Table V.1.1 List of Data Collected (1/2)

| Name of Office | Location | Name of Data |
|---|---|---|
| Central Bureau of Statistics Indonesia | Jakarta | 1. Statistical Pocket Book of Indonesia, 1979/1980.<br>2. Statistical Pocket Book of Indonesia, 1980/1981.<br>3. Economic Indicator, Monthly Statistical Bulletin, 1980.<br>4. Population of Kalimantan and Sulawesi by Province and Kabupaten/Kota Madya, Seri L No.6, Population Census Map, 1980.<br>5. Map Index of Kabupatens/Kota Madyas and Kecamatans in Indonesia, Seri No.1, Population Census Map, 1980.<br>6. Agricultural Census Volume I, 1973.<br>7. Agricultural Census Volume VII, 1973.<br>8. Agricultural Census, Jan. - April 1979.<br>9. Production of Food Crops in Indonesia, 1978, Agricultural Statistics.<br>10. Production of Food Crops in Indonesia, 1979, Agricultural Statistics.<br>11. Food Balance Sheet in Indonesia 1978, Agricultural Statistics.<br>12. Food Balance Sheet in Indonesia 1979, Agricultural Statistics.<br>13 Average wages of Estates Workers, 1978-1980. |
| Census and Statistics Office South Sulawesi Province. | Ujung Pandang | 1. Statistical Year Book of South Sulawesi, Annual Statistics, 1974.<br>2. Statistical Year Book of South Sulawesi, Annual Statistics, 1978.<br>3. Statistical Year Book of South Sulawesi, Annual Statistics, 1979.<br>4. Statistical Year Book of South Sulawesi, Annual Statistics, 1980.<br>5. Population of South Sulawesi, 1979.<br>6. Population Census of South Sulawesi, 1980.<br>7. Economic Indicator of South Sulawesi, 1980.<br>8. Economic Indicator of South Sulawesi, 1981.<br>9. Regional Income of South Sulawesi, 1975-1979.<br>10. Price Statistics, of South Sulawesi, 1980. |
| Census and Statistic Office Kab. Bone. | Watampone | 1. Statistical Year Book of Kab. Bone, 1977.<br>2. Statistical Year Book of Kab. Bone, 1978.<br>3. Statistical Year Book of Kab. Bone, 1979.<br>4. Statistical Year Book of Kab. Bone, 1980.<br>5. Population Census of Kab. Bone, 1980.<br>6. Population Census by Age Group in Kab. Bone, 1980. |
| Ministry of Agriculture South Sulawesi Province. | Ujung Pandang | 1. Annual Report of Food Crops Statistics, 1979.<br>2. Annual Report of Food Crops Statistics, 1980.<br>3. Price of Food Production Statistical Polita I - II, 1969 - 1978. |
| Bimas Construction Board of South Sulawesi Province. | | 4. Insus, Special Intensification System.<br>5. Realization Method of Insus.<br>6. Letter of Decision about the Execution Manual of Paddy, Polowijo and Vegetables Intensification within Polita III, 1979.<br>7. Realization Report of Program Intensification Paddy, Polowijo and Vegetables 1979/1980.<br>8. Intensification Plan of Paddy, Polowijo and Vegetables 1980/1981.<br>9. Letter of Decision about the Planning of Paddy, Polowijo and Vegetables Intensification within 1981/1982.<br>10. Lappo Ase Operation 1981.<br>11. Lappo Ase Operation 1981/1982. |

to be continued

Table V.1.1 List of Data Collected (2/2)

| Name of Office | Location | Name of Data |
|---|---|---|
| Maros Regional Research Station. | Maros | 1. Report of Food Crops Research in South Sulawesi, Polita I - II. |
| Agriculture Office Kab. Bone. | | 1. Annual Report of Agriculture Office 1978/1979.<br>2. Annual Report of Agriculture Office 1979/1980. |
| Bimas Construction Board of Kab. Bone. | | 3. Letter of Decision about Planning of Intensification Program of Lappo Ase Operation 1981/1982<br>4. Letter of Decision about Planning of Integrated Intensification of Paddy, Polowijo and Vegetables 1982/1983. |
| Provincial Department of Livestock South Sulawesi Province. | Ujung Pandang | 1. Annual Report, of Departement of Livestock, 1977/1978.<br>2. Annual Report, of Departement of Livestock, 1978/1979.<br>3. Annual Report, of Departement of Livestock, 1979/1980. |
| Departement of Livestock Kab. Bone. | Watampone | 1. Report of Livestock 1979. |
| Regional Logistic Affairs Board South Sulawesi Province. | Ujung Pandang | 1. Collection of Rice Data 1969/1970 - 1974/1975.<br>2. Evaluation of Producer and Consumer Prices 1980/1981.<br>3. Statistical Data, Potency and Activities Evaluation of Regional Logistic Affairs Board in South Sulawesi.<br>4. Price of Unhulled Rice, Rice and 9 Essential Commodities and 4 Strategical Commodities 1972 - 1975.<br>5. Report of Volume of Rice Price Survey in Ujung Pandang. |
| Directorate of Agrarian South Sulawesi Province. | Ujung Pandang | 1. Annual Report of Directorate of Agrarian 1980/1981.<br>2. Kab. Bone in Fact and Explaination. |
| Indonesian People's Bank South Sulawesi Province. | Ujung Pandang | 1. List of Name and Location of the Branch Office. |
| IPEDA Office Kab. Bone. | Watampone | 1. Report of IPEDA Tax of Kab. Bone, 1980. |
| JICA. RADP/ATA - 140 Project Team. | - | 1. South Sulawesi Regional Agricultural Development Planning, The Final Report of Phase III, 1982. |
| CIDA. (Canadian International Development Agency). | - | 1. Sulawesi Regional Development Study, Interim Report 1977.<br>2. Mission Report and Work Plan, Project Design for the Integrated Development of the Sonrego Area, Dec. 1981. |
| Leon A. Meers. (Gajah Mada University Press). | | 1. The New Rice Economy of Indonesia. |
| Comming Sugar Project South Sulawesi, Indonesia. | Ujung Pandang | 1. Feasibility Study for the Comming Sugar Plantation. |

Table V.2.1 General Features of Present Demographic Condition (1981)

| Kec. Desa | Area ($km^2$) | Total Household | Population Male | Female | Total | Density (Persons/$km^2$) | Family Size (Persons/ Household) | Farm Household |
|---|---|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | | | |
| Sanrego | 29.5 | 795 | 2,129 | 2,204 | 4,333 | 146.9 | 5.5 | 755 |
| Biru | 24.1 | 557 | 1,359 | 1,510 | 2,869 | 119.0 | 5.2 | 551 |
| Palakka | 24.6 | 586 | 1,612 | 1,651 | 3,263 | 132.6 | 5.6 | 540 |
| Cenrana | 22.8 | 307 | 816 | 934 | 1,750 | 76.8 | 5.7 | 288 |
| Balle | 26.9 | 475 | 1,360 | 1,598 | 2,958 | 110.0 | 6.2 | 430 |
| Cakkela | 28.6 | 376 | 1,035 | 1,105 | 2,140 | 74.8 | 5.7 | 318 |
| Labuaja | 23.5 | 422 | 1,091 | 1,216 | 2,307 | 98.2 | 5.5 | 409 |
| Kec. Libureng | | | | | | | | |
| Tappale | 44.0 | 729 | 2,009 | 2,105 | 4,114 | 93.5 | 5.6 | 682 |
| Pitumpidange | 42.0 | 280 | 673 | 674 | 1,347 | 32.1 | 4.8 | 278 |
| Polewali | 32.0 | 321 | 531 | 665 | 1,196 | 37.4 | 3.7 | 257 |
| Kec. Tenra | | | | | | | | |
| Paccing | 16.4 | 413 | 1,091 | 1,405 | 2,496 | 152.2 | 6.0 | 354 |
| Massile | 20.0 | 476 | 1,386 | 1,525 | 2,911 | 145.6 | 6.1 | 443 |
| Kec. Salomekko | | | | | | | | |
| Masago | 20.0 | 531 | 1,500 | 1,638 | 3,138 | 156.9 | 5.9 | 500 |
| Patimpeng | 26.0 | 470 | 1,774 | 1,848 | 3,622 | 139.3 | 7.7 | 468 |
| Total/Average | 380.4 | 6,738 | 18,366 | 20,078 | 38,444 | 101.1 | 5.7 | 6,273 |

Annual Population Growth (1972 - 1981)

| Kec. Desa | Year 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | Annual Average Growth Rate (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | | | | | | |
| 1. Sanrego | 3,554 | 3,642 | 3,707 | 3,798 | 3,887 | 3,980 | 4,084 | 4,152 | 4,227 | 4,333 | 2.22 |
| 2. Biru | 2,160 | 2,262 | 2,371 | 2,463 | 2,563 | 2,654 | 2,754 | 2,842 | 2,926 | 2,869 | 3.20 |
| 3. Palakka | 2,685 | 2,764 | 2,973 | 3,151 | 3,172 | 3,242 | 3,322 | 3,353 | 3,224 | 3,263 | 2.20 |
| 4. Cenrana | 1,276 | 1,342 | 1,384 | 1,454 | 1,550 | 1,628 | 1,669 | 1,714 | 1,767 | 1,750 | 3.57 |
| 5. Balle | 1,863 | 1,961 | 2,056 | 2,162 | 2,257 | 2,366 | 2,471 | 2,564 | 2,639 | 2,958 | 5.27 |
| 6. Cakkela | 1,414 | 1,546 | 1,636 | 1,755 | 1,822 | 1,905 | 1,964 | 2,060 | 2,139 | 2,140 | 4.71 |
| 7. Labuaja | 1,635 | 1,724 | 1,821 | 1,915 | 2,009 | 2,113 | 2,207 | 2,302 | 2,368 | 2,307 | 3.90 |
| Kec. Libureng | | | | | | | | | | | |
| 1. Tappale | 3,738 | 3,789 | 3,842 | 3,890 | 3,525 | 3,668 | 3,349 | 3,356 | 4,053 | 4,114 | 1.07 |
| 2. Pitumpidange | 1,207 | 1,241 | 1,270 | 1,300 | 1,202 | 1,253 | 1,249 | 1,252 | 1,329 | 1,347 | 1.23 |
| 3. Polewali | 1,111 | 1,149 | 1,191 | 1,390 | 1,295 | 1,277 | 1,149 | 1,175 | 1,181 | 1,196 | 0.82 |
| Kec. Tonre | | | | | | | | | | | |
| 1. Paccing | 1,935 | 1,957 | 1,981 | 1,993 | 2,013 | 2,050 | 2,120 | 2,145 | 2,484 | 2,496 | 1.63 |
| 2. Massile | 2,142 | 2,228 | 2,327 | 2,343 | 2,353 | 2,360 | 2,376 | 2,388 | 2,856 | 2,911 | 3.47 |
| Kec. Salomekko | | | | | | | | | | | |
| 1. Masago | 3,436 | 3,404 | 3,417 | 3,391 | 3,606 | 3,321 | 3,226 | 3,250 | 3,136 | 3,138 | -1.00 |
| 2. Patimpeng | 2,988 | 2,998 | 3,014 | 3,067 | 3,112 | 3,307 | 3,045 | 3,042 | 3,622 | 3,622 | 2.16 |
| Total/Average | 31,154 | 32,007 | 32,990 | 30,577 | 34,366 | 35,124 | 34,985 | 35,595 | 37,951 | 38,444 | 2.36 |

Source: Census and Statistics office, Kab. Bone and each Kecamatan office.

Remark: The figures include the data within the boundaries of desa under study.

Table V.2.2 Population Structure (1980)

| Item | | Kec. Kahu | | | | | | | Kec. Libureng | | | Kec. Tonra | | Kec. Salomekko | | Sub-Total | % | Total | % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Sanrego | Biru | Palakka | Cenrana | Balle | Cakkela | Labuaja | Tappale | Pitumpidange | Polewali | Paccing | Massile | Massago | Patimpeng | | | | |
| 0-4 | Male | 354 | 217 | 286 | 131 | 199 | 204 | 203 | 349 | 114 | 65 | 184 | 196 | 213 | 385 | 3,100 | 8.17 | 5,847 | 15.41 |
| | Female | 348 | 208 | 220 | 118 | 187 | 154 | 161 | 314 | 74 | 55 | 162 | 213 | 191 | 342 | 2,747 | 7.24 | | |
| 5-9 | Male | 432 | 307 | 336 | 181 | 245 | 248 | 226 | 370 | 127 | 103 | 386 | 407 | 282 | 427 | 4,077 | 10.75 | 7,627 | 20.10 |
| | Female | 373 | 229 | 281 | 104 | 235 | 176 | 211 | 365 | 121 | 88 | 343 | 391 | 247 | 386 | 3,550 | 9.35 | | |
| 10-14 | Male | 269 | 188 | 188 | 123 | 186 | 134 | 163 | 292 | 102 | 67 | 114 | 142 | 240 | 306 | 2,516 | 6.63 | 4,775 | 12.58 |
| | Female | 239 | 198 | 145 | 140 | 206 | 125 | 136 | 193 | 82 | 72 | 120 | 115 | 209 | 279 | 2,259 | 5.95 | | |
| 15-19 | Male | 115 | 94 | 154 | 59 | 120 | 79 | 90 | 162 | 63 | 50 | 66 | 115 | 136 | 122 | 1,425 | 3.75 | 3,378 | 8.90 |
| | Female | 147 | 131 | 206 | 102 | 124 | 112 | 151 | 205 | 85 | 94 | 100 | 164 | 172 | 160 | 1,953 | 5.15 | | |
| 20-24 | Male | 124 | 62 | 86 | 43 | 62 | 35 | 39 | 150 | 40 | 33 | 35 | 43 | 75 | 91 | 918 | 2.42 | 2,471 | 6.51 |
| | Female | 182 | 126 | 158 | 84 | 107 | 64 | 82 | 214 | 55 | 55 | 71 | 96 | 147 | 112 | 1,553 | 4.09 | | |
| 25-29 | Male | 111 | 82 | 119 | 56 | 59 | 52 | 62 | 121 | 29 | 32 | 88 | 90 | 109 | 58 | 1,068 | 2.81 | 2,564 | 6.75 |
| | Female | 161 | 100 | 128 | 75 | 84 | 81 | 122 | 139 | 58 | 56 | 121 | 123 | 145 | 103 | 1,496 | 3.94 | | |
| 30-34 | Male | 111 | 65 | 76 | 51 | 38 | 33 | 63 | 106 | 38 | 26 | 37 | 43 | 66 | 47 | 800 | 2.11 | 2,027 | 5.34 |
| | Female | 153 | 94 | 112 | 66 | 77 | 49 | 76 | 144 | 34 | 54 | 64 | 98 | 120 | 86 | 1,227 | 3.23 | | |
| 35-39 | Male | 177 | 110 | 120 | 44 | 81 | 70 | 95 | 150 | 44 | 32 | 86 | 135 | 109 | 73 | 1,326 | 3.49 | 2,761 | 7.27 |
| | Female | 186 | 132 | 110 | 46 | 109 | 71 | 87 | 147 | 46 | 40 | 109 | 109 | 142 | 101 | 1,435 | 3.78 | | |
| 40-44 | Male | 106 | 56 | 58 | 40 | 63 | 48 | 36 | 89 | 36 | 30 | 45 | 41 | 93 | 66 | 807 | 2.13 | 1,744 | 4.60 |
| | Female | 111 | 87 | 70 | 60 | 67 | 72 | 59 | 99 | 32 | 26 | 45 | 47 | 89 | 73 | 937 | 2.47 | | |
| 45-49 | Male | 69 | 52 | 53 | 26 | 52 | 42 | 42 | 53 | 16 | 13 | 56 | 34 | 35 | 67 | 610 | 1.61 | 1,394 | 3.67 |
| | Female | 79 | 79 | 54 | 51 | 73 | 56 | 55 | 77 | 14 | 28 | 51 | 52 | 51 | 64 | 784 | 2.06 | | |
| Sub-Total | | | | | | | | | | | | | | | | 6,954<br>9,385 | 18.32<br>24.72 | 16,339 | 43.04 |
| 50-54 | Male | 77 | 40 | 43 | 24 | 32 | 22 | 23 | 28 | 14 | 16 | 26 | 43 | 76 | 51 | 515 | 1.36 | 1,116 | 2.94 |
| | Female | 78 | 43 | 52 | 27 | 40 | 46 | 38 | 52 | 21 | 17 | 29 | 53 | 51 | 54 | 601 | 1.58 | | |
| 55-59 | Male | 18 | 36 | 22 | 14 | 41 | 23 | 28 | 29 | 6 | 24 | 30 | 26 | 17 | 26 | 340 | 0.90 | 654 | 1.73 |
| | Female | 20 | 27 | 25 | 20 | 40 | 27 | 21 | 34 | 2 | 33 | 15 | 15 | 15 | 20 | 314 | 0.83 | | |
| 60-64 | Male | 32 | 21 | 38 | 16 | 17 | 19 | 16 | 26 | 8 | 12 | 19 | 24 | 25 | 10 | 283 | 0.75 | 681 | 1.80 |
| | Female | 58 | 30 | 41 | 18 | 23 | 35 | 15 | 42 | 16 | 16 | 28 | 20 | 32 | 24 | 398 | 1.05 | | |
| 65-69 | Male | 19 | 19 | 9 | 11 | 3 | 11 | 7 | 18 | 7 | 5 | 5 | 10 | 8 | 16 | 148 | 0.39 | 327 | 0.86 |
| | Female | 23 | 22 | 11 | 10 | 17 | 19 | 6 | 21 | 8 | 6 | 6 | 8 | 6 | 16 | 179 | 0.47 | | |
| 70-74 | Male | 15 | 15 | 12 | 6 | 9 | 4 | 3 | 30 | 15 | 7 | 7 | 1 | 7 | 14 | 145 | 0.38 | 323 | 0.85 |
| | Female | 28 | 13 | 7 | 11 | 15 | 7 | 8 | 26 | 17 | 4 | 11 | 1 | 10 | 20 | 178 | 0.47 | | |
| 75- | Male | 5 | 17 | 2 | 7 | 9 | 11 | 16 | 4 | 2 | 8 | 13 | - | 8 | 15 | 117 | 0.31 | 262 | 0.69 |
| | Female | 7 | 26 | 2 | 3 | 17 | 10 | 28 | 4 | 3 | 14 | 12 | 1 | 10 | 8 | 145 | 0.38 | | |
| Total | Male | 2,034 | 1,381 | 1,602 | 832 | 1,218 | 1,035 | 1,112 | 1,977 | 661 | 523 | 1,197 | 1,350 | 1,499 | 1,774 | 18,195 | 47.94 | 37,951 | 100% |
| | Female | 2,193 | 1,545 | 1,622 | 935 | 1,421 | 1,104 | 1,256 | 2,076 | 668 | 658 | 1,287 | 1,506 | 1,637 | 1,848 | 19,756 | 52.06 | | |
| Total | | 4,227 | 2,926 | 3,224 | 1,767 | 2,639 | 2,139 | 2,368 | 4,053 | 1,329 | 1,181 | 2,484 | 2,856 | 3,136 | 3,622 | 37,951 | 100% | 37,951 | 100% |

Source: Population Census 1980, Census and Statistics office, Kab. Bone
Remark: The figures include the data within the boundaries of desa under study.

## Table V.2.3 Present Condition of Farmland by Desa

(ha)

| Kec./Desa | Total Area | Paddy Field | | | | Upland Field | Orchard Field | Total Farmland |
|---|---|---|---|---|---|---|---|---|
| | | Tech. Irri/1 | Desa Irri/2 | Rainfed | Total | | | |
| **Kec. Kahu** | | | | | | | | |
| Sanrego | 2,950 | - | - | 720 | 720 | 110 | 60 | 890 |
| Biru | 2,410 | 250 | - | 520 | 770 | 100 | 30 | 900 |
| Palakka | 2,460 | - | - | 800 | 800 | 170 | 140 | 1,110 |
| Cenrana | 2,280 | - | - | 660 | 660 | 180 | 270 | 1,110 |
| Balle | 2,690 | - | - | 780 | 780 | 380 | 380 | 1,540 |
| Cekkela | 2,860 | - | - | 940 | 940 | 430 | 270 | 1,640 |
| Labuaja | 2,350 | - | - | 660 | 660 | 350 | 240 | 1,250 |
| **Kec. Libureng** | | | | | | | | |
| Teppale | 4,400 | - | 20 | 720 | 740 | 70 | 110 | 920 |
| Pitumpidenge | 4,200 | - | - | 510 | 510 | 50 | 40 | 600 |
| Polewali | 3,200 | - | - | 450 | 450 | 50 | 20 | 520 |
| **Kec. Tonra** | | | | | | | | |
| Pacceng | 1,640 | - | - | 420 | 420 | 180 | 250 | 850 |
| Wassila | 2,000 | - | - | 610 | 610 | 280 | 250 | 1,140 |
| **Kec. Salozekko** | | | | | | | | |
| Wasago | 2,000 | - | - | 470 | 470 | 110 | 500 | 1,080 |
| Patimpeng | 2,600 | - | - | 410 | 410 | 120 | 800 | 1,330 |
| **T o t a l** | 38,040 | 250 | 20 | 8,670 | 8,940 | 2,580 | 3,360 | 14,880 |

Source : Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salozekko
Remarks : /1, Semi-technical irrigation /2, Non-technical irrigation
The figures include the data within the boundaries of desa under study.

## Table V.2.4 Average Farm Size (1980)

| Kec.Desa | Farmland | | | | Total Farm Household | Average Farm Size per Household | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Paddy field (ha) | Upland (ha) | Orchard (ha) | Total (ha) | (nos) | Paddy field | Upland (ha/household) | Orchard | Total |
| **Kec.Kahu** | | | | | | | | | |
| Sanrego | 720 | 110 | 60 | 890 | 755 | 0.95 | 0.15 | 0.08 | 1.18 |
| Biru | 770 | 100 | 30 | 900 | 551 | 1.40 | 0.18 | 0.05 | 1.63 |
| Palakka | 800 | 170 | 140 | 1,110 | 540 | 1.48 | 0.31 | 0.26 | 2.06 |
| Cenrana | 660 | 180 | 270 | 1,110 | 288 | 2.29 | 0.63 | 0.94 | 3.85 |
| Balle | 780 | 380 | 380 | 1,540 | 430 | 1.81 | 0.88 | 0.88 | 3.58 |
| Cekkela | 940 | 430 | 270 | 1,640 | 318 | 2.95 | 1.35 | 0.85 | 5.16 |
| Labuaja | 660 | 350 | 240 | 1,250 | 409 | 1.61 | 0.85 | 0.59 | 3.06 |
| **Kec. Libureng** | | | | | | | | | |
| Teppale | 740 | 70 | 110 | 920 | 682 | 1.08 | 0.10 | 0.16 | 1.35 |
| Pitumpidange | 510 | 50 | 40 | 600 | 278 | 1.83 | 0.18 | 0.14 | 2.16 |
| Polewali | 450 | 50 | 20 | 520 | 257 | 1.75 | 0.19 | 0.08 | 2.02 |
| **Kec. Tonra** | | | | | | | | | |
| Pacceng | 420 | 180 | 250 | 850 | 354 | 1.19 | 0.51 | 0.71 | 2.40 |
| Wassila | 610 | 280 | 250 | 1,140 | 443 | 1.38 | 0.63 | 0.56 | 2.57 |
| **Kec. Salozekko** | | | | | | | | | |
| Wasago | 470 | 110 | 500 | 1,080 | 500 | 0.94 | 0.22 | 1.00 | 2.16 |
| Patimpeng | 410 | 120 | 800 | 1,330 | 468 | 0.88 | 0.26 | 1.71 | 2.84 |
| Total/Average | 8,940 | 2,580 | 3,360 | 14,880 | 6,273 | 1.42 | 0.40 | 0.54 | 2.36 |

Source : Census and Statistics office, Kab.Bone
Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salozekko
Remark : The figures include the data within the boundaries of desa under study

Table V.2.5 Land Tenure Condition

(Unit : %)

| Kec. Desa | Land Owner | Land Owner cum Tenant | Tenant |
|---|---|---|---|
| Kec. Kahu | | | |
| Sanrego | 68.1 | 24.5 | 7.4 |
| Biru | 49.6 | 49.5 | 0.9 |
| Palakka | 89.9 | 8.2 | 1.9 |
| Cenrana | 49.3 | 49.9 | 0.9 |
| Balle | 52.6 | 32.1 | 15.3 |
| Cakkela | 47.2 | 46.5 | 6.3 |
| Labuaja | 70.6 | 24.0 | 5.4 |
| Kec. Libureng | | | |
| Tappale | 91.2 | 7.3 | 1.5 |
| Pitumpidange | 89.6 | 4.3 | 6.1 |
| Polewali | 69.6 | 14.8 | 15.6 |
| Kec. Tonra | | | |
| Paccing | 63.8 | 32.5 | 3.7 |
| Massila | 96.5 | - | 3.5 |
| Kec. Salomekko | | | |
| Masago | 70.8 | 29.2 | - |
| Patimpeng | 59.6 | 40.2 | 0.2 |
| Average | 69.2 | 25.9 | 4.9 |

Source : Census and Statistics office, Kab. Bone
Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salomekko.

Remark : The figures include the data within the boundaries of Desa under study.

Table V.2.6 Land Holding Size Distribution

(Unit : Nos of farmer)

| Kec. Desa | Land Holding Size (ha) | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | - 0.5 | 0.5-1.0 | 1.0-1.5 | 1.5-2.0 | 2.0-5.0 | 5.0 - | |
| Kec. Kahu | | | | | | | |
| Sanrego | 146 | 171 | 96 | 90 | 101 | 95 | 699 |
| Biru | 158 | 102 | 82 | 78 | 69 | 57 | 546 |
| Palakka | 180 | 91 | 107 | 74 | 46 | 32 | 530 |
| Cenrana | 68 | 57 | 50 | 45 | 36 | 29 | 285 |
| Balle | 114 | 102 | 53 | 43 | 31 | 21 | 364 |
| Cakkela | 85 | 65 | 56 | 38 | 30 | 24 | 298 |
| Labuaja | 150 | 82 | 63 | 41 | 31 | 20 | 387 |
| Kec. Libureng | | | | | | | |
| Tappale | 165 | 133 | 117 | 106 | 83 | 68 | 672 |
| Pitumpidange | 104 | 41 | 36 | 33 | 26 | 21 | 261 |
| Polewali | 113 | 41 | 26 | 17 | 12 | 8 | 217 |
| Kec. Tonra | | | | | | | |
| Paccing | 57 | 119 | 60 | 60 | 30 | 12 | 340 |
| Massila | 125 | 149 | 48 | 39 | 47 | 19 | 427 |
| Kec. Salomekko | | | | | | | |
| Masago | 230 | 81 | 63 | 51 | 42 | 33 | 500 |
| Patimpeng | 205 | 78 | 61 | 49 | 41 | 32 | 466 |
| Total | 1,902 | 1,312 | 918 | 764 | 625 | 471 | 5,992 |
| (%) | (31.7) | (21.9) | (15.3) | (12.8) | (10.4) | (7.9) | (100) |

Source : Census and Statistics office. Kab.Bone
Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salomekko.

Remark : The figures include the data within the boundaries of Desa under study.

Table V.2.7 Planted, Harvested and Damaged Area of Paddy, Polowijo and Upland Crops (1977-1981)

| Crops | Planted Area | Damaged Area | Harvested Area | Crops | Planted/Harvested Area |
|---|---|---|---|---|---|
| Paddy | 7,920 | 1,330 | 6,590 | Upland Crops | 4,340 |
| Wet Season Paddy | | | | Maize | |
| 1977 | 5,470 | 2,790 | 2,680 | 1977 | 3,070 |
| 1978 | 7,940 | 10 | 7,930 | 1978 | 2,740 |
| 1979 | 7,160 | 3,330 | 3,830 | 1979 | 2,860 |
| 1980 | 7,380 | 30 | 7,350 | 1980 | 2,310 |
| 1981 | 7,650 | 210 | 7,860 | 1981 | 1,350 |
| Average | 7,120 | 1,280 | 5,840 | Average | 2,465 |
| Dry Season Paddy | | | | Groundnuts | |
| 1977/78 | 500 | 110 | 390 | 1977 | 1,650 |
| 1978/79 | 620 | - | 620 | 1978 | 1,570 |
| 1979/80 | 730 | 10 | 720 | 1979 | 1,480 |
| 1980/81 | 950 | 120 | 830 | 1980 | 1,550 |
| 1981/82 | 1,220 | - | 1,220 | 1981 | 920 |
| Average | 800 | 50 | 750 | Average | 1,435 |
| Polowijo Crops | 1,760 | - | 1,760 | Cassava | |
| Groundnuts | | | | 1977 | 250 |
| 1977/78 | 1,730 | - | 1,730 | 1978 | 400 |
| 1978/79 | 1,580 | - | 1,580 | 1979 | 240 |
| 1979/80 | 1,800 | - | 1,800 | 1980 | 150 |
| 1980/81 | 1,930 | - | 1,930 | 1981 | 70 |
| 1981/82 | 1,330 | - | 1,330 | | |
| Average | 1,670 | - | 1,670 | Average | 220 |
| Greenbeans | | | | Sweet Potato | |
| 1977/78 | 60 | - | 60 | 1977 | 280 |
| 1978/79 | 70 | - | 70 | 1978 | 340 |
| 1979/80 | 100 | - | 100 | 1979 | 290 |
| 1980/81 | 110 | - | 110 | 1980 | 80 |
| 1981/82 | 90 | - | 90 | 1981 | 60 |
| Average | 85 | - | 85 | Average | 210 |

Remark : The figures include the data within the boundaries of Kecs under study.

