400,000 | 44,400,000 |
| | 1,2 Local Consultants | 48,000 | 0 | 1,152,000 |
| | | | | ······ |
| 2 | DIRECT COST | 508,000 | 11,200,000 | 23,392,000 |
| | 2.1 International Air | 0 | 11,200,000 | 11,200,000 |
| | 2.2 Communication | 10,000 | 0 | 240,000 |
| | 2.3 Perdiem | 270,000 | . 0 | 6,480,000 |
| | 2.4 Accommodation | 18,000 | 0 | .432,000 |
| | 2.5 Fuel | 10,000 | 0 | 240,000 |
| | 2.6 Sub-contracts | 150,000 | 0 | 3,600,000 |
| | 2.7 Others | 50,000 | 0 | 1,200,000 |
| | (CONSTRUCTION CTACE) | C24 400 | 50 000 000 | CC 025 C00 |
| 1-2 | (CONSTRUCTION STAGE) | 634,400 | 50,800,000 | 66,025,600 |
| 1 | REMMUNERATION | 84,000 | 48,000,000 | 50,016,000 |
| | 1.1 Foreign Consultants | 04,000 | 48,000,000 | 48,000,000 |
| · | 1.2 Local Consultants | 84,000 | | 2,016,000 |
| | | 01,000 | ` | 210101000 |
| 2 | DIRECT COST | 550,400 | 2,800,000 | 16,009,600 |
| | 2.1 International Air | 0 | 2,800,000 | 2,800,000 |
| | 2.2 Communication | 40,000 | 0 | 960,000 |
| | 2.3 Perdiem | 360,000 | 0 | 8,640,000 |
| | 2.4 Accommodation | 28,800 | 0 | 691,200 |
| | 2.5 Fuel | 21,600 | 0 | 518,400 |
| | 2.6 Others | 100,000 | 0 | 2,400,000 |
| E LO | | 1 100 100 | 100 400 000 | 124.000.000 |
| ENG | NEERING SERVICES TOTAL | 1,190,400 | 106,400,000 | 134,969,600 |
| | | | | ن منصلة (عسام من عليه مراجع عسريور) |
| ١. | ADMINISTRATION COST | | | ···· |
| | Administreetien cost | | | |
| II-1 | (DESIGN STAGE) | 353,000 | 0 | 8,472,000 |
| <u></u> | | | | |
| 1 | Staff Salary | 180,000 | 0 | 4,320,000 |
| 2 | Labour Charge | 15,000 | 0 | 360,000 |
| | Office Expenses | 84,000 | · 0 | 2,016,000 |
| 4 | Fuel | 24,000 | 0 | 576,000 |
| | Office Equipment | 18,000 | 0 | 432,000 |
| 6 | Miscellaneous | 32,000 | 0 | 768,000 |
| | · · · · · · · · · · · · · · · · · · · | | | |
| 11-2 | (CONSTRUCTION STAGE) | 1,274,000 | 0 | 30,576,000 |
| | Ch. (6.0.1) | 520,000 | | 12.004.000 |
| | Staff Salary | 536,000 120,000 | 0 | 12,864,000 2,880,000 |
| | Labour Charge Office Expenses | 360,000 | 0 | 8,640,000 |
| | Fuel | 96,000 | 0 | 2,304,000 |
| | Office Equipment | 50,000 | 0 | 1,200,000 |
| | Miscellaneous | 112,000 | 0 | 2,688,000 |
| | | | | |
| ADM | INISTRATION COST TOTAL | 1,627,000 | 0 | 39,048,000 |
| | | | | · · · |

(2) Engineering Services and Administration Costs

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Table 5.2.2 CONSTRUCTION COST FOR THE NAMIKOKWE INTEGRATED IRRIGATION PROJECT

| | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | | | |
|----------|---|---------------|---|----------------------------|
| | | Local Portion | Foreign Portion | Total |
| | Work Item | (M.Kwacha) | (J.Yen) | (J.Yen) |
| | | | | |
| 1 | PREPARATORY WORKS | 1,120,000 | 33,036,000 | 59,916,000 |
| | | | | |
| 2 | HEAD WORKS | 1,606,000 | 38,311,000 | 76,855,000 |
| | 2.1 Earth Works | 341,000 | 23,360,000 | 31,544,000 |
| | 2.2 Concrete Works | 1,053,000 | 5,998,000 | 31,270,000 |
| | 2.3 Metal Works | 4,000 | 8,952,000 | 9,048,000 |
| | 2.4 Others | 208,000 | 1,000 | 4,993,000 |
| | | · | | |
| 3 | MAIN CANAL (NM-MC-1) | 2,644,000 | 65,401,000 | 128,857,000 |
| | 3.1 Earth Works | 869,000 | 49,100,000 | 69,956,000 |
| | 3.2 Lining Works | 1,489,000 | 12,083,000 | 47,819,000 |
| | 3.3 Structural Works | 269,000 | 4,113,000 | 10,569,000 |
| | 3.4 Others | 17,000 | 105,000 | 513,000 |
| | | | | |
| 4 | BRANCH CANALS | 2,614,000 | 40,191,000 | 102,927,000 |
| | 4.1 Earth Works | 705,000 | 27,421,000 | 44,341,000 |
| | 4.2 Lining Works | 1,412,000 | 11,035,000 | 44,923,000 |
| | 4.3 Structural Works | 468,000 | 1,555,000 | 12,787,000 |
| | 4.4 Others | 29,000 | 180,000 | 876,000 |
| | | | | |
| 5 | INSPECTION ROADS | | | |
| | 5.1 Earth Works | 1,198,000 | 70,603,000 | 99,355,000 |
| | | | | |
| 6 | FLOOD DIKES/ROADS | | | |
| | 6.1 Earth Works | 1,075,000 | 61,927,000 | 87,727,000 |
| 7 | CONNECTING ROADS | 249.000 | 12 210 000 | 10 262 000 |
| · | 7.1 Earth Works | 248,000 | 13,310,000 | 19,262,000 |
| | | 224,000 | 13,155,000 | 18,531,000 |
| | 7.2 Structural Works | 19,000 | 117,000 | 573,000 |
| | 7.3 Others | 5,000 | 38,000 | 158,000 |
| 0 | | 4 505 000 | 216,938,000 | 227 402 000 |
| 0 | TERTIARY DEVELOPMENT 8.1 Earth Works | 4,606,000 | | 327,482,000 |
| | 8.2 Land Reclamation | 2,794,000 | 105,793,000 111,145,000 | 172,849,000 154,633,000 |
| •··· • · | | 1,012,000 | 111,145,000 | 1,010,000 |
| a | DRAINAGE CANALS | 441,000 | 13,689,000 | 24,273,000 |
| | 9.1 Earth Works | 175,000 | 12,224,000 | 16,424,000 |
| | 9.2 Structural Works | 28,000 | 141,000 | 813,000 |
| | 9.3 Others | 238,000 | 1,324,000 | 7,036,000 |
| | | £.30,000 | 1,327,000 | 1,030,000 |
| 10 | RICE MILL | 891,000 | 46,416,000 | 67,800,000 |
| | 10.1 Milling Machine | 12,000 | 34,320,000 | 34,608,000 |
| | 10.2 Drying Yard | 391,000 | 2,346,000 | 11,730,000 |
| | 10.3 Storage & Mill House | 488,000 | 9,750,000 | 21,462,000 |
| | tere ocorrage a trim riouse | 100,000 | | 21,704,000 |
| | TOTAL DIRECT COST | 16,444,000 | 599,822,000 | 994,478,000 |
| | | | | |
| | | | and the second secon | |

(1). DIRECT CONSTRUCTION COST

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Table 5.2.2 CONSTRUCTION COST FOR THE NAMIKOKWE INTEGRATED IRRIGATION PROJECT

| | | Local Portion | Foreign Portion | Total |
|------------|--|---------------|---|--|
| | Work Item | (M.Kwacha) | (J.Yen) | (J.Yen) |
| | | | * . | |
| l. – | ENGINEERING SERVICES COS | Τ | ····· | |
| | | : | | · · · · · · · · · · · · · · · · · · · |
| I-1 | (DESIGN STAGE) | 762,150 | 74,800,000 | 93,091,600 |
| | | | | |
| 1 | | 66,000 | 63,600,000 | 65,184,000 |
| | 1.1 Foreign Consultants | 0 | 63,600,000 | 63,600,000 |
| | 1.2 Local Consultants | 66,000 | 0 | 1,584,000 |
| <u>.</u> | | | | |
| 2 | DIRECT COST | 696,150 | 11,200,000 | 27,907,600 |
| | 2.1 International Air | 0 | 11,200,000 | 11,200,000 |
| <u>.</u> | 2.2 Communication | 10,000 | 0 | 240,000 |
| | 2.3 Perdiem | 396,000 | 0 | 9,504,000 |
| | 2.4 Accommodation | 26,400 | 0 | 633,600 |
| · | 2.5 Fuel | 13,750 | 0 | 330,000 |
| | 2.6 Sub-contracts | 200,000 | 0 | 4,800,000 |
| | 2.7 Others | 50,000 | U | 1,200,000 |
| 1-2 | (CONSTRUCTION STAGE) | 634,850 | 50,800,000 | 66,036,400 |
| 1-2 | (CONSTRUCTION STAGE) | 034,030 | 50,800,000 | 00,030,400 |
| 1 | REMMUNERATION | 84,000 | 48,000,000 | 50,016,000 |
| | 1.1 Foreign Consultants | 04,000 | 48,000,000 | 48,000,000 |
| | 1.2 Local Consultants | 84,000 | 40,000,000 | 2,016,000 |
| | | 04,000 | | 2,010,000 |
| . 2 | DIRECT COST | 550,850 | 2,800,000 | 16,020,400 |
| | 2.1 International Air | 0 | 2,800,000 | 2,800,000 |
| | 2.2 Communication | 40,000 | 2,000,000 | 960,000 |
| | 2.3 Perdiem | 360,000 | 0 | 8,640,000 |
| | 2.4 Accommodation | 28,800 | 0 | 691,200 |
| ÷- | 2.5 Fuel | 21,600 | 0 | 518,400 |
| | 2.6 Others | 100,450 | 0 | 2,410,800 |
| | | 100,100 | | 2,110,000 |
| ENG | NEERING SERVICES TOTAL | 1,398,000 | 125,600,000 | 159,128,000 |
| | | | | |
| | | | والمحافظة فالمعاملة ويرجع وبريهم الأفاعات | an ya mini da da ya mana ya mana ya mana ya mina da da |
| И. | ADMINISTRATION COST | | | |
| | ······································ | | | |
| 11-1 | (DESIGN STAGE) | 472,000 | 0 | 11,328,000 |
| | · | | | |
| 1 | Staff Salary | 261,000 | 0 | 6,264,000 |
| 2 | Labour Charge | 22,500 | 0 | 540,000 |
| 3 | Office Expenses | 84,000 | 0 | 2,016,000 |
| 4 | Fuel | 36,000 | 0 | 864,000 |
| 5 | Office Equipment | 26,000 | 0 | 624,000 |
| 6 | Miscellaneous | 42,500 | 0 | 1,020,000 |
| | | | | |
| II-2 | (CONSTRUCTION STAGE) | 1,362,000 | 0 | 32,688,000 |
| | | | | |
| 1 | Staff Salary | 624,000 | 0 | 14,976,000 |
| 2 | Labour Charge | 120,000 | 0 | 2,880,000 |
| | Office Expenses | 360,000 | 0 | 8,640,000 |
| | Fuel | 96,000 | 0 | 2,304,000 |
| | Office Equipment | 50,000 | 0 | 1,200,000 |
| 6 | Miscellaneous | 112,000 | 0 | 2,688,000 |
| | | <u> </u> | | |
| ADM | INISTRATION COST TOTAL | 1,834,000 | 0 | 44,016,000 |
| | | | ··· | |

(2) Engineering Services and Administration Costs

Table 5.2.3 CONSTRUCTION COST FOR THE LOWER LIVULEZI IRRIGATION PROJECT

| | Work Item | Local Portion (M.Kwacha) | Foreign Portion (J.Yen) | Total (J.Yen) |
|---|---|---|----------------------------------|------------------|
| · · · · T | PREPARATORY WORKS | 1,203,000 | 35,146,000 | 64,018,000 |
| | | | | |
| 2 | CULVERT ON M-18 | 971,000 | 14,206,000 | 37,510,000 |
| | 2.1 Earth Works | 112,000 | 9,152,000 | 11,840,000 |
| | 2.2 Concrete Works | 794,000 | 5,054,000 | 24,110,000 |
| | 2.3 Other Works | 65,000 | 0 | 1,560,000 |
| | RIVER DREDGING | | ···· ··· ··· ··· ··· ··· ··· ··· | |
| | 3.1 Excavation | 46,000 | 3,995,000 | 5,099,000 |
| | HEAD WORKS | 3,802,000 | 135,333,000 | 226,581,000 |
| | 4.1 Earth Works | | | 7 020 000 |
| • | | 87,000 | 5,850,000 | 7,938,000 |
| | 4.2 Concrete Works | 1,376,000 | 7,897,000 | |
| | 4.3 Metal Works | 4,000 | 8,337,000 | 8,433,000 |
| | 4.4 Other Works | 367,000 | . 0 | 8,808,000 |
| | 4.5 Intake Dike | 1,968,000 | 113,249,000 | 160,481,000 |
| 5-1 | MAIN CANAL (LV-MC-1) | 2,207,000 | 46,206,000 | 99,174,000 |
| <u> </u> | 5.1 Earth Works | 891,000 | 34,092,000 | 55,476,000 |
| | 5.2 Lining Works | 1,031,000 | 8,058,000 | 32,802,000 |
| | 5.3 Structural Works | 1,031,0001 | | |
| | 5.3 Structural works | 262,000 | 3,922,000 | 10,210,000 |
| | 5.4 Others | 23,000 | 134,000 | 686,000 |
| 5-2 | MAIN CANAL (LV-MC-2) | 1,615,000 | 27,206,000 | 65,966,000 |
| | 5.5 Earth Works | 504,000 | 19,436,000 | 31,532,000 |
| | 5.6 Lining Works | 900,000 | 7,032,000 | 28,632,000 |
| | 5.7 Structural Works | 196,000 | 647,000 | 5,351,000 |
| | 5.8 Others | 15,000 | 91,000 | 451,000 |
| | | | | |
| 6 | BRANCH CANALS | 393,000 | 5,879,000 | 15,311,000 |
| | 6.1 Earth Works | 151,000 | 4,643,000 | 8,267,000 |
| | 6.2 Lining Works | 161,000 | 1,022,000 | 4,886,000 |
| | 6.3 Structural Works | 77,000 | 192,000 | 2,040,000 |
| | 6.4 Others | 4,000 | 22,000 | 118,000 |
| 7 | INSPECTION ROADS | | | |
| | 7.1 Earth Works | 795,000 | 38,066,000 | 57,146,000 |
| | | | | |
| <u> </u> | FLOOD DIKES/ROADS | 1.170.000 | | |
| | 8.1 Earth Works | 1,478,000 | 84,022,000 | 119,494,000 |
| 9 | CONNECTING ROADS | 273,000 | 14,208,000 | 20,760,000 |
| | 9.1 Earth Works | 238,000 | 13,981,000 | 19,693,000 |
| | 9.2 Structural Works | 27,000 | 171,000 | 819,000 |
| | 9.3 Others | 8,000 | 56,000 | 248,000 |
| 17 | TERTIARY DEVELOPMENT | 2 21 9 222 | 140 300 000 | |
| 10 | | 3,217,000 | 149,269,000 | 226,477,000 |
| | 10.1 Earth Works 10.2 Land Reclamation | 1,921,000 | 72,737,000 76,532,000 | 118,841,000 |
| | | 1,230,000 | 10,332,000 | 107,030,000 |
| 11 | DRAINAGE CANALS | 846,000 | 33,812,000 | 54,116,000 |
| | 11.1 Earth Works | 355,000 | 30,481,000 | 39,001,000 |
| | 11.2 Structural Works | 48,000 | 301,000 | 1,453,000 |
| | 11.3 Others | 443,000 | 3,030,000 | 13,662,000 |
| 19 | RICEMILL | E34 000 | 77 054 004 | 10 000 000 |
| 12 | | 534,000 | 27,850,000 | 40,666,000 |
| | 12.1 Milling Machine | 7,000 | 20,592,000 | 20,760,000 |
| | 12.2 Drying Yard | 234,000 | 1,408,000 | 7,024,000 |
| | 12.3 Storage & Mill House | 293,000 | 5,850,000 | 12,882,000 |
| | TOTAL | 17,380,000 | 615,198,000 | 1,032,318,000 |
| | | 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | | |

(1). Direct Construction Cost

Table 5.2.3 CONSTRUCTION COST FOR THE LOWER LIVULEZI IRRIGATION PROJECT

| | | Local Portion | Foreign Portion | Tota |
|--|---------------------------------------|---------------|---------------------------------------|---|
| - | Work Item | (M.Kwacha) | (J.Yen) | (J.Yen) |
| | | · | | |
| <u> .</u> | ENGINEERING SERVICES COS | r | · · · · · · · · · · · · · · · · · · · | |
| | | | | |
| 1-1 | (DESIGN STAGE) | 716,500 | 68,800,000 | 85,996,000 |
| <u> </u> | | | | |
| 1 | REMMUNERATION | 60,000 | 57,600,000 | 59,040,000 |
| | 1.1 Foreign Consultants | 0 | 57,600,000 | 57,600,000 |
| | 1.2 Local Consultants | 60,000 | 0 | 1,440,000 |
| | i | | | |
| 2 | DIRECT COST | 656,500 | 11,200,000 | 26,956,000 |
| i | 2.1 International Air | 0 | 11,200,000 | 11,200,000 |
| | 2.2 Communication | 10,000 | 0 | 240,000 |
| | 2.3 Perdiem | 360,000 | ·0 | 8,640,000 |
| | 2.4 Accommodation | 24,000 | 0 | 576,000 |
| | 2.5 Fuel | 12,500 | 0 | 300,000 |
| | 2.6 Sub-contracts | 200,000 | 0 | 4,800,000 |
| | 2.7 Others | 50,000 | 0 | 1,200,000 |
| | | | | |
| 1-2 | (CONSTRUCTION STAGE) | 634,400 | 50,800,000 | 66,025,600 |
| | · · · · · · · · · · · · · · · · · · · | | | ii |
| 1 | REMMUNERATION | 84,000 | 48,000,000 | 50,016,000 |
| | 1.1 Foreign Consultants | 0 | 48,000,000 | 48,000,000 |
| | 1.2 Local Consultants | 84,000 | 0 | 2,016,000 |
| | | 01,000 | | |
| | DIRECT COST | 550,400 | 2,800,000 | 16,009,600 |
| <u> </u> | 2.1 International Air | | 2,800,000 | 2,800,000 |
| <u> </u> | 2.2 Communication | 40,000 | 2,000,000 | 960,000 |
| | 2.3 Perdiem | 360,000 | 0 | 8,640,000 |
| | 2.4 Accommodation | 28,800 | 0 | 691,200 |
| <u>`</u> | 2.5 Fuel | 21,600 | 0 | 518,400 |
| | 2.6 Others | 100,000 | 0 | 2,400,000 |
| | | 100,000 | V | 2,400,000 |
| ENG | NEERING SERVICES TOTAL | 1,350,900 | 119,600,000 | 152,024,000 |
| 1.113 | LERING SERVICES TOTAL | 1,000,000 | 113,000,000 | 132,02-7,000 |
| h | | | | والمتحاك والمتحد والمتكنينية ومشاهدتهم والمعتوي و |
| | ADMINISTRATION COST | | | |
| H | ADVENTION COST | | · | |
| 11-1 | | 472.000 | | 11 339 000 |
| 11-1 | (DESIGN STAGE) | 472,000 | 0 | 11,328,000 |
| | | 0.01.000 | | 0.004.000 |
| | | 261,000 | 0 | 6,264,000 |
| | Labour Charge | 22,500 | 0 | 540,000 |
| | Office Expenses | 84,000 | 0 | 2,016,000 |
| . | Fuel | 36,000 | 0 | 864,000 |
| | Office Equipment | 26,000 | 0 | 624,000 |
| 6 | Miscellaneous | 42,500 | 0 | 1,020,000 |
| I | | | | |
| 11-2 | (CONSTRUCTION STAGE) | 1,362,000 | 0 | 32,688,000 |
| L. | | | | |
| | Staff Salary | 624,000 | 0 | 14,976,000 |
| | Labour Charge | 120,000 | 0 | 2,880,000 |
| a service and the service of the ser | Office Expenses | 360,000 | 0 | 8,640,000 |
| | Fuel | 96,000 | 0 | 2,304,000 |
| | Office Equipment | 50,000 | 0 | 1,200,000 |
| . 6 | Miscellaneous | 112,000 | 0 | 2,688,000 |
| | | | | |
| ADM | INISTRATION COST TOTAL | 1,834,000 | 0 | 44,016,000 |
| | | | | |
| | | | | |

(2) Engineering Services and Administration Costs

Table 5.2.4 (1) DISBURSEMENT SCHEDULE OF THE PROJECT COST THE LOWER NADZIPULU IRRIGATION PROJECT

(Unit : 1000 Kwacha, 1000 J.Yen)

| L/C F/C Total L/C F/C Total L/C F/C Total L/C ristruction Cost 623 19,141 34,093 L/C F/C 7141 27,265 125 arretory Works 623 19,141 34,093 R 1,609 37,970 76,586 125 d Works 1,609 37,970 76,586 R 2,246 44,701 36,605 135 nch Canalis 2,246 44,701 38,605 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 160 2,565 6,407 2,656 6,407 2,656 6,407 2,656 1,644 2,1,514 2,565 1,644 2,151 2,265 1,668 2,712 2,246< | | | Total | | | 1994 | - | | 1995 | , | | 1996 | Ì |
|---|------------------------------------|--------|---------|---------|-------|--------|--------|-------|--------|---------|-------|---------|---------|
| 623 19,141 34,093 7 498 15,313 27,265 125 1 1609 37,970 76,566 125 125 125 1 1609 37,970 76,566 125 125 125 7 1609 37,970 76,566 6,407 6,407 6,407 7 741 43,650 6,1434 845 4 7 741 43,650 6,1434 845 4 843 46,653 6,407 741 43,650 61,434 845 873 46,653 6,193 741 43,650 61,434 845 873 46,653 6,193 741 43,650 61,434 873 4 873 46,665 6,193 741 45,650 61,434 873 4 1,543 71,14 108,794 741 45,650 61,434 873 4 106 1,190 106,400 <td< th=""><th></th><th></th><th>F/C</th><th>Total</th><th>L/C</th><th>F/C</th><th>Total</th><th>L/C</th><th>F/C</th><th>Total</th><th>L/C</th><th>F/C</th><th>Total</th></td<> | | | F/C | Total | L/C | F/C | Total | L/C | F/C | Total | L/C | F/C | Total |
| 623 19,141 34,093 498 15,313 27,265 125 1,609 37,970 76,586 1407 76,586 125 125 1,609 37,970 76,586 1407 76,586 125 125 160 2,567 6,407 741 43,650 61,434 845 4 741 43,650 61,434 741 43,650 61,434 845 4 873 46,653 66,933 69,944 741 43,650 61,434 845 4 1,545 71,714 108,794 67 464 21,514 32,650 1081 5 8,746 356 56,913 8,472 637 3030 15 2 3030 15 2 3030 15 2 3030 15 2 3030 15 2 3030 15 2 3030 15 2 3030 15 2 3030 15 2 | | | | | | | | | | | | | |
| 623 19,141 34,093 498 15,313 27,265 125 1,609 37,970 76,586 77 98,605 741 98,605 75,567 64,470 98,605 75,567 64,470 98,656 7 1,609 37,970 76,586 77 98,656 7 98,656 7 98,656 7 98,656 7 845 4 741 43,650 61,434 741 43,650 61,434 845 4 873 46,653 66,033 66,933 61,434 845 4 873 46,653 66,133 61,434 845 4 873 46,584 67,536 61,434 873 4 873 46,584 67,536 61,434 845 4 873 46,584 67,516 32,650 1,081 5 8,749 16,672 51,610 55,600 68,443 317 25,400 317 | Direct Construction Cost | | | | | | | | | | | | |
| 1,609 37,970 76,586 1,609 37,970 76,586 1 2,246 44,701 98,605 2,246 44,701 98,605 1 160 2,567 6,407 86,65 6,407 845 44,701 98,605 1 741 43,650 61,434 741 43,650 61,434 845 445 873 4 741 43,650 61,434 845 445 873 4 741 43,650 61,434 845 445 873 4 741 43,650 61,434 873 873 4 1 1,545 71,714 108,794 71 873 4 873 4 87.48 6,193 7 2 741 43,650 61,081 5 7 2 11,627 71,714 108,794 717 3 3 7 2 1,1627 314,356 55,600 68,944 | 1. Preparatory Works | 623 | - | 34,093 | | | | 498 | | | 125 | 3,828 | 6,828 |
| 2,246 44,701 98,605 6407 845 4 160 2,567 6,407 96,605 6,407 845 4 741 43,650 61,434 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 845 6,407 873 4 845 6,407 873 843 875 873 873 873 875 873 875 875 874 873 873 873 873 873 873 | 1. Head Works | 1,609 | • | 76,586 | | | | 1,609 | 37,970 | [| | | |
| 160 2,567 6,407 1 160 2,567 6,407 1 741 43,650 61,434 845 61,434 845 845 4 845 46,653 66,933 8 845 8,455 8,455 8,455 8,455 8,455 8,455 8,45 8,455 8,73 8,74 8,73 8,74 8,74 108,794 8,73 8,73 8,74 8,745 8,71 108,794 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,73 8,75 1,06 1,5 302,947 3,03 15 2 1,05 17 2 2,650 1,7 16 17 2 17 2 2 17 2 2 10 10 10 10 10 10 10 10 10 10 10 10 <td>2. Main Canals</td> <td>2,246</td> <td></td> <td>98,605</td> <td></td> <td></td> <td></td> <td>2,246</td> <td>ļ</td> <td></td> <td></td> <td></td> <td></td> | 2. Main Canals | 2,246 | | 98,605 | | | | 2,246 | ļ | | | | |
| 741 43,650 61,434 741 43,650 61,434 845 4 845 46,653 66,933 66,933 66,933 845 845 4 873 46,653 66,933 67,536 7 873 4 873 46,5584 67,536 7 7 7 873 4 106 3,649 6,193 7 7 3030 15 8,748 316,629 526,581 5,600 68,944 317 25,400 3,030 17 11,90 106,400 13,496 556 55,600 68,944 317 25,400 3,030 17 2 1,627 0 30,000 375 9,472 637 106 377 2 3,300 317 2 1,627 0 39,048 353 8,472 637 15,288 637 2 12 2 12,288 637 2 12,2288 637 | 3. Branch Canal | 160 | | 6.407 | | | | 160 | 2,567 | 6,407 | | | |
| 845 46,653 66,933 845 485 645 32,550 873 485 873 46,584 67,536 71,714 108,794 873 873 873 3 106 3,649 6,193 71,714 108,794 3,030 15 8,748 106 3,649 6,193 71,714 108,794 3,030 15 8,748 316,629 526,581 55,600 68,944 317 25,400 3,030 15 1,190 106,400 134,960 556 55,600 68,944 317 25,400 3,030 17 1,627 0 39,048 353 8,472 637 3,030 19 1,627 0 3,000 377 25,400 3,370 3,17 2 1,627 0 3,004 55 5,560 8,472 637 3,17 2 1,627 0 3,000 37 2,140 3,17 2,1 | 4. Inspection Roads | 741 | | 61,434 | | | | 741 | 43,650 | 61,434 | | | |
| 873 46,584 67,536 67,536 67,536 873 4 1,545 71,714 108,794 6,193 6,193 1,081 5 8,748 5,193 5,718 165,715 302,947 3,030 156 8,748 316,629 526,581 55,600 68,944 317 25,400 3,030 317 2 11,190 106,400 134,960 556 55,600 68,944 317 25,400 317 2 11,190 106,400 134,960 556 55,600 68,944 317 25,400 317 2 11,190 106,400 134,960 556 55,600 68,944 317 25,400 317 2 1,627 0 9,000 375 9,472 637 15,238 637 2 1,627 0 30,048 375 25,400 31,70 35,124 4340 17 1,627 1,521 637 <t< td=""><td>5. Flood Dike/Road</td><td>845</td><td></td><td>66,933</td><td></td><td></td><td></td><td></td><td></td><td></td><td>845</td><td>46,653</td><td>66,933</td></t<> | 5. Flood Dike/Road | 845 | | 66,933 | | | | | | | 845 | 46,653 | 66,933 |
| nt 11,545 71,714 108,734 6,193 106 106 8,748 8,193 6,193 71,714 108,734 5,718 155,715 32,650 1,081 5 8,748 316,629 526,581 5,718 165,715 302,947 3,030 15 1,190 106,400 134,960 556 55,600 68,944 317 25,400 33,008 317 2 1,190 106,400 134,960 555 55,600 68,944 317 25,400 33,008 317 2 1,627 0 39,048 353 9,000 68,416 6,672 191,115 351,248 637 2 375 0 9,000 375 9,000 8,472 667 191,115 351,243 4,340 17 1,627 0 39,008 317 2 191,115 351,243 4,340 17 1,220 44,160 736,601 1,668 4,750 | 6. Connecting Road | 873 | | 2 | | | *~~~~ | | | | 873 | 46,584 | 67,536 |
| 106 3,649 6,193 106 8,748 316,629 526,581 5,718 165,715 302,947 3,030 15 356 18,566 27,110 5 5,718 165,715 302,947 3,030 15 11,190 106,400 134,960 556 55,600 68,944 317 25,400 33,008 317 2 375 0 9,000 375 5 9,000 68,944 317 25,400 33,008 317 2 376 1 9,000 375 9,000 68,946 6672 19,115 351,243 4,340 19 12,296 44,1595 736,699 1,284 55,600 86,416 6,672 19,115 351,243 4,340 19 12,296 31,378 12,284 55,600 8,6416 6,672 19,115 351,243 4,340 19 12,230 44,160 736,603 12,260 8,642 667 <t< td=""><td>7. Tertiary Development</td><td>1,545</td><td>2</td><td>-</td><td></td><td></td><td></td><td>464</td><td>21,514</td><td>32,650</td><td>1,081</td><td>50,200</td><td>76,144</td></t<> | 7. Tertiary Development | 1,545 | 2 | - | | | | 464 | 21,514 | 32,650 | 1,081 | 50,200 | 76,144 |
| 8,748 316,629 52,5181 5,718 165,715 302,947 3,030 15 356 18,566 27,110 55,716 15,715 302,947 3,030 15 1,190 106,400 134,960 556 55,600 68,944 317 25,400 33,008 317 2 375 0 9,000 375 9,000 37 15,288 637 37 37 2 1,627 0 9,000 375 9,000 8742 637 15,288 637 37 2 375 0 9,000 375 9,000 86,416 6,672 191,115 351,243 4,340 19 12,296 31,378 122,89 1,284 55,600 8,642 667 19,1115 351,243 4,340 19 12,296 31,378 102,563 122,815 6,672 191,1115 351,243 4,340 12 2,966 31,653 1,263 | 8. Drainage Canals | 106 | | 6,193 | | | | | | | 106 | | 6,193 |
| 356 18,566 27,110 556 55,600 68,944 317 25,400 33,008 317 2 1,190 106,400 134,960 556 55,600 68,944 317 25,400 33,008 317 2 1,627 0 39,048 353 8,472 637 15,288 637 375 0 9,000 375 9,000 86,416 6,672 191,115 351,243 4,340 19 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 19 12,230 44,160 73,670 128 55,600 8,642 667 19,115 351,243 4,340 17 1,230 44,160 73,670 128 5,560 8,642 667 19,112 351,243 4,340 17 1,230 44,160 73,670 128 5,560 8,642 667 19,112 351,243 4,340 17 2,966 31,378 102,563 1,668 4,750 <td>Sub-Total</td> <td>8,748</td> <td>3.1</td> <td>526,581</td> <td></td> <td></td> <td>-</td> <td>12</td> <td>7</td> <td>302,947</td> <td>3,030</td> <td>150,914</td> <td>223,634</td> | Sub-Total | 8,748 | 3.1 | 526,581 | | | - | 12 | 7 | 302,947 | 3,030 | 150,914 | 223,634 |
| 356 18,566 27,110 556 55,600 68,944 317 25,400 33,008 317 2 1,190 106,400 134,960 556 55,600 68,944 317 25,400 33,008 317 2 375 0 39,048 353 8,472 637 15,288 637 2 1,120 375 0 3,000 375 9,000 375 4,340 17 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 17 12,296 44,160 73,670 128 5,560 8,642 667 191,115 351,243 4,340 17 1,230 44,160 73,670 128 5,560 8,642 667 191,115 351,243 4,340 1 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 | | | | | | | | | | | | | |
| 1,190 106,400 134,960 556 55,600 68,944 317 25,400 33,008 317 2 375 0 39,048 353 8,472 637 15,288 637 7 375 0 39,048 353 9,000 375 637 7 15,288 637 1 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 1 1 12,296 44,160 73,670 1284 55,600 86,416 6,672 191,115 351,243 4,340 1 1 12,330 44,160 73,670 128 5,560 8,642 667 19,112 351,243 4,340 1 1 1,230 44,160 73,670 128 5,560 8,642 667 19,112 351,243 4,340 1 2,966 31,378 102,563 12683 1,668 4,750 < | . Rice Mill | 356 | 18 | 27,110 | | | | | | | 356 | 18,566 | 27,110 |
| 1,627 0 39,048 353 8,472 637 15,288 637 375 0 9,000 375 9,000 7 15,288 637 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 19 12,296 44,160 73,670 128 5,560 8,6416 6,672 191,115 351,243 4,340 19 1,230 44,160 73,670 128 5,560 8,642 667 19,112 351,243 4,340 19 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 16,492 517,132 912,932 1,541 62,828 99,807 8,740 21,1855 431,633 6,211 25 | I. Engineering Service | 1,190 | 2 | 134,960 | 556 | 55,600 | 68,944 | 317 | 25,400 | 33,008 | 317 | 25,400 | 33,008 |
| 375 0 9,000 375 9,000 375 9,000 375 9,000 375 373 4,340 15 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 15 1,230 44,160 73,670 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 25 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 25 | V. Administration Expenses | 1,627 | 0 | 39,048 | 353 | | 8,472 | 637 | | 15,288 | 637 | | 15,288 |
| 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 15 1,230 44,160 73,670 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 26 | /. Land Acquisition | 375 | | 9,000 | 375 | | 9,000 | | | | | | |
| 12,296 441,595 736,699 1,284 55,600 86,416 6,672 191,115 351,243 4,340 15 1,230 44,160 73,670 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 5,560 8,642 667 19,112 35,124 434 1 1,6492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 26 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 26 | | | | | | | | | | | | | |
| 1,230 44,160 73,670 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 25 | Total | 12,296 | 441,595 | 736,699 | 1,284 | 55,600 | 86,416 | 6,672 | 191,11 | 351,243 | 4,340 | 194,880 | 299,040 |
| 1,230 44,160 73,670 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 25 | | | | | | | | | | | | | |
| 1,230 44,160 73,670 128 5,560 8,642 667 19,112 35,124 434 1 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 1 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 25 | /l. Contingencies | : | | | | | | | | | | | |
| 2,966 31,378 102,563 128 1,668 4,750 1,401 11,639 45,266 1,437 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 | 1. Physical | 1,230 | 44, | 73,670 | 128 | 5,560 | 8,642 | 667 | - | | 434 | 19,488 | 29,904 |
| 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 | 2. Price | 2,966 | 3 | 102,563 | 128 | 1,668 | 4,750 | 1,401 | 11,639 | 45,266 | 1,437 | 18,071 | 52,548 |
| 16,492 517,132 912,932 1,541 62,828 99,807 8,740 221,865 431,633 6,211 | | | | | | | | | | | | | |
| lote : L/C; Local Currency Portion | Grand Total | 16,492 | 517,132 | 912,932 | 1,541 | 62,828 | 99,807 | 8,740 | | 431,633 | 6,211 | 232,439 | 381,492 |
| Vote : L/C; Local Currency Portion | | | | | | | | | | | : · · | | |
| | Vote : L/C; Local Currency Portior | Ē | | | | | | | | | | | |