Table V.2.8 Unit Farm Inputs and Labour Requirement per Ha under Present Crop Cultivation

| Description | | Paddy Cultivation | | | Tolowijo Crops | | |
|---|---|---|---|---|---|---|---|
| | | Wet Season Paddy | | Dry Season Paddy | Maize | Groundnuts | Green beans |
| | | BIMAS/1 | Non-BIMAS | | | | |
| 1. Farm Inputs | | | | | | | |
| (1) Seed (kg) | | 25 | 30 | 30 | 30 | 80 | 35 |
| (2) Fertilizer | Urea (kg) | 100 | - | 100 | - | 50 | 50 |
| | T.S.P. (kg) | 50 | - | - | - | - | |
| (3) Agro-Chemical | Insecticide (lit)/2 | 2 | - | 2 | - | 1.0 | 1.0 |
| | Rodentiside (kg) /3 | 2 | - | 2 | - | - | - |
| 2. Labour (man/day) | | | | | | | |
| (1) Nursery Preperetion | | 4.1 | 4.1 | 4.1 | | | |
| (2) Plowing | (Land Preparation)/4 | 11.3 | 11.3 | 12.3 | 8.0 | 10.0 | 8.0 |
| (3) Harrowing/Puddling | | 13.6 | 13.6 | 14.5 | | | |
| (4) Transplanting | (Seeding)/4 | 25.7 | 25.7 | 25.7 | 4.0 | 6.0 | 10.0 |
| (5) Weeding | | 11.9 | 11.9 | 12.5 | 14.0 | 20.0 | 20.0 |
| (6) Fertilizer Application | | 3.0 | - | 2.0 | - | 1.0 | 1.0 |
| (7) Chemical Application | | 2.0 | - | 2.0 | - | 2.0 | 2.0 |
| (8) Harvesting | | 18.0 | 15.0 | 19.0 | | | |
| (9) Threshing | (Harvesting)/4 | 14.3 | 10.3 | 15.2 | 16.0 | 22.0 | 20.0 |
| (10) Drying | | 4.0 | 3.5 | 3.6 | | | |
| (11) Transportation | | 9.8 | 8.8 | 9.0 | 3.0 | 3.0 | 2.5 |
| (12) Water Management | | 1.5 | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 |
| | | 119.2 | 105.2 | 121.9 | 46.0 | 65.0 | 64.5 |
| 3. Miscellaneous | | | | | | | |
| Bags, mats, sicle, etc. | | about 12% of total production cost | | | about 10% of total production cost | | |

Remarks : /1 ; Refer to the Lappo Ase Operation 1981/82
/2 ; Diozinon
/3 ; Klerat RM
/4 ; Work item for Tolowijo Crops Cultivation

Source : Agriculture office in Kab. Bone and Data collected by the field survey

Table V.2.9 Unit Yield of Paddy (1977-1981)

(Unit: Dried Paddy ton/ha)

| Kec. Desa | Wet Season Paddy | | | | | | Dry Season Paddy | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1977 | 1978 | 1979 | 1980 | 1981 | Average | 1977/78 | 1978/79 | 1979/80 | 1980/81 | 1981/82 | Average |
| Kec. Kahu | | | | | | | | | | | | |
| Sanrego | 1.58 | 2.23 | 1.79 | 2.44 | 2.48 | 2.10 | - | - | - | - | - | - |
| Biru | 1.69 | 2.32 | 1.81 | 2.40 | 2.61 | 2.17 | 2.23 | 2.41 | 2.67 | 2.98 | 2.33 | 2.49 |
| Palakka | 1.58 | 2.24 | 1.79 | 2.51 | 2.56 | 2.14 | - | - | - | - | - | - |
| Cenrana | 1.68 | 2.25 | 1.79 | 2.39 | 2.60 | 2.14 | - | - | - | - | - | - |
| Balle | 1.48 | 2.19 | 1.79 | 2.41 | 2.65 | 2.10 | - | - | - | - | - | - |
| Cakkela | 1.57 | 2.22 | 1.81 | 2.38 | 2.58 | 2.11 | - | - | - | - | - | - |
| Labuaja | 1.64 | 2.28 | 1.81 | 2.39 | 2.64 | 2.15 | - | - | - | - | - | - |
| Kec. Libureng | | | | | | | | | | | | |
| Tappale | 2.16 | 2.67 | 2.05 | 2.45 | 2.48 | 2.36 | 2.02 | 2.35 | 2.53 | 2.54 | 2.98 | 2.48 |
| Pitumpidange | 2.70 | 2.80 | 2.37 | 2.76 | 2.83 | 2.69 | 2.10 | 2.22 | 2.72 | 2.44 | 2.92 | 2.48 |
| Polewali | 2.68 | 2.61 | 2.37 | 2.47 | 2.77 | 2.58 | 2.10 | 2.14 | 2.64 | 2.95 | 2.92 | 2.55 |
| Kec. Tonra | | | | | | | | | | | | |
| Paccing | 1.73 | 2.18 | 1.74 | 2.07 | 2.16 | 1.98 | - | - | - | - | - | - |
| Massila | 1.89 | 2.40 | 1.92 | 2.29 | 2.38 | 2.18 | - | - | - | - | - | - |
| Kec. Salomekko | | | | | | | | | | | | |
| Masago | 1.87 | 2.37 | 2.15 | 2.51 | 2.53 | 2.29 | 2.11 | 2.28 | 2.64 | 2.73 | 2.79 | 2.51 |
| Patimpeng | 1.86 | 2.36 | 2.14 | 2.50 | 2.51 | 2.27 | 2.11 | 2.27 | 2.63 | 2.71 | 2.78 | 2.50 |
| Average | 1.86 | 2.37 | 1.95 | 2.43 | 2.55 | 2.23 | 2.11 | 2.28 | 2.64 | 2.72 | 2.78 | 2.50 |

Source : Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salomekko

Table V.2.10 Annual Production of Paddy (1977-1981, Average)

| Keo.Desa | Wet Season Paddy | | | | | Dry Season Paddy | | | | | Annual Production |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | P.A. /1 (ha) | D.A. /2 (ha) | H.A. /3 (ha) | U.Y. /4 (ton/ha) | Pro. /5 (tons) | P.A. (ha) | D.A. (ha) | H.A. (ha) | U.Y. (ton/ha) | Pro. (tons) | (tons) |
| Keo. Kahu | | | | | | | | | | | |
| Sanrego | 680 | 115 | 565 | 2.10 | 1,190 | - | - | - | - | - | 1,190 |
| Diru | 670 | 110 | 560 | 2.17 | 1,220 | 270 | 5 | 265 | 2.49 | 660 | 1,880 |
| Palakka | 700 | 135 | 565 | 2.14 | 1,210 | - | - | - | - | - | 1,210 |
| Cenrana | 580 | 95 | 485 | 2.14 | 1,040 | - | - | - | - | - | 1,040 |
| Balle | 720 | 140 | 580 | 2.10 | 1,220 | - | - | - | - | - | 1,220 |
| Cekkela | 810 | 130 | 680 | 2.11 | 1,630 | - | - | - | - | - | 1,630 |
| Labuaja | 580 | 140 | 440 | 2.15 | 950 | - | - | - | - | - | 950 |
| Keo. Liburong | | | | | | | | | | | |
| Tappalo | 390 | 60 | 330 | 2.36 | 780 | 260 | 30 | 230 | 2.48 | 570 | 1,350 |
| Pitumpidange | 270 | 35 | 235 | 2.69 | 630 | 120 | 15 | 105 | 2.48 | 260 | 890 |
| Polewali | 260 | 30 | 230 | 2.58 | 590 | 90 | - | 90 | 2.55 | 230 | 820 |
| Keo. Tonra | | | | | | | | | | | |
| Pacoing | 270 | 50 | 220 | 1.98 | 440 | - | - | - | - | - | 440 |
| Massilla | 490 | 90 | 400 | 2.18 | 870 | - | - | - | - | - | 870 |
| Keo. Salomekko | | | | | | | | | | | |
| Masago | 370 | 80 | 290 | 2.29 | 660 | 45 | - | 45 | 2.51 | 110 | 770 |
| Patimpeng | 330 | 70 | 260 | 2.27 | 590 | 20 | - | 20 | 2.50 | 50 | 640 |
| Total/Average | 7,120 | 1,280 | 5,840 | 2.23 | 13,020 | 805 | 50 | 750 | 2.50 | 1880 | 14,910 |

Remarks : /1 P.A. ; Planted Area, /2 D.A. ; Damaged Area, /3 H.A. ; Harvested Area.
/4 U.Y. ; Unit Yield, /5 Pro. : Production.
The figures include the data within the boundaries of Desa under study
Sources : Kecamatan offices, Keo.Kahu, Liburong, Tonra and Salomekko

Table V.2.11 Production of Polowijo Crops (1977-1981, Average)

| Kec. Desa | Groundnuts | | | Greenbeans | | |
|---|---|---|---|---|---|---|
| | Planted Area (ha) | Unit Yield (ton/ha) | Production (tons) | Planted Area (ha) | Unit Yield (ton/ha) | Production (tons) |
| Kec. Kahu | | | | | | |
| Sarrego | 150 | 0.72 | 108 | 5 | 0.52 | 3 |
| Biru | 170 | 0.75 | 127 | 5 | 0.49 | 2 |
| Palakka | 230 | 0.75 | 172 | 10 | 0.31 | 3 |
| Cenrana | 250 | 0.72 | 180 | 10 | 0.32 | 3 |
| Balle | 290 | 0.74 | 214 | 10 | 0.31 | 3 |
| Cakkela | 220 | 0.73 | 161 | 5 | 0.32 | 2 |
| Labuaja | 160 | 0.71 | 114 | 10 | 0.49 | 5 |
| Kec. Libureng | | | | | | |
| Tappale | 20 | 0.69 | 14 | - | - | - |
| Pitumpidange | 10 | 0.70 | 7 | - | - | - |
| Polewali | 5 | 0.69 | 3 | - | - | - |
| Kec. Tonra | | | | | | |
| Paccing | - | - | - | 5 | 0.40 | 2 |
| Massila | - | - | - | 15 | 0.49 | 7 |
| Kec. Salomekko | | | | | | |
| Masago | 85 | 0.72 | 61 | 5 | 0.41 | 2 |
| Patimpeng | 80 | 0.72 | 58 | 5 | 0.41 | 2 |
| Total/Average | 1,670 | 0.73 | 1,219 | 85 | 0.40 | 34 |

Source : Kecamatan offices, Kec.Kahu, Libureng, Tonra and Salomekko
Remark : The figures include the data within the boundaries of Desa under study.

Table V.2.12 Production of Upland Crops (1977-1981, Average)

| Kec.Desa | Maize | | | Groundnuts | | | Cassava | | | Sweet Potato | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | P.A. /1 (ha) | U.Y. /2 (ton/ha) | Pro. /3 (tons) | P.A. (ha) | U.Y. (ton/ha) | Pro. (tons) | P.A. (ha) | U.Y. (ton/ha) | Pro. (tons) | P.A. (ha) | U.Y. (ton/ha) | Pro. (tons) |
| Kec. Kahu | | | | | | | | | | | | |
| Cenrego | 130 | 0.64 | 83 | 50 | 0.53 | 26 | 20 | 6.01 | 120 | 25 | 3.36 | 84 |
| Biru | 100 | 0.65 | 65 | 40 | 0.56 | 22 | 20 | 5.96 | 119 | 20 | 3.52 | 70 |
| Palakka | 210 | 0.62 | 130 | 140 | 0.55 | 77 | 25 | 5.99 | 150 | 30 | 3.36 | 101 |
| Cenrene | 180 | 0.65 | 117 | 190 | 0.53 | 101 | 20 | 5.96 | 119 | 25 | 3.37 | 84 |
| Belle | 420 | 0.62 | 260 | 230 | 0.56 | 129 | 25 | 5.94 | 148 | 30 | 3.36 | 101 |
| Cekkela | 460 | 0.61 | 280 | 230 | 0.54 | 124 | 20 | 6.00 | 120 | 15 | 3.36 | 51 |
| Labuaja | 350 | 0.63 | 220 | 190 | 0.58 | 110 | 30 | 6.02 | 181 | 20 | 3.38 | 68 |
| Kec. Liburong | | | | | | | | | | | | |
| Tappale | 55 | 0.60 | 33 | 15 | 1.06 | 16 | - | - | - | - | - | - |
| Pitumpidange | 25 | 0.81 | 20 | 20 | 1.15 | 23 | 5 | 6.01 | 30 | - | - | - |
| Polewali | 30 | 0.56 | 16 | 20 | 1.05 | 21 | 5 | 6.20 | 31 | 5 | 3.21 | 16 |
| Kec. Tonra | | | | | | | | | | | | |
| Pecoing | 90 | 0.77 | 69 | 180 | 0.62 | 112 | 10 | 5.90 | 59 | - | - | - |
| Massila | 165 | 0.61 | 100 | 65 | 0.60 | 39 | 15 | 5.75 | 86 | 15 | 3.11 | 47 |
| Kec. Salomekko | | | | | | | | | | | | |
| Massego | 115 | 0.65 | 74 | 40 | 0.72 | 29 | 15 | 5.98 | 90 | 10 | 2.50 | 25 |
| Patimpeng | 135 | 0.64 | 86 | 25 | 0.71 | 18 | 10 | 5.87 | 59 | 15 | 2.50 | 38 |
| Total/Average | 2,465 | 0.63 | 1,553 | 1,435 | 0.59 | 847 | 220 | 5.96 | 1,312 | 210 | 3.26 | 685 |

Remarks : /1 P.A. : Planted Area, /2 U.Y. : Unit Yield. /3 Pro. : Production.
The figures include the data within the boundaries of Desa under study.

Source : Kecamatan offices, Kec. Kahu, Liburong, Tonra and Salomekko.

Table V.2.13 Population of Livestock (1981)

(Unit : head)

| Kec.Desa | Cattle | Buffalo | Horse | Goat | Fowl | Duck |
|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | |
| Sanrego | 1707 | 834 | 278 | 52 | 3,703 | 98 |
| Biru | 1850 | 681 | 259 | 46 | 3,804 | 184 |
| Palakka | 759 | 870 | 225 | 33 | 2,907 | 107 |
| Cenrana | 963 | 412 | 387 | 90 | 1,986 | 118 |
| Balle | 883 | 322 | 102 | 85 | 1,926 | 186 |
| Cakkela | 1,005 | 383 | 136 | 35 | 1,528 | 116 |
| Labuaja | 1,460 | 219 | 127 | 61 | 2,416 | 203 |
| Kec. Libureng | | | | | | |
| Tappale | 293 | 38 | 74 | 25 | 612 | 70 |
| Pitumpidange | 89 | 23 | 28 | 29 | 461 | 22 |
| Polewali | 118 | 92 | 34 | 27 | 358 | 48 |
| Kec. Tonra | | | | | | |
| Paccing | 337 | 272 | 129 | 139 | 402 | 175 |
| Massila | 400 | 150 | 145 | 150 | 1,500 | 750 |
| Kec. Salomekko | | | | | | |
| Masago | 1037 | 394 | 305 | 55 | 1,901 | 148 |
| Patimpeng | 1298 | 532 | 310 | 48 | 3,211 | 127 |
| Total | 12,199 | 5,222 | 2,539 | 875 | 26,715 | 2,352 |

Source : Livestock Services office, Kab.Bone
Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salomekko

Remark : The figures include the data within the boundaries of Desa under study.

## Table V.2.14 Surplus and Deficit of Paddy

| Kec./Desa | (1) Annual Planted Area | (2) Annual Production of Dried Paddy | (3) Seed Stock (35kg/ha) (1)x0.035 | (4) Handling, Storage Losses (2)x5% | (5) Livestock Feed (2)x2% | (6) Available for Consumption of Dried Paddy (2)-(3+4+5) | (7) Population (1981) | (8) Annual Consumption of Dried Paddy (7)x230kg/capita | (9) Balance of Dried Paddy (6)-(8) |
|---|---|---|---|---|---|---|---|---|---|
| | (ha) | (tons) | (tons) | (tons) | (tons) | (tons) | (persons) | (tons) | (tons) |
| Kec. Kahu | | | | | | | | | |
| Sanrego | 680 | 1,190 | 24 | 60 | 24 | 1,082 | 4,333 | 996 | 36 |
| Biru | 940 | 1,890 | 33 | 94 | 38 | 1,725 | 2,869 | 660 | 1,065 |
| Palakka | 700 | 1,210 | 25 | 61 | 24 | 1,100 | 3,263 | 750 | 350 |
| Cenrana | 580 | 1,040 | 20 | 52 | 21 | 947 | 1,750 | 403 | 544 |
| Balle | 720 | 1,220 | 25 | 61 | 24 | 1,110 | 2,958 | 680 | 430 |
| Cakkela | 810 | 1,630 | 28 | 81 | 83 | 1,488 | 2,140 | 492 | 996 |
| Labuaja | 580 | 950 | 20 | 48 | 19 | 863 | 2,307 | 531 | 332 |
| Kec. Libureng | | | | | | | | | |
| Tappale | 650 | 1,350 | 23 | 67 | 27 | 1,233 | 4,114 | 946 | 287 |
| Pitumpidange | 390 | 890 | 14 | 45 | 18 | 813 | 1,347 | 310 | 503 |
| Polewaki | 350 | 820 | 12 | 41 | 16 | 751 | 1,196 | 275 | 476 |
| Kec. Tonra | | | | | | | | | |
| Paccing | 270 | 440 | 9 | 22 | 9 | 400 | 2,496 | 574 | -174 |
| Massila | 490 | 870 | 17 | 43 | 17 | 793 | 2,911 | 670 | 123 |
| Kec. Salomekko | | | | | | | | | |
| Massago | 415 | 770 | 15 | 38 | 15 | 702 | 3,138 | 722 | -20 |
| Patimpeng | 350 | 640 | 12 | 32 | 13 | 583 | 3,622 | 833 | -250 |
| Total | 7,925 | 14,910 | 277 | 745 | 298 | 13,590 | 34,444 | 8,842 | 4,748 |

Remarks: Annual palnted area and annual production of dried paddy are carried out by 5 years average, as referred to Table V.2.10.

Sources: Annual Report of Agriculture office, 1978/79 and 1979/80, Kab. Bone
Food Balance Sheet in Indonesia, 1979, Central Bureau of Statistics

Table V.2.15 Retail Prices of Major Crops (1977-1981)

| Crops | 1977 | 1978 | 1979 | 1980 | 1981 |
|---|---|---|---|---|---|
| 1. Milled Rice | | | | | |
| Kab. Bone | 113.8 | 125.0 | 119.4 | 156.9 | 116.1 |
| South Sulawesi | 115.3 | 128.9 | 164.5 | 207.8 | 184.9 |
| 2. Dried Paddy | | | | | |
| Kab. Bone | 56.9 | 62.5 | 59.5 | 78.3 | 83.3 |
| South Sulawesi | 78.4 | 87.6 | 111.9 | 141.3 | 108.9 |
| 3. Maize | | | | | |
| Kab. Bone | 48.8 | 37.1 | 54.2 | 69.2 | 69.2 |
| South Sulawesi | 57.2 | 64.1 | 72.0 | 86.0 | 88.0 |
| 4. Groundnuts | | | | | |
| Kab. Bone | 250.6 | 275.5 | 367.8 | 403.8 | 344.2 |
| South Sulawesi | 261.0 | 283.0 | 328.0 | 467.0 | 564.0 |
| 5. Greenbeans | | | | | |
| Kab. Bone | 200.0 | 157.9 | 319.4 | 317.9 | 274.6 |
| South Sulawesi | 219.0 | 232.0 | 286.0 | 327.0 | 378.0 |
| 6. Cassava | | | | | |
| Kab. Bone | 47.5 | 50.5 | 60.5 | 63.5 | 85.0 |
| South Sulawesi | 50.0 | 54.4 | 61.1 | 108.0 | 132.0 |
| 7. Sweet Potatoes | | | | | |
| Kab. Bone | 57.7 | 60.0 | 75.0 | 100.5 | 115.0 |
| South Sulawesi | 55.5 | 60.2 | 62.4 | 124.0 | 158.0 |

Sources : Census and Statistics offices and Agriculture offices, South Sulawesi Province and Kab. Bone

Table V.2.16 Farm Gate Prices of Farm Products and Inputs (1981)

(Unit : Rp/Kg, lit)

| Description | | Price |
|---|---|---|
| 1. Farm Products | | |
| Dried paddy | | 85 |
| Maize | | 70 |
| Groundnuts | | 260 |
| Greenbeans | | 205 |
| Casava | | 65 |
| Sweet potato | | 85 |
| 2. Seed | | |
| Dried paddy | | 150 |
| Maize | | 100 |
| Groundnuts | | 400 |
| Greenbeans | | 300 |
| 3. Fertilizer | | |
| Urea | | 70 |
| T.S.P. (Triple Super Phosphate) | | 70 |
| 4. Agro-Chemicals | | |
| Insecticide | Furadan 3G | 350 |
| | Diazinon 10G | 1,250 |
| | Dimecron 50 | 1,230 |
| | Sevin 85SP | 1,230 |
| Fungicide | Agrothion 50EC | 1,230 |
| | Bassacinon | 1,250 |
| Rodenticide | Klerat RM | 500 |
| 5. Labour | | |
| Heavy Worker | | 1,000 |
| Light Worker | | 800 |
| Female Worker | | 500 |

Source : Agriculture office, Kab. Bone
P.T. PERTANI, Ujung Pandang
Kecamatan and Desa offices in in and around the study area.

Table V.2.17 Production Cost of Paddy under Present Condition

| Description | Unit Price | Wet Season Paddy | | | | Dry Season Paddy | |
|---|---|---|---|---|---|---|---|
| | | BIMAS Package | | Non - BIMAS | | | |
| 1. Farm Inputs | | | | | | | |
| (1) Seed | Rp. 150/Kg | 25 Kg | 3,750 | 30 Kg | 4,500 | 30 Kg | 4,500 |
| (2) Fertilizers | | | | | | | |
| Urea | Rp. 70/Kg | 100 Kg | 7,000 | - | - | 100 Kg | 7,000 |
| T.S.P. | Rp. 70/Kg | 50 Kg | 3,500 | - | - | - | - |
| (3) Agro-Chemicals | | | | | | | |
| Insecticide | Rp. 1,230/lit | 2 lit | 2,460 | - | - | 2 lit | 2,460 |
| Rodenticide | Rp. 500/Kg | 2 Kg | 1,000 | - | - | 2 Kg | 1,000 |
| Sub-total | | | 17,710 | | 4,500 | | 14,960 |
| 2. Labour Cost | (Rp./day) | (man-day) | | (man-day) | | (man-day) | |
| (1) Nursery Preparation | 1,000 | 4.1 | 4,100 | 4.1 | 4,100 | 4.1 | 4,100 |
| (2) Plowing | 1,100 | 11.3 | 12,430 | 11.3 | 12,430 | 12.3 | 13,530 |
| (3) Harrowing/Puddling | 1,100 | 13.6 | 14,960 | 13.6 | 14,960 | 14.5 | 15,950 |
| (4) Transplanting | 1,000 | 25.7 | 25,700 | 25.7 | 25,700 | 25.7 | 25,700 |
| (5) Weeding | 1,000 | 11.9 | 11,900 | 11.9 | 11,900 | 12.5 | 12,700 |
| (6) Fertilizer Application | 500 | 3.0 | 1,500 | - | - | 2.0 | 1,000 |
| (7) Chemical Application | 1,000 | 2.0 | 2,000 | - | - | 2.0 | 2,000 |
| (8) Harvesting | 750 | 18.0 | 13,500 | 15.0 | 11,250 | 19.0 | 14,250 |
| (9) Threshing | 750 | 14.3 | 10,730 | 10.3 | 7,730 | 15.2 | 11,400 |
| (10) Drying | 750 | 4.0 | 3,000 | 3.5 | 2,620 | 3.6 | 2,700 |
| (11) Transplanting | 500 | 9.8 | 4,900 | 8.8 | 4,400 | 9.0 | 4,500 |
| (12) Water Management | 500 | 1.5 | 750 | 1.0 | 500 | 2.0 | 1,000 |
| Sub-total | | 119.2 | 105,470 | 105.2 | 95,590 | 121.9 | 108,830 |
| 3. Miscellaneous (Bags, moto, sicles, tax, etc.) | 12% of (1 + 2) | | 14,720 | | 12,010 | | 14,810 |
| Total (1 + 2 + 3) | | | 137,900 | | 112,100 | | 138,600 |

Table V.2.18 Production Cost of Polowijo Crops under Present Condition

(Unit : Rp/ha)

| Description | Unit Price | Groundnuts | | Greenbeans | |
|---|---|---|---|---|---|
| 1. Farm Inputs | | | | | |
| (1) Seed | | 80 Kg | 32,000 | 25 Kg | 7,500 |
| (2) Fertilizer Urea | Rp. 70/Kg | 50 Kg | 3,500 | 50 Kg | 3,500 |
| (3) Agro-chemical Insecticide | Rp. 1,230/lit | 1 lit | 1,230 | 1 lit | 1,230 |
| Sub-total | | | 36,730 | | 12,230 |
| 2. Labour Cost | (Rp./day) | | | (Rp./day) | |
| (1) Land Preparation | 1,100 | 10.0 | 11,000 | 8.0 | 8,800 |
| (2) Seeding | 1,000 | 6.0 | 6,000 | 12.0 | 12,000 |
| (3) Weeding | 800 | 20.0 | 16,000 | 20.0 | 16,000 |
| (4) Fertilizer Application | 500 | 1.0 | 500 | 1.0 | 500 |
| (5) Chemical Application | 1,500 | 2.0 | 2,000 | 2.0 | 3,000 |
| (6) Harvesting/Drying | 500 | 22.0 | 11,000 | 20.0 | 10,000 |
| (7) Transportation, Others | 1,000 | 4.0 | 4,000 | 4.0 | 4,000 |
| Sub-total | | 65.0 | 51,300 | 67.0 | 51,100 |
| 3. Miscellaneous Cost | | | | | |
| (Equipment, bags, tax, etc.) about 10% of (1 + 2) | | | 8,970 | | 6,670 |
| T o t a l (1 + 2 + 3) | | | 97,000 | | 70,000 |

Source : Agriculture office, Kab. Bone and Kecamatan office, Kec. Kahu, Libureng Tonra and Salozekko
Data collected by the field survey.

Table V.2.19 Production Cost of Upland Crops under Present Condition

(Unit : Rp./ha)

| Description | Maize | | Groundnuts | | Cassava | | Sweet Potato | |
|---|---|---|---|---|---|---|---|---|
| 1. Farm Inputs | | | | | | | | |
| (1) Seed | 30 Kg | 3,000 | 80 Kg | 32,000 | (17,600) | 5,000 | (13,000) | 5,000 |
| (2) Fertilizer Urea | | - | 50 Kg | 3,500 | | - | | - |
| (3) Agro-Chemicals Insecticide | | - | 1 lit | 1,230 | | - | | - |
| Sub-total | | 3,000 | | 36,730 | | 5,000 | | 5,000 |
| 2. Labour Cost | (man-day) | | (man-day) | | (man-day) | | (man-day) | |
| (1) Land Preparation | 8.0 | 8,800 | 8.0 | 8,800 | 20.0 | 22,000 | 20.0 | 22,000 |
| (2) Seeding | 4.0 | 4,000 | 5.5 | 5,500 | 10.0 | 10,000 | 20.0 | 20,000 |
| (3) Weeding | 14.0 | 11,200 | 16.0 | 12,800 | 10.0 | 8,000 | 8.0 | 6,400 |
| (4) Plant Control /1 | - | - | 2.5 | 3,500 | - | - | - | - |
| (5) Harvesting/Drying | 18.0 | 9,000 | 22.0 | 11,000 | 22.0 | 11,000 | 15.0 | 7,500 |
| (6) Transportation | 2.0 | 2,000 | 4.0 | 4,000 | 20.0 | 20,000 | 20.0 | 20,000 |
| Sub-total | 46.0 | 35,000 | 58.0 | 45,600 | 82.0 | 71,000 | 83.0 | 75,900 |
| 3. Miscellaneous | | | | | | | | |
| (Equipment, bags, tax, etc) About 10% of (1+2) | | 4,000 | | 8,670 | | 7,000 | | 8,100 |
| T o t a l (1 + 2 + 3) | | 42,000 | | 91,000 | | 83,000 | | 89,000 |

Source : Agriculture office, Kab. Bone and Kecamatan offices, Kec. Kahu, Libureng, Tonra and Salozekko.
Data collected by the field survey

Remark : /1 ; Plant control works are included fertilizer and agro-chemical application.

Table V.2.20 Annual Net Production Value under Present Condition

| Crops | Planted Area | Harvested Area | Unit Yield | Production | Unit Price | Gross Production Value | Unit Production Value | Total Production Value | Net Production Value |
|---|---|---|---|---|---|---|---|---|---|
| | (ha) | (ha) | (tons/ha) | (tons) | (Rp/kg) | ($10^6$Rp) | ($10^3$Rp/ha) | ($10^6$Rp) | ($10^6$Rp) |
| **Paddy** | 7,920 | 6,590 | | 14,900 | | 1,267 | | 1,000 | 267 |
| Wet season paddy | 7,120 | 5,840 | 2.23 | 13,020 | 85 | 1,107 | 125 | 890 | 217 |
| Dry season paddy | 800 | 750 | 2.50 | 1,880 | 85 | 1,610 | 138 | 110 | 50 |
| **Polowijo Crops** | 1,750 | 1,750 | | 1,245 | | 324 | | 168 | 156 |
| Groundnuts | 1,670 | 1,670 | 0.73 | 1,220 | 260 | 317 | 97 | 162 | 155 |
| Greenbeans | 80 | 80 | 0.40 | 30 | 205 | 7 | 70 | 6 | 1 |
| **Upland Crops** | 4,330 | 4,330 | | 4,400 | | 473 | | 272 | 201 |
| Maize | 2,470 | 2,470 | 0.63 | 1,560 | 70 | 109 | 42 | 104 | 5 |
| Groundnuts | 1,440 | 1,440 | 0.59 | 850 | 260 | 221 | 91 | 131 | 90 |
| Cassava | 220 | 220 | 5.96 | 1,310 | 65 | 85 | 83 | 18 | 67 |
| Sweet potato | 210 | 210 | 3.26 | 680 | 85 | 58 | 89 | 19 | 39 |
| Total | - | - | - | - | - | 2,064 | - | 1,438 | 624 |

Remarks: The figures are estimated based on the past 5 years data obtained from Kecamatan offices and the farm economy survey.
The figures include the data within the boundaries of Desa under study.

Table V.3.1 Present Condition of Agricultural Support Service (1981)

| Kec. Desa | Village Unit | BUUD/KUD | Farmers Group | Member | Kiosk | Warehouse | Ricemill | PPL |
|---|---|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | | | |
| Sanrego | - | - | 2 | 50 | 1 | - | 6 | - |
| Biru | Biru | - | 3 | 76 | 1 | - | 5 | 1 |
| Palakka | - | - | 2 | 50 | 1 | - | 5 | - |
| Cenrana | - | - | 2 | 75 | 1 | - | 3 | 1 |
| Balle | Balle | Tenrisangkae | 2 | 51 | 1 | 2 | 3 | 1 |
| Cakkela | - | - | 2 | 60 | 1 | - | 2 | 1 |
| Labuaja | - | - | 2 | 51 | 1 | - | 5 | 1 |
| Kec. Libureng | | | | | | | | |
| Tappale | - | - | - | - | - | - | 14 | - |
| Pitumpidenge | - | - | 2 | 50 | 1 | - | 4 | 1 |
| Polewali | - | - | 2 | 50 | 1 | - | 3 | 1 |
| Kec. Tonra | | | | | | | | |
| Pacceng | Pacceng | - | 2 | 54 | 1 | - | 2 | - |
| Wassila | - | - | 2 | 65 | 1 | - | 2 | - |
| Kec. Salorekko | | | | | | | | |
| Masago | - | - | 2 | 57 | 1 | - | 5 | - |
| Patimpeng | - | - | 2 | 81 | 1 | - | 6 | 1 |
| Total | 3 | 1 | 27 | 770 | 13 | 2 | 65 | 10 |

Source : Kecamatan offices, Kec.Kahu, Libureng, Tonra and Salorekko
Remark : The figures of data include within the boundaries of Desa under study

Table V.3.2 Area under BIMAS/INMAS and INSUS Program (1982)

(Unit : ha )

| Kec. Desa | Name of Rural Extension Center | BIMAS Program | | | INMAS Program | | | BIMAS/INMAS | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | INSUS | INMUM | Total | INSUS | INMUM | Total | INSUS | INMUM | TOTAL |
| Kec. Kahu | | | | | | | | | | |
| Sanrego | Palattae | - | 101 | 101 | - | 51 | 51 | - | 152 | 152 |
| Biru | Palattae | 25 | 132 | 157 | 50 | 100 | 150 | 75 | 232 | 307 |
| Palakka | Palattae | - | 51 | 51 | - | 26 | 26 | - | 77 | 77 |
| Cenrana | Palattae | - | 132 | 132 | - | 51 | 51 | - | 183 | 183 |
| Balle | Palattae | 25 | 79 | 104 | 25 | 75 | 100 | 50 | 154 | 204 |
| Cakkela | Palattae | - | 42 | 42 | - | 25 | 25 | - | 67 | 67 |
| Labuaja | Palattae | - | 47 | 47 | - | 41 | 41 | - | 88 | 88 |
| Kec. Libureng | | | | | | | | | | |
| Tappale | Palattae | - | 19 | 19 | - | 30 | 30 | - | 49 | 49 |
| Pitumpidenge | Palattae | - | 41 | 41 | - | 75 | 75 | - | 116 | 116 |
| Polewali | Palattae | - | 16 | 16 | - | 50 | 50 | - | 66 | 66 |
| Kec. Tonra | | | | | | | | | | |
| Pacceng | Mare | - | - | - | - | 151 | 151 | - | 151 | 151 |
| Wassila | Mare | - | 42 | 42 | - | 60 | 60 | - | 102 | 102 |
| Kec. Salorekko | | | | | | | | | | |
| Masago | Palattae | 26 | 47 | 71 | 30 | 70 | 100 | 56 | 117 | 173 |
| Patimpeng | Palattae | - | - | - | - | 75 | 75 | - | 75 | 75 |
| Total | | 76 | 749 | 825 | 105 | 880 | 985 | 181 | 1,629 | 1,810 |

Source : Kecamatan offices and BRI -branch offices, Kec. Kahu, Libureng, Tonra and Salorekko
Remark : The figures of data include within the boundaries of Desa under study

Table V.3.3 Amount of BIMAS Package Credit per Ha (Paddy, 1982/1983)

| Description | Category I | | | | | | Category II | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Package A | | Package B | | Package C | | Package A | | Package B | | Package C | |
| | Amount | Value | Amount | Value | Amount | Value | Amount | Value | Amount | Value | Amount | Value |
| 1. Seed | - | 6,250 | - | - | - | 6,250 | - | 6,250 | - | - | - | 6,250 |
| 2. Fertilizer | | | | | | | | | | | | |
| Urea | 200 kg | 14,000 | 100 kg | 7,000 | 300 kg | 21,000 | 150 kg | 10,500 | 75 kg | 5,250 | 250 kg | 17,500 |
| T.S.P./1 | 100 kg | 7,000 | 50 kg | 3,500 | 150 kg | 10,500 | 100 kg | 7,000 | 50 kg | 3,500 | 150 kg | 10,500 |
| Z.A. /2 | - | - | - | - | - | - | 100 kg | 7,000 | 70 kg | 4,900 | 100 kg | 7,000 |
| KCl/$K_2O$/3 | 50 kg | 3,500 | 50 kg | 3,500 | 50 kg | 3,500 | 50 kg | 3,500 | 50 kg | 3,500 | 50 kg | 3,500 |
| 3. Agro-Chemicals | | | | | | | | | | | | |
| Insecticide | 2 lit | 2,460 | 2 lit | 2,460 | 2 lit | 2,460 | 2 lit | 2,460 | 2 lit | 2,460 | 2 lit | 2,460 |
| Rodenticide | 2 kg | 1,000 | 2 kg | 1,000 | 2 kg | 1,000 | 2 kg | 1,000 | 2 kg | 1,000 | 2 kg | 1,000 |
| 4. Sprayer | - | 2,000 | - | 2,000 | - | 2,000 | - | 2,000 | - | 2,000 | - | 2,000 |
| 5. Other Expenses | - | 20,000 | - | 20,000 | - | 20,000 | - | 20,000 | - | 20,000 | - | 20,000 |
| T o t a l | - | 56,210 | - | 39,460 | - | 66,710 | - | 59,710 | - | 42,610 | - | 70,210 |

Source : Surat-Keputusan Bupati Kepala Daerah/Ketua Satuan Pelaksana BIMAS Kab. DATI II Bone

Remarks : /1 T.S.P. ; Triple super phosphate
/2 Z.A. ; Zulphure amonium
/3 KCl. ; Potassium chloride

Table V.3.4 Amount of BIMAS Package Credit per Ha (Polowijo crops, 1982/1983)

| Description | Maize | | Soybeans | | Groundnuts | | Greenbeans | |
|---|---|---|---|---|---|---|---|---|
| | Amount | Value | Amount | Value | Amount | Value | Amount | Value |
| 1. Seed | - | 4,375 | - | 18,000 | - | 60,000 | - | 11,250 |
| 2. Fertilizers | | | | | | | | |
| Urea | 250 kg | 17,500 | 75 kg | 5,250 | 100 kg | 7,000 | 50 kg | 3,500 |
| T.S.P. | 100 kg | 7,000 | 100 kg | 7,000 | 50 kg | 7,000 | 50 kg | 3,500 |
| 3. Chemicals | | | | | | | | |
| Insecticide | 0.5 lit | 615 | 4 lit | 4,920 | 2 lit | 2,460 | 2 lit | 2,460 |
| Fungicide | - | - | - | - | - | - | - | - |
| Rodenticide | - | - | - | - | - | - | - | - |
| 4. Sprayer | - | - | - | 2,000 | - | 1,000 | - | 1,000 |
| 5. Other Expenses | - | 4,000 | - | 4,000 | - | 4,000 | - | 4,000 |
| T o t a l | - | 33,490 | - | 41,170 | - | 81,460 | - | 25,710 |

Source : Surat-Keputusan Bupati Kepala Daerah/Ketua Satuan Pelaksana BIMAS Kab. DATI II Bone, Nomor : 22/IV/1982.

Table V.3.5 Production of Paddy under the Lappo Ase Operation Area (1981)

| Kec. Desa | Total Planted Area (ha) | Operation Area Planning (ha) | Operation Area Activity (ha) | Proportion (%) | Unit Yield Lappo Ase (ton/ha) | Unit Yield Others (ton/ha) | Increase Rate |
|---|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | | |
| Sanrego | 704 | 500 | 500 | 71.0 | 3.78 | 2.48 | 1.52 |
| Biru | 702 | 325 | 325 | 46.3 | 3.98 | 2.61 | 1.52 |
| Pelekka | 694 | 550 | 550 | 79.3 | 3.89 | 2.56 | 1.52 |
| Cenrana | 605 | 500 | 309 | 51.1 | 3.95 | 2.60 | 1.52 |
| Balle | 749 | 450 | 330 | 44.1 | 4.03 | 2.65 | 1.52 |
| Cakkela | 898 | 600 | 384 | 42.8 | 3.93 | 2.58 | 1.52 |
| Labuaja | 587 | 500 | 417 | 71.0 | 4.02 | 2.64 | 1.52 |
| Kec. Libureng | | | | | | | |
| Tappale | 510 | 350 | 350 | 68.6 | 3.08 | 2.48 | 1.24 |
| Pitumpidenge | 230 | 100 | 100 | 43.5 | 2.83 | 2.83 | - |
| Polewali | 279 | 150 | 150 | 53.8 | 2.77 | 2.77 | - |
| Kec. Tonra | | | | | | | |
| Pecing | 590 | 400 | 350 | 80.8 | 3.09 | 2.16 | 1.43 |
| Massila | 330 | 220 | 477 | 90.9 | 3.53 | 2.38 | 1.48 |
| Kec. Salomekko | | | | | | | |
| Masago | 402 | 250 | 293 | 72.9 | 3.75 | 2.53 | 1.48 |
| Patimpeng | 370 | 250 | 268 | 72.4 | 3.73 | 2.51 | 1.49 |
| Total/Average | 7,650 | 5,145 | 4,753 | 62.1 | 3.67 | 2.55 | 1.44 |

Source : Bimas Construction Boards of Ministry of Agriculture in South Sulawesi Province and Kab. Bone.

Table V.3.6 Activity of the Lappo Ase Paddy Program Intensification (1980/1981)

| Kec. Desa | Planted Area Planning (ha) | Planted Area Activity (ha) | Nos. of Farmer | Amount of Credit (Rp) | Amount of Repayment (Rp) | Balance (Rp) |
|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | |
| Sanrego | 500 | 500 | 590 | 15,049,025 | 12,856,300 | 2,192,725 |
| Biru | 325 | 325 | 440 | 10,107,972 | 6,385,830 | 3,722,142 |
| Palekka | 550 | 550 | 593 | 16,973,215 | 13,017,855 | 3,955,360 |
| Cenrena | 500 | 309 | 348 | 9,639,953 | 8,552,402 | 1,087,551 |
| Balle | 450 | 330 | 412 | 5,426,656 | 4,037,827 | 1,389,029 |
| Cakkele | 600 | 334 | 220 | 10,146,882 | 8,248,902 | 1,897,980 |
| Labuaja | 500 | 417 | 313 | 12,741,561 | 9,805,636 | 2,935,925 |
| Kec. Libureng | | | | | | |
| Tappale | 350 | 350 | 357 | 10,799,250 | 9,745,541 | 1,053,709 |
| Pituapiderge | 100 | 100 | 132 | 3,085,500 | 2,173,456 | 912,014 |
| Polewali | 150 | 150 | 152 | 4,628,250 | 3,192,108 | 1,436,142 |
| Kec. Tonra | | | | | | |
| Pecceng | 400 | 350 | 282 | 10,813,307 | 6,753,012 | 4,060,295 |
| Massila | 220 | 477 | 412 | 14,728,202 | 9,153,588 | 5,574,614 |
| Kec. Salomekko | | | | | | |
| Masego | 250 | 293 | 437 | 7,378,829 | 5,585,146 | 1,793,683 |
| Patimpeng | 250 | 268 | 571 | 8,264,802 | 4,406,575 | 3,858,227 |
| Total/Average | 5,145 | 4,753 | 5,259 | 139,783,604 | 103,914,178 | 35,869,426 |

Source : Bicas Construction Boards of Ministry of Agriculture in South Sulawesi Province and Kab. Bone.

Table V.3.7 Amount of BIMAS Package for the Lappo Ase Program per Ha (Paddy, 1981/1982)

| Description | Kec. Kahu and Libureng Amount | Kec. Kahu and Libureng Value | Kec. Tonra and Salomekko Amount | Kec. Tonra and Salomekko Value |
|---|---|---|---|---|
| 1. Seed | 25 kg | Rp. 6,250 | 25 kg | Rp. 6,250 |
| 2. Fertilizer | | | | |
| Urea | 150 kg | Rp. 10,000 | 100 kg | Rp. 7,000 |
| TSP | 100 kg | Rp. 7,000 | 150 kg | Rp. 10,500 |
| ZA | - | - | - | - |
| Kcl | - | - | - | - |
| 3. Agro-Chemicals | | | | |
| Insecticide | 2 lt | Rp. 4,460 | 2 lt | Rp. 4,460 |
| Rodenticide | 2 kg | Rp. 4,460 | 2 kg | Rp. 4,460 |
| Total | | Rp. 32,670 | | Rp. 32,670 |

Source : Bicas Construction Boards of Ministry of Agriculture in South Sulawesi Province and Kab. Bone.

Table V.3.8 Total Amount of BIMAS Credit (Paddy, 1982)

| Kec. Desa | Urea | | ZA | | TSP | | Insecticide | | Rodenticide | | Total Credit |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Amount (kg) | Value (10³Rp) | Amount (kg) | Value (10³Rp) | Amount (kg) | Value (10³Rp) | Amount (kg) | Value (10³Rp) | Amount (kg) | Value (10³Rp) | (10³Rp) |
| Kec. Kahu | | | | | | | | | | | |
| Sanrego | 20,405 | 1,428 | 5,075 | 355 | 14,455 | 1,012 | 265 | 326 | 205 | 252 | 3,373 |
| Biru | 39,013 | 2,731 | 7,912 | 554 | 28,417 | 1,989 | 386 | 475 | 276 | 339 | 6,088 |
| Palakka | 10,251 | 718 | 2,550 | 178 | 7,267 | 509 | 175 | 215 | 102 | 126 | 1,746 |
| Cenrana | 24,983 | 1,749 | 6,577 | 460 | 17,450 | 1,221 | 285 | 351 | 263 | 323 | 4,104 |
| Balle | 30,125 | 2,109 | 1,500 | 105 | 18,265 | 1,279 | 127 | 156 | 127 | 156 | 3,805 |
| Cakkela | 8,850 | 619 | 4,200 | 294 | 6,700 | 469 | 95 | 117 | 84 | 103 | 1,602 |
| Labueja | 13,175 | 922 | 3,125 | 219 | 7,895 | 553 | 101 | 124 | 101 | 124 | 1,942 |
| Kec. Libureng | | | | | | | | | | | |
| Tappale | 5,515 | 386 | 1,250 | 88 | 4,325 | 303 | 39 | 48 | 20 | 25 | 850 |
| Pitumpidange | 12,850 | 900 | 3,425 | 240 | 10,175 | 712 | 102 | 125 | 82 | 101 | 2,078 |
| Polewali | 6,895 | 483 | 2,125 | 149 | 5,675 | 397 | 61 | 75 | 35 | 43 | 1,147 |
| Kec. Tonra | | | | | | | | | | | |
| Paccing | 13,600 | 952 | - | - | 11,000 | 770 | 50 | 62 | 40 | 49 | 1,833 |
| Massila | 12,050 | 843 | - | - | 12,850 | 899 | 85 | 105 | 25 | 31 | 1,878 |
| Kec. Salomekko | | | | | | | | | | | |
| Masago | 22,945 | 1,606 | - | - | 17,750 | 1,243 | 145 | 178 | 151 | 186 | 3,213 |
| Patimpeng | 7,905 | 553 | - | - | 8,275 | 579 | 57 | 70 | 25 | 31 | 1,233 |
| Total/Average | 228,562 | 15,999 | 37,739 | 2,642 | 170,499 | 11,935 | 1,973 | 2,427 | 1,536 | 1,889 | 34,892 |

Remarks: The figures include the data within the boundaries of Desa under study

Source: Agriculture office and BRI branch office, Kab. Bone

Table V.4.1 Result of Paddy Yield Survey
(Sanrego Irrigation Project Area)

| Sampling Place (Desa/Kec.) | Sample No. | Variety | Nos. of Hills per m2 | Nos. of Panicles per Hill | Nos. of Grains per Panicles | Total Nos. of Grains per m2 | 1.000 grain weight (gr) | % of Ripened Grains | Unit Yield (ton/ha) |
|---|---|---|---|---|---|---|---|---|---|
| Maroddo | | | | | | | | | |
| Semi-technical Irrigation Area | 1 | IR36 | 19.6 | 14.9 | 61.3 | 17,902 | 23.6 | 76.5 | 3.23 |
| | 2 | IR36 | 15.2 | 17.5 | 64.8 | 17,237 | 23.3 | 65.2 | 2.62 |
| | 3 | IR36 | 19.0 | 16.4 | 59.1 | 18,416 | 23.7 | 67.8 | 2.96 |
| | 4 | IR36 | 19.4 | 17.7 | 68.8 | 23,625 | 24.7 | 76.3 | 4.45 |
| | 5 | IR36 | 22.6 | 19.6 | 67.2 | 29,767 | 23.2 | 63.9 | 4.41 |
| | 6 | IR36 | 20.9 | 19.9 | 60.9 | 25,329 | 24.5 | 70.9 | 4.40 |
| | 7 | IR42 | 21.4 | 15.8 | 68.1 | 23,026 | 20.4 | 74.9 | 3.52 |
| | 8 | IR42 | 20.8 | 16.3 | 77.6 | 26,310 | 20.3 | 78.5 | 4.19 |
| | 9 | IR42 | 19.6 | 17.5 | 70.8 | 24,284 | 20.5 | 68.1 | 3.39 |
| | 10 | IR42 | 20.7 | 16.5 | 69.1 | 23,601 | 20.3 | 70.0 | 3.35 |
| Average | | | 19.9 | 17.2 | 66.8 | 22,864 | 22.5 | 71.1 | 3.66 |
| Rain-fed Paddy Field | | | | | | | | | |
| Massila/Salomekko | 11 | IR5 | 18.6 | 14.8 | 62.6 | 17,233 | 20.1 | 68.1 | 2.36 |
| | 12 | IR42 | 16.4 | 16.1 | 77.6 | 20,490 | 20.5 | 81.4 | 3.42 |
| Conrana/Kahu | 13 | IR42 | 18.4 | 13.4 | 73.2 | 18,048 | 20.7 | 84.9 | 3.17 |
| Biru/Kahu | 14 | IR42 | 19.6 | 13.1 | 73.8 | 18,948 | 19.0 | 64.2 | 2.31 |
| | 15 | IR42 | 18.8 | 12.8 | 54.9 | 13,211 | 18.8 | 62.8 | 1.56 |
| Sanrego/Kahu | 16 | IR42 | 18.6 | 10.5 | 101.8 | 19,881 | 20.6 | 70.3 | 2.88 |
| | 17 | IR36 | 15.8 | 8.8 | 73.9 | 10,275 | 22.1 | 64.3 | 1.46 |
| Tappele/Liburong | 18 | IR5 | 19.2 | 11.9 | 64.3 | 14,691 | 24.3 | 24.7 | 0.88 |
| | 19 | IR42 | 15.6 | 13.5 | 64.8 | 13,696 | 20.2 | 45.0 | 1.24 |
| Cakkela/Kahu | 20 | IR42 | 20.4 | 15.2 | 49.4 | 15,317 | 18.8 | 71.2 | 2.05 |
| | 21 | IR42 | 17.4 | 12.9 | 62.7 | 14,073 | 20.2 | 65.4 | 1.86 |
| Balle/Kahu | 22 | IR42 | 18.8 | 11.9 | 70.9 | 15,861 | 20.2 | 86.5 | 2.77 |
| | 23 | IR42 | 19.8 | 16.2 | 68.1 | 21,843 | 18.7 | 67.1 | 2.74 |
| | 24 | IR42 | 17.4 | 15.9 | 67.1 | 18,563 | 20.2 | 67.2 | 2.52 |
| Palekka/Kahu | 25 | IR42 | 19.8 | 12.3 | 54.9 | 13,370 | 20.1 | 63.3 | 1.70 |
| | 26 | IR42 | 17.2 | 13.6 | 64.9 | 15,181 | 20.2 | 68.2 | 2.09 |
| Paccing/Tonra | 27 | IR42 | 15.4 | 11.8 | 68.2 | 12,393 | 20.4 | 57.7 | 1.46 |
| | 28 | IR42 | 16.3 | 12.4 | 52.1 | 10,530 | 19.7 | 42.9 | 0.89 |
| Masago/Salomekko | 29 | IR42 | 18.2 | 11.9 | 70.9 | 15,355 | 20.2 | 65.1 | 2.02 |
| | 30 | IR42 | 17.9 | 14.8 | 50.3 | 13,325 | 20.2 | 62.8 | 1.69 |
| Labuaja/Kahu | 31 | IR42 | 18.3 | 10.3 | 92.1 | 17,359 | 19.1 | 57.9 | 1.92 |
| | 32 | IR42 | 19.8 | 11.2 | 73.2 | 16,232 | 19.8 | 66.0 | 2.12 |
| Average | | | 18.1 | 13.0 | 67.8 | 15,953 | 20.2 | 63.3 | 2.04 |

Table V.4.2 Result of Paddy Yield Survey
(Sadang Irrigation Project area)

(Variety : IR42)

| Sampling Place | No. | Nos. of Hills per m2 | Nos. of Panicles per Hill | Nos. of Grains per Panicles | Total Nos. of Grains per m2 | 1,000 grains Weight (gr) | % of Ripend Grains | Unit Yield (ton/ha) |
|---|---|---|---|---|---|---|---|---|
| Sadang Area | S 1 | 20.2 | 18.0 | 100.9 | 36,687 | 21.1 | 64.7 | 5.01 |
| | S 2 | 19.5 | 18.7 | 94.8 | 34,567 | 22.0 | 79.0 | 6.01 |
| | S 3 | 16.2 | 17.7 | 118.0 | 33,835 | 21.6 | 77.2 | 5.64 |
| | S 4 | 17.8 | 15.0 | 112.1 | 29,931 | 21.1 | 70.3 | 4.44 |
| | S 5 | 17.6 | 16.4 | 94.8 | 27,363 | 22.8 | 79.8 | 4.98 |
| | S 6 | 19.2 | 18.3 | 108.0 | 37,947 | 19.8 | 81.3 | 6.11 |
| | S 7 | 18.4 | 22.4 | 130.2 | 53,663 | 22.0 | 64.2 | 7.58 |
| | S 8 | 19.8 | 19.1 | 118.0 | 44,625 | 20.7 | 73.0 | 6.74 |
| | S 9 | 21.6 | 16.8 | 103.2 | 37,449 | 21.6 | 73.8 | 5.97 |
| | S10 | 19.8 | 19.5 | 79.7 | 30,772 | 20.6 | 85.2 | 5.40 |
| | S11 | 21.8 | 18.8 | 104.3 | 42,746 | 20.7 | 74.5 | 6.59 |
| | S12 | 21.0 | 19.3 | 105.0 | 42,556 | 20.2 | 71.0 | 6.10 |
| | S13 | 24.4 | 17.2 | 80.2 | 33,659 | 21.4 | 75.9 | 5.47 |
| | S14 | 23.2 | 17.7 | 90.2 | 32,933 | 21.9 | 81.2 | 5.86 |
| | S15 | 16.0 | 26.3 | 80.6 | 33,916 | 20.9 | 81.5 | 5.78 |
| | S16 | 19.2 | 18.5 | 109.6 | 38,930 | 21.1 | 85.7 | 7.04 |
| | S17 | 20.4 | 17.4 | 108.8 | 38,620 | 21.0 | 82.3 | 6.67 |
| | S18 | 21.2 | 19.6 | 93.0 | 38,643 | 22.6 | 73.3 | 6.40 |
| | S19 | 25.2 | 16.9 | 107.9 | 45,952 | 20.9 | 68.5 | 6.58 |
| | S20 | 22.1 | 17.5 | 118.2 | 45,714 | 21.5 | 74.2 | 7.29 |
| | S21 | 24.4 | 16.3 | 86.3 | 34,323 | 20.8 | 77.2 | 5.51 |
| | S22 | 19.2 | 16.4 | 98.5 | 31,016 | 20.5 | 66.5 | 4.23 |
| Average | | 20.4 | 18.3 | 101.9 | 37,538 | 21.2 | 75.5 | 5.97 |

Source : ANNEX VOLUME - I, Feasibility Study on the Bila Irrigation Project, June 1982, JICA.

Table V.4.3 Result of Yield Survey for Dry Season Paddy
(Master Plan Study)

| Variety | Sampling Place (Desa/Kecamatan) | Nos. of Hills per m2 | Nos. of Panicles per Hill | Nos. of Grains per Panicle | Total Nos. of Grains per m2 | 1,000 Grain Weight (gr) | % of Ripened Grains | Unit Yield (ton/ha) |
|---|---|---|---|---|---|---|---|---|
| C4 - 63 | Baru/Lalabata | 15.2 | 10 | 61.4 | 9,333 | 21.5 | 69.2 | 1.39 |
| IR - 30 | Labessi/Marioriwawo | 20.0 | 22 | 57.7 | 25,388 | 24.7 | 53.9 | 3.38 |
| IR - 30 | Galung/Lilirieja | 17.3 | 26 | 115.9 | 52,132 | 21.1 | 73.6 | 8.12 |
| IR - 32 | Otting/Dua Pitue | 18.8 | 20 | 75.8 | 28,501 | 23.7 | 77.6 | 5.23 |
| Local 46 | Otting/Dua Pitue | 15.3 | 14 | 120.4 | 25,790 | 22.5 | 75.0 | 4.40 |
| IR - 32 | Lanrirang/Dua Pitue | 15.3 | 23 | 90.6 | 31,882 | 24.3 | 80.3 | 6.22 |
| IR - 26 | Baru/Lalabata | 16.0 | 20 | 114.6 | 36,672 | 21.3 | 64.5 | 5.03 |
| IR - 26 | Baru/Lalabata | 16.0 | 17 | 99.8 | 27,146 | 20.8 | 73.7 | 4.17 |
| IR - 5 | Patangkai/Lapparieja | 13.4 | 21 | 67.3 | 18,938 | 21.9 | 77.0 | 3.21 |
| IR - 5 | Sanaanre/Lapparieja | 21.0 | 15 | 65.6 | 20,664 | 22.7 | 76.5 | 3.59 |
| C4 - 63 | Maddualre/Lalabata | 16.0 | 15 | 63.1 | 15,144 | 22.1 | 70.4 | 2.35 |
| IR - 26 | Attangsolo/Marioriwawo | 21.8 | 26 | 104.8 | 59,401 | 21.0 | 66.4 | 8.29 |
| IR - 5 | JanrengPalie/Lapparieja | 16.0 | 16 | 105.1 | 26,906 | 26.8 | 76.2 | 5.49 |

Source : Supporting Report (volume 2) of Master Plan for the Central South Sulawesi Water Resources Development Project, March 1980.

Table V.5.1 Projected Labour Force in and around Project Area (1990)

| Kec. Desa | 15 - 49/1 Male | 15 - 49/1 Female | Total |
|---|---|---|---|
| **Kec. Kahu** | | | |
| Sanrego | 1,339 | 1,441 | 2,780 |
| Biru | 908 | 1,010 | 1,918 |
| Palakka | 1,079 | 1,140 | 2,219 |
| Cenrana | 557 | 617 | 1,174 |
| Balle | 793 | 942 | 1,735 |
| Cakkela | 651 | 678 | 1,329 |
| Labuaja | 738 | 865 | 1,603 |
| **Kec. Libureng** | | | |
| Tappale | 1,351 | 1,407 | 2,758 |
| Pitumpidange | 443 | 481 | 924 |
| Polewali | 343 | 459 | 802 |
| **Kec. Tonra** | | | |
| Paccing | 842 | 928 | 1,770 |
| Massila | 975 | 1,096 | 2,071 |
| **Kec. Salomekko** | | | |
| Masago | 1,017 | 1,182 | 2,199 |
| Patimpeng | 1,124 | 1,227 | 2,351 |
| T o t a l | 12,160 | 13,473 | 25,633 |
| Total Labour Force/2 | 10,944 | 10,105 | 21,049 |
| Labour Force per Household/3 | 1.62 | 1.50 | 3.12 |

Remarks : /1 ; Age group between 15 and 49 years old is taken by shifting age group between 5 to 39 years old of 1980. Anyone will not die, and will not move in the area or out of area. See Table V.2.2.

/2 ; Adult men equivalent is calculated as 0.90 unit of male and 0.75 unit of female.

/3 ; Total household is 6,738.

Table V.5.2 Calculation of Available Labour Force for Irrigated Paddy Cultivation

| Total Paddy Field (1) | Irrigated Paddy Field Under the Project (2) | Remaining Rainfed Paddy Field (3) | Paddy Field/1 per Household: Irrigated (4) | Paddy Field/1 per Household: Rainfed (5) | Available/2 Labour Force for Paddy Cultivation (6) | Labour Require-/3 ments for Rainfed Paddy Cultivation (7) = (5) - (6) | Available Labour Force for Irrigated Paddy Cultivation (8) = (7)/(3) | Unit Available Labour Force for Irrigated Paddy Cultivation |
|---|---|---|---|---|---|---|---|---|
| (ha) | (ha) | (ha) | (ha/household) | | (man-day/household) | (man-day/household) | (man-day/household) | (man-day/ha) |
| 8,900 | 6,000 | 2,900 | 0.96 | 0.46 | 2.19 | 0.37 | 1.82 | 1.90 |
| 8,900 | 7,000 | 1,900 | 1.12 | 0.30 | 2.19 | 0.24 | 1.95 | 1.74 |
| 8,900 | 8,000 | 900 | 1.28 | 0.14 | 2.19 | 0.10 | 2.09 | 1.63 |
| 9,800/4 | 9,000 | 800/5 | 1.43 | 0.12 | 2.24/6 | 0.09 | 2.15 | 1.50 |
| 10,800 | 10,000 | 800/5 | 1.59 | 0.12 | 2.30/6 | 0.09 | 2.21 | 1.39 |

Remarks: /1: Paddy field/Total number of farm household (6,270)

/2: Available labour force for paddy cultivation: 2.19, (a)-(b)

(a) Total available labour for per household in 1990

Population in age group of 15 - 49 years old

| | | |
|---|---|---|
| Male | 12,160 x 0.90*1 | = 10,944 |
| Female | 13,473 x 0.75*1 | = 10,105 |
| Total available labour force | | = 21,049 |
| (total household 6,738) | | = 3.12 man-day/household |

*1: Conversion factor for adult men equivalence, see Table V.5.1

(b) Total labour requirement for farm operation on upland crops and orchard, and for household works and herding

| | | |
|---|---|---|
| Upland crops | 50 man-day/ha x 0.40 ha*3/130 days | = 0.15 |
| Orchard | 100 man-day/ha x 0.54 ha*3/290 days | = 0.19 |
| Household | 156 man-day/household/365 days | = 0.43 |
| Herding | 60 man-day/household/365 days | = 0.16 |
| | Total | 0.93 man-day/household |

*3; Cultivated farm lands per household, see Table V.2.4

/3: Labour requirement for rainfed paddy cultivation = Unit labour requirement for rainfed paddy per ha (112 man-day)/Cultivation period (140 days) x Rainfed paddy area per household, see item (4).

/4: The paddy field area over the existing paddy field of 8,900 ha is to be newly reclaimed on the existing upland field.

/5: Non-irrigable rainfed paddy fields extending on the outskirts of the study area are included; These paddy fields of 800 ha are presently cultivated by the farmers under this study and are excluded from the project.

/6: Available labour force for paddy cultivation will increase due to reduction in upland area resulted from the development of new paddy fields.

Table V.5.3 Comprison of Alternative Cropping Pattern in Profitability per Ha

(Unit : $10^3$Rp.)

| Description | Pattern A (Paddy - Paddy) | Pattern B (Paddy - Paddy/ Polowijo) | Pattern C (Paddy - Polowijo- Polowijo - Paddy) | Pattern D (Paddy - Polowijo - Polowijo) |
|---|---|---|---|---|
| 1. Planted Area (ha) | | | | |
| 1st Paddy (wet season paddy) | 1.00 | 1.00 | 0.50 | 0.50 |
| 2nd Paddy (dry season paddy) | 0.50 | 0.38 | 0.29 | - |
| 3rd Paddy (wet season paddy) | - | - | 0.50 | 0.50 |
| 1st Polowijo Crops | - | 0.37 | - | 0.50 |
| 2nd Polowijo Crops | - | - | 0.50 | 0.43 |
| 3rd Polowijo Crops | - | - | 0.30 | 0.37 |
| 2. Cropping Intencity | 1.50 | 1.75 | 2.09 | 2.30 |
| 3. Gross Production Value/1 | 1,605.0 | 1,622.8 | 1,593.1 | 1,583.5 |
| Wet Season Paddy | 1,070.0 | 1,070.0 | 1,070.0 | 1,070.0 |
| Dry Season Paddy | 535.0 | 406.6 | 307.1 | - |
| Polowijo Crops | - | 146.2 | 316.0 | 513.5 |
| 4. Production Cost /2 | 482.4 | 512.4 | 563.4 | 561.9 |
| Wet Season Paddy | 318.1 | 318.1 | 318.1 | 318.1 |
| Dry Season Paddy | 164.3 | 124.9 | 95.3 | - |
| Polowijo Crops | - | 69.4 | 150.0 | 243.8 |
| 5. Net Production Value (3 - 4) | 1,122.6 | 1,110.4 | 1,129.7 | 1,021.6 |
| Wet Season Paddy | 751.9 | 751.9 | 751.9 | 751.9 |
| Dry Season Paddy | 370.7 | 281.7 | 211.8 | - |
| Polowijo Crops | - | 76.8 | 166.0 | 269.7 |

Remarks : /1 ; Planted area x Unit yield x Unit price
Unit yield W.S.P. 5 ton/ha, D.S.P. 5 ton/ha, Polowijo Crops 1 ton/ha
Unit prices: Dried paddy Rp.214,000/ton; Polowijo Crops Rp.393,500/ton

/2 ; Planted area x Unit production cost
Unit production cost: Wet season paddy Rp.318,100/ha; Dry season paddy Rp.328,600/ha; Polowijo crops Rp.187,500/ha

Table V.6.1 Farm Inputs and Labour Requirements per Ha under Proposed Farming Practices for Paddy Cultivation

(Unit : man-day)

| Farm Operation | Days after Trans-planting | Farm Inputs | | Labour Requirement Wet Season Paddy | Labour Requirement Dry Season Paddy |
|---|---|---|---|---|---|
| 1. Nursery preparation/1 (seeding, raising of seedling) | - 25 | Seed | 30 kg | 4.3 | 4.5 |
| | | Urea | 5 kg | | |
| 2. Field preparation (plowing) | - 10 | | | 11.3 | 12.8 |
| 3. Field preparation (harrowing/paddling) | - 5 | | kg | 13.6 | 15.0 |
| | | Urea | 45 kg | | |
| 4. 1st fertilizer application | - 5 | T.S.P | 100 kg | 2.5 | 2.5 |
| 5. Transplanting/2 | 0 | | | 25.7 | 25.7 |
| 6. 1st weeding | + 10 | | | 4.5 | 5.8 |
| 7. 2nd fertilizer application | + 10 | Urea | 65 kg | 1.5 | 1.5 |
| 8. 1st chemical application | + 10 | Insecticide | 1 lit | 1.3 | 1.3 |
| 9. 2nd weeding | + 15 | | | 4.5 | 5.8 |
| 10. 3rd weeding | + 25 | | | 3.1 | 4.1 |
| 11. 2nd chemical application | + 25 | Insecticide | 1 lit | 1.3 | 1.3 |
| 12. 3rd fertilizer application | + 30 | Urea | 65 kg | 1.5 | 1.5 |
| 13. 3rd chemical application | + 50 | Fungicide | 1 lit | 1.3 | 1.3 |
| 14. 4th chemical application | + 70 | Insecticide | 1 lit | 1.8 | 1.8 |
| | | Rodenticide | 2 kg | | |
| 15. Harvesting | + 90 | | | 22.9 | 22.9 |
| 16. Thresing | | | | 18.2 | 18.2 |
| 17. Drying | | | | 5.6 | 5.6 |
| 18. Transportation | | | | 12.8 | 12.8 |
| 19. Water management | | | | 5.0 | 5.0 |
| T o t e l | | | | 142.7 | 149.4 |

Remarks : /1 ; Area of nursery bed ; 1/20 of paddy field

/2 ; Planting density ; 30 cm x 15 cm, 3 seedling/hill
Planting depth ; 3 cm from the surface

This table's compiled on the basis data obtained from Central Research Institute for agriculture, Bogor and Agriculture Offices in Kab. Wajo and Sidrap.