F/C; Foreign Currency Portion

П - Т - 72

Table 5.2.4 (2) DISBURSEMENT SCHEDULE OF THE PROJECT COST THE NAMIKOKWE INTEGRATED IRRIGATION PEOJECT

| . | | — | | β | | | | | 5 | Ŋ | ŝ | ξ | ω | | Q | ß | Z | | [| 0 | ***** | | က္က | ୭ | 144-11 3 | 2 | |
|---------------------------------|-------|----------|--------------------------|----------------------|---------------|----------------|-----------------|---------------------|-----------------|--------------------|-------------------------|--------------------|-----------|---|---------------|-------------------------|-----------------------------|---------------------|----------|------------|-------|-------------------|-------------|----------|-----------------|-------------|-----------|
| J.Yen) | | Total | | 11,983 | | | | | 87,727 | 19,262 | 229,233 | 24,273 | 372,478 | | 67,800 | 33,008 | 16,344 | | | 489,630 | | | 48,963 | 86,009 | | 624,602 | |
| cha, 1000 | 1996 | F/C | | 6,607 | | | | | 61,927 | 13,310 | 151,857 | 13,689 | 247,390 | | 46,416 | 25,400 | | | | 319,206 | | | 31,921 | 29,599 | | 380,726 | |
| (Unit: 1000 Kwacha, 1000 J.Yen) | | LC LC | | 224 | | | | | 1,075 | 248 | 3,224 | 441 | 5,212 | | 891 | 317 | 681 | | | 7,101 | | | 710 | 2,350 | | 10,162 | |
| (Unit: 1 | | Total | | 47,933 | 76,879 | 128,857 | 102,927 | 99,355 | | | 98,249 | | 554,200 | | | 33,008 | 16,344 | | | 603,552 | | | 60,355 | 77,332 | | 741,239 | |
| | 1995 | F/C | | 26,429 | 38,311 | <u></u> | 40,191 | 70,603 | | | 65,081 | | 306,016 | - | | 25,400 | | | | 331,416 | | | 33,142 | 20,183 | | 384,741 | |
| | | | | 968 | 1,607 | 2,644 | 2,614 | 1,198 | | | 1,382 | | 10,341 | | | 317 | - 681 | | | 11,339 | | | 1,134 | 2,381 | | 14,854 | |
| | | Total | | | | | | | : | | | | | | | 93,068 | 11,328 | 20,520 | | 124,936 | | | 12,494 | 7,258 | | 144,687 | |
| - | 1994 | F/C | | | · | | | | | | | | | | | 74,800 | | | | 74,800 | • | | 7,480 | 2,244 | | 84,524 | |
| | | L/C | | | | - | | - | | | | | | | | 762 | 472 | 855 | | 2,089 | | | 209 | 209 | | 2,507 | |
| | | Total | | 59,916 | 76,879 | 128,857 | 102,927 | 99,355 | 87,727 | 19,262 | 327,482 | 24,273 | 926,678 | | 67,800 | 159,128 | 44,016 | 20,520 | | 1,218,142 | | | 121,812 | 170,599 | | 1,510,553 | |
| | Total | F/C | | 33,036 | 38,311 | 65,401 | 40,191 | 70,603 | 61,927 | 13,310 | 216,938 | 13,689 | 553,406 | | 46,416 | 125,600 | 0 | 0 | | 725,422 1, | | | 72,542 | 52,026 | | 849,990 1, | |
| . • | | | | 1,120 | 1,607 | 2,644 | 2,614 | 1,158 | 1,075 | 248 | 4,606 | 441 | 15,553 5 | | 168 | 1,397 | 1,834 | 855 | | 20,530 7 | | | 2,053 | 4,941 | | 27,523 8 | |
| | | | on Cost | Works | | | | oads | Road | Road | elopment | nals | | | | 9 | cpenses | | | | | | | | | | ; ;; . |
| | | | Direct Construction Cost | 1. Preparatory Works | 1. Head Works | 2. Main Canals | 3. Branch Canal | 4. Inspection Roads | 5. Flood Dike/F | 6. Connecting Road | 7. Tertiary Development | 8. Drainage Canals | Sub-Total | | II. Rice Mill | II. Engineering Service | IV. Administration Expenses | V. Land Acquisition | | Total | | VI. Contingencies | 1. Physical | 2. Price | | Grand Total | |

Note : L/C; Local Currency Portion F/C; Foreign Currency Portion

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 Table 5.2.4 (3)
 DISBURSEMENT SCHEDULE OF THE PROJECT COST

 THE LOWER LIVULEZI IRRIGATION PROJECT

(Unit: 1000 Kwacha, 1000 J.Yen)