Table V.7.1 Calculation of 1990 Economic Farm Gate Price of Paddy
(Import Substitution Price)

(Unit : Rp./ton)

| | | |
|---|---|---|
| 1. | International Market Price of Milled Rice (F.O.B. Bangkok, Thai 5% broken), US$ 662/1 | 443,540 |
| 2. | Quality Discount at 20% | 354,800 |
| 3. | External Transportation Cost (Bangkok - Ujung Pandang) | + 25,300 |
| 4. | Port Handling Charge and Storing Cost (including cost of sack) | + 15,400 |
| 5. | Price of Milled Rice at Ex-DOLOG (at Ujung Pandang) | 395,500 |
| 6. | Inland Transportation Cost (Ujung Pandang - Palattae) | - 24,000 |
| 7. | Milling Charge | - 29,300 |
| 8. | Local Storage Loss (5%) | - 19,800 |
| 9. | Price of Milled Rice at Ex-mill Gate (at Palattae) | 322,400 |
| 10. | Conversion to Price of Dried Paddy (x 0.68) | 219,200 |
| 11. | Handling and Transportation Cost (farm gate to mill) | - 4,900 |
| 12. | Economic Farm Gate Price of Dried Paddy | 214,300 (≒ 214,000) |

Source : Price Prospects for Major Primary Commodities, IBRD, 1981 (Forecasted price of milled rice in 1990 is made based upon 1982 constant dollars converted from 1980 constant dollars : US$ 575 x 1,151 = US$ 662)

Remarks : All the data for 1982 were obtained from DOLOG Office, South Sulawesi and were projected to 1990 by using the general price index in South Sulawesi.

/1 Conversion rate : US$ 1 = Rp.670.

Table V.7.2 Calculation of 1990 Economic Farm Gate Price of Polowij and Upland Crops (Import Substitution Prices)

(Unit : Rp./ton)

| Description | Maize | Groundnuts | Greenbeans |
|---|---|---|---|
| 1. International Market Prices/1 | (US$ 235) 157,500 | (US$ 688) 461,000 | (US$ 599) 401,300 |
| 2. External Transportation Cost (to Ujung Pandang) | + 27,600 | + 27,600 | + 27,600 |
| 3. Port Handling Charge and Storing Cost | + 12,600 | + 12,600 | + 12,600 |
| 4. Market Prices at Ujung Pandang | 197,700 | 501,200 | 441,500 |
| 5. Inland Transportation Cost (Ujung Pandang - Palattae) | - 29,300 | - 29,300 | - 29,300 |
| 6. Marketing Cost/2 (at Palattae) | - 19,400 | - 52,000 | - 45,600 |
| 7. Economic Farm Gate Prices | 149,000 | 419,900 | 366,600 |
| | (≒ 149,000) | (≒ 420,000) | (≒ 367,000) |

Source : Price Prospects for Major Primary Commodity, IBRD, 1981 (Forecasted prices of Polowijo Crops in 1990 is made based upon 1982 constant dollars converted from 1980 constant dollars : conversion rate 1,151).

Remarks : All the data for 1982 were obtained from DOLOG Office, South Sulawesi and were projected to 1990 by using the general price index in South Sulawesi.

/1 : Conversion rate US$ 1 = Rp.670

/2 : Including cost of marketing, handling and transportation from farm.

Table V.7.3 Calculation of 1990 Economic Farm Gate Price of Farm Inputs (Import Substitution Price)

(Unit : Rp./ton)

| Description | Price |
|---|---|
| 1. Fertilizer | |
| (1) Urea | |
| Export price F.O.B. Europe US$ 325/1 | 217,750 |
| External transportation cost to Ujung Pandang | 27,000 |
| Port handling charge and storing cost | 13,500 |
| Inland distribution cost/2 | 22,200 |
| Economic farm gate price, Palattae | 280,450 |
| | (≒Rp.280/Kg) |
| (2) Tripple Super Phosphate | |
| Export price F.O.B. Gulf US$ 265/2 | 177,550 |
| External transportation cost to Ujung Pandang | 26,500 |
| Port handling charge and storing cost | 13,500 |
| Inland distribution cost/2 | 22,200 |
| Economic farm gate price, Palattae | 239,750 |
| | (≒Rp.240/Kg) |
| 2. Agro-chemicals | |
| (1) Insecticide, Fungicide | |
| Adjusted to 1982 prices | 6,980,000 |
| | (≒Rp.7,000/lit) |
| (2) Rodenticide | |
| Adjusted to 1982 price | 2,480,000 |
| | (≒Rp.2,500/Kg) |

Source : Price Prospects for Major Primary Commodities, IBRD, 1981

Remarks : All the data were projected to 1990 by using the general price index in South Sulawesi.

/1 : Conversion rate US$ 1 = Rp.670

/2 : Including cost of storing, handling and transportation to KIOS.

Table V.7.4 Economic Prices of Farm Products and Farm Inputs at Farm Gate (1990)

(Unit : Rp./Kg, lit)

| Description | | Price |
|---|---|---|
| 1. Farm Products | | |
| Dried Paddy | | 214 |
| Groundnuts | | 420 |
| Greenbeans | | 367 |
| Maize | | 149 |
| 2. Farm Inputs | | |
| Seed | Paddy | 300 |
| | Groundnuts | 500 |
| | Greenbeans | 400 |
| | Maize | 170 |
| Fertilizers | Urea | 280 |
| | T.S.P. | 240 |
| Agro-chemicals | Insecticide | 7,000 |
| | Fungicide | 7,000 |
| | Rodenticide | 2,500 |
| Labour | Heavy Worker | 1,300 |
| | Light Worker | 1,000 |
| | Female Worker | 600 |

Source : Calculated from the data given in "Price Prospects for Major Primary Commodity" IBRD, June 1981.

## Table V.7.5 Market/Farm Gate Prices of Farm Products and Farm Inputs (1982)

(Unit: Rp/kg, man-day)

| Kec. Desa | Farm Products | | | | | | | Farm Inputs (Seed) | | | Labour Cost | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Milled Rice | Dried Paddy | Ground-nuts | Green-beans | Maize | Cassava | Sweet Potato | Paddy | Groundnuts | Maize | Male: Heavy | Male: Light | Female |
| **Kec. Kabu** | | | | | | | | | | | | | |
| Sanrego | 155 | 110 | 500 | 400 | 75 | 75 | 110 | 150 | 550 | 100 | 1,000 | 750 | 750 |
| Biru | 170 | 110 | 500 | 400 | 85 | 75 | 110 | 150 | 550 | 100 | 1,000 | - | - |
| Palakka | 155 | 110 | 500 | 400 | 75 | 75 | 110 | 150 | 550 | 100 | 1,000 | 750 | - |
| Cenrana | 150 | 110 | 500 | 400 | 75 | 75 | 110 | 150 | 550 | 100 | 1,500 | 800 | - |
| Balle | 175 | 120 | 550 | 450 | 95 | 85 | 110 | 160 | 600 | 125 | 750 | - | - |
| Cakkela | 155 | 110 | 500 | 400 | 85 | 75 | 110 | 150 | 550 | 100 | 1,000 | 750 | - |
| Labuaja | 155 | 110 | 500 | 400 | 75 | 75 | 110 | 150 | 550 | 100 | 800 | - | - |
| **Kec. Libureng** | | | | | | | | | | | | | |
| Tappale | 155 | 110 | 500 | 400 | 85 | 75 | 110 | 150 | 550 | 125 | 1,000 | - | - |
| Pitumpidange | 165 | 110 | 500 | 400 | 75 | 75 | 110 | 150 | 550 | 100 | 1,000 | 850 | - |
| Polewali | 150 | 110 | 500 | 400 | 75 | 75 | 110 | 150 | 550 | 100 | 800 | - | - |
| **Kec. Tonra** | | | | | | | | | | | | | |
| Paccing | 185 | 125 | 600 | 400 | 75 | 80 | 120 | 170 | 650 | 100 | 1,500 | - | - |
| Massila | 185 | 120 | 600 | 400 | 75 | 80 | 120 | 160 | 650 | 100 | 1,000 | - | - |
| **Kec. Salomekko** | | | | | | | | | | | | | |
| Masago | 170 | 110 | 500 | 450 | 75 | 75 | 115 | 150 | 600 | 100 | 1,000 | 750 | 500 |
| Patimpeng | 165 | 110 | 400 | 425 | 75 | 75 | 115 | 150 | 500 | 100 | 2,000 | 1,500 | 500 |
| Market Prices | 167 | 118 | 512 | 425 | 85 | 80 | 115 | 160 | 575 | 112 | 1,100 | 880 | 580 |
| Farm Gate Prices (x0.9) | 150 | 105 | 460 | 383 | 77 | 72 | 104 | 160 | 575 | 112 | 1,100 | 880 | 580 |

Sources: The figures were collected from Kecamatan offices and Desa offices in Kec. Kabu, Libureng, Tonra and Salomekko, and carried out by farm economy survey during the period of August to October, 1982.

Table V.7.6 Financial Prices of Farm Products and Farm Inputs at Farm Gate (as of 1982)

(Unit: Rp/kg, lit)

| Description | | Price |
|---|---|---|
| 1. Farm Products | | |
| | Dried paddy | 105 |
| | Groundnuts | 460 |
| | Greenbeand | 383 |
| | Maize | 77 |
| | Cassava | 72 |
| | Sweet Potato | 104 |
| | Coconuts | 185 (fruit) |
| | Banana | 60 (bunch) |
| 2. Farm Inputs | | |
| Seed | Paddy | 160 |
| | Groundnuts | 575 |
| | Greenbeans | 455 |
| | Maize | 112 |
| Fertilizers | Urea | 90 |
| | T.S.P. | 90 |
| | KCL | 90 |
| Agro-chemicals | Insecticide | 1,500 |
| | Fungicide | 1,500 |
| | Rodenticide | 550 |
| Labour | Heavy worker | 1,100 |
| | Light worker | 880 |
| | Female worker | 580 |

Remark: Financial prices in 1982 are estimated based on the farm economy survey and referred to Table V.7.5.

Table V.7.7 Production Cost of Paddy under without and with Project Condition

(Unit : Rp.)

| Description | Unit Price | Without Project | | | | With Project | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Wet Season Paddy | | Dry Season Paddy | | Wet Season Paddy | | Dry Season Paddy | |
| 1. Farm Inputs | | | | | | | | | |
| (1) Seed | Rp. 300/kg | 30 kg | 9,000 | 30 kg | 9,000 | 30 kg | 9,000 | 30 kg | 9,000 |
| (2) Fertilizers | | | | | | | | | |
| Urea | Rp. 280/kg | 50 kg | 14,000 | 50 kg | 14,000 | 200 kg | 56,000 | 200 kg | 56,000 |
| T.S.P. | Rp. 240/kg | 25 kg | 6,000 | - | - | 100 kg | 24,000 | 100 kg | 24,000 |
| (3) Agro-chemicals | | | | | | | | | |
| Insecticide | Rp. 7,000/lit | 2 lit | 14,000 | 2 lit | 14,000 | 3 lit | 21,000 | 3 lit | 21,000 |
| Fungicide | Rp. 7,000/lit | - | - | - | - | 1 lit | 7,000 | 1 lit | 7,000 |
| Rodenticide | Rp. 2,500/kg | 1 kg | 2,500 | - | - | 2 kg | 5,000 | 2 kg | 5,000 |
| Sub-total | | | 45,500 | | 37,000 | | 122,000 | | 122,000 |
| 2. Labour Cost | (Rp./man-day) | (man-day) | | (man-day) | | (man-day) | | (man-day) | |
| (1) Nursery Preparation | 1,300 | 4.1 | 5,330 | 4.1 | 5,330 | 4.3 | 5,590 | 4.5 | 5,850 |
| (2) Plowing | 1,500 | 11.3 | 16,950 | 12.3 | 18,450 | 11.3 | 16,950 | 12.8 | 19,200 |
| (3) Harrowing/Puddling | 1,500 | 13.6 | 20,400 | 14.5 | 21,750 | 13.6 | 20,400 | 15.0 | 22,500 |
| (4) Transplanting | 1,300 | 25.7 | 33,410 | 25.7 | 33,410 | 25.7 | 33,410 | 25.7 | 33,410 |
| (5) Weeding | 1,300 | 11.9 | 15,470 | 12.5 | 16,770 | 12.1 | 15,730 | 15.7 | 20,410 |
| (6) Fertilizer Application | 600 | 1.5 | 900 | 2.0 | 1,200 | 5.5 | 3,300 | 5.5 | 3,300 |
| (7) Chemical Application | 1,500 | 1.0 | 1,500 | 1.5 | 1,500 | 5.7 | 8,550 | 5.7 | 8,550 |
| (8) Harvesting | 1,000 | 15.5 | 15,500 | 19.0 | 19,000 | 22.9 | 22,900 | 22.9 | 22,900 |
| (9) Threshing | 1,000 | 13.1 | 13,700 | 15.2 | 15,200 | 18.2 | 18,200 | 18.2 | 18,200 |
| (10) Drying | 1,000 | 4.0 | 4,000 | 3.6 | 3,600 | 5.6 | 5,600 | 5.6 | 5,600 |
| (11) Transportation | 660 | 9.0 | 5,940 | 9.0 | 5,940 | 12.8 | 8,450 | 12.8 | 8,450 |
| (12) Water Management | 600 | 1.5 | 900 | 2.0 | 1,200 | 5.0 | 3,000 | 5.0 | 3,000 |
| Sub-total | | 112.2 | 133,400 | 121.4 | 143,350 | 142.7 | 162,080 | 149.4 | 171,370 |
| 3. Miscellaneous Cost (Equipment, tax etc.) | 12% of (1 + 2) | | 21,500 | | 21,650 | | 34,020 | | 35,230 |
| Total (1 + 2 + 3) | | | 200,400 | | 202,000 | | 318,100 | | 328,600 |

Table V.7.8 Production Cost of Polowijo Crops under without and with Project Condition

(Unit : Rp/ha)

| Description | Unit Prices | Without Project | | | | With Project | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Groundnuts | | Greenbeans | | Groundnuts | | Greenbeans | |
| 1. Farm Inputs | | | | | | | | | |
| (1) Seed | | 80kg | 40.000 | 25kg | 10.000 | 80kg | 40,000 | 25kg | 10.000 |
| (2) Fertilizers | | | | | | | | | |
| Urea | Rp. 280/kg | 50kg | 14.000 | 50kg | 14,000 | 100kg | 28.000 | 50kg | 14,000 |
| T.S.P. | Rp. 240/kg | | - | - | - | 50kg | 12,000 | 50kg | 12,000 |
| (3) Agro-Chemicals | | | | | | | | | |
| Insecticide | Rp.7.000/lit | 1 lit | 7,000 | 1 lit | 7.000 | 2 lit | 14,000 | 2 lit | 14,000 |
| Sub-total | | | 61,000 | | 31,000 | | 94,000 | | 50,000 |
| 2. Labour Cost | (Rp./man-day) | (man/day) | | (man/day) | | (man/day) | | (man/day) | |
| (1) Land preparation | 1,500 | 10 | 15,000 | 8 | 12,000 | 10 | 15,000 | 10 | 15,000 |
| (2) Seeding | 1,300 | 6 | 7,800 | 12 | 15,600 | 10 | 13,000 | 20 | 26,000 |
| (3) Weeding | 1,300 | 20 | 26,000 | 20 | 26,000 | 20 | 26,000 | 20 | 26,000 |
| (4) Fertilizer application | 600 | 1 | 600 | 1 | 600 | 2 | 1,200 | 2 | 1,200 |
| (5) Chemical application | 1,500 | 2 | 3,000 | 2 | 3,000 | 4 | 6,000 | 4 | 6,000 |
| (6) Harvesting/Drying | 1,000 | 22 | 22,000 | 20 | 20,000 | 30 | 30,000 | 25 | 25,000 |
| (7) Transportation | 600 | 3 | 1,800 | 3 | 1,800 | 3 | 1,800 | 3 | 1,800 |
| (8) Water management | 600 | 1 | 600 | 1 | 600 | 3 | 1,800 | 3 | 1,800 |
| Sub-total | | 65 | 76,800 | 67 | 79,600 | 82 | 94,800 | 87 | 102,800 |
| 3. Miscellaneous Cost (Equipment, bags, tax, etc.) | about 10% of (1+2) | | 13,200 | | 11,400 | | 18,200 | | 15,200 |
| Total (1 + 2 + 3) | | | 151,000 | | 122,000 | | 207,000 | | 168,000 |

Table V.7.9 Production Cost of Upland Crops and Orchard Products under without and with Project Condition

(Unit : Rp./ha)

| Description | Upland Crops | | | | Orchard Products | |
|---|---|---|---|---|---|---|
| | Maize | Groundnuts | Cassava | Sweet Potato | Coconuts | Banana |
| 1. Farm Inputs | | | | | | |
| (1) Seed | 5,100 | 40,000 | 7,500 | 7,500 | 23,000 | 23,500 |
| (2) Fertilizers | - | 14,000 | - | - | - | - |
| (3) Agro-chemicals | - | 7,000 | - | - | - | - |
| Sub-total | 5,100 | 31,000 | 7,500 | 7,500 | 23,000 | 23,500 |
| 2. Labour Cost | | | | | | |
| (1) Land Preparation | 12,000 | 12,000 | 30,000 | 30,000 | 15,000 | 15,000 |
| (2) Seeding/Planting | 5,200 | 6,200 | 13,000 | 26,000 | 13,000 | 10,500 |
| (3) Weeding | 17,700 | 20,800 | 13,000 | 10,400 | 14,000 | 53,000 |
| (4) Fertilizer Application | - | 600 | - | - | - | - |
| (5) Chemical Application | - | 1,500 | - | - | - | - |
| (6) Harvesting/Drying | 18,000 | 22,000 | 22,000 | 15,000 | 72,000 | 12,500 |
| (7) Transportation, Others | 1,200 | 3,000 | 12,000 | 12,000 | 43,000 | 12,500 |
| Sub-total | 54,100 | 66,100 | 90,000 | 93,400 | 157,000 | 103,500 |
| 3. Miscellaneous | | | | | | |
| (Equipment,tax,bags,etc.) | 5,800 | 9,900 | 9,500 | 10,100 | 18,000 | 13,000 |
| T o t a l (1 + 2 + 3) | 65,000 | 107,000 | 107,000 | 111,000 | 198,000 | 140,000 |

Table V.8.1 Estimation of Potential Paddy Yield

(1) Empirical formula[/1] for estimation

$$Y = S(278 - 7.07t) \times F1100 \times W \times 10^{-5}$$

where, Y: potential yield (ton/ha)
S: average daily solar radiation (cal/cm$^2$)
t: average daily mean temperature (°C)
F: percent of rippened grains (%)
W: 1000 grain weight (g)

(2) Monthly mean solar radiation (Rs) and monthly mean temperature (T) at the Canning meteorological station (1974 - 1982)

| | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rs (cal/cm$^2$) | 400 | 430 | 443 | 421 | 367 | 362 | 406 | 483 | 523 | 510 | 459 | 392 |
| T (°C) | 26.2 | 26.1 | 26.2 | 26.1 | 25.9 | 25.1 | 24.8 | 24.9 | 25.7 | 26.9 | 27.0 | 26.2 |

(3) Average daily solar radiation (S) and average daily mean temperature (t) during the 25-day period before flowering

| | 25-day Period[/2] before Flowering | S (cal/cm$^2$) | t (°C) |
|---|---|---|---|
| Wet season paddy | 20 June - 15 July | 388 | 24.9 |
| Dry season paddy | 20 Jan. - 15 Feb. | 418 | 26.1 |

(4) Potential paddy yield (in case of percentage of rippened grains (F) of 75% and 1000 grain weight (W) of 23.0g)

| | (Unit: tons per ha) |
|---|---|
| Wet season paddy | 0.82 |
| Dry season paddy | 6.73 |

Remarks: /1; Climate influence of yield and yield components of lowland rice in the tropics, in Climate & Rice, 1976, Yoshida, S. and E.T. Parao, IRRI.

/2; see Fig. V.5.4, "proposed cropping pattern"

Table V.8.2 Annual Incremental Production of Paddy and Poloeijo Crops under without and with Project

| Description | Without Project | With Project | Increment |
|---|---|---|---|
| 1. Total Area (ha)/1 | 8,300 | 8,000 | -300 |
| 2. Paddy Field (ha) | 7,050 | 8,000 | 950 |
| 3. Planted Area (ha)/2 | 9,090 | 12,000 | 2,910 |
| Wet Season Paddy | 7,050 | 8,000 | 950 |
| Dry Season Paddy | 640 | 4,000 | 3,360 |
| Polowijo Crops | 1,400 | - | 1,400 |
| 4. Harvested Area (ha)/2 | 7,770 | 12,000 | 5,380 |
| Wet Season Paddy | 5,780 | 8,000 | 2,220 |
| Dry Season Paddy | 600 | 4,000 | 3,400 |
| Polowijo Crops | 1,400 | - | 1,400 |
| 5. Unit Yield (ton/ha) | | | |
| Wet Season Paddy | 2.23 | 5.00 | 2.77 |
| Dry Season Paddy | 2.50 | 5.00 | 2.50 |
| Polowijo Crops | 0.71 | - | - |
| 6. Production (tons) | 14,390 | 60,000 | 45,610 |
| Wet Season Paddy/3 | 12,890 | 40,000 | 27,110 |
| Dry Season Paddy/3 | 1,500 | 20,000 | 18,500 |
| Polowijo Crops | (990) | - | (-990) |

Remarks : /1 ; The difference between with and without project conditions means losses of farmland for project facilities, i.e., the areas of the existing paddy fields which will become unproductive owing to the construction of the project facilities.

/2 ; The planted/harvested areas under without project condition area determined by applying the rate of the present drought damage area to the total paddy field area.

/3 ; Dried paddy.

Table V.8.3 Net Production Value under without and with Project Condition

| Description | Planted Area | Harvested Area | Unit Yield | Production | Unit Price | Gross Production Value | Unit Production Cost | Total Production Cost | Net Production Value |
|---|---|---|---|---|---|---|---|---|---|
| | (ha) | (ha) | (ton/ha) | (ton) | ($10^3$Rp./ton) | ($10^6$Rp.) | ($10^3$Rp./ha) | ($10^6$Rp.) | ($10^6$Rp.) |
| 1. Paddy | 7,690 | 6,380 | | 14,390 | | 3,079.5 | | 1,542.1 | 1,537.4 |
| Wet Season Paddy | 7,050 | 5,780 | 2.23 | 12,890 | 214 | 2,758.5 | 200.4 | 1,412.8 | 1,345.7 |
| Dry Season Paddy | 640 | 600 | 2.50 | 1,500 | 214 | 321.0 | 202.0 | 129.3 | 191.7 |
| 2. Polowijo Crops | 1,400 | 1,400 | | | | 418.1 | | 209.3 | 208.8 |
| Groundnuts | 1,330 | 1,330 | 0.73 | 970 | 420 | 407.8 | 151.0 | 200.8 | 207.0 |
| Greenbeans | 70 | 70 | 0.40 | 30 | 367 | 10.3 | 122.0 | 8.5 | 1.8 |
| 3. Upland Crops | 510 | 510 | | | | 113.3 | | 42.2 | 71.1 |
| Maize | 290 | 290 | 0.63 | 180 | 149 | 27.2 | 65.0 | 18.8 | 8.4 |
| Groundnuts | 170 | 170 | 0.59 | 100 | 420 | 42.1 | 107.0 | 18.1 | 24.0 |
| Cassava | 25 | 25 | 5.96 | 150 | 158 | 23.5 | 107.0 | 2.6 | 20.9 |
| Sweet Potato | 25 | 25 | 3.26 | 80 | 252 | 20.5 | 111.0 | 2.7 | 17.8 |
| 4. Orchard Products | 130 | 130 | | | | 30.6 | | 22.0 | 8.6 |
| Coconuts | 65 | 65 | 1,800 fruits | 117,000 | 0.15 | 17.6 | 198.0 | 12.9 | 4.7 |
| Banana | 65 | 65 | 400 bunches | 26,000 | 0.50 | 13.0 | 140.0 | 9.1 | 3.9 |
| T o t a l | 9,730 | 8,420 | - | - | - | 3,641.5 | - | 1,815.6 | 1,825.9 |

## Table V.8.4 Irrigation Benefits

| Description | Without Project | With Project | Increment |
|---|---|---|---|
| 1. Total Area (ha)/1 | 8,300 | 8,000 | -300 |
| 2. Planted Area (ha) | 9,730 | 12,000 | 2,270 |
| Wet season paddy | 7,050 | 8,000 | 950 |
| Dry season paddy | 640 | 4,000 | 3,360 |
| Polowijo crops/2 | 1,400 | - | -1,400 |
| Upland crops/3 | 510 | - | 510 |
| Orchard products/4 | 130 | - | 130 |
| 3. Harvested Area (ha) | 8,420 | 12,000 | 3,580 |
| Wet season paddy | 5,780 | 8,000 | 2,220 |
| Dry season paddy | 600 | 4,000 | 3,400 |
| Polowijo crops | 1,400 | - | -1,400 |
| Upland crops | 510 | - | -510 |
| Orchard products | 130 | - | -130 |
| 4. Unit Yield (ton/ha) | | | |
| Wet season paddy | 2.23 | 5.00 | 2.77 |
| Dry season paddy | 2.50 | 5.00 | 2.50 |
| Polowijo crops | 0.72 | - | - |
| Upland crops | 1.00 | - | - |
| Orchard products | 740 (fruits) | - | - |
| 5. Unit Price ($10^3$RP/ton) | | | |
| Dried paddy | 214 | 214 | - |
| Polowijo crops | 415 | - | - |
| Upland crops | 222 | - | - |
| Orchard products | 325 (fruits) | - | - |
| 6. Unit Production Cost ($10^3$RP/ha) | | | |
| Wet season paddy | 200.4 | 318.1 | 117.7 |
| Dry season paddy | 202.0 | 328.6 | 126.6 |
| Polowijo crops | 149.3 | - | - |
| Upland crops | 82.3 | - | - |
| Orchard crops | 169.2 | - | - |

| Description | Without Project | With Project | Increment |
|---|---|---|---|
| 7. Gross Production Value ($10^6$RP) | | | |
| (3 x 4 x 5) | 3,641 | 12,840 | 9,199 |
| Wet season paddy | 2,758 | 8,560 | 5,802 |
| Dry season paddy | 321 | 4,280 | 3,959 |
| Polowijo crops | 418 | - | -418 |
| Upland crops | 113 | - | -113 |
| Orchard products | 31 | - | -31 |
| 8. Total Production Cost ($10^6$RP) | | | |
| ( 2 x 6 ) | 1,815 | 3,859 | 2,044 |
| Wet season paddy | 1,413 | 2,545 | 1,132 |
| Dry season paddy | 129 | 1,314 | 1,185 |
| Polowijo crops | 209 | - | -209 |
| Upland crops | 42 | - | -42 |
| Orchard products | 22 | - | -22 |
| 9. Net Production Value ($10^6$RP) | | | |
| ( 7 - 8 ) | 1,826 | 8,981 | 7,155 |
| Wet season paddy | 1,345 | 6,015 | 4,670 |
| Dry season paddy | 192 | 2,966 | 2,774 |
| Polowijo crops | 209 | - | -209 |
| Upland crops | 71 | - | -71 |
| Orchard products | 9 | - | -9 |
| 10. Annual Incremental Benefits per Ha | | | |
| ( 9 ÷ 1 )/5 | 228,200 (US$341) | 1,122,600 (US$1,675) | 894,400 (US$1,335) |

Remarks:
/1 : The difference between with and without project conditions means losses of farmland for project facilities.
/2 : Polowijo crops = Groundnuts and Greenbeans
/3 : Upland crops = Maize, Groundnuts, Cassava and Sweet Potato
/4 : Orchard products = Coconuts and Banana
/5 : Conversion rate US$1 = Rp. 670

Table V.9.1 Results of Farm Economy Survey on the Living Expenses of Farmer

(Unit : Rp./household/annum)

| Kec./Desa | No. of Sampling Farmer (Nos.) | Average Family Size (Person) | Food | Clothing | Residence | Education | Luxury | Social | Others | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Kec. Kahu | | | | | | | | | | |
| Sanrego | 8 | 5.5 | 194,230 | 31,250 | 63,710 | 4,730 | 20,980 | 24,380 | 31,350 | 370,630 |
| Biru | 7 | 5.0 | 176,940 | 25,000 | 22,290 | 15,180 | 26,290 | 9,290 | 14,210 | 289,200 |
| Palakka | 7 | 6.1 | 293,060 | 36,430 | 28,940 | 1,180 | 48,000 | 29,570 | 13,860 | 451,040 |
| Cenrana | 7 | 5.7 | 218,830 | 22,000 | 37,810 | 15,640 | 28,000 | 9,290 | 14,570 | 346,140 |
| Balle | 7 | 6.2 | 285,820 | 22,570 | 20,630 | 25,190 | 27,530 | 9,290 | 9,980 | 399,010 |
| Cakkela | 7 | 5.7 | 181,190 | 22,000 | 59,890 | 3,810 | 24,610 | 6,710 | 21,490 | 319,700 |
| Labuaja | 7 | 5.5 | 179,800 | 16,420 | 54,190 | 2,540 | 15,570 | 10,710 | 21,830 | 301,060 |
| Kec. Liburong | | | | | | | | | | |
| Tappale | 8 | 5.7 | 298,770 | 45,000 | 60,560 | 6,250 | 33,750 | 22,670 | 15,370 | 482,370 |
| Pitumpidange | 7 | 5.2 | 292,380 | 37,140 | 58,770 | 16,030 | 25,540 | 22,170 | 19,660 | 471,690 |
| Polewali | 7 | 5.3 | 303,650 | 48,570 | 68,610 | 8,290 | 35,730 | 24,340 | 28,670 | 517,860 |
| Kec. Tonyo | | | | | | | | | | |
| Pacoing | 7 | 5.7 | 197,640 | 40,000 | 35,370 | 5,310 | 33,600 | 9,290 | 10,360 | 331,570 |
| Mossila | 7 | 5.8 | 297,220 | 65,720 | 61,730 | 8,790 | 37,900 | 9,390 | 18,510 | 499,260 |
| Kec. Salomekko | | | | | | | | | | |
| Masago | 7 | 5.9 | 298,520 | 24,290 | 70,210 | 17,860 | 37,270 | 10,710 | 31,330 | 490,190 |
| Patimpeng | 7 | 7.7 | 306,663 | 65,710 | 71,750 | 7,857 | 37,910 | 26,000 | 33,530 | 549,420 |
| Total/Average | 100 | 5.7 | 252,000 | 36,000 | 51,000 | 10,000 | 31,000 | 16,000 | 20,000 | 416,000 |
| | | | 60.0 % | 9.1 % | 12.3 % | 2.4 % | 7.4 % | 3.8 % | 5.0 % | 100 % |