| UC FUC Total L/C FUC Total L/C FUC Total L/C 971 14.206 37.510 37.510 241 246 3.995 5.099 241 971 14.206 37.510 971 14.206 37.510 241 971 14.206 37.510 971 14.206 37.510 241 3.822 73.412 165.140 3.822 73.412 165.140 265.631 3.822 73.412 165.140 3.822 73.412 165.140 273 1 3.93 5.879 15.311 773 38.066 57.146 1,478 8 775 38.066 57.146 775 38.066 57.146 1,478 8 273 1 773 14.209 226.477 38.20 15.311 1,478 8 273 1 1,478 8 273 1 273 1 273 1 273 1 | UC F/G Total UC F/G <thuc< th=""> F/G Total <th< th=""><th></th><th></th><th></th><th></th><th></th><th>1004</th><th></th><th></th><th>1005</th><th></th><th>1000 KWa</th><th>: TUUU KWacna, TUUU J. Yen</th><th>J.Yen)</th></th<></thuc<> | | | | | | 1004 | | | 1005 | | 1000 KWa | : TUUU KWacna, TUUU J. Yen | J.Yen) |
|--|--|-----------------------------------|-------------|---------|-----------|-------|--------|---------|---------|---------|---------|----------|----------------------------|---------|
| UC F/C Total L/C F/C F/C Total L/C F/C | UC F/C Total L/C F/C F/C F/C Total L/C F/C | : | | IOLAI | | | -934 | | | 1330 | | | 1220 | · |
| Direct Construction Cost Interact Cost Interact Construction Cost Interact Cost < | Direct Construction Cost Index State 64,018 State 64,018 State 51,008 24,1 7,029 1 Present Construction Cost 1,203 35,146 64,018 971 14,206 37,510 241 7,029 2 Culverton Mirds 971 14,206 37,510 46 3,955 5,099 241 7,029 3 Rote Threedging 3822 15,311 14,206 57,146 1478 84,022 1 1,478 84,022 1 5 Main Canals 333 25,613 26,74 27,04 14,768 84,022 1 1,478 84,022 1 1,478 84,022 1 1,478 84,022 1 1,478 84,022 1 1,478 84,022 1 1 273 14,206 7 1 1,478 84,022 1 1 1,478 84,022 1 1 1 1 1 1 1,1,756 343,769 57,148 </th <th></th> <th>ר ר ר</th> <th>F/C</th> <th>Total</th> <th></th> <th>F/C</th> <th>Total</th> <th>L/C</th> <th>F/C</th> <th>Total</th> <th></th> <th>F/C</th> <th>Totai</th> | | ר ר ר | F/C | Total | | F/C | Total | L/C | F/C | Total | | F/C | Totai |
| 1 Preparatory Works 1,203 55,146 64,018 971 1,4206 37,510 7,023 3 Nore Diredging 971 14,206 37,510 37,510 7,03 3 River Diredging 971 14,206 37,510 7,03 7,03 3 River Diredging 3,802 155,333 226,581 7,412 165,140 7,03 4 Head Works 3,802 155,133 226,581 7,418 84,022 17,03 5 Fload Dise/Reads 3,822 73,416 84,022 11,478 84,022 14,208 5 Fload Dise/Read 1,478 84,022 14,208 57,146 7,738 84,022 17,478 84,022 14,208 5 Fload Dise/Read 1,478 84,022 14,208 57,146 7,738 84,022 14,208 6 Fload Dise/Read 1,478 84,028 14,508 7,347 8,422 14,208 6 Fload Dise/Read | 1. Preparatory Works 1,203 35,146 64,018 7,029 7,020 7,020 2. Unvertionedic 971 14,206 37,510 971 14,206 37,510 7 3. Neer Dredging 3,802 15,333 226,581 14,206 57,146 14,206 7 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 14,206 | I. Direct Construction Cost | | | | | | | | | | | | |
| 2. Culvert on M-16 971 14.206 37,510 7 4. Hard Works 3,802 3,393 5,099 7 7 5. Main Carnals 3,802 15,331 5,099 7 7 5. Main Carnals 3,802 15,331 5,099 7 7 5. Main Carnal 3,802 15,331 165,140 7 7 3 8 7 14/78 84,022 1 5. Main Carnals 3,933 5,014 7 3 8 7 14/5 7 14/28 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 1/478 84,022 1 <td< td=""><td>2. Culvert on M-16 971 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,76 84,022 13,533 25,5591 14,76 84,022 11,756 38,026 57,140 14,76 84,022 11,276 38,026 57,140 14,76 84,022 11,276 34,781 67,941 74,76 84,022 11,276 34,781 67,941 74,76 84,022 11,276 34,781 67,941 74,76 84,022 11,276 34,781 67,941 74,76 84,623 36,102 14,476 84,022 14,476 84,022 14,476 84,022 14,476 84,022 14,476 84,022 14,726 84,623 14,206 14,726 84,623 13,626 14,726 84,62</td><td>1. Preparatory Works</td><td>1,203</td><td>35,146</td><td>64,018</td><td></td><td></td><td></td><td>962</td><td>·</td><td>51,205</td><td>241</td><td>7,029</td><td>12,813</td></td<> | 2. Culvert on M-16 971 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,206 37,510 14,76 84,022 13,533 25,5591 14,76 84,022 11,756 38,026 57,140 14,76 84,022 11,276 38,026 57,140 14,76 84,022 11,276 34,781 67,941 74,76 84,022 11,276 34,781 67,941 74,76 84,022 11,276 34,781 67,941 74,76 84,022 11,276 34,781 67,941 74,76 84,623 36,102 14,476 84,022 14,476 84,022 14,476 84,022 14,476 84,022 14,476 84,022 14,726 84,623 14,206 14,726 84,623 13,626 14,726 84,62 | 1. Preparatory Works | 1,203 | 35,146 | 64,018 | | | | 962 | · | 51,205 | 241 | 7,029 | 12,813 |
| 3. River Dredging 46 3,905 5,099 7 5. More Dredging 46 3,902 135,133 226,581 7 5. Mario Dredging 3,802 135,133 226,581 7 146 5. Mario Dredging 3,802 15,511 7 146 7,915 15,511 5. Mario Dredging 3,82 27,146 75 3,806 57,146 7 1,478 8,4022 1 4. Inspection Roads 753 85,006 57,146 7 75 84,022 1 4,202 5. Flood Direc Roads 1,77 84,022 19,494 7 75 84,022 1 7,478 84,022 1 7,478 84,022 1 7,478 84,022 1 7,47 84,6 3,812 2,4116 7 7 7 7 84,6 3,812 2,4116 7 7 7 7 7 84,6 3,812 2,4126 1 7 7 7 7 <td< td=""><td>3. River Dredging 46 3.995 5.099 4 5. Mint Canals 3.822 73.312 226.561 3.822 73.412 165.140 7 5. Maint Canals 3.822 73.412 165.140 3.822 73.412 165.140 7 6. Maint Canals 3.832 75.31 165.140 3.822 73.412 165.140 7 7. Inspection Roads 7.95 38.066 57.146 7 3.822 73.412 1.476 8.4022 1.478 8.4022 1.4.208 1.4.268 2.25.104.488 1.4.268 2.25.417 2.7.3412 1.4.268 2.7.341 2.7.3412 2.7.3412 2.7.3412 2.7.3412 2.7.461 2.7.341 2.7.252 10.4.4.288 1.4.208 1.4.208 2.7.341 2.7.252 10.4.4.881 2.7.341 2.7.341 2.7.341 2.7.351 2.7.4.61 2.7.341 2.7.352 10.4.4.881 1.4.208 2.7.341 2.7.341 2.7.352 10.4.4.83 1.4.208 2.7.341 2.7.342 2.7.342 2</td><td>2. Culvert on M-18</td><td>126</td><td>14,206</td><td>37,510</td><td></td><td></td><td></td><td>126</td><td>14,206</td><td>37,510</td><td></td><td></td><td></td></td<> | 3. River Dredging 46 3.995 5.099 4 5. Mint Canals 3.822 73.312 226.561 3.822 73.412 165.140 7 5. Maint Canals 3.822 73.412 165.140 3.822 73.412 165.140 7 6. Maint Canals 3.832 75.31 165.140 3.822 73.412 165.140 7 7. Inspection Roads 7.95 38.066 57.146 7 3.822 73.412 1.476 8.4022 1.478 8.4022 1.4.208 1.4.268 2.25.104.488 1.4.268 2.25.417 2.7.3412 1.4.268 2.7.341 2.7.3412 2.7.3412 2.7.3412 2.7.3412 2.7.461 2.7.341 2.7.252 10.4.4.288 1.4.208 1.4.208 2.7.341 2.7.252 10.4.4.881 2.7.341 2.7.341 2.7.341 2.7.351 2.7.4.61 2.7.341 2.7.352 10.4.4.881 1.4.208 2.7.341 2.7.341 2.7.352 10.4.4.83 1.4.208 2.7.341 2.7.342 2.7.342 2 | 2. Culvert on M-18 | 126 | 14,206 | 37,510 | | | | 126 | 14,206 | 37,510 | | | |
| 4. Head Works 3.802 13.533 226,581 7 7 7 5. Sim Canals 3.822 73,412 165,140 7 1478 84,022 3. Barch Canals 3.822 73,412 165,140 7 1478 84,022 4. Inspection Roads 793 3.605 57,146 7 273 14,708 84,022 1478 84,022 1478 84,022 14,708 84,022 14,478 84,022 14,478 84,022 14,478 84,022 14,468 57,146 7 273 14,508 7 273 14,508 26,106 7 273 14,708 84,62 33,612 273 14,708 273 14,708 273 14,708 273 14,708 273 14,708 273 14,468 33,612 275 14,468 33,612 273 14,508 273 14,468 273 273 14,408 273 273 14,428 273 273,618 273,618 273,610 <t< td=""><td>4. Head Works 3,802 15,533 226,581 5 165,140 5 5. Main Canals 3,822 73,412 165,140 33 366 57,146 1,478 94,022 1 5. Flood Dike Roads 795 36,065 57,146 79 38,066 57,146 79 36,06 57,146 70 273 14,208 6. Flood Dike Roads 795 38,066 57,146 79 79 38,066 57,146 70 273 14,208 6. Connecting Road 273 14,208 20,760 20,760 79 79 86,51 47,78 64,61 70 273 14,208 7. Tetrainery Conscience 1,478 84,022 119,720 1 11,756 343,712 255,400 273 14,208 27,850 24,656 27,850 24,656 27,850 24,576 27,85 26,540 27,85 25,400 27,85,400 27,85,400 27,85,400 27,85,400 27,85,400 27,85,415 28,45,4</td><td>3. River Dredging</td><td>46</td><td>3,995</td><td>5,099</td><td></td><td></td><td></td><td>46</td><td>3,995</td><td>5.099</td><td></td><td></td><td></td></t<> | 4. Head Works 3,802 15,533 226,581 5 165,140 5 5. Main Canals 3,822 73,412 165,140 33 366 57,146 1,478 94,022 1 5. Flood Dike Roads 795 36,065 57,146 79 38,066 57,146 79 36,06 57,146 70 273 14,208 6. Flood Dike Roads 795 38,066 57,146 79 79 38,066 57,146 70 273 14,208 6. Connecting Road 273 14,208 20,760 20,760 79 79 86,51 47,78 64,61 70 273 14,208 7. Tetrainery Conscience 1,478 84,022 119,720 1 11,756 343,712 255,400 273 14,208 27,850 24,656 27,850 24,656 27,850 24,576 27,85 26,540 27,85 25,400 27,85,400 27,85,400 27,85,400 27,85,400 27,85,400 27,85,415 28,45,4 | 3. River Dredging | 46 | 3,995 | 5,099 | | | | 46 | 3,995 | 5.099 | | | |
| S. Main Canals 3,822 73,412 165,140 No 3. Branch Canal 393 5,879 15,311 No 13,478 84,022 13,418 No 13,478 84,022 13,478 84,022 13,478 84,022 13,478 84,022 13,478 84,022 13,478 84,022 14,208 20,760 779 38,066 57,146 1,478 84,022 14,208 20,760 14,278 84,022 14,208 20,760 273 14,208 217 14,208 273 14,208 273 14,208 20,760 273 14,208 273 14,208 273 14,208 273 14,208 273 14,208 273 17 84,625 33,412 273 14,208 273 12,213 14,208 273 12,212 14,208 273 14,208 273 12,213 14,208 11,252 14,208 273 12,212 14,208 11,254 214 214 214 214 214 214 | 5. Main Canals 3:822 73,412 165,140 3:822 73,412 165,140 1 3. Brench Canals 393 5,879 15,311 3933 5,879 15,311 1 4. Brench Canal 393 5,879 15,311 3933 5,879 15,311 1 5. Hood Dike/Road 1,478 84,022 19,476 84,022 19,478 84,022 1 5. Hood Dike/Road 273 14,208 20,760 7 965 44,781 67,941 273 14,208 6. Connecting Road 273 14,208 20,407 965 44,781 67,941 275 14,208 8. Delinope Canals 95,11 19,505 217 66,60 71,175 84,025 14,788 84,025 14,281 74,031 255,400 255,400 256,400 264,050 27,450 256,400 266,60 27,412 66,175 26,401 26,402 26,403 25,403 25,403 25,403 25,403 25,400 <t< td=""><td>4. Head Works</td><td>3,802</td><td>1.3</td><td>226,581</td><td></td><td></td><td></td><td>3,802</td><td>135,333</td><td>226,581</td><td></td><td></td><td></td></t<> | 4. Head Works | 3,802 | 1.3 | 226,581 | | | | 3,802 | 135,333 | 226,581 | | | |
| 3. Branch Canal 393 5,879 15,311 | 3. Brainch Camal 393 5,879 15,311 1 1,476 8,402 1 4. Inspection Roads 795 38,066 57,146 795 38,066 57,146 7,176 8,402 5. Connecting Road 1,718 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,476 84,022 11,470 84,022 11,470 84,022 11,470 84,022 11,470 84,022 11,470 84,022 11,470 84,022 11,726 11,756< | 5. Main Canals | 3,822 | - | 165,140 | | | | 3,822 | 73,412 | 165,140 | | | |
| 4. Inspection Roads 795 38,066 57,146 1 </td <td>4. Inspection Roads 795 38,066 57,146 1,478 8,022 1 5. Flood Dike/Road 1,478 8,022 119,494 965 4,781 6,7941 2,723 14,208 7. Toromecting Roads 2,17 19,269 26,477 965 4,781 6,7941 2,723 14,208 7. Toromecting Roads 3,512 54,116 965 4,781 67,941 2,723 14,208 8. Drainage Canals 846 33,512 54,116 965 4,781 67,941 2,75 846 33,612 8. Drainage Canals 846 33,512 54,116 11,756 343,789 67,943 5,793 2,400 8. Drainage Canals 15,84 91,652 40,666 717 68,800 86,10 3,4789 67,543 5,930 27,400 Roe Mill 534 71,568 817 717 68,800 86,10 8,6708 8,740 27,400 27,400</td> <td>3. Branch Canal</td> <td>393</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>393</td> <td>5,879</td> <td>15,311</td> <td></td> <td></td> <td></td> | 4. Inspection Roads 795 38,066 57,146 1,478 8,022 1 5. Flood Dike/Road 1,478 8,022 119,494 965 4,781 6,7941 2,723 14,208 7. Toromecting Roads 2,17 19,269 26,477 965 4,781 6,7941 2,723 14,208 7. Toromecting Roads 3,512 54,116 965 4,781 67,941 2,723 14,208 8. Drainage Canals 846 33,512 54,116 965 4,781 67,941 2,75 846 33,612 8. Drainage Canals 846 33,512 54,116 11,756 343,789 67,943 5,793 2,400 8. Drainage Canals 15,84 91,652 40,666 717 68,800 86,10 3,4789 67,543 5,930 27,400 Roe Mill 534 71,568 817 717 68,800 86,10 8,6708 8,740 27,400 27,400 | 3. Branch Canal | 393 | | | | | | 393 | 5,879 | 15,311 | | | |
| 5. Flood Dike/Road 1,478 84,022 119,494 1 1,478 84,023 13,478 84,023 14,208 273 14,208 273 14,208 84,021 14,208 84,023 14,208 84,023 14,208 84,023 14,208 273 14,208 273 14,208 273 14,208 14,218 66,21 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 | 5. Flood Dike/Road 1,478 84,022 119,494 1 1,478 84,022 11,478 84,022 11,478 84,022 11,478 84,022 11,478 84,022 11,478 84,022 11,478 84,022 10,4788 1 273 1,478 84,022 10,4788 1 273 1,478 84,022 10,4788 1 273 1,478 84,022 10,4288 10,4288 10,4288 10,4288 10,4288 10,4288 10,4288 10,4288 10,4288 10,4288 10,4288 11,756 343,789 625,933 5,030 23,3181 25,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,3181 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23,400 23, | 4. Inspection Roads | 262 | | | | | | 795 | 38,066 | 57,146 | | | |
| 6. Connecting Road 273 14,208 20,760 273 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 10,49 256 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 14,208 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 12,252 104,438 11,756 11,756 11,756 11,756 11,756 11,756 11,726 15,424 10 11 12,427 12,427 12,427 12,427 12,427 12,427 12,427 12,427 12,427 12,426 12 | 6. Connecting Road 273 14,208 20,700 273 14,208 11,276 34,3,789 6,25,333 5,090 24,3,559 25,400 27,41 27,400 27,41 27,400 27,41 27,400 27,41 27,400 27,41 27,400 27,41 27,400 27,400 27,400 27,41 27,400 27,41 27,400 27,41 27,400 27,41 27,400 27,41 27,41 27,400 </td <td>5. Flood Dike/Road</td> <td>1,478</td> <td>84,022</td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>1,478</td> <td>84,022</td> <td>119,494</td> | 5. Flood Dike/Road | 1,478 | 84,022 | - | | | | | | | 1,478 | 84,022 | 119,494 |
| 7. Tertiary Development 3.217 149.266 226,477 965 44,781 67,941 2.252 104,486 3.3.812 8. Drainage Canals 946 33.312 54,116 7 | 7. Tertiary Development 3,217 149,269 226,477 965 44,781 67,941 2,252 104,486 11 8. Drainage Canals 846 33,612 54,116 846 33,612 54,116 846 33,612 54,116 846 33,612 54,116 846 33,612 846 33,72 26,800 86,008 811 6,61 16,726 661 16,726 661 16,726 661 16,726 661 1 | 6. Connecting Road | 273 | 14,208 | | | | | | | | 273 | 14,208 | 20,760 |
| 8. Drainage Canals 846 33,812 54,116 94,6 33,812 54,116 846 33,812 54,116 846 33,812 54,116 846 33,812 5,090 243,559 3 Sub-Total 16,846 587,348 991,652 40,666 717 68,900 86,008 317 25,400 33,008 317 25,400 Rice Mill 534 27,850 40,666 717 68,900 86,008 317 25,400 317 25,400 Administration Expenses 1,351 119,600 152,024 717 68,900 86,008 317 25,400 317 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 77 Land Acquisition 780 18,720 780 116,056 12,754 369,189 675,285 6,622 296,809 7 Lotal 21,345 734,798 13,720 18,720 78,809,189 | 8. Drainage Canals 846 33,812 54,116 94 33,812 54,116 94 33,812 54,116 74 75 343,739 625,933 5,030 243,550 7 Rice Mill 534 27,850 40,666 717 68,000 86,008 31,7 25,400 35,000 243,550 7,4550 Rice Mill 534 27,850 44,066 717 68,00 86,008 31,7 25,400 35,008 31,7 25,400 Administration Expenses 1,351 119,600 15,720 780 11,328 681 16,74 71 25,400 33,008 31,7 25,400 Administration Expenses 1,331 11,320 68,00 86,008 817 27,400 33,008 31,7 25,400 31,7 25,400 31,7 25,400 31,7 25,400 31,7 25,400 31,7 25,400 31,7 25,400 31,7 25,400 31,7 25,400 35,401 4,75 21,47 | 7. Tertiary Development | 3,217 | 149,269 | | | | | 965 | 44,781 | 67,941 | 2,252 | 104,488 | 158,536 |
| Sub-Total 16,346 587,348 991,652 11,756 343,789 625,933 5,090 243,559 3 Rice Mill 534 27,850 40,666 7 7 68,800 86,008 317 25,400 534 27,850 Administration 534 735 119,600 152,024 717 68,800 86,008 317 25,400 35,008 317 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 7 25,400 Administration Expenses 1,834 0 18,720 780 18,720 7 26,918 675,285 6,622 296,809 4 I otal 21,345 1,956 68,800 116,056 12,754 369,189 675,285 6,622 296,809 4 7 29,400 7 29,400 7 29,400 7 29,400 7 20,610 4 681 7 26,400 | Sub-Total 16,846 587,348 991,652 11,756 343,789 625,933 5,090 243,559 3 Rice Mill 534 27,850 40,666 717 68,800 817 25,400 35,008 317 25,400 Administration Expenses 1,331 119,600 152,024 717 68,800 861 72,400 35,008 317 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 77 25,400 Administration Expenses 1,834 0 18,720 78 681 16,756 52,400 37 25,400 Administration Expenses 1,834 0 18,720 78 681 682 296,809 4 Administration Expenses 21,345 1,969 68,800 16,750 65,22 296,809 4 27,529 Cotal 21,Physical 2,134 19,7 68,800 116,056 12,775 369,19 </td <td>8. Drainage Canals</td> <td>846</td> <td>33,812</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>846</td> <td>33,812</td> <td>54,116</td> | 8. Drainage Canals | 846 | 33,812 | | | | | | | | 846 | 33,812 | 54,116 |
| Rice Mill 534 27,850 40,666 717 68,800 85,008 317 25,400 33,008 317 25,400 Engineering Service 1,351 119,600 152,024 717 68,800 817 25,400 33,008 317 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 27,400 Administration Expenses 1,834 0 18,720 780 11,328 681 16,344 681 26,340 Land Acquisition 780 0 18,720 780 11,328 6810 16,344 681 26,340 26,6919 472 26,340 26,340 26,622 296,809 4 4 4 4 4 4 4 6 4 4 6 4 5 26,340 56,5185 6,622 296,809 4 2 4 6 4 5 5 5 5 5 5 <td>Rice Mill 534 27,850 40,666 7 7 68,800 86,008 317 25,400 33,008 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 31,01 16,344 681 12,400 317 25,400 31,01 16,344 681 1 24,000 317 25,400 31,01 16,344 681 1 25,400 31,01 20,01 20,01 20,01 20,01 20,01 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02<!--</td--><td>Sub-Total</td><td>16,846</td><td>587,348</td><td>. </td><td></td><td></td><td></td><td>11,756</td><td>343,789</td><td>625,933</td><td>5,090</td><td>243,559</td><td>365,719</td></td> | Rice Mill 534 27,850 40,666 7 7 68,800 86,008 317 25,400 33,008 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 317 25,400 31,01 16,344 681 12,400 317 25,400 31,01 16,344 681 1 24,000 317 25,400 31,01 16,344 681 1 25,400 31,01 20,01 20,01 20,01 20,01 20,01 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 21,02 </td <td>Sub-Total</td> <td>16,846</td> <td>587,348</td> <td>. </td> <td></td> <td></td> <td></td> <td>11,756</td> <td>343,789</td> <td>625,933</td> <td>5,090</td> <td>243,559</td> <td>365,719</td> | Sub-Total | 16,846 | 587,348 | . | | | | 11,756 | 343,789 | 625,933 | 5,090 | 243,559 | 365,719 |
| Rice Mill 534 27,850 40,666 717 68,800 86,008 317 25,400 33,003 317 25,400 Engineering Service 1,351 119,600 152,024 717 68,800 86,008 317 25,400 33,003 317 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 25,400 Administration 780 0 18,720 780 18,720 780 36,918 681 681 681 681 16,544 681 7 7 7 7 400 7 7 7 7 7 400 7 7 7 7 400 7 7 7 400 817 2 400 81 7 5 400 8 7 8 7 2 400 8 7 7 400 8 7 4 681 7 6 <td< td=""><td>Rice Mill 534 27,850 40,666 717 68,800 85,008 317 25,400 33,7 25,400 Engineering Service 1,351 119,600 152,024 717 68,800 86,107 25,400 33,77 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 25,400 Administration Expenses 1,834 0 18,720 780 18,720 78 681 66,344 681 7 7 7 68,800 7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<> | Rice Mill 534 27,850 40,666 717 68,800 85,008 317 25,400 33,7 25,400 Engineering Service 1,351 119,600 152,024 717 68,800 86,107 25,400 33,77 25,400 Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 25,400 Administration Expenses 1,834 0 18,720 780 18,720 78 681 66,344 681 7 7 7 68,800 7 | | | | | | | | | | | | | |
| Engineering Service 1,351 119,600 152,024 717 68,800 86,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 35,008 317 25,400 36,712 26,800 16,346 681 16,346 681 17 26,40 21,247 26,40 36,712 36,919 675,285 6,622 29,6809 31 Contingencies 2,1752 3,773 1,2775 <t< td=""><td>Engineering Service 1,351 119,600 152,024 717 68,000 86,008 317 25,400 33,008 317 25,400 Administration 780 0 44,016 472 11,328 681 16,344 681 56,22 29,6809 4 Land Acquisition 780 0 18,720 780 11,328 681 16,344 681 56,22 296,809 4 Land Acquisition 21,345 734,798 1,369 68,800 11,6056 12,754 369,189 675,285 6,622 296,809 4 Contingencies 2,135 734,800 1397 6,8800 11,6056 12,754 36,919 67,528 6,622 296,809 4 6 764 2,192 27,522 2</td><td>I. Rice Mill</td><td>534</td><td>27,850</td><td>40,666</td><td></td><td></td><td></td><td></td><td></td><td></td><td>534</td><td>27,850</td><td>40,666</td></t<> | Engineering Service 1,351 119,600 152,024 717 68,000 86,008 317 25,400 33,008 317 25,400 Administration 780 0 44,016 472 11,328 681 16,344 681 56,22 29,6809 4 Land Acquisition 780 0 18,720 780 11,328 681 16,344 681 56,22 296,809 4 Land Acquisition 21,345 734,798 1,369 68,800 11,6056 12,754 369,189 675,285 6,622 296,809 4 Contingencies 2,135 734,800 1397 6,8800 11,6056 12,754 36,919 67,528 6,622 296,809 4 6 764 2,192 27,522 | I. Rice Mill | 534 | 27,850 | 40,666 | | | | | | | 534 | 27,850 | 40,666 |
| Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 6 Land Acquisition 780 0 18,720 780 18,720 780 6622 296,809 4 Total 21,345 734,798 1,247,078 1,969 68,800 116,056 12,754 369,189 675,285 6,622 296,809 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 6 4 4 4 6 4 4 4 6 4 | Administration Expenses 1,834 0 44,016 472 11,328 681 16,344 681 681 Land Acquisition 780 0 18,720 780 18,720 780 681 7 7 Total 21,345 734,798 1,247,078 1,969 68,800 116,056 12,754 369,189 675,285 6,622 296,809 4 Total 2,1345 73,4798 1,247,078 197 6,880 11,6056 12,754 369,189 675,285 6,622 296,809 4 Contingencies 2,135 73,480 1724,708 197 2,064 6,750 2,753 6,622 29,681 7 21,922 27,522 Contingencies 2,195 57,070 173,681 197 2,064 6,750 2,678 6,622 29,681 7 21,922 27,522 27,522 27,522 27,522 27,522 27,522 27,522 27,522 2,64,64 2,192 27,522 | II. Engineering Service | 1,351 | 119,600 | 152,024 | 212 | 68,800 | 86,008 | 317 | 25,400 | 33,008 | 317 | 25,400 | 33,008 |
| Land Acquisition 780 18,720 780 18,720 780 18,720 78 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 78,700 71,600 12,754 369,189 675,285 6,622 296,809 4 Contingencies 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 1 Contingencies 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 | Land Acquisition 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 780 18,720 18,6,764 2,192 27,522 17,522 11,500 1,5753 16,702 2,752 27,523 54,5451 16,708 | V. Administration Expenses | 1,834 | | 44,016 | 472 | | 11,328 | 681 | | 16,344 | 681 | | 16,344 |
| 21,345 734,798 1,247,078 1,969 68,800 116,056 12,754 369,189 675,285 6,622 296,809 2 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 2 5,067 52,070 173,681 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,750 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 21,345 734,798 1.247,078 1,969 68,800 116,056 12,754 369,189 675,285 6,622 296,809 21,345 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 2,135 73,480 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | V. Land Acquisition | 780 | | 18,720 | 780 | | 18,720 | | | | | | |
| 21,345 734,798 1,247,078 1,969 68,800 116,056 12,754 369,189 675,285 6,622 296,809 2 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 21,345 734,798 1.247,078 1,969 68,800 116,056 12,754 369,189 675,285 6,622 296,809 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 27,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | | | | | | | | | | | | | |
| 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 Durrency Portion 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | Total | 21,345 | 734,798 | 1 247,078 | 1,969 | 68,800 | 116,056 | 12,754 | 369,189 | 675,285 | 6,622 | 296,809 | 455,737 |
| 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 Durrency Portion 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 Durrency Portion 20 20 2,744 134,451 16,708 428,592 829,577 9,476 354,012 | | | | | | | | | | | | | |
| 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,750 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 2,135 73,480 124,708 197 6,880 11,606 1,275 36,919 67,529 662 29,681 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | /l. Contingencies | | | | | | - | | | | | | |
| 5,067 52,070 173,681 197 2,064 6,790 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 5,067 52,070 173,681 197 2,064 6,750 2,678 22,484 86,764 2,192 27,522 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 n 1 <t< td=""><td>1. Physical</td><td>2,135</td><td></td><td>124,708</td><td>197</td><td>6,880</td><td>11,606</td><td>1,275</td><td>36,919</td><td>67,529</td><td>662</td><td>29,681</td><td>45,574</td></t<> | 1. Physical | 2,135 | | 124,708 | 197 | 6,880 | 11,606 | 1,275 | 36,919 | 67,529 | 662 | 29,681 | 45,574 |
| 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 2. Price | 5,067 | 52,070 | 173,681 | 197 | 2,064 | 06,790 | 2,678 | 22,484 | 86,764 | 2,192 | 27,522 | 80,127 |
| 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | 28,547 860,348 1,545,467 2,363 77,744 134,451 16,708 428,592 829,577 9,476 354,012 | | | | | | | | | | | | | |
| | | Grand Total | 28,547 | 860,348 | 1,545,467 | 2,363 | 77,744 | 134,451 | 1.6,708 | 428,592 | 829,577 | 9,476 | 354,012 | 581,438 |
| Vote: L/C; Local Currency Portion | Vote: L/C; Local Currency Portion F/C; Foreign Currency Portion | | | | | | | :: | | | | - | | |
| | F/C; Foreign Currency Portion | Vote: L/C; Local Currency Portion | | | | | | | | | | | | |

Table 5.2.5 ANNUAL OPERATION AND MAINTENANCE COST

| | | | (Unit : M.Kwacha) |
|-----------------------------|-----------------|----------------------|-------------------|
| | Lower Nadzipulu | Namikokwe Integrated | Lower Livulezi |
| | | | |
| 1 ADMINISTRATION COST | 300,000 | 310,000 | 307,000 |
| 1.1 Staff Salary | 126,000 | 135,000 | 132,000 |
| 1.2 Labour Charge | 28,000 | 29,000 | 29,000 |
| 1.3 Office Expense | 85,000 | 85,000 | 85,000 |
| 1.4 Fyel | 23,000 | 23,000 | 23,000 |
| 1.5 Office Equipment | 12,000 | 12,000 | 12,000 |
| 1.6 Micellaneous | 26,000 | 26,000 | 26,000 |
| | | | |
| 2 O/M Equipment | 168,000 | 204,000 | 183,000 |
| 2.1 Depreciation | 69,000 | 81,000 | 76,000 |
| 2.2 Fuel | 99,000 | 123,000 | 107,000 |
| | | | |
| 3 Maintenance of Facilities | 72,000 | 126,000 | 134,000 |
| 3.1 Head Works | 13,000 | 12,000 | 39,000 |
| 3.2 Canal System | 32,000 | 85,000 | 66,000 |
| 3.3 Farm Roads | 27,000 | 29,000 | 29,000 |
| | | | |
| TOTAL O/M COST | 540,000 | 640,000 | 624,000 |
| | | | - |

Table 5.2.6 REPLACEMENT COST AND ECONOMIC LIFE OF FACILITIES

() Init • M Kwacha)

| | بالمستقادية ومعالية والمعالية والمعالية | | | |
|------------------------|---|-------------------------------|------------------------------------|------------------------------|
| Items to be replaced | Economic Life (Year) | Lower Nadzipulu (M.Kwacha) | Namikokwe Integrated (M.Kwacha) | Lower Livulezi (M.Kwacha) |
| | | | | |
| 1 METAL WOORKS | | 337,000 | 719,000 | 578,000 |
| 1.1 Gates | 20 | 334,000 | 717,000 | 576,000 |
| 1.2 Screens | 20 | 3,000 | 2,000 | 2,000 |
| | | | | |
| 2 RICE MILL | | | | |
| 2.1 Milling Machine | 20 | 577,000 | 1,442,000 | 865,000 |
| | | | | |
| | | | | |
| TOTAL REPLACEMENT COST | | 914,000 | 2,161,000 | 1,443,000 |
| | | | | |
| | | | | |

| | | · · · | • | |
|-------------|---|---------------------------------------|------------------------|-------------|
| | underne den nienen gegeneren er en einen der er der gegenen er einen die stellte stellte einen andere einen | Local Portion | Foreign Portion | Total |
| | Work Item | (M.Kwacha) | (J.Yen) | (J.Yen) |
| r · | PREPARATORY WORKS | 412,000 | 8,390,000 | 18,278,000 |
| | | -112,000 | 0,550,000 | 10,270,000 |
| <u>11. </u> | BUILDING WORKS | 5,193,000 | 95,918,000 | 220,550,000 |
| 1 | Housing | 4,934,000 | 53,782,000 | 172,198,000 |
| | 1.1 O/M Office | 469,000 | 4,125,000 | 15,381,000 |
| | 1.2 Training Room | 313,000 | 2,750,000 | 10,262,000 |
| | 1.3 Laboratory | 313,000 | 2,750,000 | 10,262,000 |
| | 1.4 Guest House | 1,935,000 | 22,290,000 | 68,730,000 |
| | 1.5 Staff Quater | 1,044,000 | 12,002,000 | 37,058,000 |
| | 1.6 Storage/Repair | 295,000 | 3,395,000 | 10,475,000 |
| | 1.7 Storage | 469,000 | 5,401,000 | 16,657,000 |
| | 1.7 Guard House | 80,000 | 926,000 | 2,846,000 |
| | 1.8 Generator house | 16,000 | 143,000 | 527,000 |
| 2 | Electricity | 148,000 | 26,891,000 | 30,443,000 |
| 3 | Water supply | 49,000 | 13,445,000 | 14,621,000 |
| 4 | Outside Works | 62,000 | 1,800,000 | 3,288,000 |
| <u>-</u> - | 4.1 Earth works | 37,000 | 1,655,000 | 2,543,000 |
| | 4.2 Structural Works | 25,000 | 145,000 | 745,000 |
| n r | ARM PREPARATION WORKS | 582,000 | 21,541,000 | 35,509,000 |
| | 5.1 Earth Works | 574,000 | 21,074,000 | 34,850,000 |
| | 5.2 Land Reclamation Works | 8,000 | 467,000 | 659,000 |
| co | NSTRUCTION WORKS TOTAL | 6,187,000 | 125,849,000 | 274,337,000 |
| | | | A1 772 000 | 41,772,000 |
| | PROCUREMENT WORKS. | | 41,772,000 | 30,992,000 |
| | Purchasing 1. Back-hoe | | 30,992,000 10340000 | 10,340,000 |
| | 2. Moter Grader | | | 11,385,000 |
| | 3. Jeep | | 11385000 2415000 | 2,415,000 |
| | 4. Pickup | | 1562000 | 1,562,000 |
| | 5. Bike | | 1150000 | 1,150,000 |
| | 6. Meteo Equip | | 2415000 | 2,415,000 |
| | 7. Office Equip | | 1725000 | 1,725,000 |
| 2 | Transportation | · · · · · · · · · · · · · · · · · · · | 10780000 | 10,780,000 |
| то | TAL DIRECT COST | 6,187,000 | 167,621,000 | 316,109,000 |
| | | | | |

Table 5.4.1 CONSTRUCTION COST OF BWANJE DEVELOPMENT CENTER

TABLE 7.2.1 PRIMARY PROFIT FROM CROPS

(1) Paddy

| | | Without Project-1 (paddy) | | | Without Project-2 (paddy) | | | With Project (Milled Rice) | | |
|--|---------|---------------------------|------------|--------------|---------------------------|------------|------------------|----------------------------|------------|-------------|
| kems | Unit | Unit Yield | Unit Price | Amount | Unit Yield | Unit Price | Amount | Unit Yield | Unit Price | Amount |
| | | (a) (kg) | (b) (MK) | (a x b) (MK) | (a) (kg) | (b) (MK) (| a x b) (MK) | (a) (kg) | (b) (MK) (| a x b) (MK) |
| Gross Revenue | kg | 2,700.0 | 1.5 | 4,050.0 (c) | 1,000.0 | 1.5 | 1,500.0 (c) | 2,925.0 | 4.0 | 11,700.0 (c |
| Farm Inputs | | | | | | | | | | |
| 1) Seeds | kg | 90.0 | 1.5 | 135.0 | 90.0 | 1.5 | 135.0 | 40.0 | 1.5 | 60.0 |
| 2) Femilizers | - | | | · | | | | | | |
| - Urca | kg | 0.0 | 1.2 | 0.0 | 0.0 | 1.2 | 0.0 | 190.0 | 1.2 | 231.0 |
| - TSP | kg | 0.0 | 1.3 | 0.0 | 0.0 | 1.3 | 0.0 | 54.0 | 1.3 | 71.4 |
| Sub-total | | | | 0.0 | | | 0.0 | | | 302.5 |
| Misœllancous | | | | | | | | | | |
| (5 % of product | . cost) | 5% | | 6.8 | 5% | | 6.8 | 5% | | 18.1 |
| Total Production C | lost | | | 141.8 (d) | | | <u>141.8</u> (d) | | | 380.6 (d) |
| | | | | | | | | $(1,\ldots,n_{n+1})$ | | |
| Net Return per Ha | · | | | | | | | | | |
| $(\mathbf{c} = \mathbf{c} - \mathbf{d})$ | 1. A. | | | 3,908.3 | | | 1,358.3 | | | 11,319.4 |
| (e/c %) | | | | 97% | | | 91% | • | | 97% |

Remarks: * "Without project-1" indicates crop budget for irrigated rice in the existing Mtandamula scheme, while "Without project-2" for rainfed paddy in Upper Namikokwe area and Livulezi area.

(2) Maize

| | • | W | ithout Proj | ect | | | With Pr | roject | |
|--------------------|----------|----------------|-------------|--------|-----------|------------|------------|-------------|--|
| Items | Unit | Unit Yield | Unit Price | Amount | | Unit Yield | Unit Price | Amount | |
| | | (a) (kg) · | (b) (MK) | (a x | b) (MK) | (a) (kg) | (b) (MK) (| a x b) (MK) | |
| Gross Revenue | kg | 1,000.0 | 0.43 | | 430.0 (c) | 2,000.0 | 0.43 | 860.0 (c) | |
| Farm Inputs | | | | | | | | 1 | |
| 1) Seeds | kg | 60.0 | 1.0 | | 58.8 | 25.0 | 3.3 | 82.8 | |
| Miscellaneous | • | | | | | | | | |
| (5% of produc | t, cost) | 5% | | | 2.9 | 5% | | 4.1 | |
| Total Production C | lost | | | | 61.7 (d) | | | 86.9 (d) | |
| Net Return per Ha | | | | • | | | | | |
| (c - d) | | 1 () 1 () | | | 368 (e) | | | 773 (c) | |
| (e/c %) | | | | | 86% | | | 90% | |

(3) Vegetable

| | | With Project | | | | | |
|---------------------|-------|--------------|------------|---------------------|--|--|--|
| Items | Unit | Unit Yield | Unit Price | Amount | | | |
| | | (a) (kg) | (b) (MK) | (a x b) (MK) | | | |
| Gross Revenue* | kg | - | • | <u>13,902.0</u> (c) | | | |
| Færn Inputs | | | | н 1 | | | |
| 1) Seeds | kg | | • | 381.0 | | | |
| 2) Fertil /chemi | kg | ÷ · | - | 1,960.0 | | | |
| Miscellaneous | | | | | | | |
| (5% of product. | cost) | 5% | | 117.1 | | | |
| Total Production Co | st | | | (d) | | | |
| Net Return per Ha | | | | | | | |
| (c - d) | | | | 11,444 (c) | | | |
| (c/c %) | | | | 82.3% | | | |

Remark: * Estimated at 70% of the farm budget in Ngolowind Irrigation Scheme

| | Area (ha) | Unit Benefit (MK/ha) | Amount (MK) |
|-----------------------|--------------|-------------------------|----------------|
| A. Without Project | <u></u> | • . | |
| 1.Rainfed paddy | 0 | 1,358 | 0 |
| 2 Irrigated packly | 0 | 3,908 | 0 |
| 3.Maize | 80 | 368 | 29,440 |
| Total-A | | | 29,440 |
| B. With Project | | | |
| 1.Irrigated paddy | 250 | 11,319 | 2,829,850 |
| 2.Irrigated maize | 205 | 773 | 158,465 |
| 3.Irrigated vegetable | 19 | 11,444 | 217,436 |
| Total-B | | | 3,205,751 |
| C. Increment | | | 3,176,311 |
| (1,000 J¥) | | | (76,231) |

(1) The Lower Nadzipulu Irrigation Project

(2) The Namikokwe Integrated Irrigation Project

| · · · · | Area (ha) | Unit Benefit (MK/ha) | Amount (MK) |
|-----------------------|--------------|-------------------------|----------------|
| A. Without Project | | | |
| 1.Rainfed paddy | 150 | 1,358 | 203,745 |
| 2.Irrigated paddy | 230 | 3,908 | 898,909 |
| 3.Maize | 150 | 368 | 55,200 |
| Total-A | | | 1,157,854 |
| B. With Project | | | |
| 1 Irrigated paddy | 800 | 11,319 | 9,055,520 |
| 2.Irrigated maize | 63 | 773 | 48,699 |
| 3.Irrigated vegetable | 60 | 11,444 | 686,640 |
| Total-B | • | | 9,790,859 |
| C. Increment | | | 8,633,005 |
| (1,000 J¥) | | | (207,192) |

(3) The Lower Livulezi Irrigation Project

| | | and the second | |
|-----------------------|--------------|--|----------------|
| | Area (ha) | Unit Benefit (MK/ha) | Amount (MK) |
| A. Without Project | | | |
| 1.Rainfed paddy | 190 | 1,358 | 258,077 |
| 2.Irrigated paddy | 0 | 3,908 | 0 |
| 3.Maize | 0 | 368 | . 0 |
| Total-A | | | 258,077 |
| B. With Project | | | · |
| 1.Irrigated paddy | 520 | 11,319 | 5,886,088 |
| 2.Irrigated maize | 200 | 773 | 154,600 |
| 3.Irrigated vegetable | 39 | 11,444 | 446,316 |
| Total-B | | , | 6,487,004 |
| C. Increment | | | 6,487,004 |
| (1,000 J¥) | • | | (149,494) |

TABLE 7.2.3 FINANCIAL INTERNAL RATE OF RETURN

1. Lower Nadzipulu Irrr. Project

2. Namikokwe Integrated Irri. Project-1

3. Lower Livulezi Irr. Project

| Year in | 250 ha | | | 250 ha Year in 800 ha | | | | ĩ | ear in | | 520 ha | | |
|---------|--------|---------|---------|-----------------------|-------|------|---------|---------|--|-------|--------|---------|---------|
| Order | Cost | Benefit | Balance | | Order | Cost | Benefit | Balance | | Order | Cost | Benefit | Balance |
| 1 | 95 | | -95 | | 1 | 137 | | -137 | | 1 | 128 | | -12 |
| 2 | 386 | | -386 | | 2 | 664 | | -664 | | 2 | 743 | | -74 |
| 3 | 329 | | -329 | | 3 | 539 | | -539 | | 3 | 501 | | -50 |
| 4 | 13 | 2 | 5 12 | | 4 | 15 | 103 | 88 | | 4 | 15 | 49 | 3 |
| 5 | 13 | 7 | 6 63 | | 5 | 15 | 207 | 192 | | 5 | 15 | 149 | 13 |
| 6 | 13 | 7 | 6 63 | | 6 | 15 | 207 | 192 | | 6 | 15 | 149 | 13 |
| 7 | 13 | 7 | 6 63 | | 7 | 15 | 207 | 192 | | 7 | - 15 | 149 | 13 |
| 8 | 13 | 7 | 6 63 | | 8 | 15 | 207 | 192 | | 8 | 15 | 149 | 13 |
| 9 | 13 | 7 | 6 63 | | 9 | 15 | 207 | 192 | | 9 | 15 | 149 | 13 |
| 10 | 13 | 7 | 6 63 | | 10 | 15 | 207 | 192 | | 10 | 15 | 149 | 13 |
| 11 . | 13 | 7 | 6 63 | | 11 | 15 | 207 | 192 | | 11 | 15 | 149 | 13 |
| 12 | 13 | 7 | 6 63 | | 12 | 15 | 207 | 192 | | 12 | 15 | 149 | 13 |
| 13 | 13 | 7 | 6 63 | | 13 | 15 | 207 | 192 | | 13 | 15 | 149 | 13 |
| 14 | 13 | 7 | 6 63 | | 14 | 15 | 207 | 192 | e de la composition de | 14 | 15 | 149 | 13 |
| 15 | 13 | 7 | 6 63 | | 15 | 15 | 207 | 192 | | 15 | 15 | 149 | 13 |
| 16 | 13 | 7 | 6 63 | | 16 | 15 | 207 | 192 | | 16 | 15 | 149 | 13 |
| 17 | 13 | 7 | 6 63 | | 17 | 15 | 207 | 192 | | 17 | 15 | 145 | • 13 |
| 18 | 13 | 7 | 6 63 | | 18 | 15 | 207 | 192 | | 18 | 15 | 149 | 13 |
| 19 | 13 | 7 | 6 63 | | 19 | 15 | 207 | 192 | | 19 | 15 | 149 | 13 |
| 20 | 13 | 7 | 6 63 | | 20 | 15 | 207 | 192 | | 20 | 15 | 149 | 13 |
| 21 | 35 | 7 | 6 41 | | 21 | 68 | 207 | 139 | | 21 | 50 | 149 | 9 |
| 22 | 13 | 7 | 6 63 | | 22 | 15 | 207 | 192 | | 22 | - 15 | 149 | 13 |
| 23 | 13 | 7 | 6 63 | | 23 | 15 | 207 | 192 | | 23 | 15 | 149 | 13 |
| 24 | 13 | 7 | 6 63 | | 24 | 15 | 2.07 | 192 | | 24 | 15 | 149 | 13 |
| 25 | 13 | 7 | 6 63 | | 25 | 15 | 207 | 192 | | 25 | 15 | 149 | 13 |
| 26 | 13 | 7 | 6 63 | | 26 | 15 | 207 | 192 | | 26 | 15 | 149 | 13 |
| 27 | 13 | 7 | 6 63 | | 27 | 15 | 207 | 192 | | 27 | 15 | 149 | 13 |
| 28 | 13 | 7 | 6 63 | | 28 | 15 | 207 | 192 | | 28 | 15 | 149 | . 13 |
| 29 | 13 | . 7 | 6 63 | | 29 | 15 | 207 | 192 | | 29 | 15 | 149 | 13 |
| 30 | 13 | 7 | 6 63 | | 30 | 15 | 207 | 192 | | 30 | 15 | 149 | 13 |
| 31 | 13 | 7 | 6 63 | | 31 | 15 | 207 | 192 | | 31 | 15 | 149 | 13 |
| 32 | 13 | 7 | 6 63 | | 32 | 15 | 207 | 192 | | 32 | 15 | 149 | 13 |

IRR: 5.54%

IRR: 11.88%

IRR: 7.61%

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| Items | Unit | Mtandan | nula scheme | Rainfed condition | | |
|-------------------------------|------|------------------------------|------------------------|------------------------------|------------------------|--|
| | | Without project condition | With Project condition | Without Project condition | With project condition | |
| (a) Family size (person) | | 4.00 | 4.00 | 4.30 | 4.30 | |
| (b) Cultivated area | | | | | | |
| Irrigated paddy | ha | | 0.40 | | 0.36 | |
| Irrigated maze | ha | | 0.03 | | 0.03 | |
| Irrigated vegetables | ha | | 0.03 | | 0.03 | |
| Rainfed maize | ha | 1.00 | 1.00 | 0.83 | 0.83 | |
| Rainfed paddy | ha | 0.40 | | 0.36 | | |
| (c) Sale of crops | ÷ | | | | | |
| Rice | MK | | 3744(1) | | 3370(1) | |
| Maize | MK | | 0(2) | | 0(2) | |
| Vegetables | MK | | 309(3) | | 309(3) | |
| Total crop income | MK | 2,240 | 4,053 | 395 | 3,679 | |
| (d) Sale of livestock | MK | 41 | 41 | 126 | 126 | |
| (e) Non-farm income | MK | 0 | 0 | 184 | 0 | |
| (f) Total income | MK | 2,281 | 4,094 | 705 | 3,805 | |
| (g) Production cost | | | | | | |
| Paddy | MK | | 152 | | 137 | |
| Maize | MK | | 65 | | 54 | |
| Vegetables | MK | | 74 | | 74 | |
| Millig cost | | | 180 | | 162 | |
| Total productio cost | MK | 294 | 471 | 40 | 427 | |
| (h) Non-farm cost | MK | . 0 | 0 | 27 | 0 | |
| (i) Living expense(4) | MK | 1,685 | 2,022 | 689 | 827 | |
| (j) Total expense | MK | 1 ,9 79 | 2,493 | 756 | 1,254 | |
| (k) Balance (capacity to pay) | МК | 302 | 1,601 | -51 | 2,551 | |

TABLE 7.3.1 FUTURE FARM BUDGET OF THE TYPICAL FARMERS IN THE PROJECT AREA

(1): 80 % of the total product of rice is for sale.