Table V.9.2 Farm Budget of Average Size and Peasant Farmers under Present Condition

(Unit: Rp/household)

| Description | Average Size Farmer<br>Total farm land: 2.36 ha<br>Paddy field : 1.42<br>Upland field: 0.40<br>Orchard : 0.54<br>Family size : 5.7 persons | Peasant Farmer<br>Total farm land: 1.00 ha<br>Paddy field : 0.78<br>Upland field: 0.22<br>Family size : 5.7 persons | Peasant Farmer<br>Total farm land: 0.50 ha<br>Paddy field : 0.39<br>Upland field: 0.11<br>Family size : 5.7 persons |
|---|---|---|---|
| 1. Gross Income | | | |
| Farm income | 529,400 | 399,800 | 338,100 |
| Wet season paddy | 176,700 | 97,100 | 48,500 |
| Dry season paddy | 25,500 | 14,000 | 7,000 |
| Polowijo crops | 52,400 | 28,700 | 14,400 |
| Upland crops | 43,600 | 24,000 | 12,200 |
| Orchard products | 49,400 | - | - |
| Farm labour income | 54,500 | 70,800 | 76,800 |
| Off-farm income | 127,300 | 165,200 | 179,200 |
| 2. Out-go | 104,800 | 46,200 | 23,100 |
| Farming expenses | | | |
| Wet season paddy | 39,800 | 21,800 | 10,900 |
| Dry season paddy | 5,100 | 2,800 | 1,400 |
| Polowijo crops | 14,300 | 7,900 | 3,900 |
| Upland crops | 10,000 | 5,500 | 2,800 |
| Orchard products | 18,200 | - | - |
| IPEDA tax, others | 17,400 | 8,200 | 4,100 |
| 3. Net Income (1-2) | 424,600 | 353,600 | 310,000 |
| 4. Family Expences | 416,000 | 347,000 | 308,400 |
| Balance (3-4) | 8,600 | 6,600 | 5,000 |

## Table V.9.3 Financial Crop Budget per Ha

| Description | Without Project | | | | With Project | |
|---|---|---|---|---|---|---|
| | | | Polowijo Crops | | | |
| | W.S.P./1 | D.S.P./2 | G. Nuts/3 | G. Beans/4 | W.S.P./1 | D.S.P./2 |
| 1. Gross Production Value ($x10^3$Rp) | | | | | | |
| (1) Unit yield (ton/ha) | 2.23 | 2.50 | 0.73 | 0.40 | 5.00 | 5.00 |
| (2) Unit prices ($x10^3$Rp/ton)/5 | 105 | 105 | 460 | 383 | 105 | 105 |
| G.P.V. (1) x (2) | 234.15 | 262.50 | 335.80 | 153.20 | 525.00 | 525.00 |
| 2. Production Cost ($x10^3$Rp) | | | | | | |
| (1) Farm inputs | 15.10 | 17.35 | 52.00 | 17.40 | 38.90 | 38.90 |
| (2) Labour costs | 112.50 | 121.15 | 61.54 | 64.58 | 137.07 | 144.73 |
| (3) Miscellaneous | 15.30 | 16.60 | 11.36 | 8.22 | 21.13 | 22.07 |
| Total (1) + (2) + (3) | 142.90 | 155.10 | 124.90 | 90.20 | 197.10 | 205.70 |
| 3. Net Production Value ($x10^3$Rp) (1 - 2) | 91.25 | 107.40 | 210.90 | 63.00 | 327.90 | 319.30 |

| Description | Upland Crops | | | | Orchard Products | |
|---|---|---|---|---|---|---|
| | Maize | G. Nuts | Cassava | S. Potato | Coconuts | Banana |
| | | | | | (fruits) | (bunches) |
| 1. Gross Production Value ($x10^3$Rp) | | | | | | |
| (1) Unit yield (ton/ha) | 0.63 | 0.59 | 5.96 | 3.26 | 1,800 | 400 |
| (2) Unit prices ($x10^3$Rp/ha)/6 | 77 | 460 | 72 | 104 | 185 | 60 |
| G.P.V. (1) x (2) | 48.51 | 271.40 | 429.12 | 339.04 | 333.00 | 24.00 |
| 2. Production Cost ($x10^3$Rp) | | | | | | |
| (1) Farm inputs | 3.36 | 52.00 | 6.15 | 6.15 | 61.51 | 6.20 |
| (2) Labour costs | 32.04 | 54.41 | 80.76 | 85.50 | 184.50 | 15.00 |
| (3) Miscellaneous | 3.50 | 10.69 | 8.69 | 9.45 | 49.00 | 2.10 |
| Total (1) + (2) + (3) | 38.90 | 117.10 | 97.60 | 101.10 | 295.00 | 23.30 |
| 3. Net Production Value ($x10^3$Rp) (1 - 2) | 9.61 | 154.30 | 333.52 | 237.94 | 38.00 | 0.70 |

Remarks: /1; Wet Season Paddy /2; Dry Season Paddy /3; Groundnuts
/4; Greenbeans /5; Sweet Potato /6; see Table V.7.6

Table V.9.4 Farm Bedget of Average Size and Peasant Farmers under without and with Project Condition

(Unit: Rp/household)

| | Average Size Farmer | | Peasant Farmer | | | |
|---|---|---|---|---|---|---|
| | Without Project | With Project | Without Project | With Project | Without Project | With Project |
| Total Farm Land : | 2.36 ha | 2.41 ha | 1.00 ha | 1.02 ha | 0.50 ha | 0.51 ha |
| Irrigated paddy field: | - | 1.24 | - | 0.67 | - | 0.33 |
| Rainfed paddy field : | 1.42 | 0.32 | 0.78 | 0.17 | 0.39 | 0.09 |
| Upland field : | 0.40 | 0.33 | 0.22 | 0.18 | 0.11 | 0.09 |
| Orchard field : | 0.54 | 0.52 | - | - | - | - |
| Family Size : | 5.7 persons | 5.7 persons | 5.7 persons | 5.7 persons | 5.7 persons | 5.7 persons |
| 1. Gross Income | 705,100 | 1,354,800 | 504,400 | 911,000 | 389,200 | 666,000 |
| Farm income | | | | | | |
| Net season paddy | 272,600 | 712,300 | 149,900 | 384,300 | 59,900 | 190,600 |
| Dry season paddy | 31,500 | 332,600 | 17,300 | 179,600 | 8,700 | 88,600 |
| Polowijo crops | 92,800 | - | 50,900 | - | 25,400 | - |
| Upland crops | 59,200 | 51,700 | 34,300 | 27,900 | 17,400 | 14,400 |
| Orchard products | 63,000 | 60,700 | - | - | - | - |
| Farm labour income | 55,800 | 197,500 | 75,600 | 319,200 | 83,300 | 372,400 |
| Off-farm income | 130,200 | - | 176,400 | - | 194,500 | - |
| 2. Gross Out-go | 150,100 | 247,700 | 66,000 | 118,100 | 29,000 | 58,600 |
| Farming expences | | | | | | |
| Wet season paddy | 59,800 | 105,600 | 32,800 | 56,900 | 13,100 | 28,300 |
| Dry season paddy | 5,900 | 48,500 | 3,300 | 26,200 | 1,600 | 12,900 |
| Polowijo crops | 19,600 | - | 10,700 | - | 5,400 | - |
| Upland crops | 12,000 | 9,900 | 6,600 | 5,400 | 3,300 | 2,700 |
| Orchard products | 26,800 | 25,800 | - | - | - | - |
| IPEDA tax, others | 26,000 | 57,900 | 12,600 | 29,600 | 5,600 | 14,700 |
| 3. Net Incomes (1 - 2) | 555,000 | 1,107,100 | 438,400 | 792,900 | 360,200 | 607,400 |
| 4. Family Living Expences | 510,000 | 625,000 | 405,000 | 590,000 | 340,000 | 495,000 |
| Net Reserve (3 - 4) | 45,000 | 482,100 | 33,400 | 202,900 | 20,200 | 112,400 |

Table V.10.1 Agricultural Support Services envisaged under the CIDA Integrated Rural Development Project

| Annual Support Services | Proposed Programme under CIDA Project |
|---|---|
| 1. Extension Services : | - Expansion of the Rural Extension Center (REC) at Palatte<br>- Increase of PPS(1), PPM(4) and PPL(23)<br>- Training of PPL and farmer's leaders on the demonstration plots |
| 2. Agricultural Research : | - Establishment of the Agricultural Development Center (ADC) with 4 ha of land at Tapple<br>- Research on main food crops<br>- Trials for irrigation practices of water distribution and water management experiment on farmer's fields<br>- Collection of data concerning irrigation problems at on-farm level |
| 3. Agricultural Credit : | - Food crops credit for paddy (8,000 ha), maize (500 ha), groundnuts (500 ha) and greenbeans (700 ha)<br>- Industrial crops credit (1,360 ha)<br>- Investment facilities credit to KUD and RCC for collecting and distribution center (18), storage (6,000 ton), drying yards (14,260 $m^2$), hullers (4), tractors (10) and threshers (23)<br>- Land development credit (3,000 ha)<br>- Irrigation rehabilitation (400 ha)<br>- New desa irrigation (500 ha) |
| 4. Farm Inputs Supplies : | - Procurement and delivery of farm inputs by KUD and RCC<br>- Studies of transportation flow and system |
| 5. Farmers Cooperatives : | - Establishment of 21 sub unit KUD in each desa<br>- Increase of KUD extension workers<br>- Training and education of cooperative members<br>- Extension and technical assistance of KUD activities<br>- Training in the use of credit for marketing and post harvest facilities<br>- Establishment and operation of a price and market information system<br>- Feasibility study of a network of collecting and distribution center<br>- Marketing studies of market outlets and cooperative transportation system<br>- Organization of the farmer water users association (P3A) on the Maradda irrigation project area<br>- Organization and traihing of P3A in the Maradda area |
| 6. Social Development : | - Improvement of public health for eradiation of TB and malaria including the provision of a mobile health care units and construction of 7 dispensaries staffed by 7 MD, 2 health technicians and 20 health workers<br>- Improvement of domestic water supplies<br>- Improvement of social education mainly for public health, nutrition and cooperative movement<br>- Development of school cooperatives |

Source: Mission Report and Work Plan of the Project Design for the Integrated Rural Development of the Sanrego Area, Kabupaten Bone, South Sulawesi, December 1981, the Canadian International Development Agency (CIDA).

## Table V.10.2 List of Sub Unit KUD and Field Block KUD

| | Description | Location (Desa/Kec.) | Area (ha) | Nos. of Tertiary Unit (Nos.) |
|---|---|---|---|---|
| 1. | **MARADDA SUB UNIT KUD** | | | |
| (1) | Beru Teko | Sanrego, Biru/KAHU | 265 | 7 |
| (2) | Kape | Sanrego/KAHU | 267 | 6 |
| (3) | Palakka | Palakka, Sanrego/KAHU | 256 | 7 |
| (4) | Pao | Palakka, Biru/KAHU | 294 | 7 |
| (5) | Mattuju | Biru/KAHU | 216 | 6 |
| (6) | Maradda | Palakka, Biru/KAHU | 188 | 6 |
| | | Sub-total | 1,486 | 39 |
| 2. | **CENRANA SUB UNIT KUD** | | | |
| (1) | Larengkeng | Biru/KAHU | 209 | 6 |
| (2) | Batu Tanueh | Biru, Cenrana, Palakka/KAHU | 254 | 7 |
| (3) | Cenranae | Cenranae/KAHU | 211 | 4 |
| (4) | Candranae | Cenranae, Balle/KAHU | 257 | 7 |
| (5) | Jarancle | Cenranae, Balle/KAHU | 214 | 5 |
| (6) | Barang | Cakkele, Balle/KAHU | 258 | 8 |
| | | Sub-total | 1,403 | 37 |
| 3. | **PALATTAE SUB UNIT KUD** | | | |
| (1) | Larentung | Cakkele, Balle/KAHU | 192 | 4 |
| (2) | Palattae | Cakkele, Balle/KAHU | 208 | 4 |
| (3) | Aoing | Cakkele, Labuaja/KAHU | 244 | 6 |
| (4) | Labuaja | Labuaja/KAHU | 231 | 7 |
| (5) | Patinpeng | Labuaja, Balle/KAHU | 222 | 5 |
| (6) | Balle | Balle/KAHU, Masago/SALOMEKKO | 208 | 6 |
| | | Sub-total | 1,305 | 32 |
| 4. | **MASAGO SUB UNIT KUD** | | | |
| (1) | Masago | Masago, Patipeng/SALOMEKKO | 229 | 5 |
| (2) | Madong | Masago, Patinpeng/SALOMEKKO | 222 | 6 |
| (3) | Macinaga | Masago/SALOMEKKO, Massila/TONRA | 248 | 5 |
| (4) | Massila | Massila/TONRA | 213 | 7 |
| (5) | Bicucu | Paccing/TONRA | 237 | 5 |
| (6) | Kulo | Paccing/TONRA, Palakka/KAHU | 200 | 6 |
| (7) | Paccing | Paccing/TONRA, Palakka/KAHU | 207 | 6 |
| | | Sub-total | 1,556 | 40 |
| 5. | **SANREGO SUB UNIT KUD** | | | |
| (1) | Sanrego | Sanrego/KAHU | 217 | 5 |
| (2) | Labosi | Sanrego/KAHU, Tappale/LIBURENG | 272 | 6 |
| (3) | Tappale | Sanrego/KAHU, Tappale/LIBURENG | 239 | 6 |
| (4) | Parota | Sanrego/KAHU, Tappale/LIBURENG | 207 | 5 |
| (5) | Apale | Tappale/LIBURENG | 245 | 5 |
| (6) | Laburasseng | Tappale/LIBURENG | 246 | 6 |
| | | Sub-total | 1,426 | 33 |
| 6. | **POLEVALI SUB UNIT KUD** | | | |
| (1) | Peleng Pelenge | Paccing/TONRA, Polevali/LIBURENG | 215 | 5 |
| (2) | Popparapa | Polevali/LIBURENG | 220 | 5 |
| (3) | Polevali | Polevali, Pitumpidange/LIBURENG | 195 | 4 |
| (4) | Sama Enre | Pitumpidange/LIBURENG | 194 | 5 |
| | | Sub-total | 824 | 19 |
| | Total | 35 Field Block KUD | 8,000 | 200 |

Table V.10.3 Requirement of Warehouse, Processing and Transpotation Facilities for Sub Unit KUD

| | Covered Area (ha) | Total/1 Paddy Production (tons) | Consumption, Handling Losses/2 (tons) | Surplus of Paddy (tons) | Milling/3 Capacity (ton/day) | Total/4 Paddy Milled (tons) | Storage of Dried Paddy (tons) | Storage of Milled Rice (tons) |
|---|---|---|---|---|---|---|---|---|
| A. Warehouse | | | | | | | | |
| 1. Maradda | 1,490 | 7,500 | 600 | 6,900 | 63 | 3,150 | 3,750 | 200 |
| 2. Cenranae | 1,400 | 7,000 | 560 | 6,440 | 63 | 3,150 | 3,290 | 200 |
| 3. Palattae | 1,300 | 6,500 | 520 | 5,980 | 56 | 2,800 | 3,180 | 175 |
| 4. Masago | 1,560 | 7,800 | 620 | 7,180 | 70 | 3,500 | 3,680 | 225 |
| 5. Sanrego | 1,430 | 7,100 | 570 | 6,530 | 63 | 3,150 | 3,380 | 200 |
| 6. Polewali | 820 | 4,100 | 320 | 3,770 | 35 | 1,750 | 2,020 | 125 |
| Total | 8,000 | 40,000 | 3,200 | 36,800 | 350 | 17,500 | 19,300 | 1,125 |

| | Daily Received/6 of Dried Paddy (ton/day) | Dryer/7 Capacity (ton/ha) | Dryer/7 Number (nos.) | Rice Mill/8 Capacity (ton/ha) | Rice Mill/8 Number (nos.) | Truck/9 Capacity (ton/ha) | Truck/9 Number (nos.) |
|---|---|---|---|---|---|---|---|
| B. Processing and Transportation Facilities | | | | | | | |
| 1. Maradda | 140 | 7.0 | 8 | 8.2 | 9 | 40 | 8 |
| 2. Cenranae | 130 | 6.5 | 7 | 7.7 | 9 | 40 | 8 |
| 3. Palattae | 120 | 6.0 | 7 | 7.1 | 8 | 35 | 7 |
| 4. Masago | 145 | 7.3 | 8 | 8.5 | 10 | 45 | 9 |
| 5. Sanrego | 130 | 6.5 | 7 | 7.8 | 9 | 40 | 8 |
| 6. Polewali | 75 | 3.8 | 4 | 4.5 | 5 | 25 | 5 |
| Total | 740 | | 41 | | 50 | | 45 |

Remarks:
/1; Total paddy production for wet season paddy = Covered area x 5.0 ton/ha
/2; Consumption, handling losses = Total paddy production x 8%
/3; Milling capacity per days = Number of rice mill (1 ton/hr) x 7 hr/day (working hour)
/4; Total paddy milled = Milling capacity x 50 days/cropping (harvesting days)
/5; Storage capacity for milled rice = Daily paddy milled x milling rate (0.65) x 5 days
/6; Daily received paddy = Surplus of paddy ÷ 50 days
/7; Required number of dryer = Daily received paddy ÷ 20 hr/day (working hour)
/8; Required number of rice mill = Surplus of paddy ÷ (120 days x 7 hr/day)
/9; Required number of truck = Daily paddy milled (number of rice mill x 7 hr/day) x milling rate (0.65) ÷ 5 ton/truck

Table V.10.4 Requirement of Warehouse, Processing and Transpotation Facilities for Field Block KUD

| | Description | Covered Area (ha) | Daily Received/1 Paddy (tons/day) | Drying/2 Floor ($m^2$) | Ware-/3 house (tons) | Truck/4 (nos.) |
|---|---|---|---|---|---|---|
| 1. | MARADDA SUB UNIT KUD (1,486 ha) | | | | | |
| | Beru Teko | 265 | 24 | 1,440 | 72 | 4 |
| | Kape | 267 | 25 | 1,500 | 75 | 4 |
| | Palakka | 256 | 24 | 1,440 | 72 | 4 |
| | Pao | 294 | 27 | 1,620 | 81 | 5 |
| | Mattuju | 216 | 20 | 1,200 | 60 | 3 |
| | Maradda | 188 | 17 | 1,020 | 51 | 3 |
| | | Sub-total | | 7,920 | 411 | 23 |
| 2. | CENRANA, SUB UNIT KUD (1,403 ha) | | | | | |
| | Larengkeng | 209 | 19 | 1,140 | 57 | 3 |
| | Batu Tanueh | 254 | 23 | 1,380 | 69 | 4 |
| | Cenranae | 211 | 19 | 1,140 | 57 | 3 |
| | Candranae | 257 | 24 | 1,440 | 72 | 4 |
| | Jarancle | 214 | 20 | 1,200 | 60 | 3 |
| | Barang | 258 | 24 | 1,440 | 72 | 4 |
| | | Sub-total | | 7,740 | 387 | 21 |
| 3. | PALATTAE SUB UNIT KUD (1,305 ha) | | | | | |
| | Lancntong | 192 | 27 | 1,620 | 81 | 5 |
| | Palattae | 208 | 19 | 1,140 | 57 | 3 |
| | Aning | 244 | 22 | 1,320 | 66 | 4 |
| | Labuaja | 231 | 21 | 1,260 | 63 | 4 |
| | Patinpeng | 222 | 20 | 1,200 | 60 | 3 |
| | Balle | 208 | 19 | 1,140 | 57 | 3 |
| | | Sub-total | | 7,680 | 384 | 22 |
| 4. | MASAGO STATION SUB UNIT KUD (1,550 ha) | | | | | |
| | Masago | 229 | 21 | 1,260 | 63 | 4 |
| | Hadong | 222 | 20 | 1,200 | 60 | 3 |
| | Macinaga | 248 | 23 | 1,380 | 69 | 4 |
| | Massila | 213 | 20 | 1,200 | 60 | 3 |
| | Bicucu | 237 | 22 | 1,320 | 66 | 4 |
| | Hulo | 200 | 18 | 1,080 | 54 | 3 |
| | Paccing | 207 | 19 | 1,140 | 57 | 3 |
| | | Sub-total | | 8,580 | 429 | 24 |
| 5. | SANREGO SUB UNIT KUD (1,426 ha) | | | | | |
| | Sanrego | 217 | 20 | 1,200 | 60 | 3 |
| | Labosi | 272 | 25 | 1,500 | 75 | 4 |
| | Tappale | 239 | 22 | 1,320 | 66 | 4 |
| | Parota | 207 | 19 | 1,140 | 57 | 3 |
| | Apale | 245 | 23 | 1,380 | 69 | 4 |
| | Laburasseng | 246 | 23 | 1,380 | 69 | 4 |
| | | Sub-total | | 7,920 | 396 | 22 |
| 6. | POLEWALI SUB UNIT KUD (824 ha) | | | | | |
| | Peleng Pelenge | 215 | 20 | 1,200 | 60 | 3 |
| | Popparapa | 220 | 20 | 1,200 | 60 | 3 |
| | Polewali | 195 | 18 | 1,080 | 54 | 3 |
| | Sasa Bare | 194 | 18 | 1,080 | 54 | 3 |
| | | Sub-total | | 4,560 | 228 | 12 |
| | Total | | | 44,400 | 2,235 | 124 |

Remarks: /1; Daily received paddy = Covered area x 5 ton/ha x 0.92 ÷ 50 days
/2; Required drying floor = Daily received paddy x (30 $m^2$/ton) x 2 days
/3; Required warehouse capacity = Daily received paddy x 3 days
/4; Required truck capacity = Daily received paddy ÷ (2 tons/truck x 3 times)