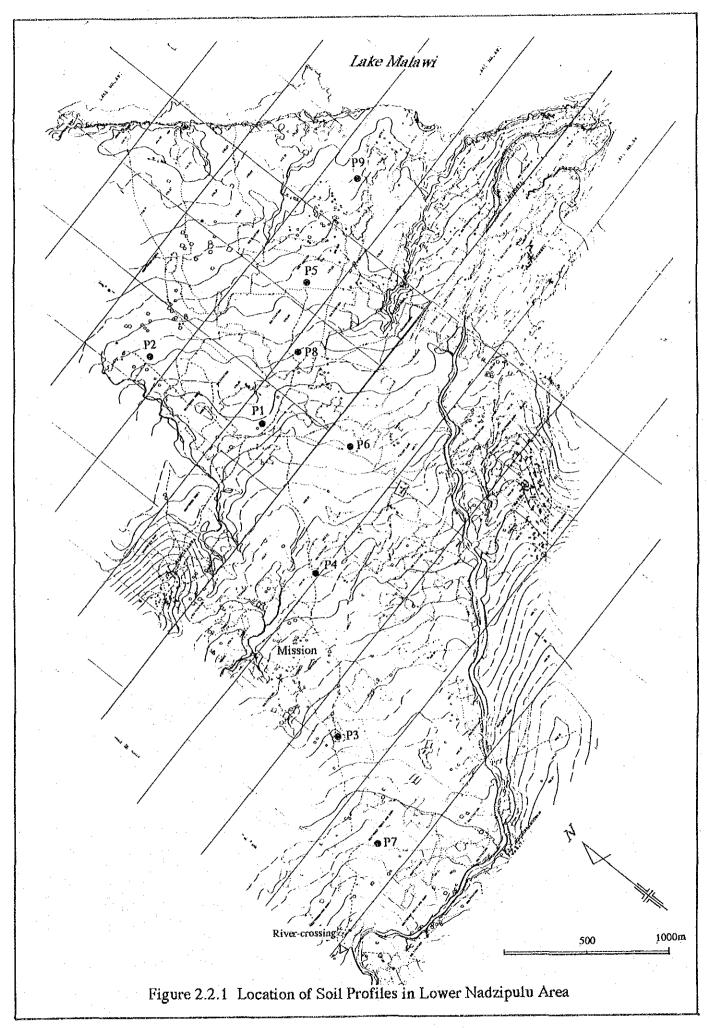
(2): All product of maize for home consumption

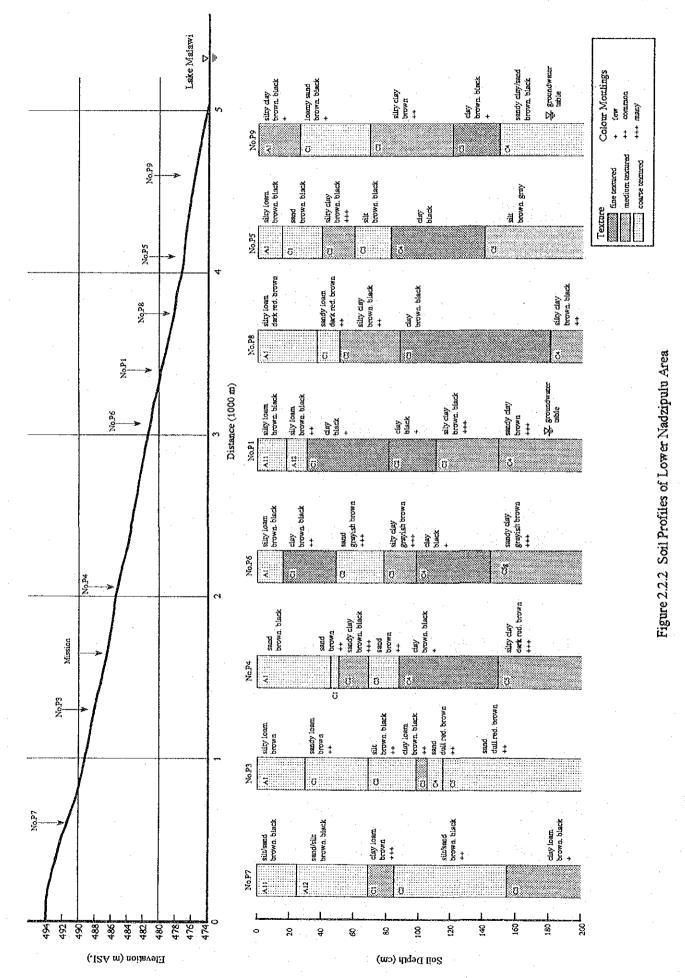
(3): 90 % of the total product of vegetables is for sale.

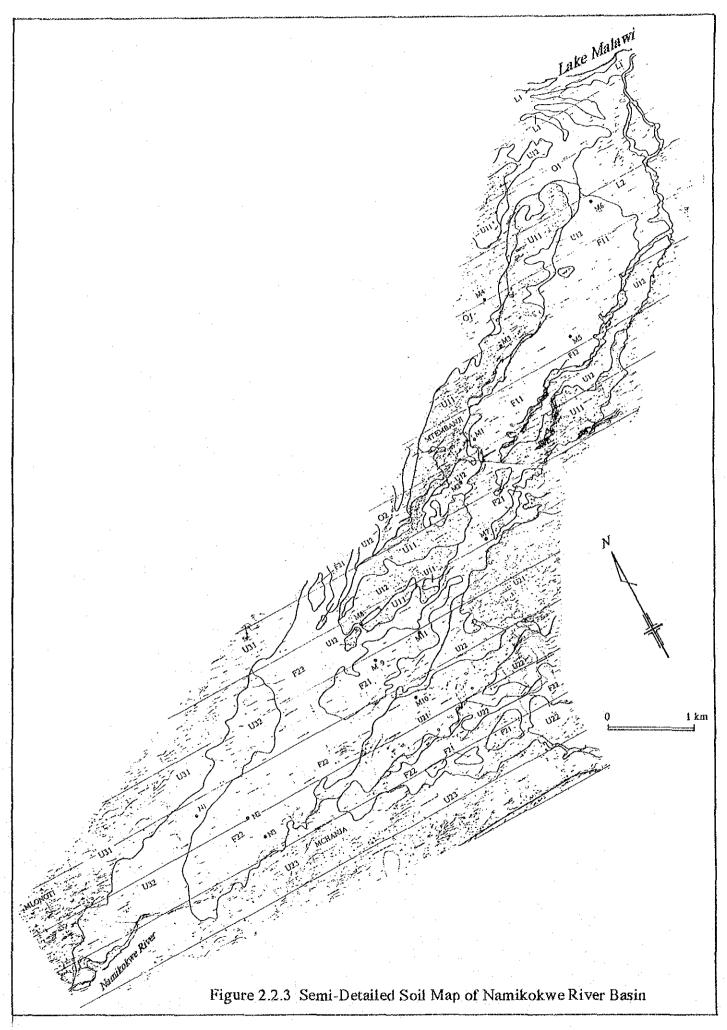
(4): Living expense with project conditions is assumed to be 120 % of the without project condition

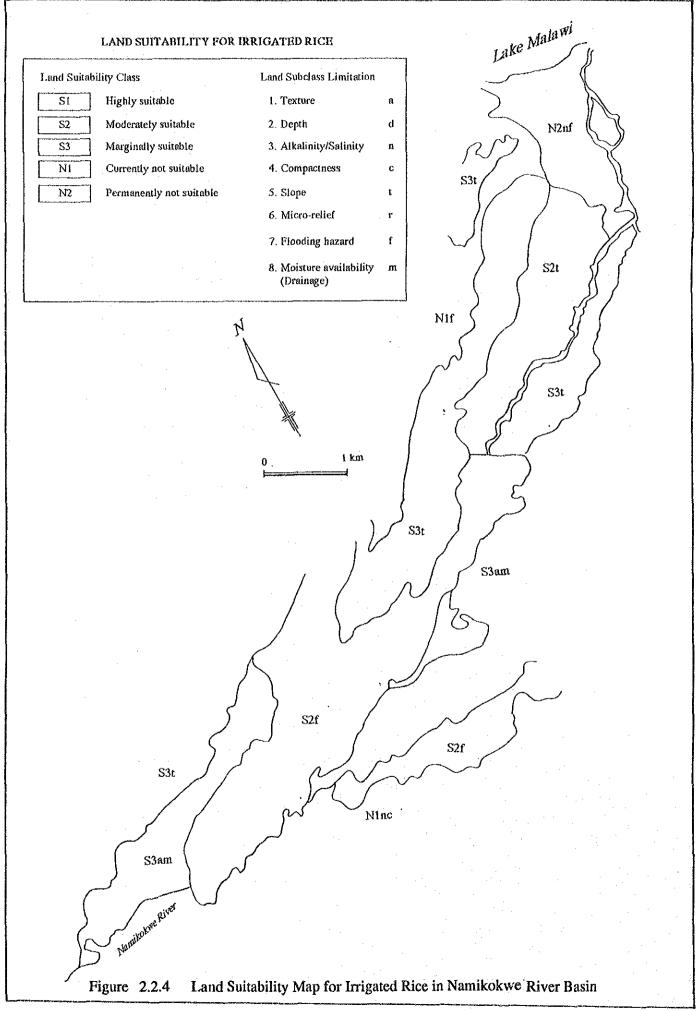
ANNEX II FEASIBILITY STUDY FOR FIVE SELECTED PROJECTS

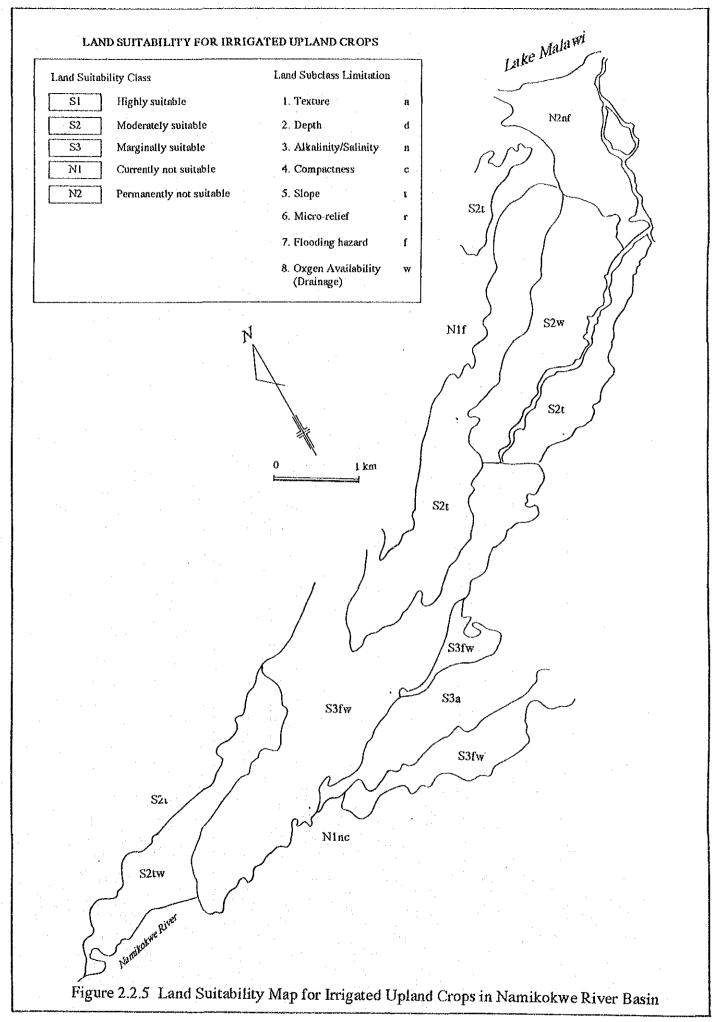
Figures











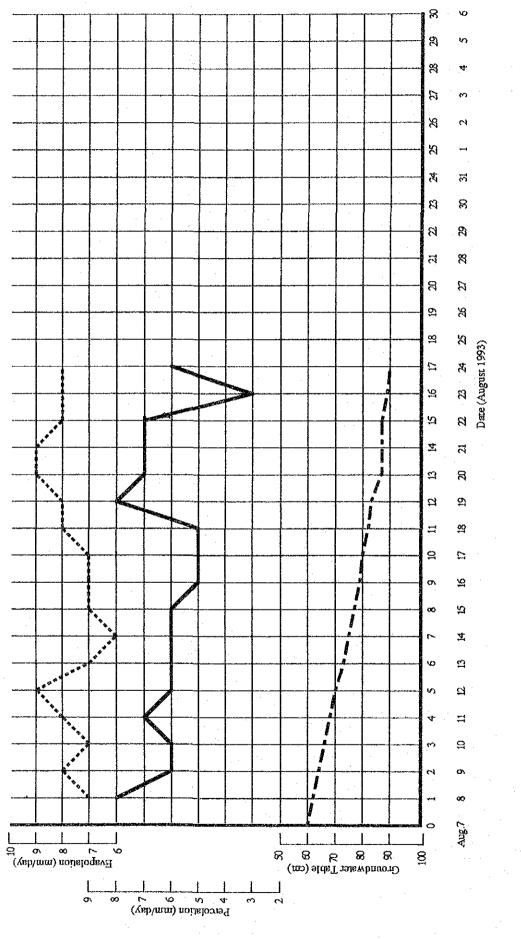
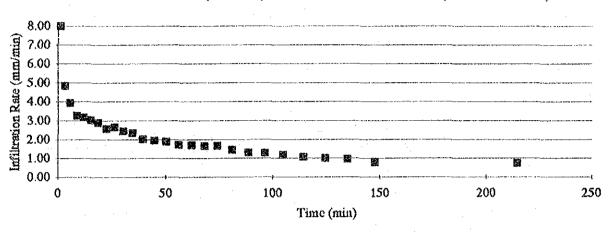
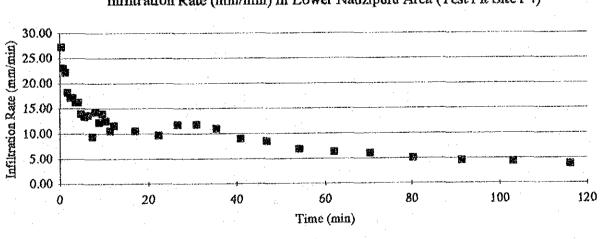


Figure 2.2.6 Test Results of Field Percolation Measurement



Infiltration Rate (mm/min) in Lower Namikokwe Area (Test Pit Site M3)



Infiltration Rate (mm/min) in Lower Nadzipulu Area (Test Pit Site P4)