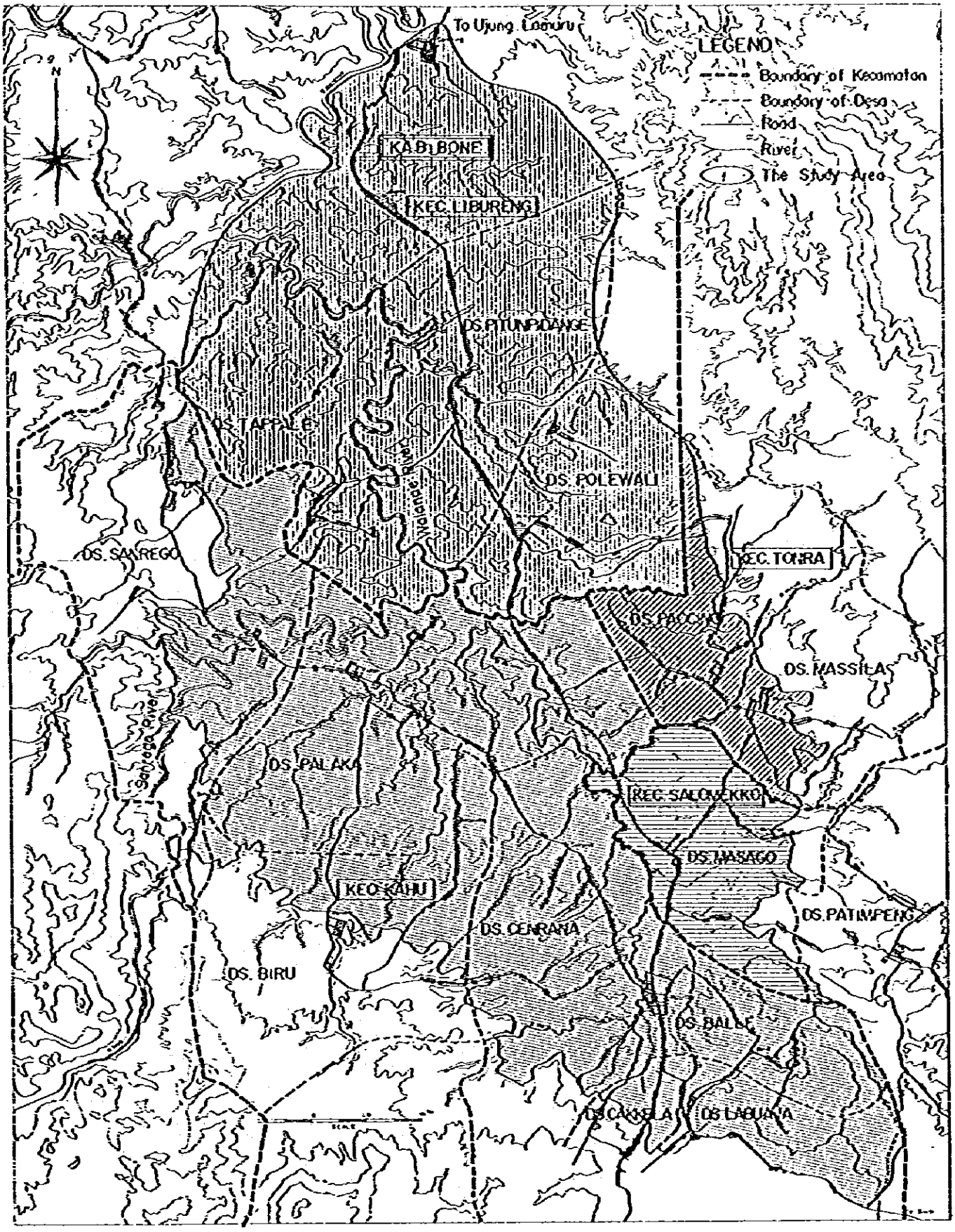



Fig. V.2.1 ADMINISTRATIVE BOUNDARIES IN THE STUDY AREA

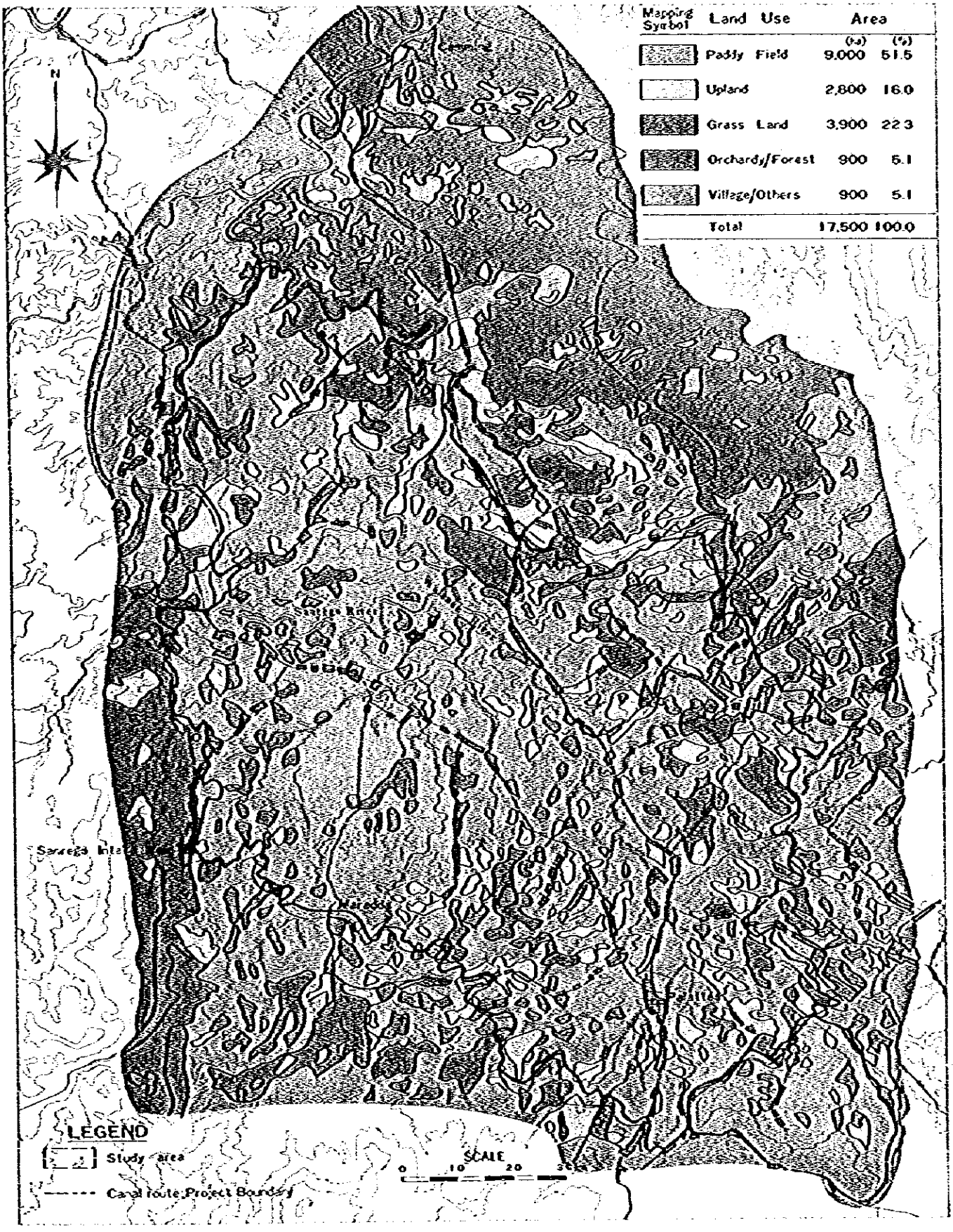



Fig. V.2.2 PRESENT LAND USE MAP

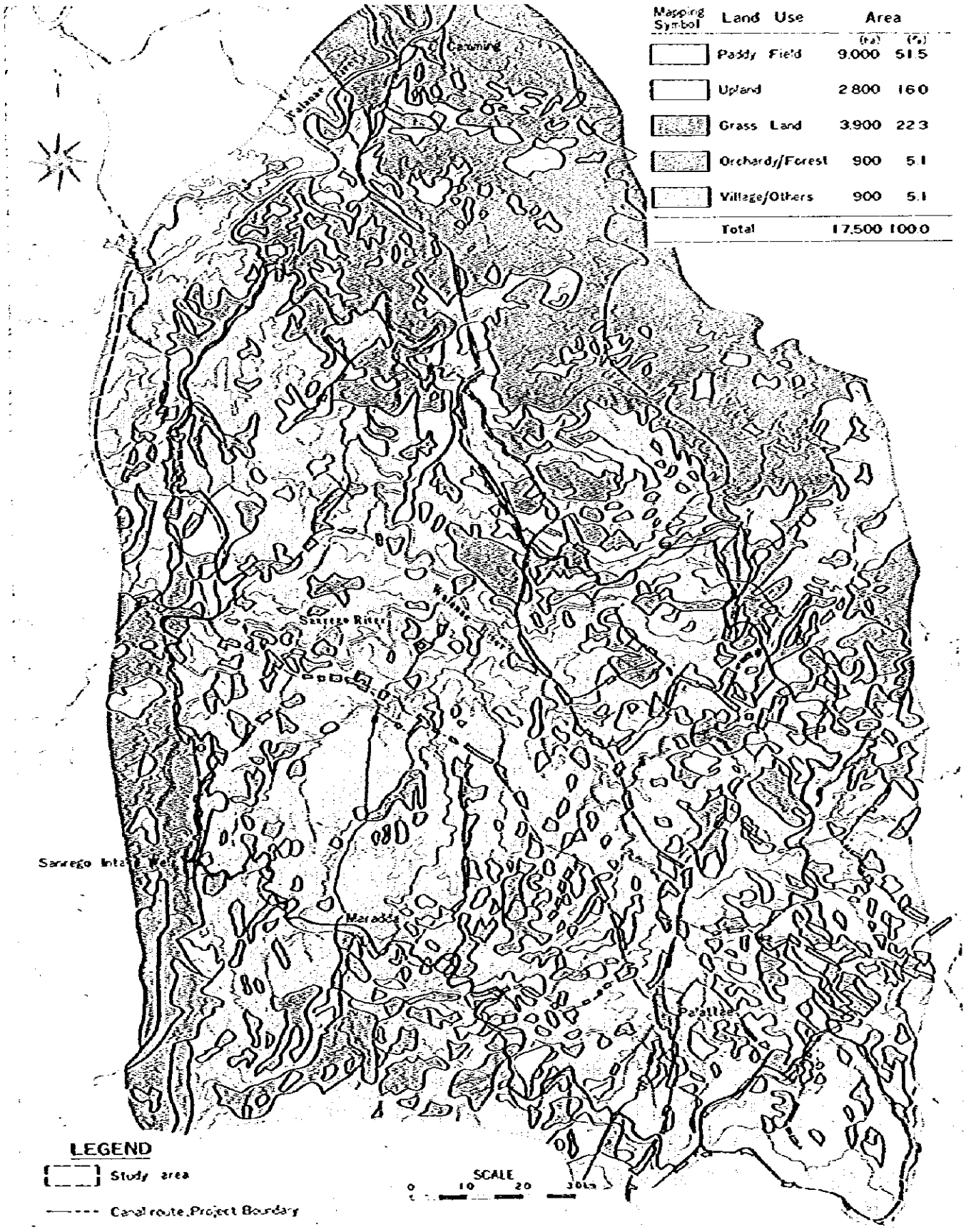



Fig. V.2.2 PRESENT LAND USE MAP

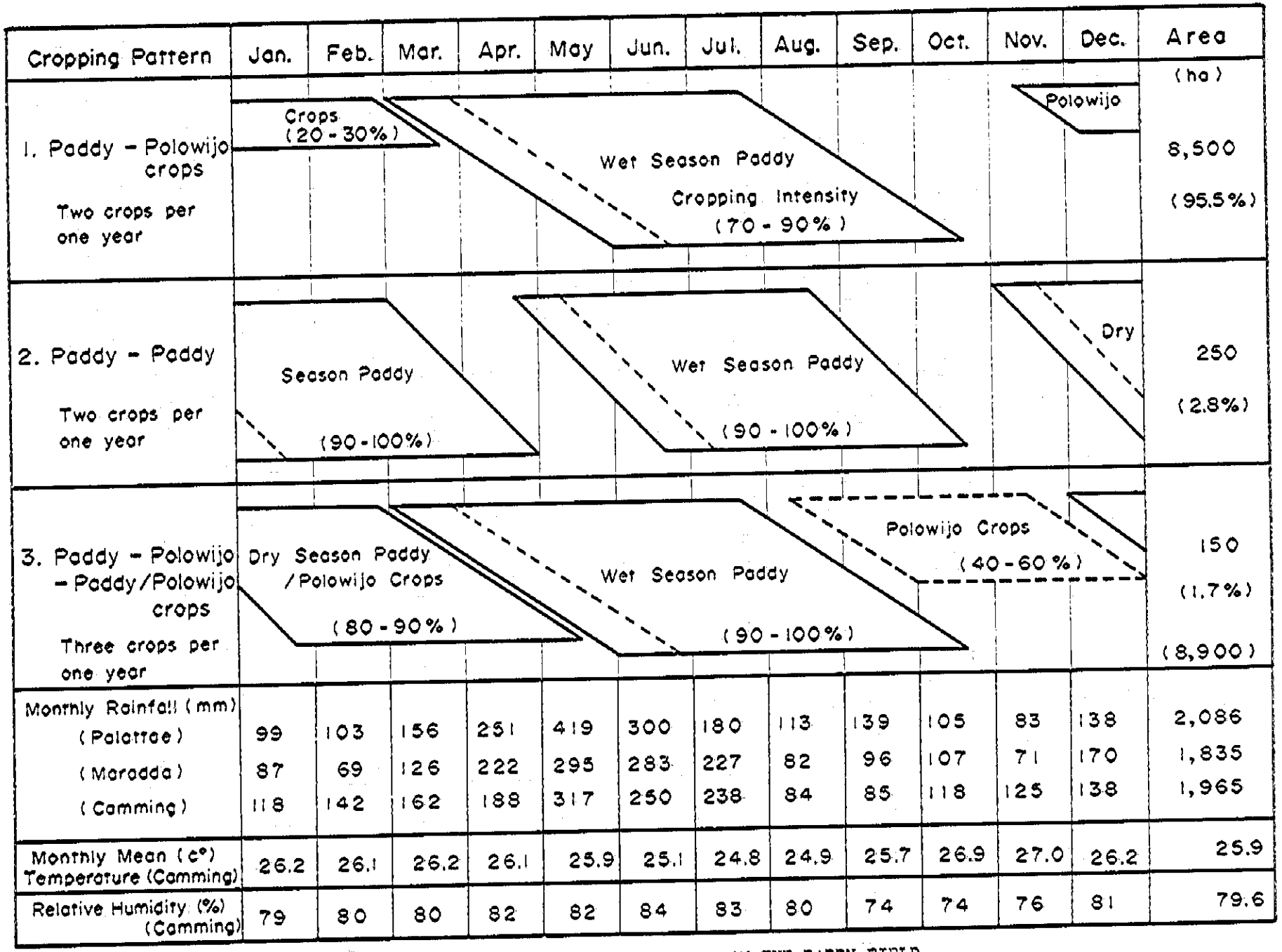



Fig. V.2.3 PRESENT CROPPING PATTERN ON THE PADDY FIELD

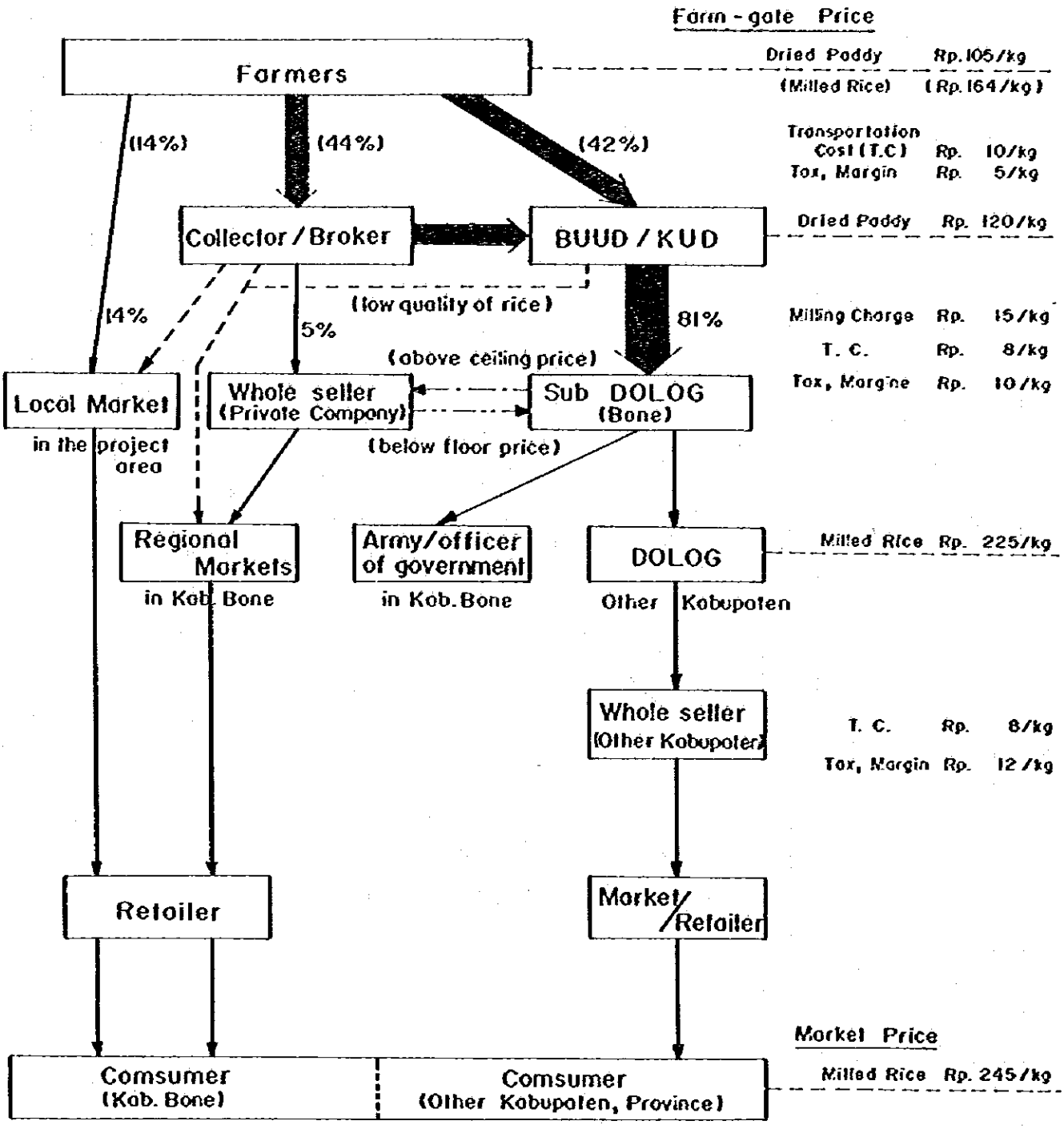
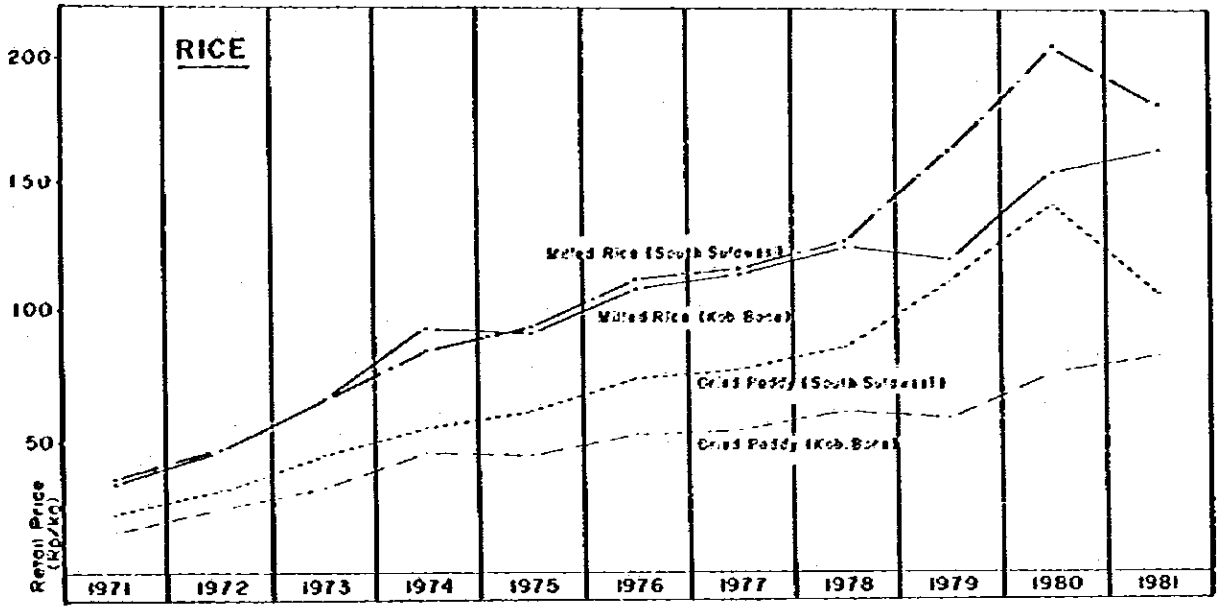
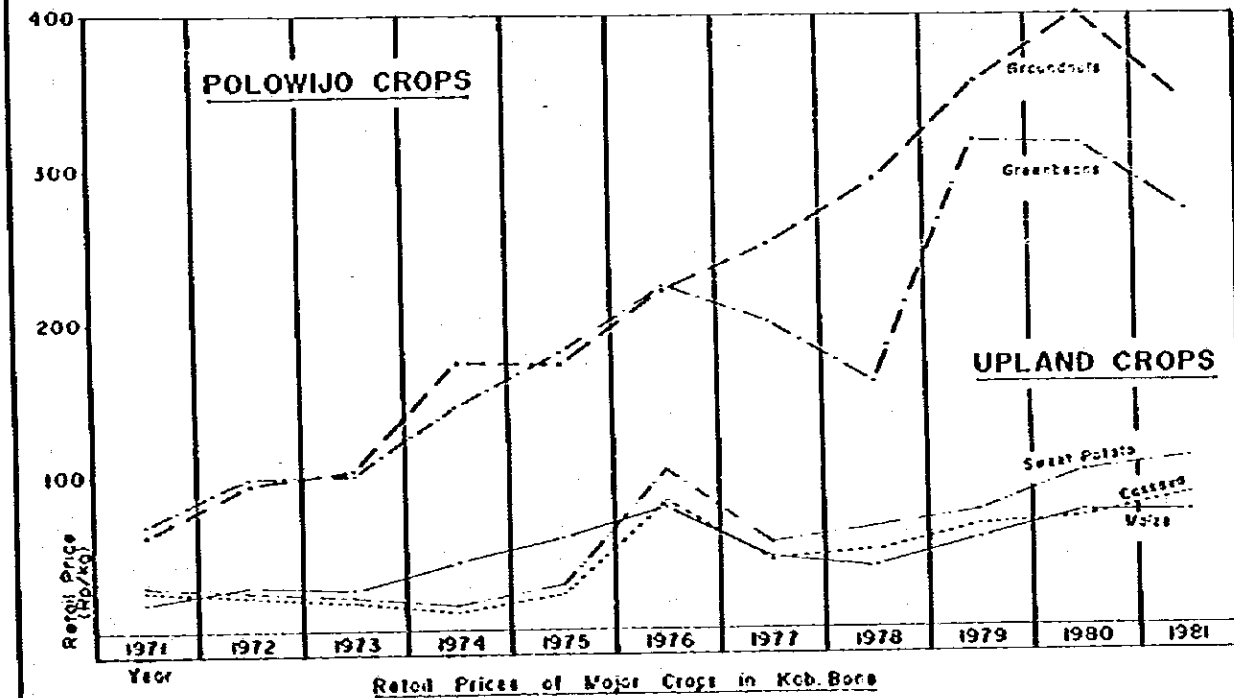



Fig. V.2.4 MARKETING FLOW OF RICE (1982)




Retail Prices of Milled Rice and Dried Paddy in Kab. Bone and South Sulawesi Province




Retail Prices of Major Crops in Kab. Bone

Fig. V.2.5 RETAIL PRICES OF FARM PRODUCTS

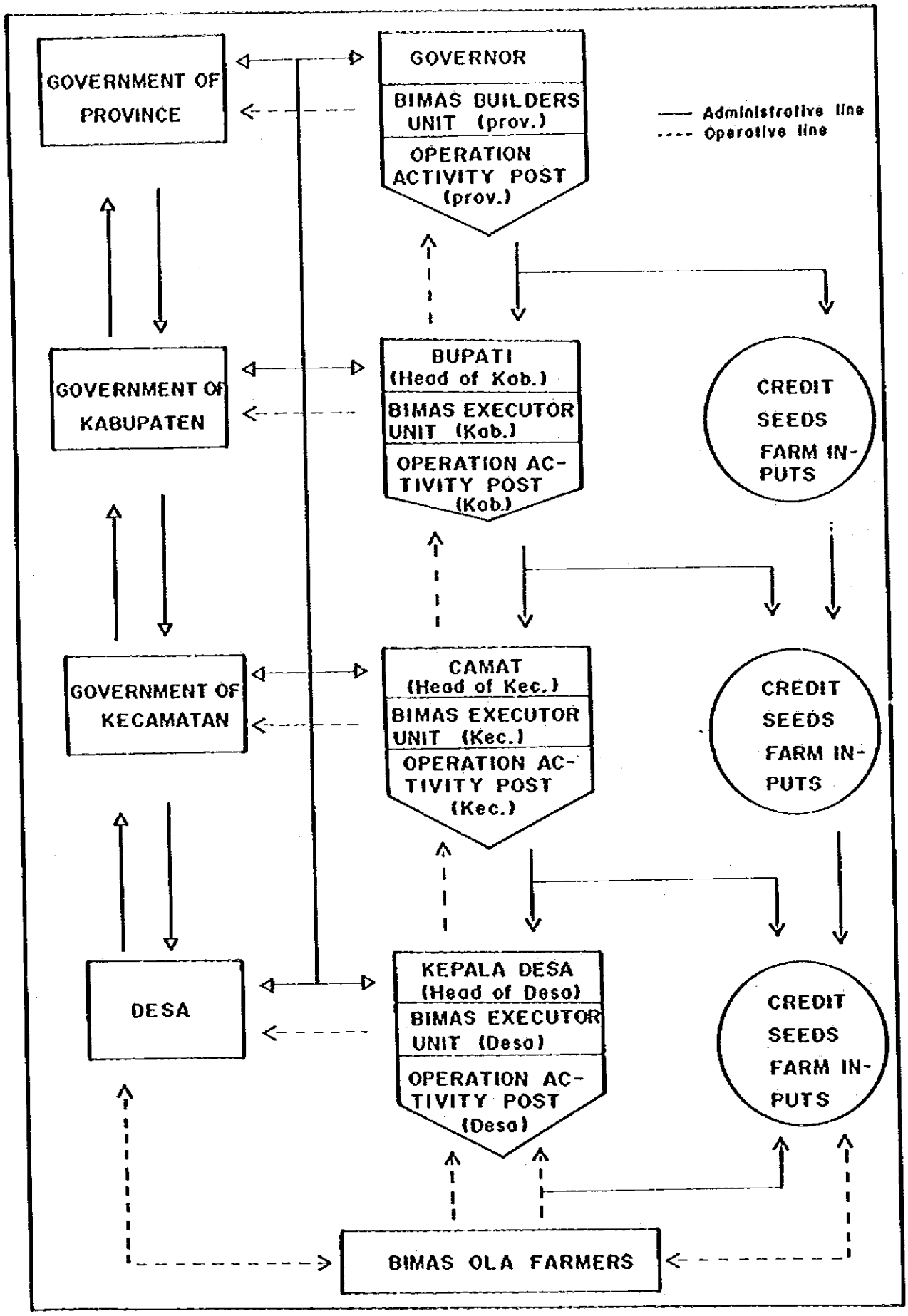



Fig. V.3.1 ORGANIZATION CHART OF LAPPO ASE OPERATION

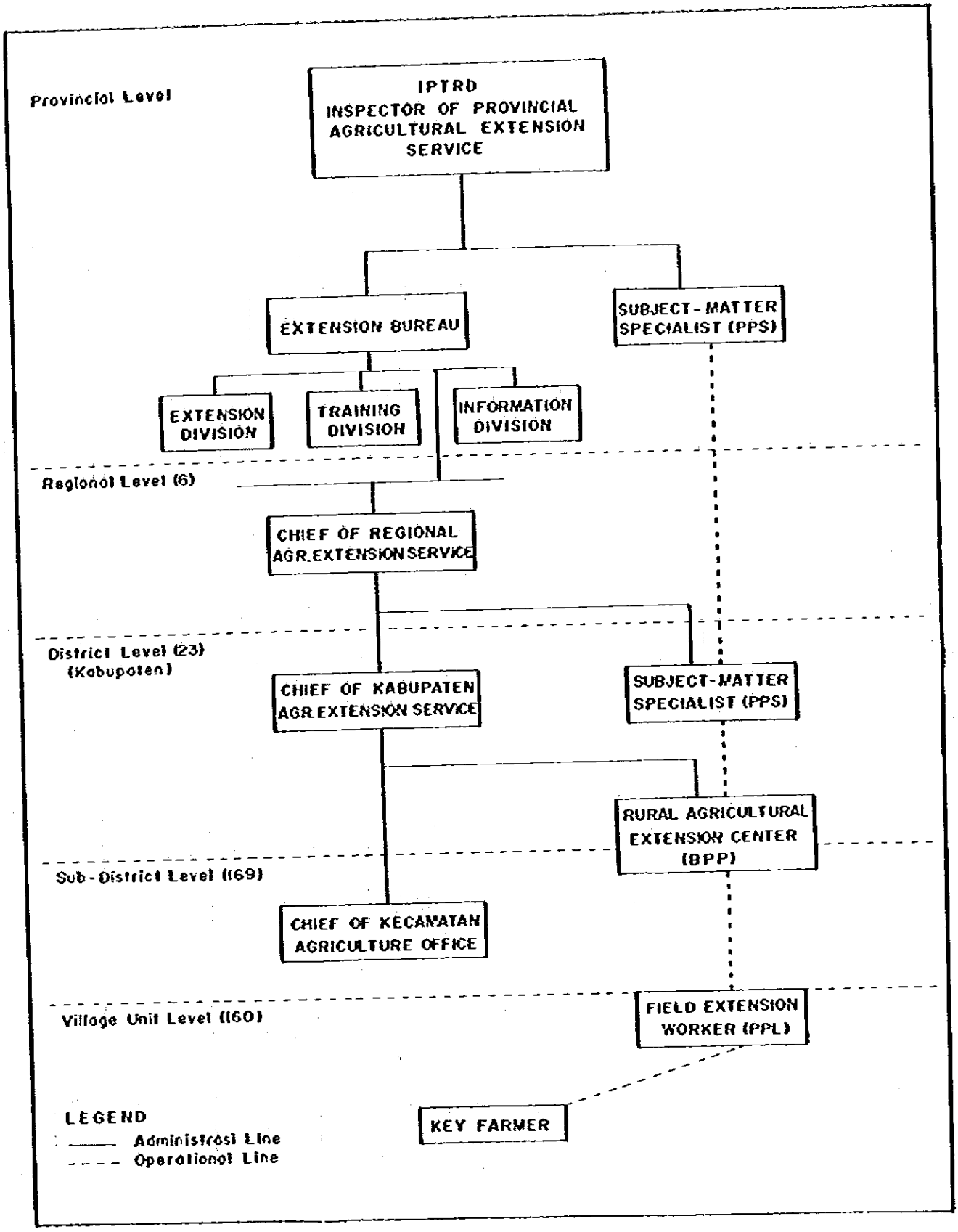



Fig. V.3.2 ORGANIZATION CHART OF AGRICULTURAL EXTENTION SERVICE IN THE SOUTH SULAWESI PROVINCE

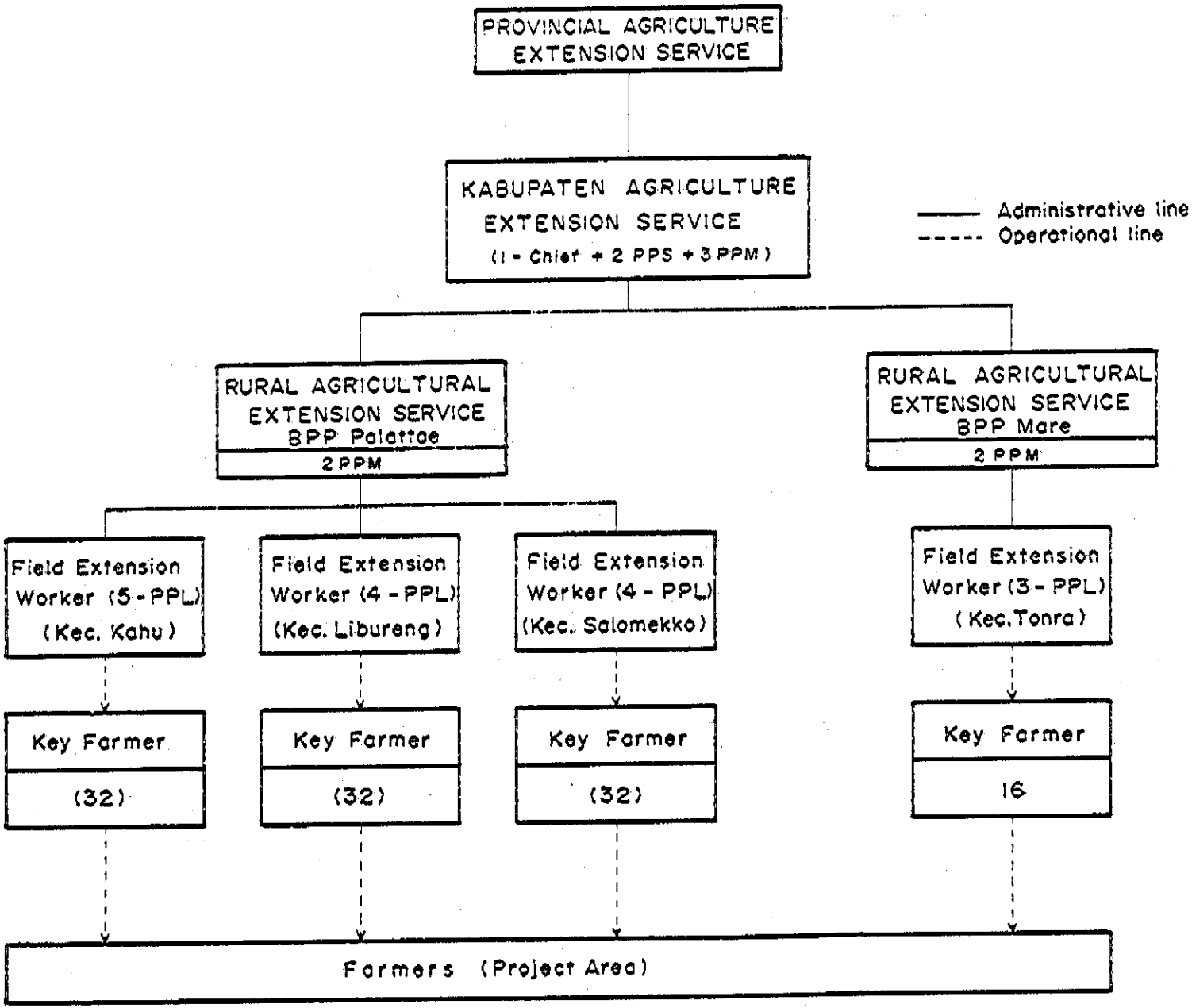



Fig. V.3.3 STRUCTURAL ORGANIZATION OF AGRICULTURAL EXTENTION SERVICE IN THE PROJECT AREA

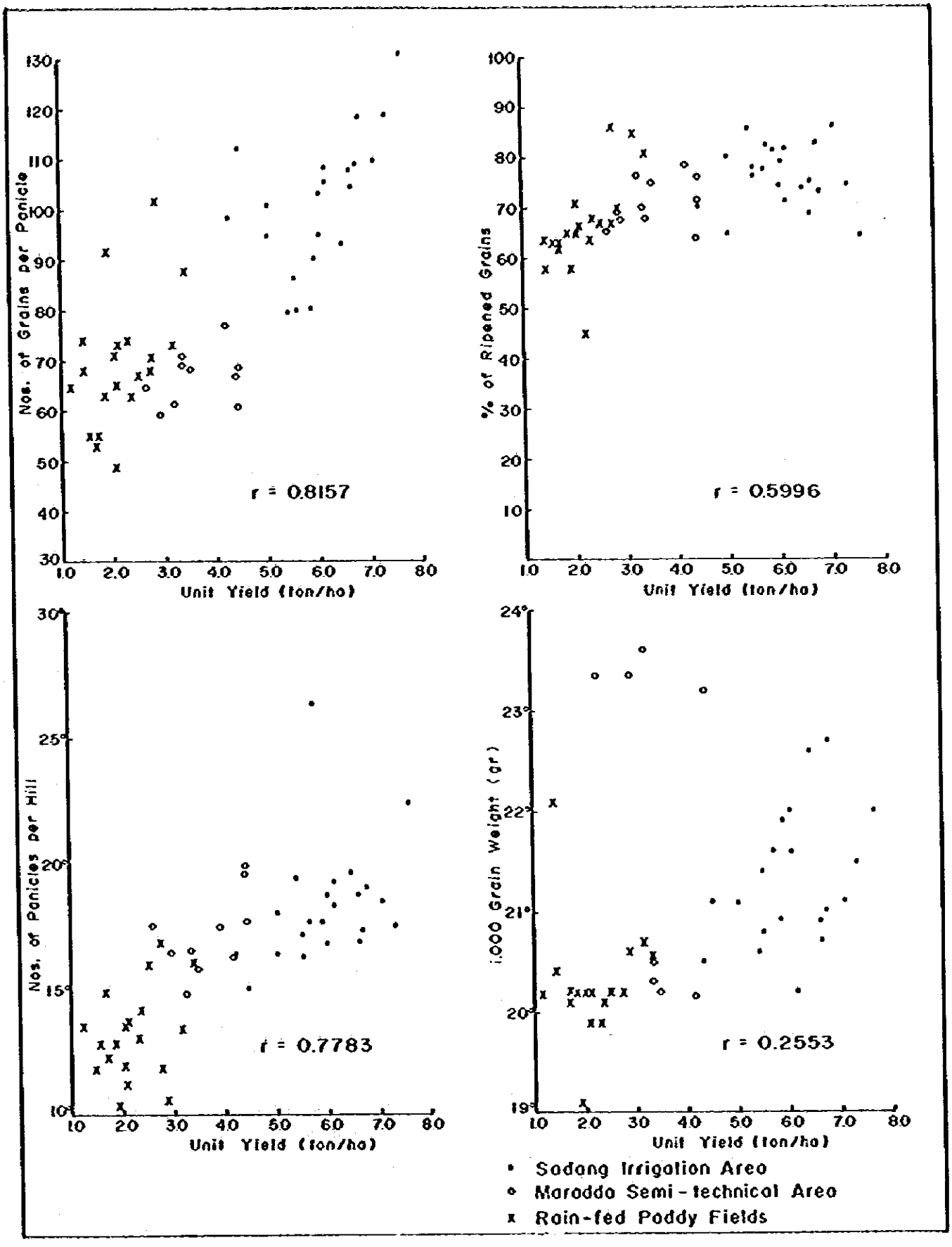
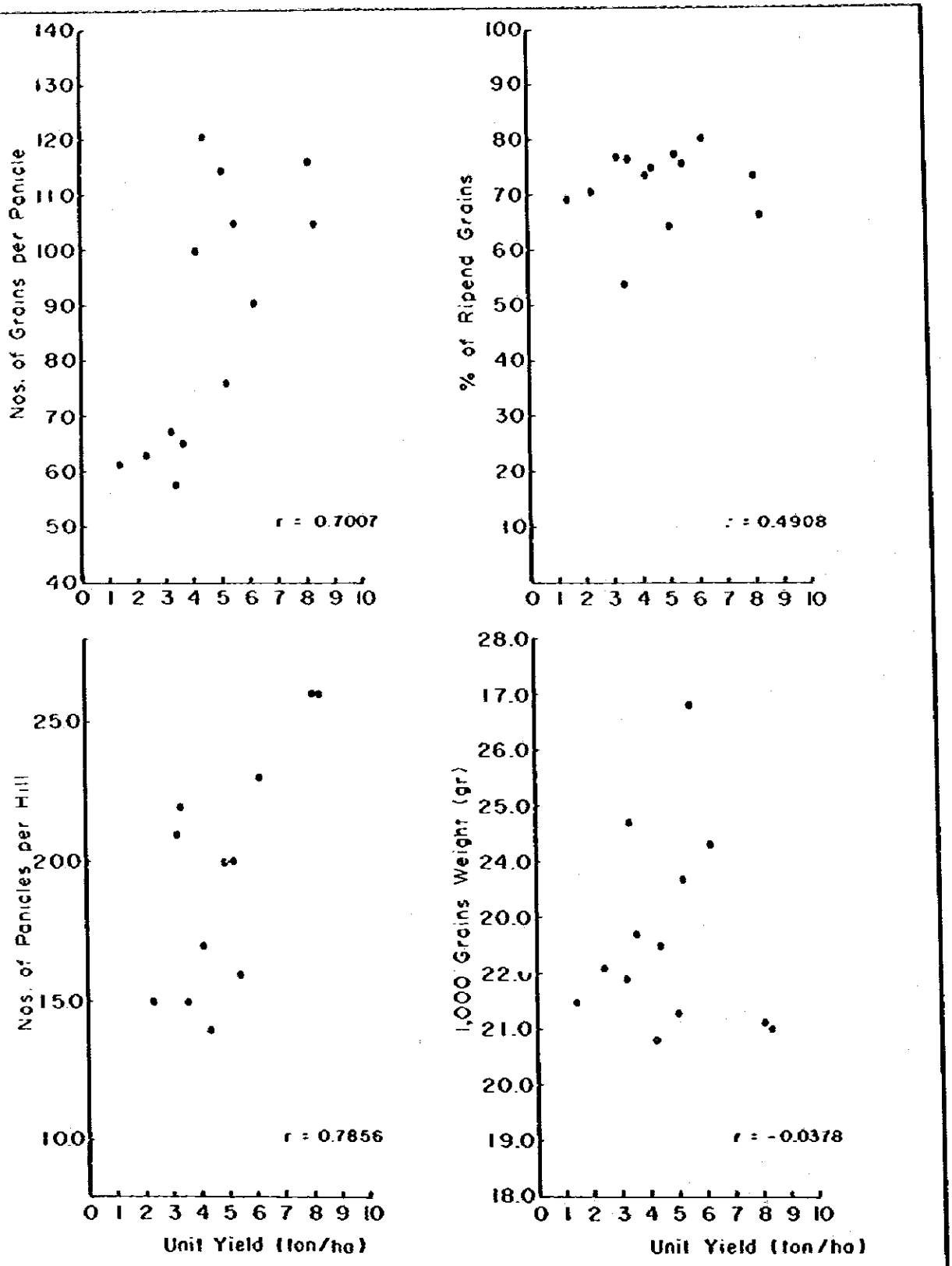



Fig. V.4.1 RELATION BETWEEN UNIT YIELD & YIELD COMPONENTS (WET SEASON PADDY)




Source: Supporting Report (volume 2) of Master Plan for The Central South Sulawesi Water Resources Development Project, March 1980.