Figure 2.2.7 Test Results of Infiltration Rates in the Project Area

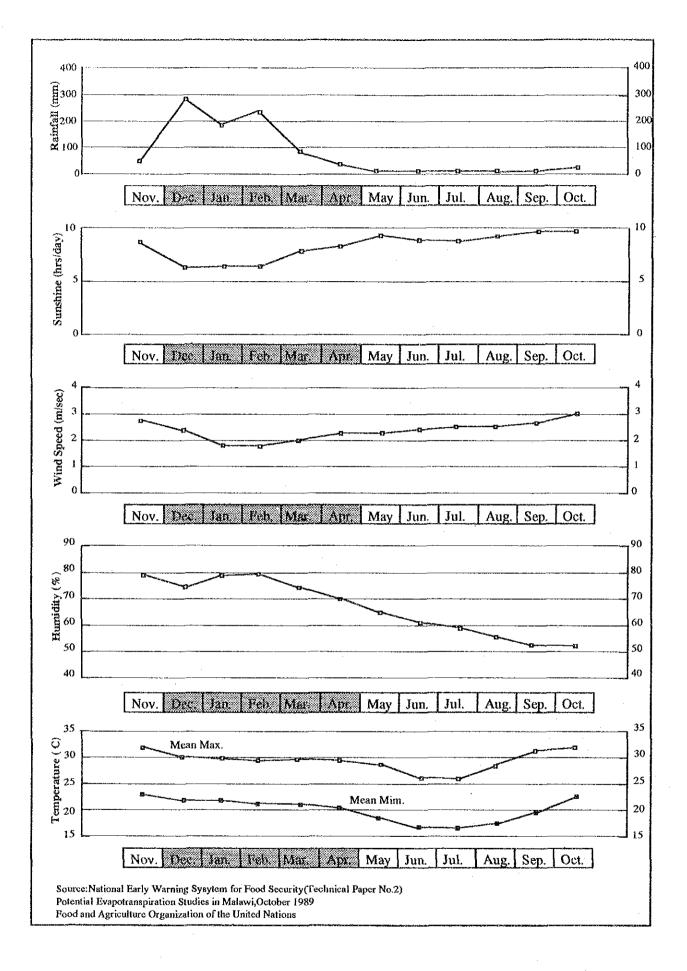
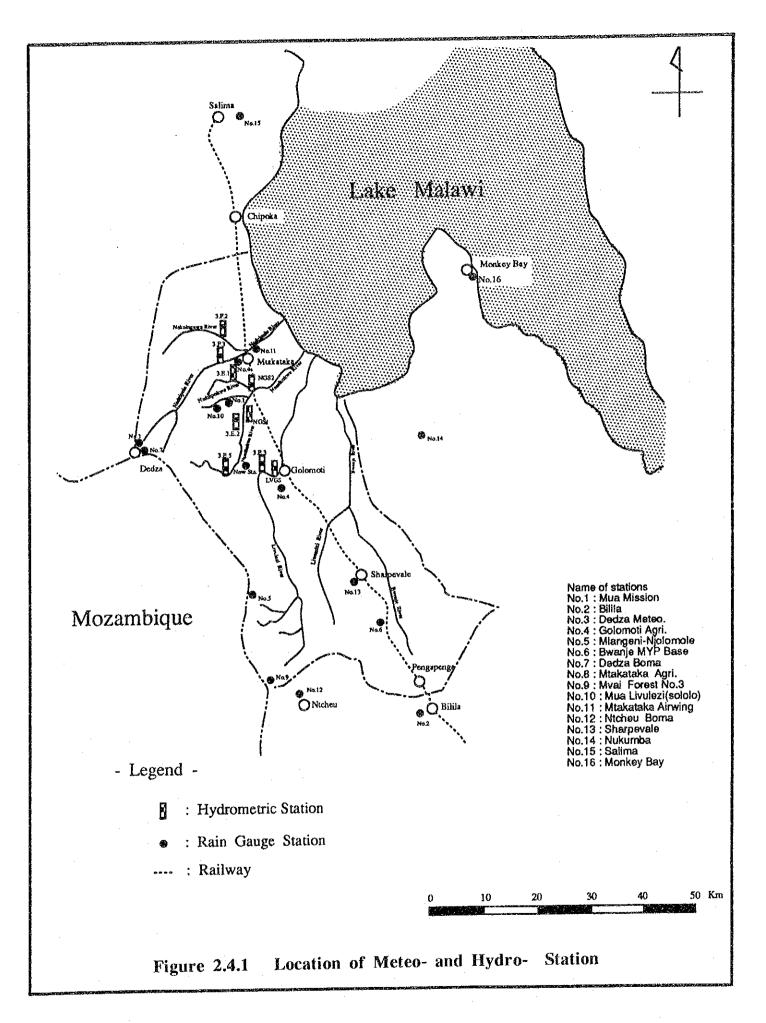
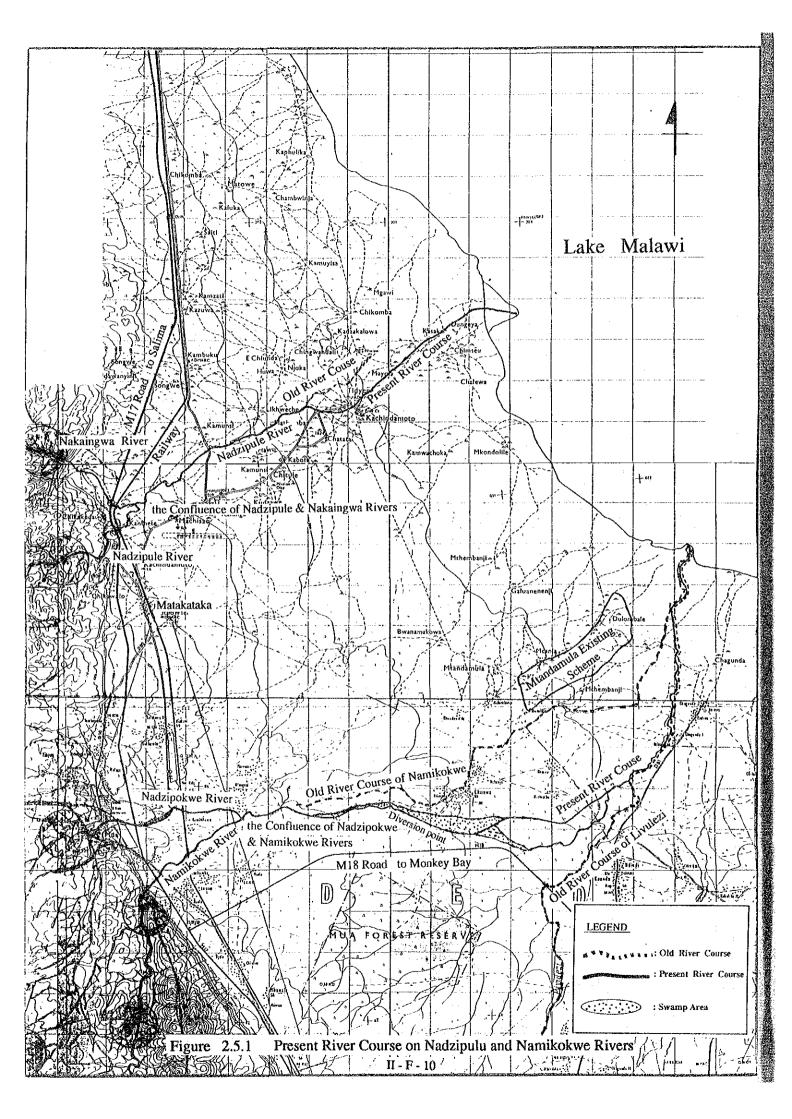
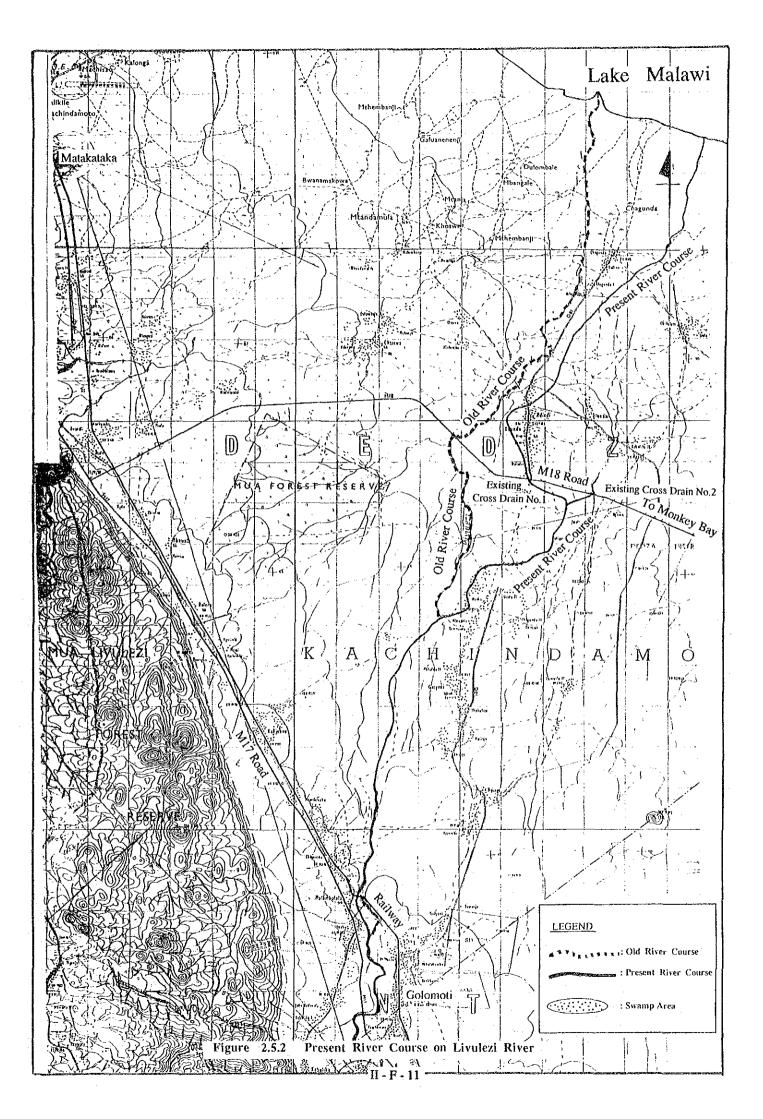
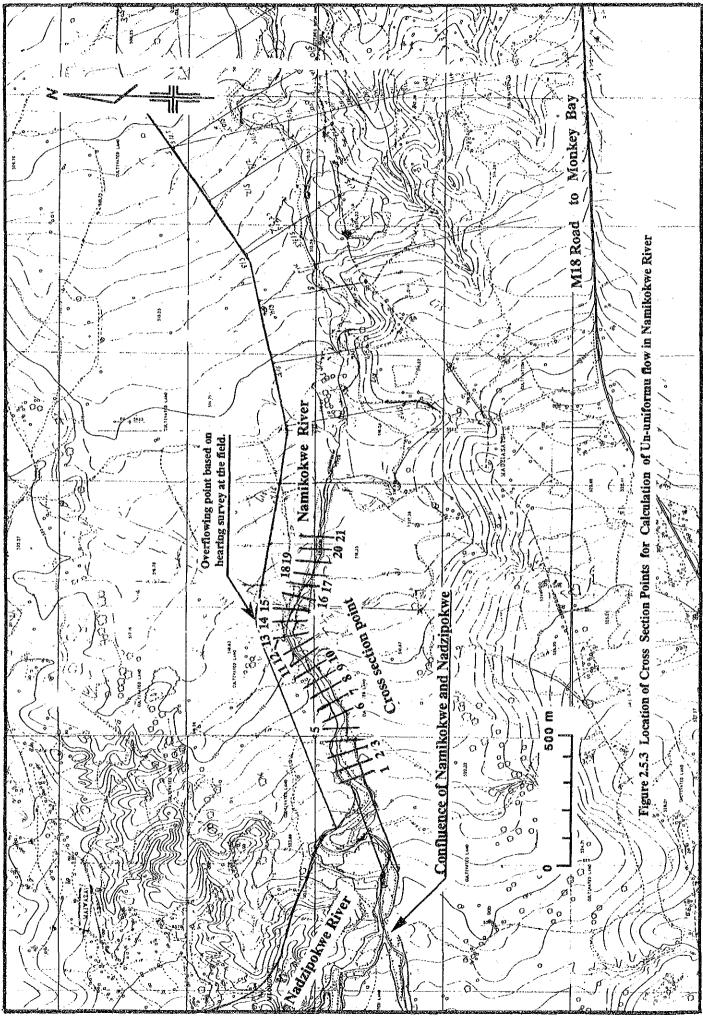


Figure 2.3.1 Monthly Meteorological Fluctuation in Monkey Bay

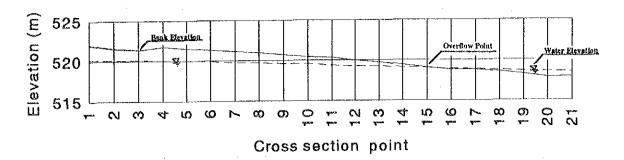




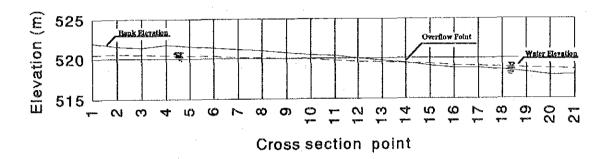


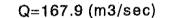


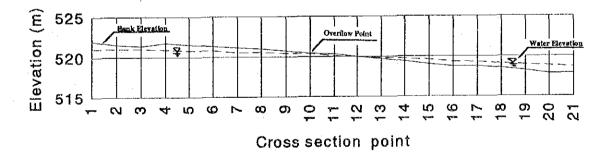
Q=93.5 (m3/sec)



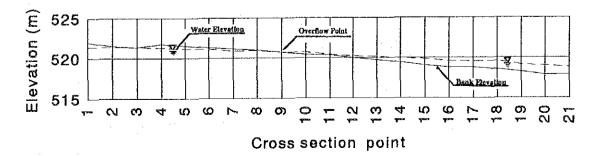
Q=123.9m3/sec

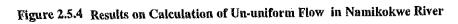




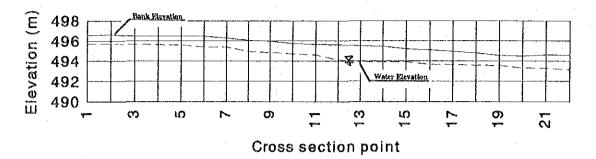


Q=205.4 (m3/sec)

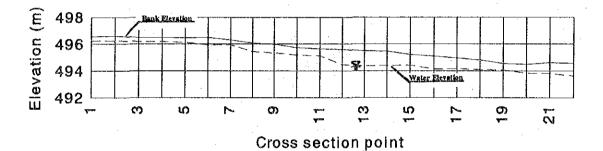


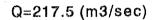


Q=121.6 (m3/sec)



Q=160.5 (m3/sec)





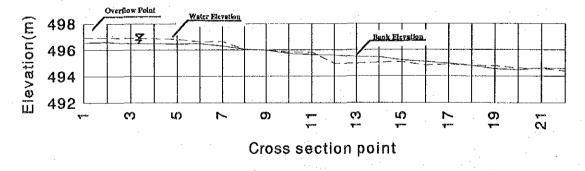
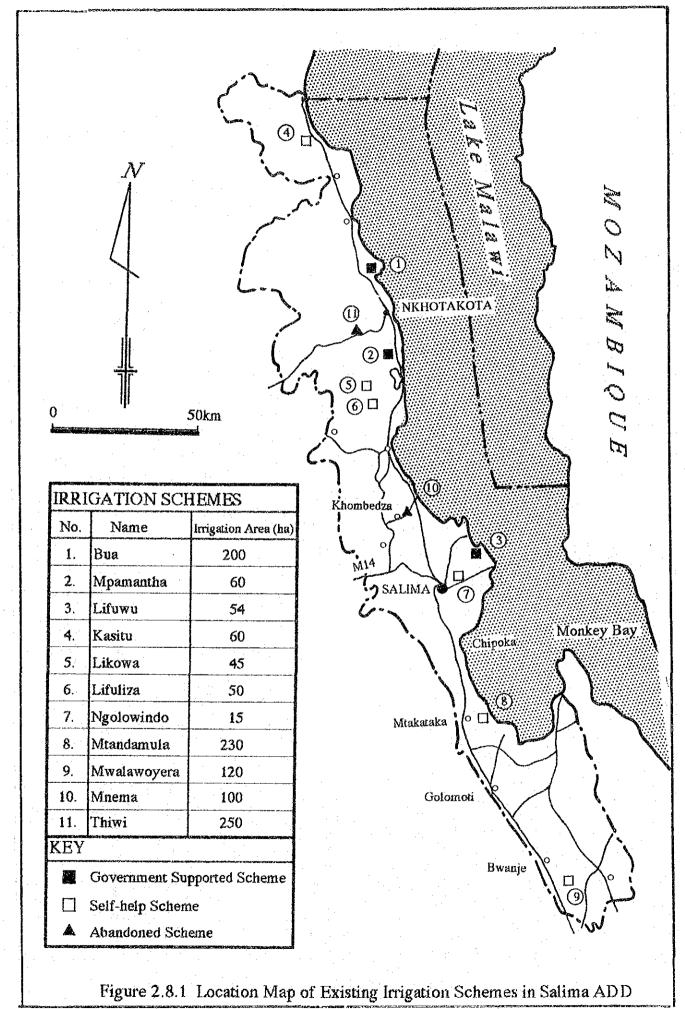
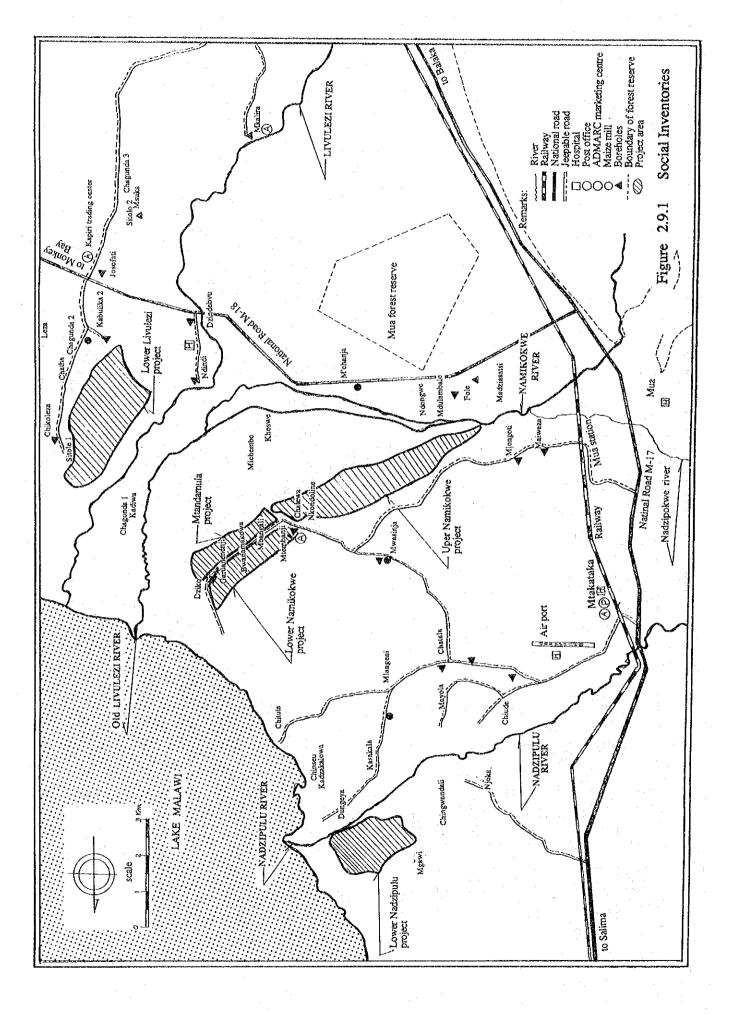
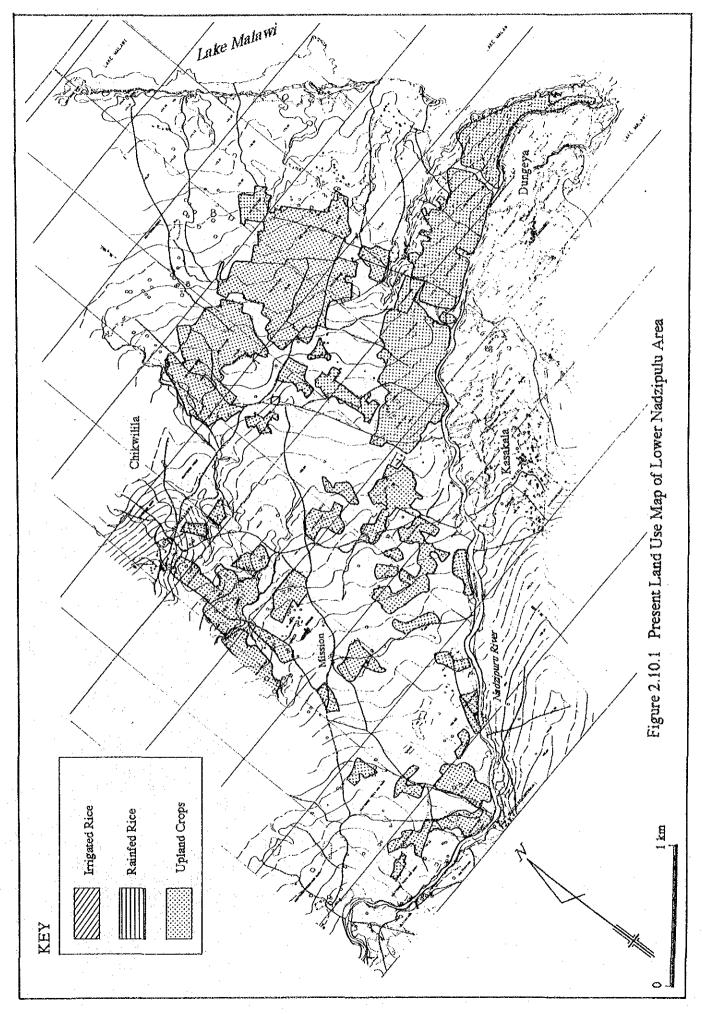
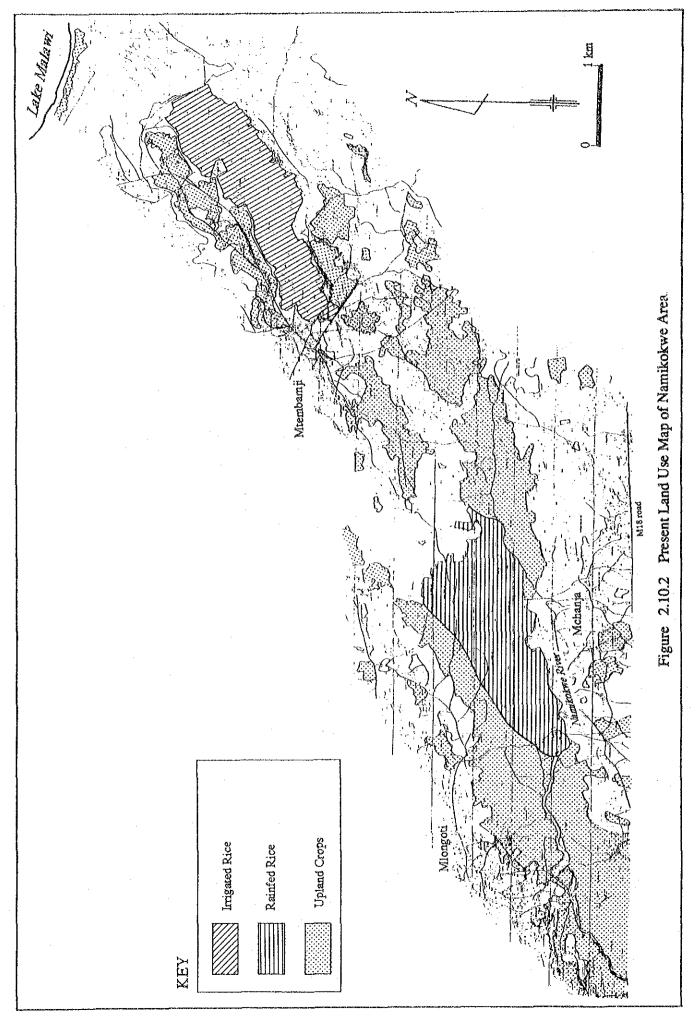