Fig. V.4.2 RELATION BETWEEN UNIT YIELD & YIELD COMPONENTS (DRY SEASON PADDY)

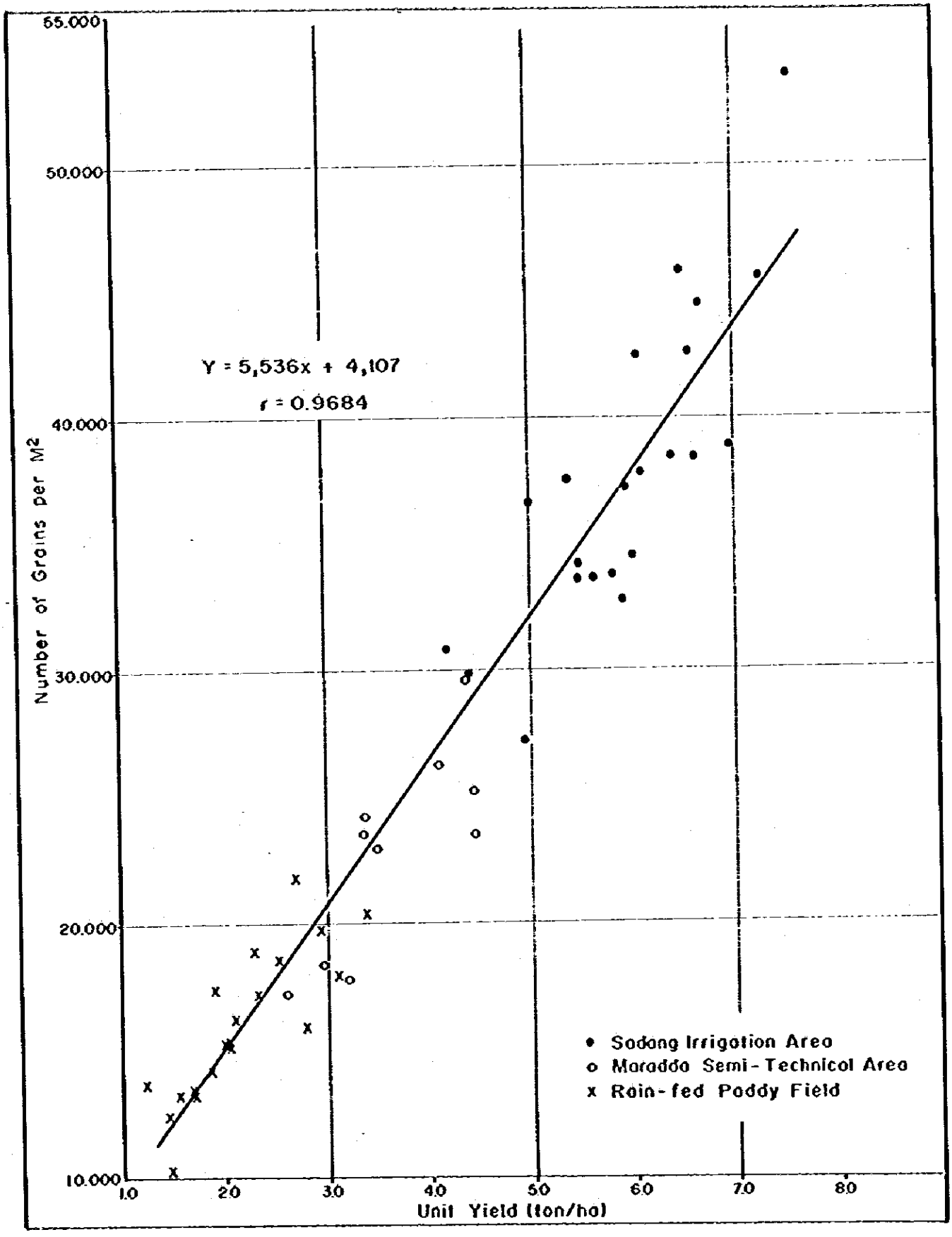
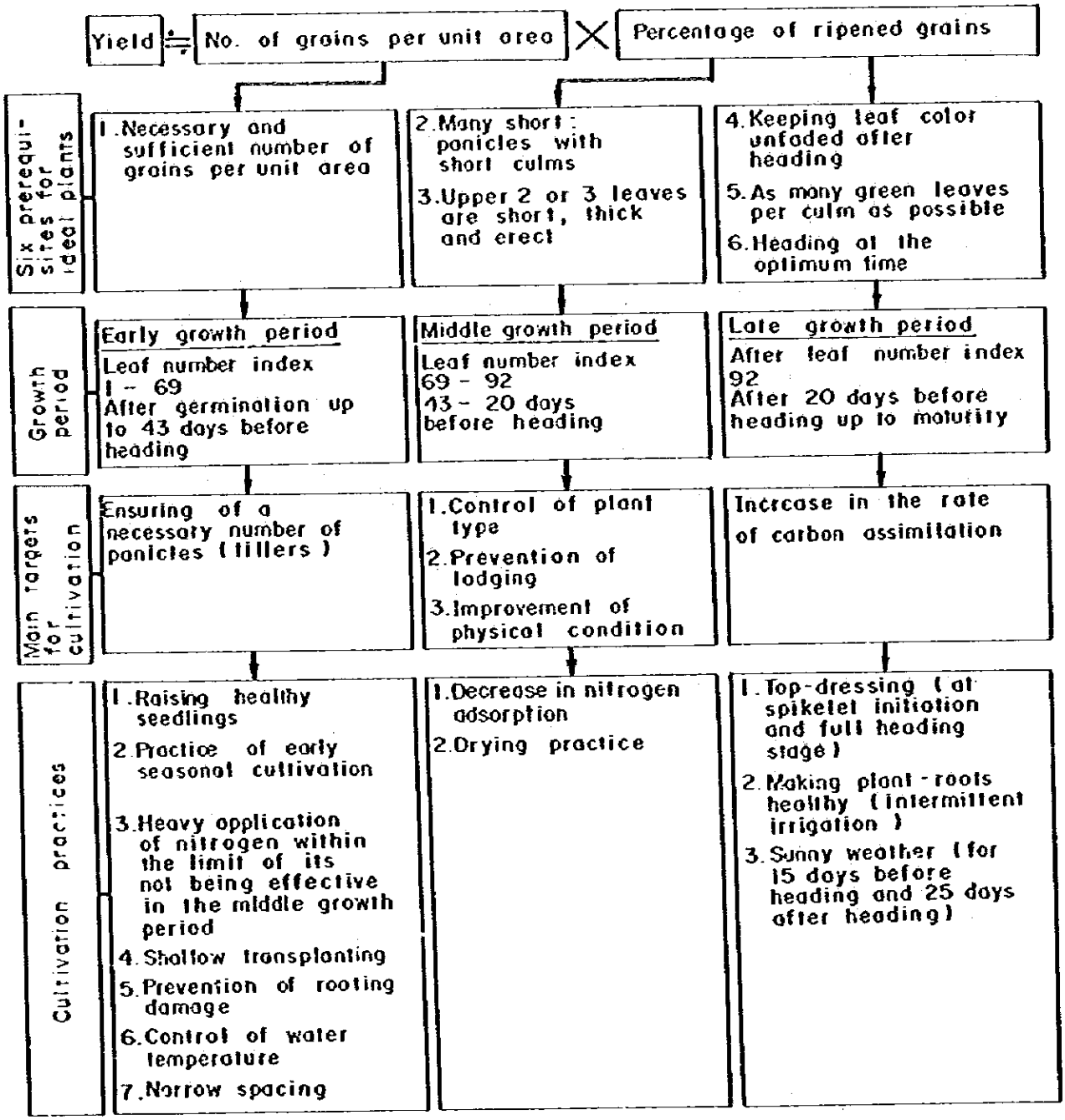



Fig. V.4.3 RELATION BETWEEN UNIT YIELD & NUMBER OF GRAINS PER $M^2$




Source : S. Matsushima, Rice cultivation for the Million, Japan Scientific Societies Press, 1980

Fig. V.4.4 DIAGRAMATIC GUIDELINE FOR IMPROVEMENT OF RICE CULTIVATION PRACTICES

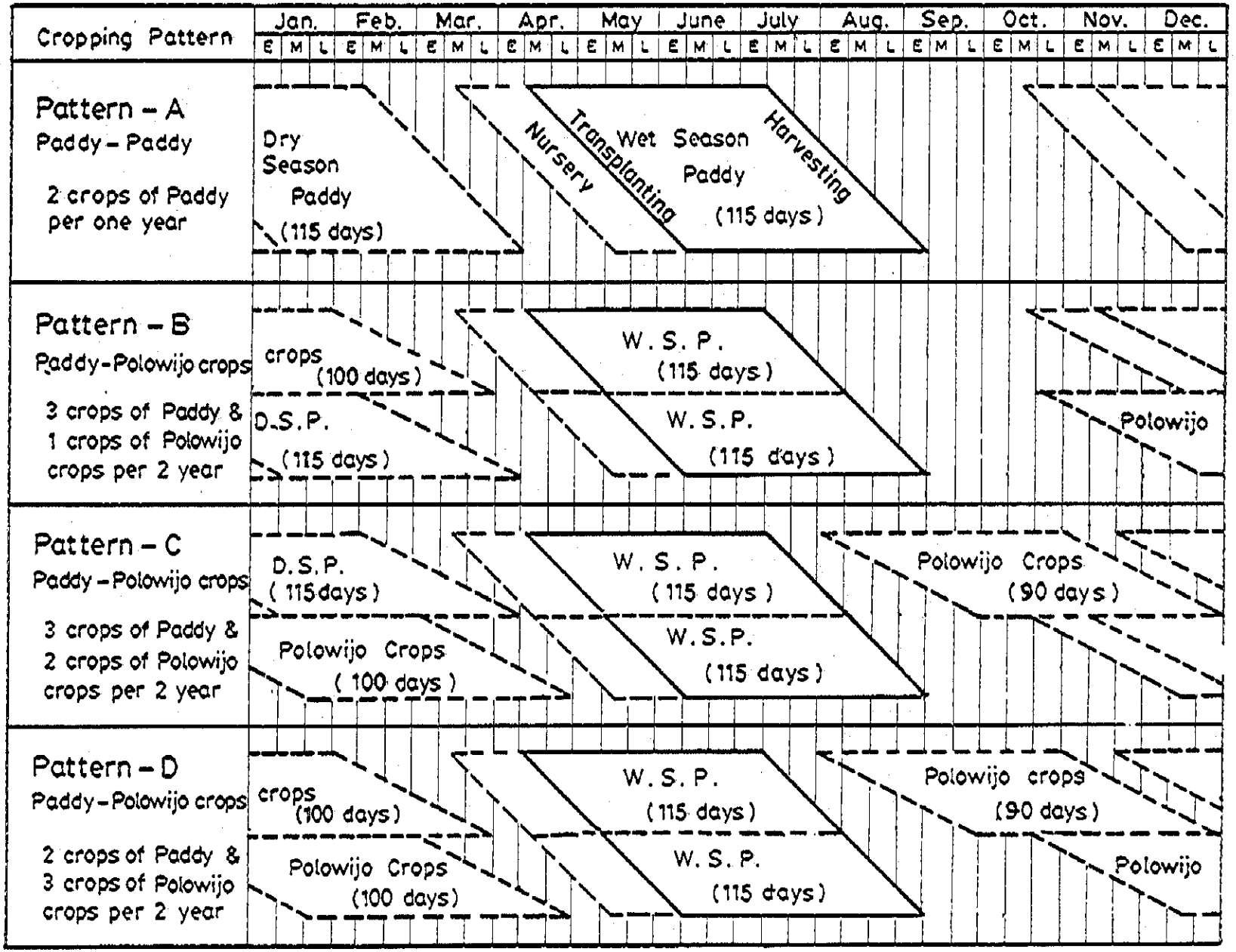



Fig. V.5.1 ALTERNATIVE CROPPING PATTERNS

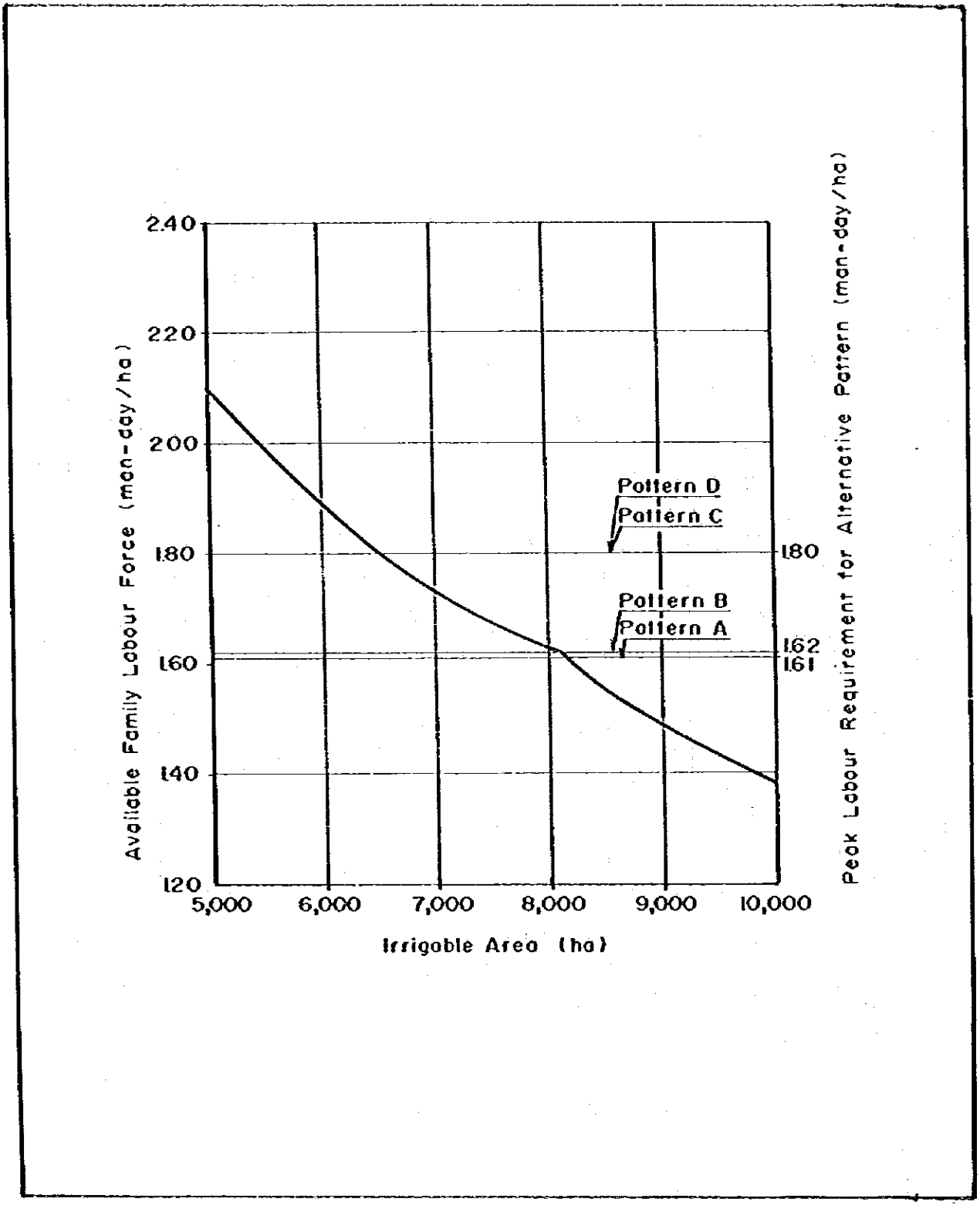



Fig. V.5.2 AVAILABLE LABOUR FORCE UNDER DIFFERENT IRRIGABLE AREA (ADAPTABILITY OF ALTERNATIVE CROPPING PATTERN)

| Description \ Month | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov | Dec. | Unit Labour Requirement (Man-day/ha) Wet Season Paddy | Palawija crops | Dry Season Paddy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cropping Pattern | D.S.P. | | | | W.S.P. | | | | | | | | | | |
| A. Farm Operation | | | | | | | | | | | | | | | |
| 1. Nursery preparation | | | | 0.09 | | | | | | | 0.05 | | 4.3 | - | 4.3 |
| 2. Field preparation (plowing) | | | | 0.24 | | | | | | | 0.13 | | 11.3 | 5.0 | 12.8 |
| 3. — ,, — (harrowing/puddling) | 0.15 | | | 0.28 | | | | | | | | 0.15 | 13.6 | 5.0 | 15.0 |
| 4. 1st fertilizer application | 0.03 | | | 0.05 | | | | | | | | 0.03 | 2.5 | 1.0 | 2.5 |
| 5. Transplanting/Seeding | 0.26 | | | 0.54 | | | | | | | | 0.26 | 25.7 | 15.0 | 25.7 |
| 6. 1st weeding | 0.06 | | | 0.09 | | | | | | | | 0.06 | 4.5 | 8.0 | 5.8 |
| 7. 2nd fertilizer application | 0.02 | | | 0.03 | | | | | | | | 0.02 | 1.5 | 1.0 | 1.5 |
| 8. 1st chemical application | 0.01 | | | 0.03 | | | | | | | | 0.01 | 1.4 | 2.0 | 1.4 |
| 9. 2nd weeding | 0.06 | | | 0.08 | | | | | | | | 0.06 | 4.5 | 6.0 | 5.8 |
| 10. 3rd weeding | 0.04 | | | | 0.06 | | | | | | | 0.04 | 3.1 | 6.0 | 4.1 |
| 11. 2nd chemical application | 0.01 | | | | 0.03 | | | | | | | 0.01 | 1.4 | 2.0 | 1.4 |
| 12. 3rd fertilizer application | 0.02 | | | | 0.03 | | | | | | | 0.02 | 1.5 | - | 1.5 |
| 13. 3rd chemical application | 0.01 | | | | | 0.03 | | | | | | | 1.4 | - | 1.4 |
| 14. 4th chemical application | | 0.02 | | | | | 0.03 | | | | | | 1.5 | 2.0 | 1.5 |
| 15. Harvesting | | | 0.23 | | | | | 0.48 | | | | | 22.9 | 16.0 | 22.9 |
| 16. Threshing | | | 0.18 | | | | | 0.36 | | | | | 18.2 | 8.0 | 18.2 |
| 17. Drying | | | 0.06 | | | | | 0.12 | | | | | 5.6 | 2.0 | 5.6 |
| 18. Transportation | | | 0.13 | | | 0.02 | | 0.27 | | | | | 12.8 | 3.0 | 12.8 |
| 19. Water management | | | | 0.03 | | | | | | 0.03 | | | 3.0 | 3.0 | 3.0 |
| B. Total Unit Labour Requirement per Ha | 0.28 | 0.68 | 0.67 | 1.25 | 1.61 | 0.44 | 1.36 | 1.33 | 0.05 | 0.05 | 0.67 | 0.89 | Assumption : % of Workable Days : 80 % | | |
| | 0.72 | 0.71 | 0.58 | 0.67 | 0.74 | 1.31 | 1.69 | 1.58 | 1.52 | 1.31 | 0.32 | 0.23 | 1.36 | 1.33 | 1.30 | 1.30 | 0.05 | 0.05 | 0.05 | 0.10 | 0.41 | 0.82 | 0.87 | 0.84 | |
| C. Available Family Labour For per Ha | 1.63 | | | | | | | | | | | | Annual Working Days : 290 days | | |
| D. Balance (B-C) | | | | | | | | | | | | | | | |

Fig. V.5.3 UNIT LABOUR REQUIREMENT PER HA FOR ALTERNATIVE CROPPING PATTERN VS. AVAILABLE LABOUR FORCE (1/4)

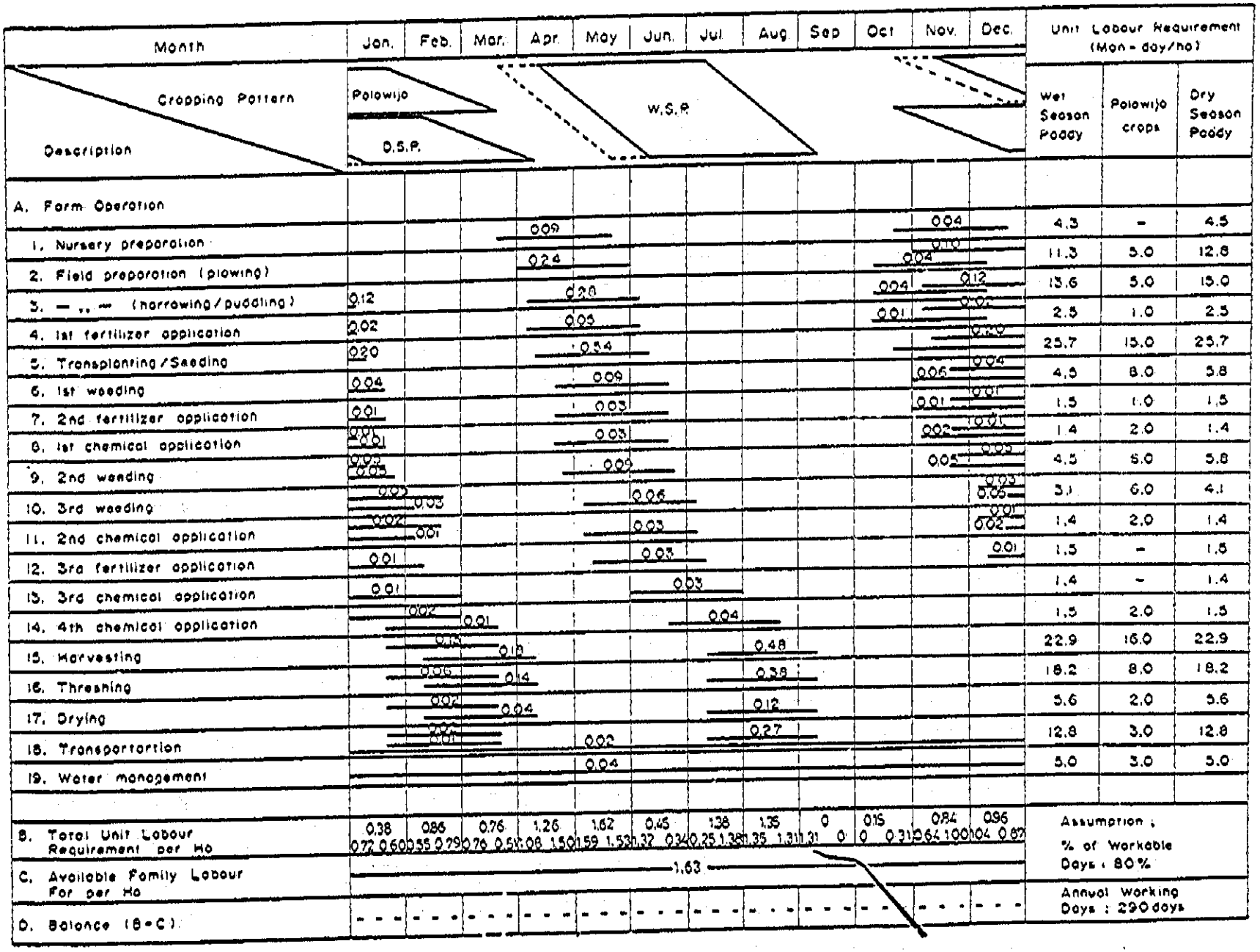



Fig. V.5.3 UNIT-LABOUR REQUIREMENT PER HA FOR ALTERNATIVE CROPPING PATTERN VS. AVAILABLE LABOUR FORCE (2/4)

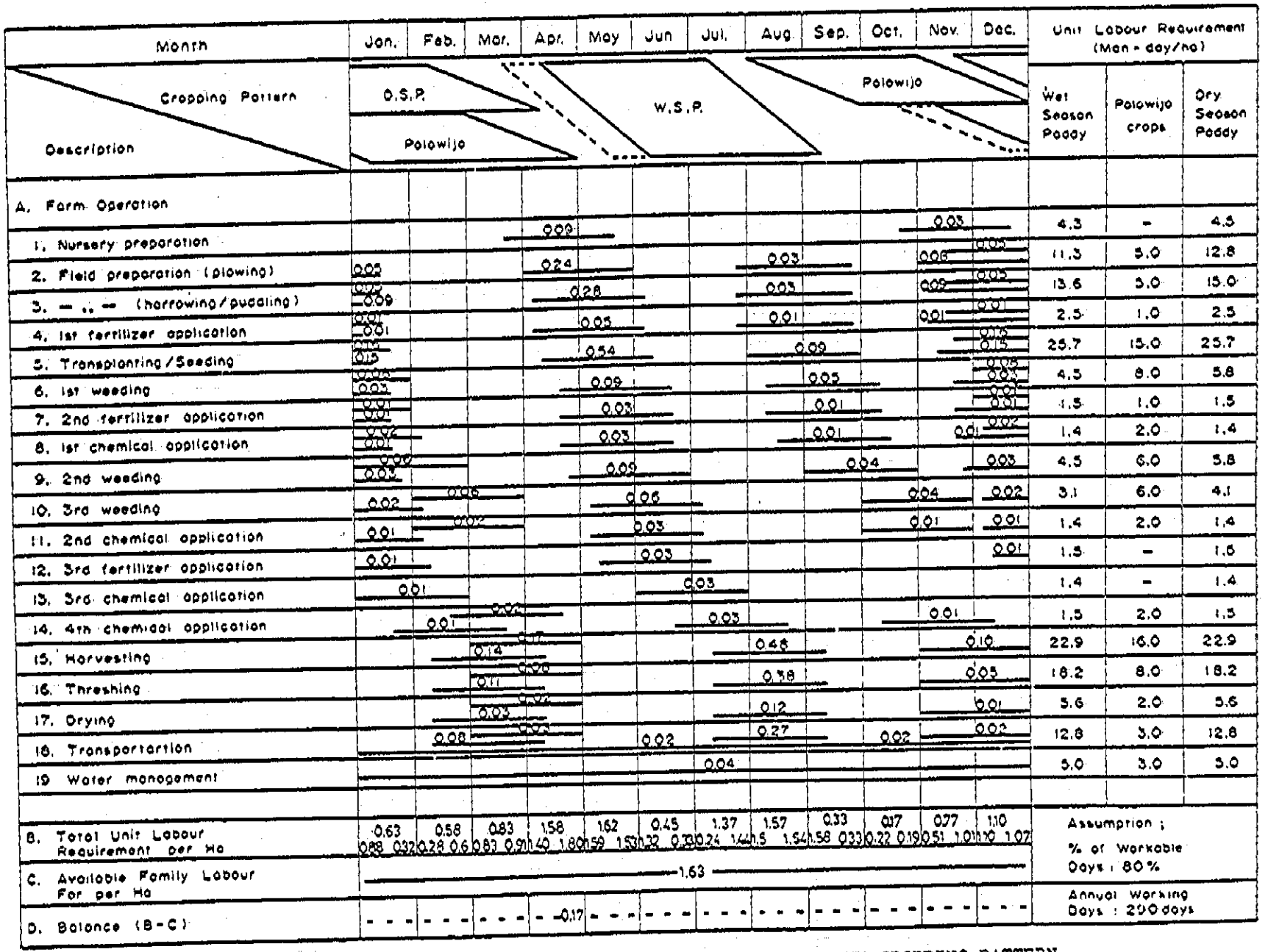



Fig. V.5.3 UNIT LABOUR REQUIREMENT PER HA FOR ALTERNATIVE CROPPING PATTERN VS. AVAILABLE LABOUR FORCE (3/4)