Figure 2.5.5 Results on Calculation of Un-uniform Flow in Nadzipulu River

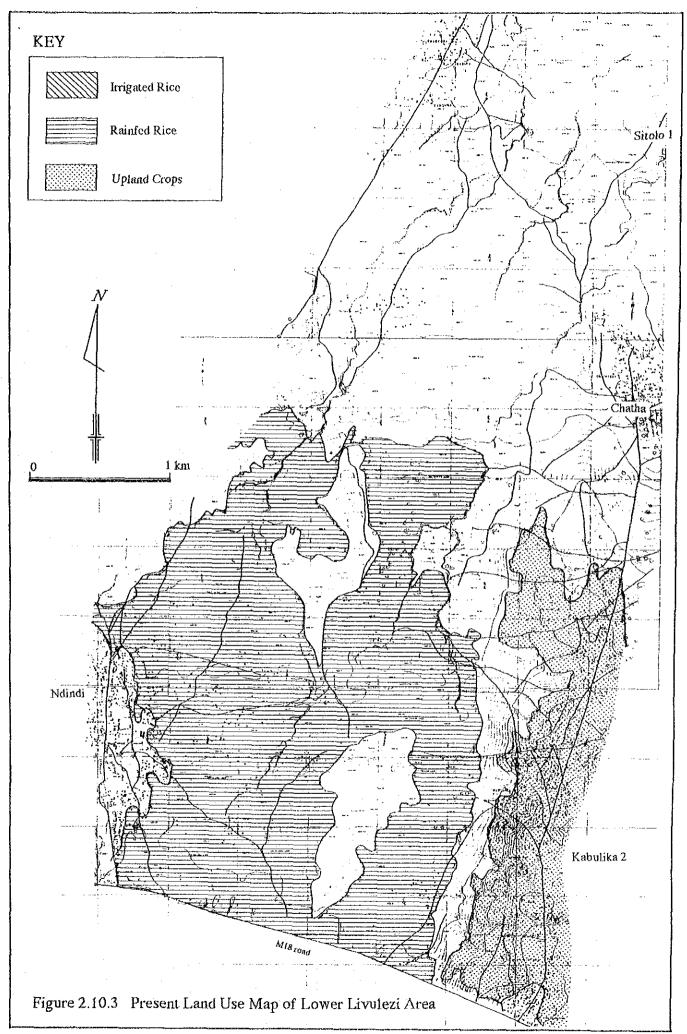








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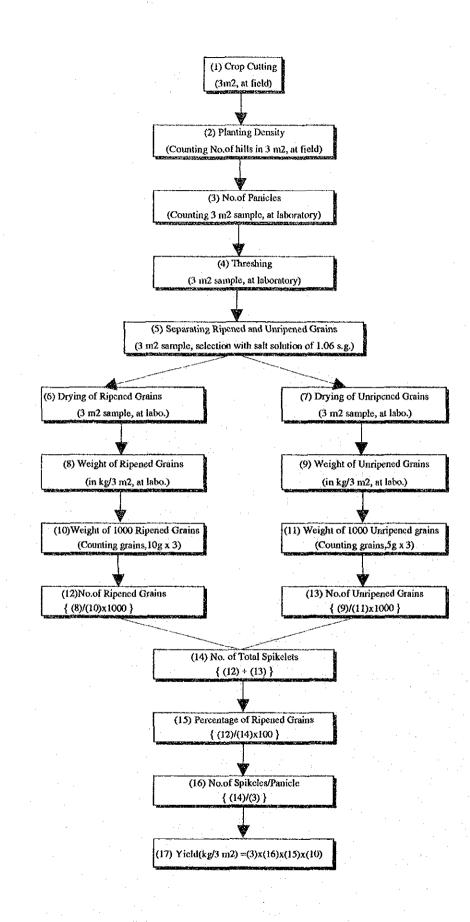


Figure 2.13.1 Method of Simplified Crop Cutting Survey

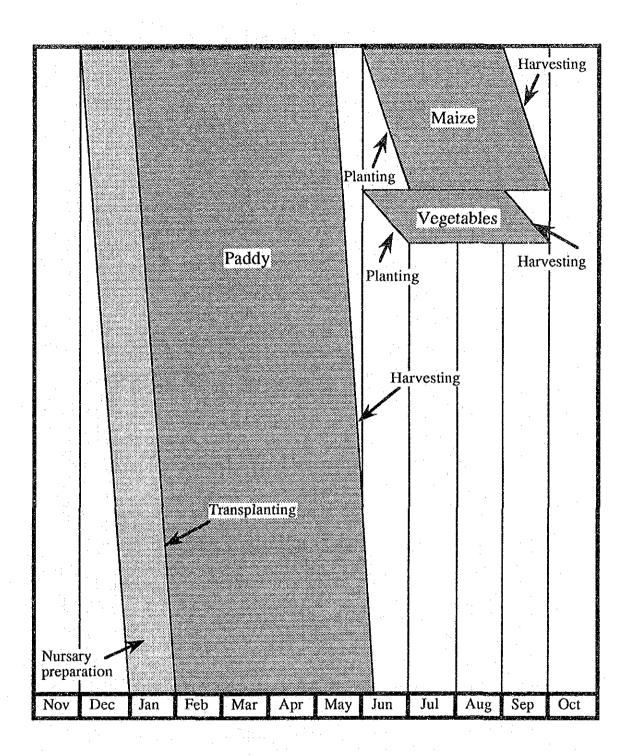


Figure 3.2.1 Proposed Cropping Pattern

Figure 3.3.1 Unit Water Requirement (pattern-1)

| Manth New. Dec. Jac. ETO (at Membery bev) 65.9 65.9 55.9 55.9 52.3 37.3 37.3 37.3 37.3 37.3 37.3 37.5 <th>Dec. 13</th> <th>Jan. 523 523 57.5</th> <th>Fob.</th> <th>17</th> <th></th> | Dec. 13 | Jan. 523 523 57.5 | Fob. | 17 | | | | | | | | | | | |
|---|-----------|----------------------|----------------|----------------|------------|---------------------|---------------|--------------|-------------|----------------|---------------------------------|-------------|-------------------------------------|--------------------------|------|
| | | 2.12 523 57.5 | | | - | ¥4 | MAY | ň | Jun | Ĵui. | | _ | Ser | 8 | ł |
| | | | 51.1 51.1 4 | 40.9 53.5 53.5 | 58.9 49.6 | £ | 43.2 43.2 | 47.5 37.9 37 | 37.9 | 403 403 463 | 48.1 | 5.0.5 1.52 | | 701 701 | i |
| 50 | = j | 30 dave (start o | | 4 | T | | | | | | | | _ | | 3 |
| | = J | | | | | | | | | | | | | | |
| Vegonstion period (1) (early stage) Vegenstein period (2) Vegenstein initiation) Ripering period | | 10 10 4 | | | | | | | | | | | | | |
| Vegration period (?) (after penida initation) Ripaning period | | 10 10 11 | 10 10 | 5 10 10 | = | | | | | | | | | | i i |
| Ripening period | | | | 9. • | : | 10 10 10 | v. | | | | | | | | 1 |
| | | | | | * * | o, | 12 10 10 | | | | | | | | · |
| initial development Stage | | | | | | | | 10 | | 10 10 | 4 | | | | |
| Crop development Strips | | | | | | | | | -i | 10 11 | 10 | 11 | | | |
| | | | | | | | · · · · · | | : | | 6 | 11 | 15 10 | 10 | 1 |
| and the president | | | | | | : | | | | | | | 2 2 | 10 IO | 12 |
| Kc Vegetation period (1) | | 1.10 1.10 1.10 | 1.10 1.10 1 | 1.10 1.10 1.10 | 1.10 | 1.16 | | | | | | | | 1 1 1 | |
| Kc Vegetation period (2) | | 1 | 5 | 8 | 8 | 1.05 1.05 1.05 | 8 | | | | | | | | |
| c Kupenug parlod | | | | | 5 | | 0.95 0.95 | | | | | | | | |
| Ke Anturat coverspirate States | | | | | | | | | 0.35 0.35 0 | 0.35 0.35 0.3 | 0.35 0.35 | | | | |
| | | | | | | | | | | ţ | 1 | 211511 | | F | |
| K.c.L.ste seeson | | | | | | | | | | | | | 1001 | 1.03 1.03 | 1 |
| Arca IDCODALTY OF PAGGUINE | 0.211 (| 0.29 0.29 0.11 | | | | | | | | | | _ | | - | |
| Area meaning of vegetation paraod (1) ET Vegetation period (1) | | 0.50 | 5622 5622 44 | | 50 | 1.14 | | | | | | : | | | |
| Area immensity of Vegetation period (2) ET Vegetation period (2) | | | | 0.03 0.30 | 0.65 | 250 100 250 XIII | 200 S | | | | | | | | |
| Area internatiy of Ripening partod ET Ripening period | - | | | | | | | | | | | | | - | |
| Area intensity of Initial development ET Initial development Street | | | | | | | | | 0.17 0.50 0 | 50 | 0.02 0.03 | | | | |
| Area internsity of Crop development ET Crop development Stage | | | | | | | | | 3 | 0.04 0.33 0.68 | 0.68 0.97 0.87 | 70.052 0.17 | | | 1 - |
| Assa imensity of Mid seasons ET Mid season | | | | | | | | | | | | 14 E | 1.00 0.95 | 0.67 0.33 53.80 26.94 | 88 |
| Area internetity of Late season 0.02 ET Late season 0.28 | | | | | | | | | | | | | | 0.04 0.31 0.37 | 10 2 |
| Total Area interactor | - | 0.17 0.50 0.85 | 1.00 1.00 | 1.00 1.00 1.00 | 8 | 8 | 1.1 | | 0.17 0.50 0 | 100 | 1.00 1.00 1.00 | 001 001 0 | 8 | 0.07 0.70 | l o |
| | | | 56.2 56.2 | 57.9 | | ¥. | 40.9 19.3 6.8 | | 22 666 1 | | 36.6 | 59.3 | 07.0 | 25.0 | 253 |
| Percolation losses (mm/day) | | | 30.0 30.0 24.0 | 29.5 | | 23.8 30.0 25.0 14.4 | 1 | | | | | | | - | |
| Water requirement (mm) 0.3 446 43.8 81.7 86.2 86.2 69.0 87.4 88.1 95.8 78.6 80.4 65.9 3 | | 14.6 43.8 81.7 | 862 862 6 | 9.0 87.4 88.1 | 1 95.8 75. | 78.6 80.4 65.9 | 9 34.1 11.8 | | 22 666 1 | 11.5 17.0 25 | 6.6 11.5 17.0 25.3 36.6 43.5 59 | 59.3 67.8 | 59.31 67.81 68.51 67.01 76.01 53.41 | 760 534 | X |

| | | Figure | 3.3.2 | Unit Water Requirement (pattern-2) | ement (pattern | 1-2) | | | |
|---|--|--|--|--------------------------------------|---------------------|--|---|--|-----------------|
| Senson | | Rainy S | Seraon | | | | Dry Season | | |
| Month | Nov. Dec. | . Tabl | Pob. Mar | с Арт. | May | Jun 7td | | Sep., | det Oct |
| ETo (at Monkey bey) | 639 55.9 | 61.5 523 523 57.5 | 51.1 51.1 40.9 53.5 53.5 | 58.9 49.6 | 43.2 43.2 47.5 37.9 | 37.9 37.9 40.3 40.3 | 3 44.3 48.3 48.3 | 53.1 59.6 59.6 59.6 | 70.3 70.3 77.3 |
| | Sine (Fave) + Mathe (90 days | arie(y) | (start of transplanting Ja | | | | | | |
| | | | | | | | | | |
| intervention and Puddline | | 11 10 10 4 | | | | | | | |
| for Main fields | | 1110000 | - - - - | | | | | | |
| Vegetation period (1) | | = | 10 10 5 10 10 | 10 11 5 | | | | | |
| (cerily stage) | : | | • | Ľ. | | | | | |
| Vegetation period (2) (after panicle initiation) | | | Mar. 4 10 | 11 10 | ~ ` \ | | | | |
| Ripcuing pariod | | | | 2 10 10 2 2 | 10 10 10 10 | | | | |
| | | | | | | | | | |
| Initial development Stage | | | | | | 01 | 10 5 | | |
| Crop developendnt Stage | | | | | | Jan. 35 10 10 | 0 11 10 9 | | |
| Mid serion | | | | | -12 - 12 | | 11 10 10 | 11 10 8 | |
| Late season | | | | | | | | 11 10 10 8 | |
| Ke Vegetation period (1) | | 1.10 1.10 1.10 | 1.10 | 1.10 1.10 | | | | | |
| Vegetation period (2) | | | 1.05 1.05 1.05 | 1.05 1.05 1.05 1.05 1.05 | 1.05 | | | | |
| Ke Ripening period | | | | | | 1 | - | | |
| Kc Inital development Stage | | | | | | 20 200 | 070 070 081 000 | - | |
| Ke Mid seaton | - | | | | | 2 | 1.15 1.15 | 1.15 1.15 1.15 | |
| Ko Late season | | ~~ | | | | | _1 | 1.04 | |
| Ams intensity of padding | | 0.31 0.29 0.29 0.11 | | | | | - | | |
| Area intensity of Vegetation period (1) ET Venetation neriod (1) | | 0.17 0.50 0.35 1.00 | 1.00 1.00 0.97 56.22 44.97 57.30 | 0.70 0.35 0.04 41.21 22.66 1.14 | | | | | |
| Area intensity of Vegetation period (2) | | | 0.03 | 0.30 0.65 0.92 0.67 0.33 | 200 | | | | |
| Area intentity of Ripening period | | | | 0.04 0.33 | | | | | |
| Area intensity of Initial development FT Initial development Steed | | | | | | 0.50 20.5 | | | |
| Area intensity of Crop development | | | | | | 0.04 0.33 | 0.67 0.78 0.47 0.14 18.71 24.05 18.70 5.81 | 4 | |
| Area intensity of Mid season | | | | | · | | 0.18 | 6 0.78 0.43 0.11 4 47.85 29.70 5.85 | |
| Area incusity of Lata season FT Late season | | | | | | | | 0.21 0.33 11.63 20.66 | 0 |
| otal Area intensity | | 28.0 020 171 0.85 | 1.00 1.00 1.00 1.00 | 1.00 1.00 | 0.50 0.17 | 0.17 0.50 0.83 | 001 001 001 001 | 65/ 0.77 0.43 | 2 1 1 |
| Elterop | | 3 | 56.2 56.2 45.0 57.9 | 58.1 62.8 49.9 50.4 40.9 19.8 | 19.8 6.8 | 22 64 144 2 | 33.7 44.3 | 59.5 50.4 26.1 | 5.31 |
| uddling (mm) | | 47.1 42.9 42.9 17.1 | 100 010 010 | - | | | | | |
| Varier redition josses (mm/day) | | Ìα | 86.21 86.2 69.01 87.4 | 88.1 05.8 78.61 80.4 65.9 34.1 11.81 | 341 11.8 | 22 64 144 2 | 14.4 23.4 33.7 48.3 53.8 | 59.51 50.4 26.1 | 53 |
| | Nore) -ETO : Republic of Malawi Meteorological Deper | ilawi Meteorological Departme | nt, Climatological Tables fo | ulawi Station at Monkey | | | | | |
| | -Pudding for main field -Purrolation issues in | -Puddling for main field including land preparation to be -Purcolation bases is assumed to be 3 mm/day. | 15 15 15 15 15 15 15 15 15 15 15 15 15 1 | | anihing anihing | murany person pedding of main field | indumer entruge | | maize harvesing |
| | -Irrigation water chring | -Irrigation water during nursery period is neglected due to anall amount | se to amall amount | | rice cutriv | | iplowing & sowin | g for maize | |

П-F-23