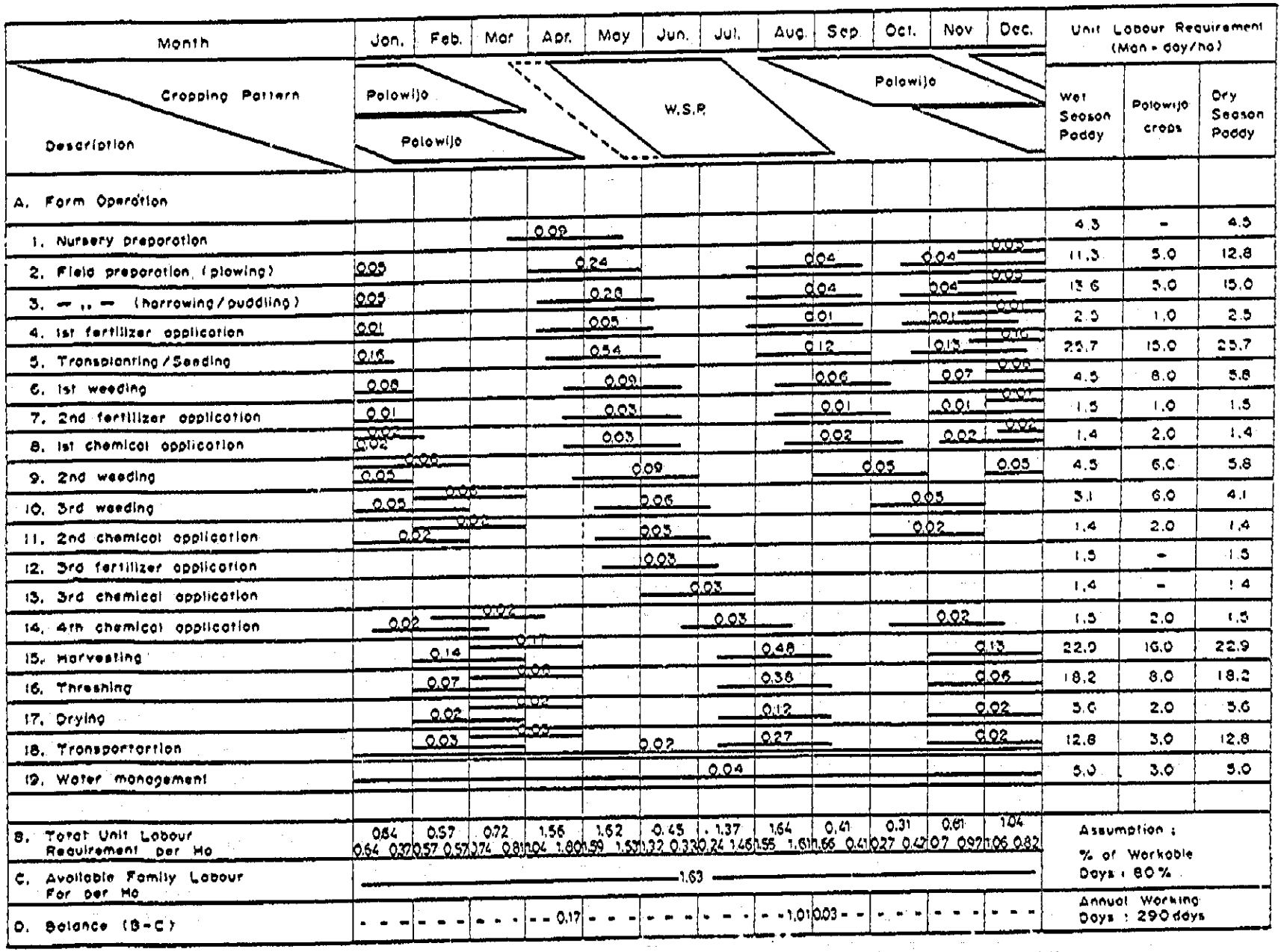



Fig. V.5.3 UNIT LABOUR REQUIREMENT PER HA FOR ALTERNATIVE CROPPING PATTERN VS. AVAILABLE LABOUR FORCE (4/4)

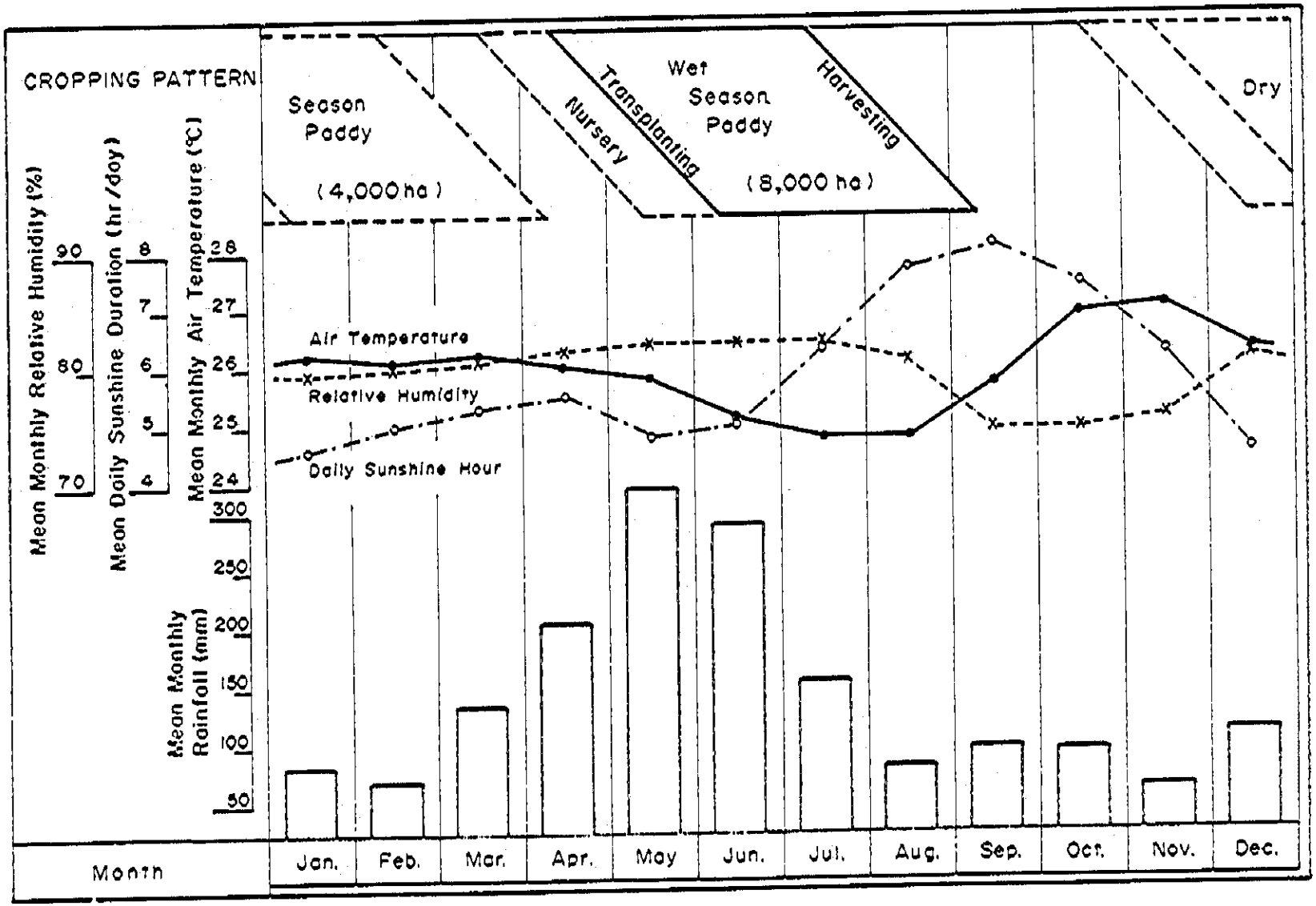



Fig. V.5.4 PROPOSED CROPPING PATTERN (PATTERN A)

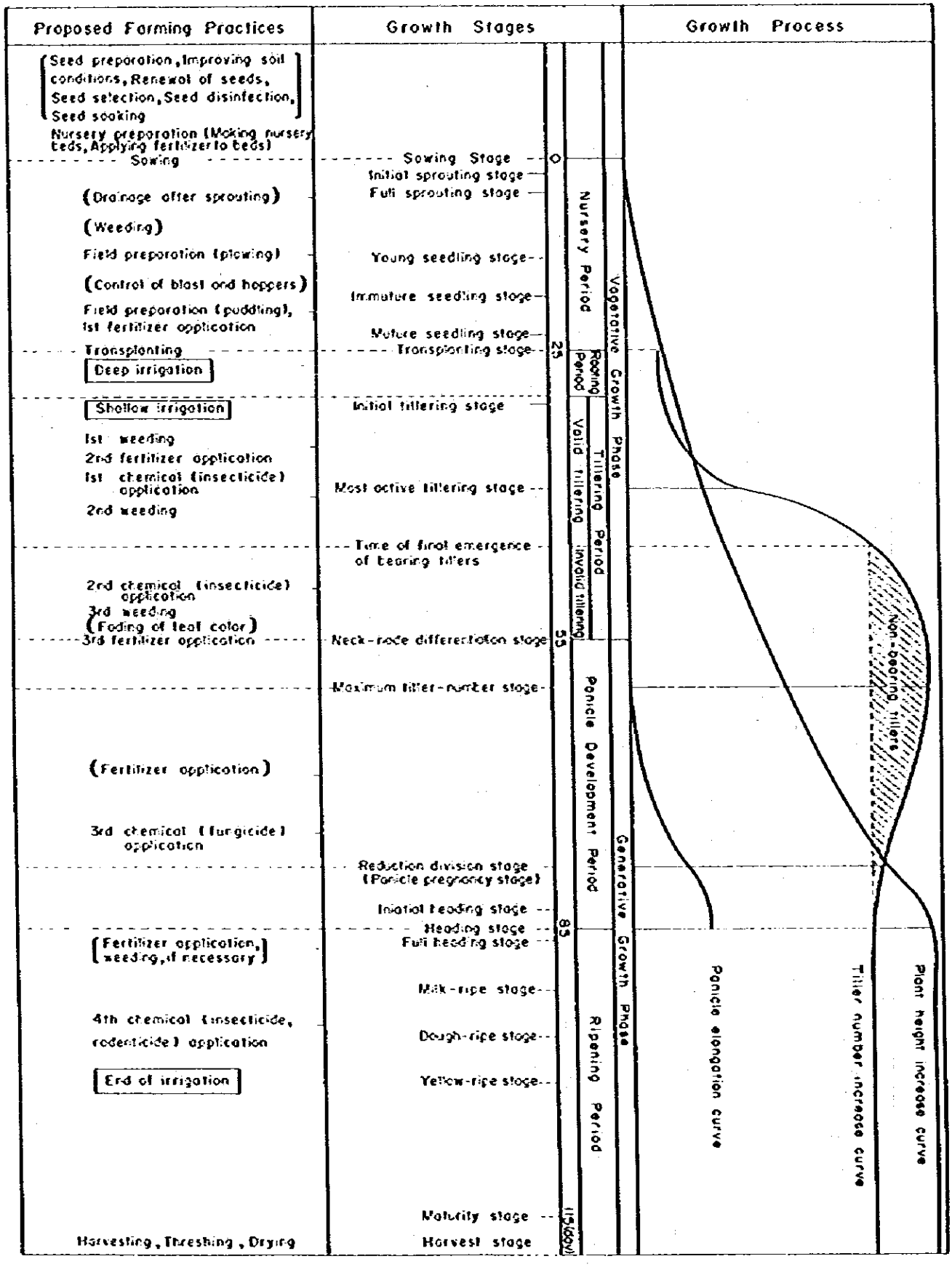
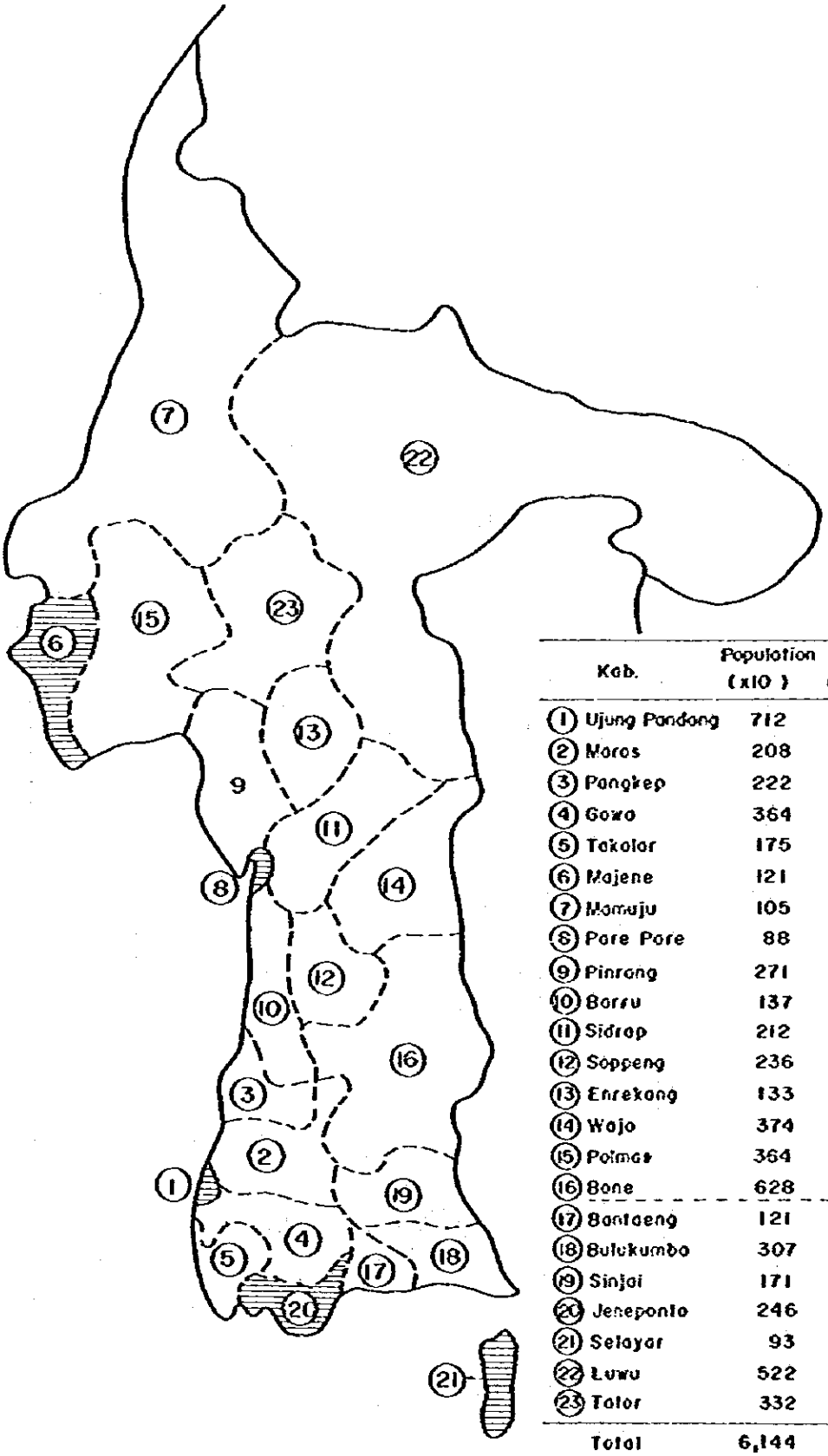



Fig. V 6.1 GROWTH PROCESS OF THE RICE PLANT AND PROPOSED FARMING PRACTICES AT EACH GROWTH STAGE




(Unit : 1,000 tons)

| Kab. | Population (x10) | Paddy Consumption | Paddy Production | Surplus |
|---|---|---|---|---|
| (1) Ujung Pandang | 712 | 164 | 13 | - 151 |
| (2) Maros | 208 | 48 | 131 | 83 |
| (3) Pangkep | 222 | 51 | 129 | 78 |
| (4) Gowa | 364 | 84 | 165 | 81 |
| (5) Takolar | 175 | 40 | 66 | 26 |
| (6) Majene | 121 | 28 | 6 | - 22 |
| (7) Mamuju | 105 | 24 | 25 | 1 |
| (8) Pare Pare | 88 | 20 | 5 | - 15 |
| (9) Pinrang | 271 | 62 | 298 | 236 |
| (10) Barru | 137 | 31 | 74 | 43 |
| (11) Sidrap | 212 | 49 | 377 | 328 |
| (12) Soppeng | 236 | 54 | 230 | 176 |
| (13) Enrekang | 133 | 31 | 34 | 3 |
| (14) Wajo | 374 | 86 | 358 | 272 |
| (15) Polmas | 364 | 84 | 121 | 37 |
| (16) Bone | 628 | 145 | 484 | 339 |
| (17) Bantaeng | 121 | 28 | 37 | 9 |
| (18) Bulukumba | 307 | 71 | 169 | 98 |
| (19) Sinjai | 171 | 39 | 96 | 57 |
| (20) Jeneponto | 246 | 57 | 48 | - 9 |
| (21) Selayar | 93 | 21 | 2 | - 19 |
| (22) Luwu | 522 | 120 | 222 | 102 |
| (23) Tator | 332 | 76 | 108 | 32 |
| Total | 6,144 | 1,413 | 3,198 | 1,785 |

Source: Census and Statistic office, South Sulawesi Province

Fig. V.7.1 RICE SURPLUS CONDITION IN SOUTH SULAWESI PROVINCE 1980/1981

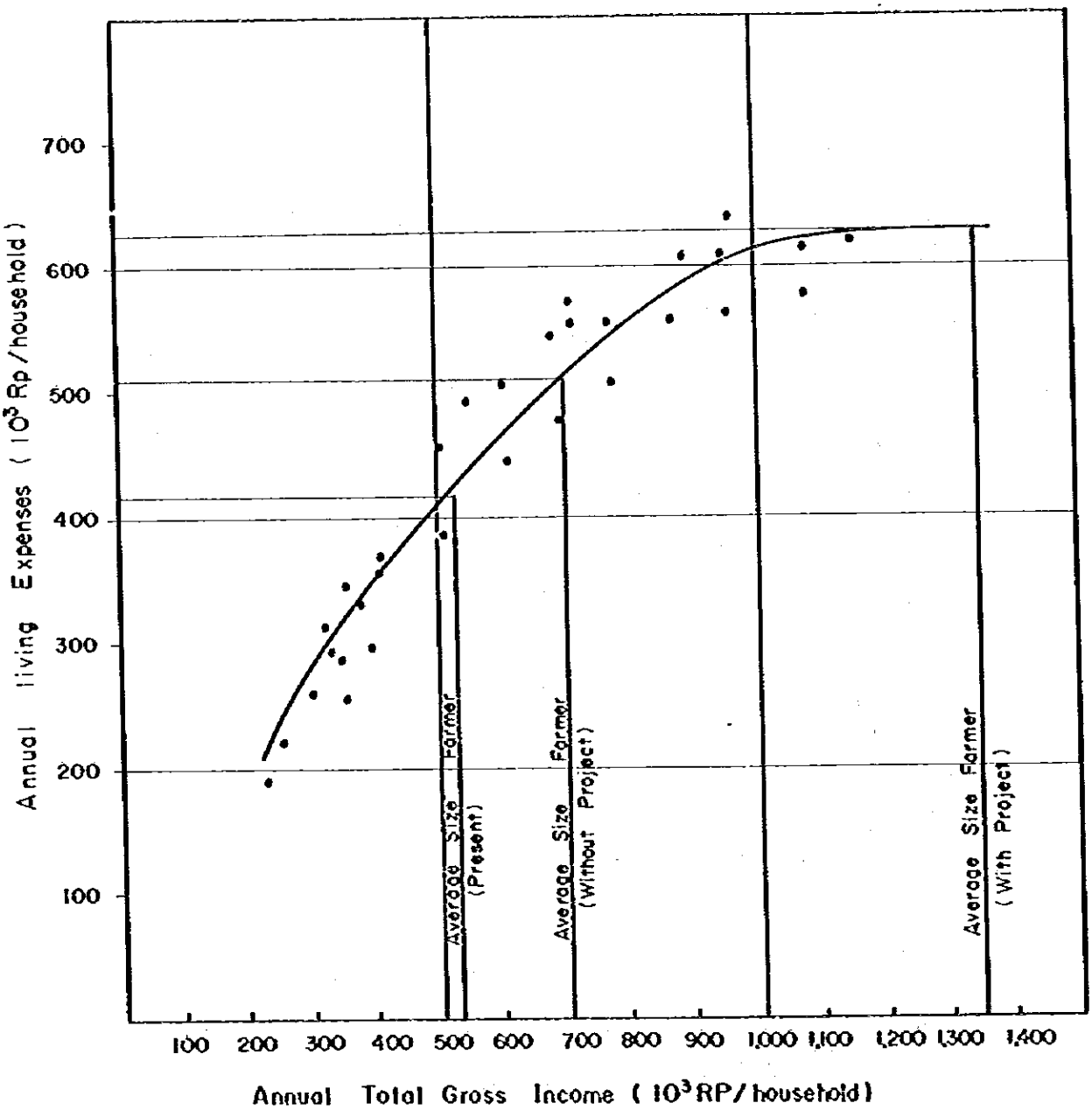



Fig. V.9.1 CORRELATION BETWEEN ANNUAL TOTAL GROSS INCOME AND ANNUAL LIVING EXPENCES

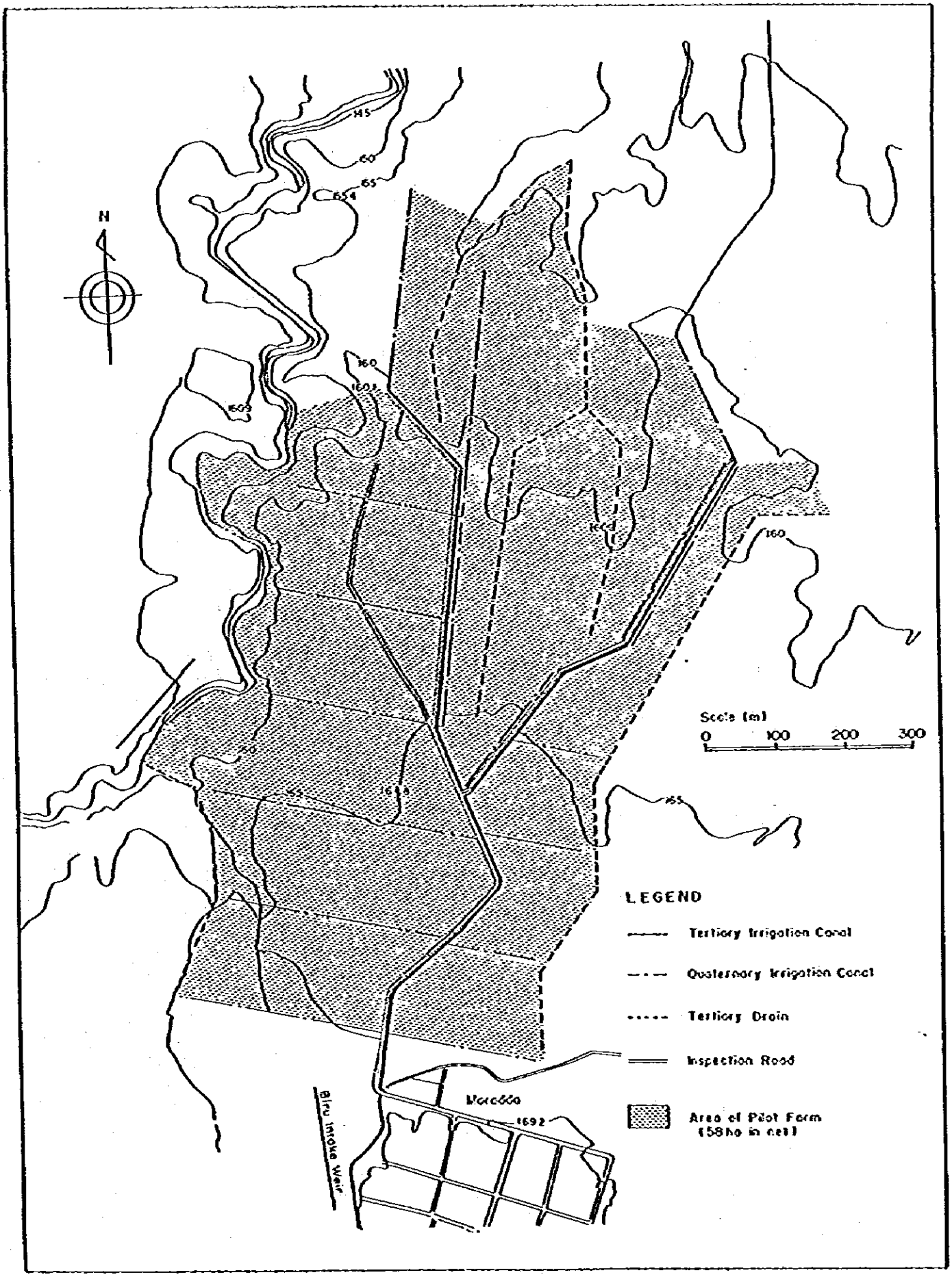
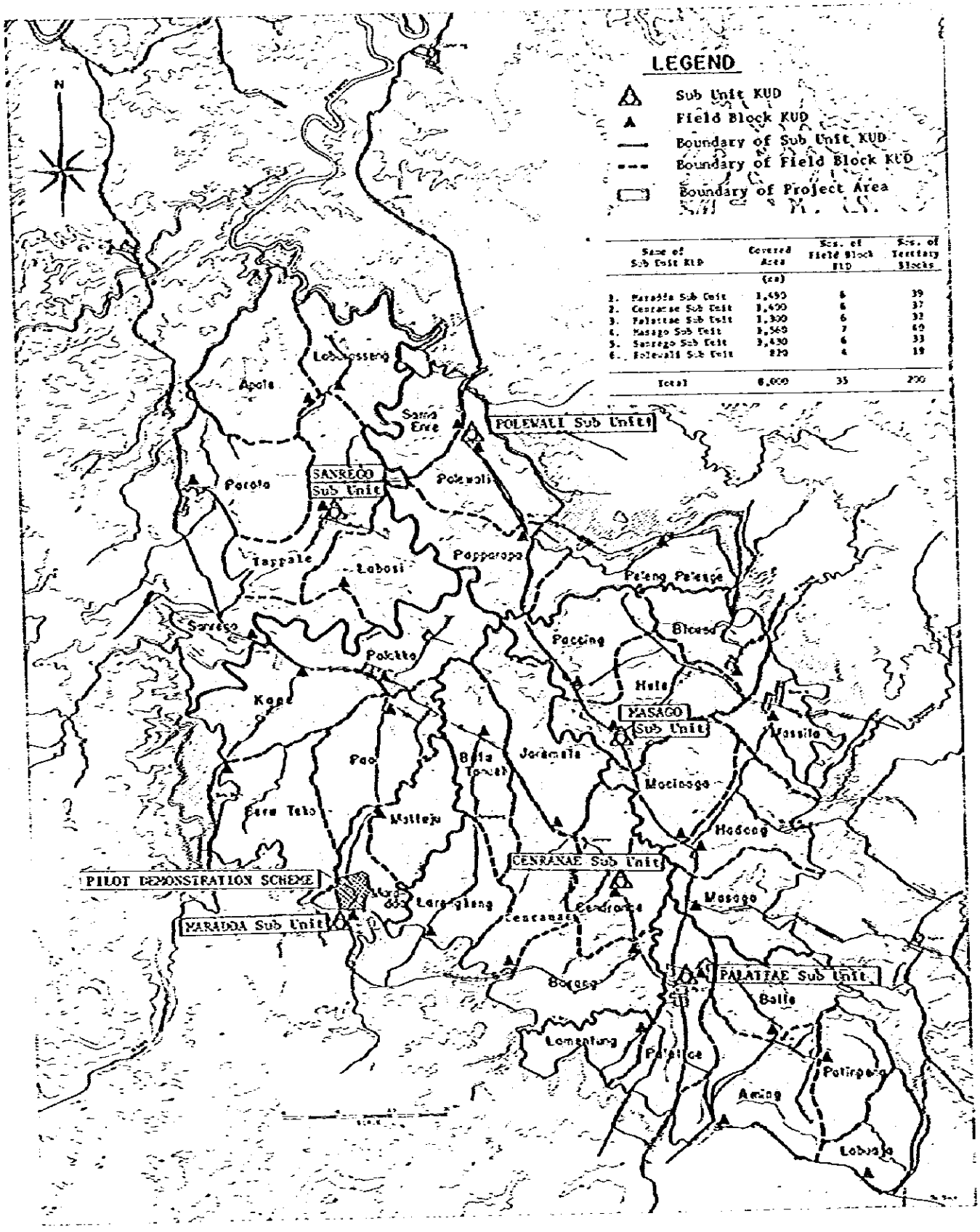



Fig. V.10.1 GENERAL LAYOUT OF THE PILOT DEMONSTRATION SCHEME




| Name of Sub Unit KUD | Covered Area (ha) | Nos. of Field Block KUD | Nos. of Tertiary Blocks |
|---|---|---|---|
| 1. Maradda Sub Unit | 1,490 | 6 | 39 |
| 2. Cenranae Sub Unit | 1,490 | 6 | 37 |
| 3. Palattae Sub Unit | 1,300 | 6 | 32 |
| 4. Masago Sub Unit | 1,560 | 7 | 60 |
| 5. Sarego Sub Unit | 1,430 | 6 | 33 |
| 6. Polewali Sub Unit | 820 | 4 | 19 |
| Total | 8,000 | 35 | 220 |

Fig. V.10.2 LOCATION MAP OF SUB UNIT KUD AND FIELD BLOCK KUD

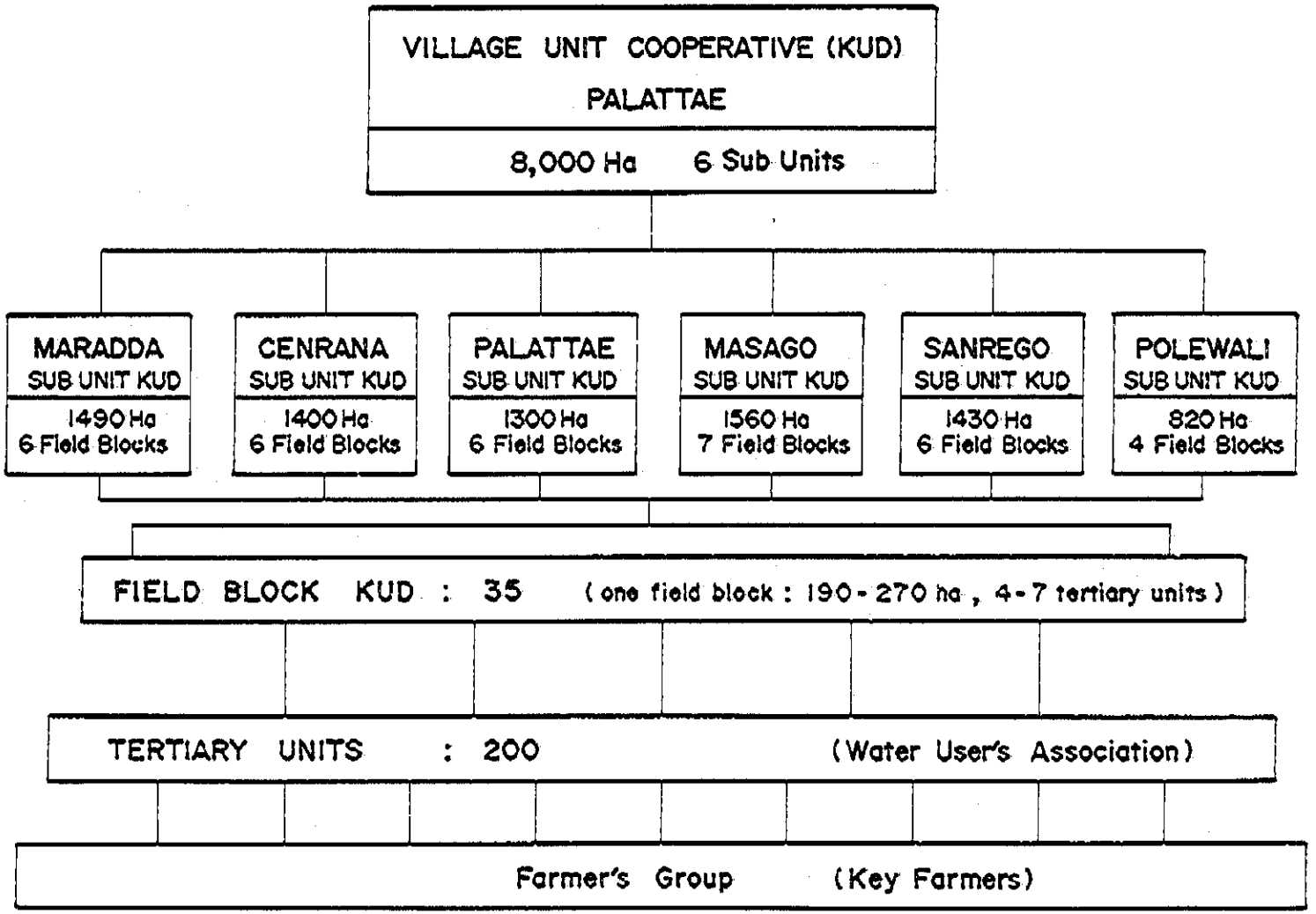



Fig. V.10.3 ORGANIZATION FOR POST HARVEST SCHEME

JICA