table 3 Selected 89 rainfall stations and mean monthly rainfall (1/3)

| HA | Station | SHA | Coordinate |  | Mean Monthly Rainfall in the 1980's (mm) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lat. | long. | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
| I | Dustin-Ma Junior School | 1010 | $12^{\circ} 30^{\prime}$ | $7^{\circ} 30^{\prime}$ | 0 | 0 | 1 | 5 | 48 | 89 | 163 | 226 | 153 | 2 | 0 | 0 | 687 |
|  | Funtua Mairuwa Dam | 1030 | ${ }^{11^{\circ} 366^{\prime}}$ | $7{ }^{\prime} 13^{\prime}$ | 0 | 3 | 3 | 24 | 85 | 97 | 167 | 251 | 116 | 29 | 0 | 0 | 775 |
|  | Gusau Aerodrome | 1040 | 12 ${ }^{\circ} 10^{\prime}$ | $6^{\circ} 42^{\prime}$ | 0 | 0 | 6 | 12 | 76 | 99 | 196 | 222 | 164 | 9 | 0 | 0 | 784 |
|  | Sokoto Aerodrome | 1042 | $13^{\circ} 04^{\prime}$ | $5^{\circ} 13^{\prime}$ | 0 | 0 | 3 | 1 | 31 | 96 | 140 | 170 | 86 | 8 | 0 | 0 | 535 |
|  | Kalmalo | 1052 | $13^{\circ} 45^{\prime}$ | $5^{\circ} 14^{\prime}$ | 0 | 0 | 0 | 2 | 4 | 38 | 142 | 117 | 59 | 7 | 0 | 0 | 369 |
|  | Anka Dam | 1082 | $12^{\circ} 07^{\prime}$ | $5^{\circ} 55^{\prime}$ | 0 | 0 | 7 | 13 | 82 | 96 | 196 | 226 | 141 | 7 | 0 | 0 | 768 |
|  | Yelwa | 1104 | 10 ${ }^{\circ} 3^{\prime}$ | $4^{\circ} 45^{\prime}$ | 0 | 0 | 25 | 25 | 90 | 110 | 216 | 219 | 160 | 25 | 0 | 0 | 870 |
|  | Kainji Dam | 1113 | $10^{\circ} 10^{\prime}$ | $4^{\circ} 38^{\prime}$ | 0 | 0 | 8 | 53 | 132 | 137 | 163 | 228 | 190 | 59 | 0 | 0 | 970 |
| II | Egudu | 2040 | $8^{\circ} 05^{\prime}$ | $4^{\circ} 50^{\prime}$ | 18 | 38 | 88 | 148 | 227 | 274 | 258 | 259 | 341 | 248 | 28 | 9 | 1,936 |
|  | Hlorin Agba River W.W. | 2040 | $8^{\circ} 29^{\prime}$ | $4^{\circ} 35^{\prime}$ | 6 | 6 | 67 | 87 | 132 | 185 | 117 | 169 | 214 | 124 | 2 | 6 | 1,115 |
|  | Bactia Sugar Company | 2051 | $9^{\circ} 05^{\prime}$ | $4^{\circ} 57$ | 0 | 5 | 25 | 71 | 153 | 176 | 183 | 179 | 203 | 72 | 1 | 0 | 1,068 |
|  | Shika Agric | 2111 | 11914' | $7{ }^{\circ} 33^{\prime}$ | 0 | 0 | 5 | 28 | 99 | 138 | 227 | 257 | 151 | 41 | 0 | 0 | 946 |
|  | Birnin Gwarl | 2060 | $10^{\circ} 35^{\prime}$ | $6^{\circ} 34^{\prime}$ | 0 | 0 | 14 | 41 | 126 | 142 | 192 | 277 | 260 | 93 | 0 | 0 | 1,151 |
|  | Kontagora | 2060 | $10^{\circ} 20^{\prime}$ | $5^{\circ} 30^{\prime}$ | 0 | 4 | 30 | 34 | 106 | 109 | 191 | 251 | 213 | 59 | 7 | 0 | 1,004 |
|  | Ikara Town | 2111 | $12^{\circ} 10^{\prime}$ | $8^{\circ} 05^{\prime}$ | 0 | 2 | 8 | 41 | 73 | 123 | 202 | 267 | 148 | 26 | 0 | 0 | 890 |
|  | Saminaka | 2111 | $10^{\circ} 23^{\prime}$ | $8^{\circ} 48^{\prime}$ | 0 | 5 | 5 | 62 | 193 | 180 | 220 | 269 | 201 | 46 | 0 | 0 | 1,181 |
|  | Kaduna South | 2122 | $1^{10} 30^{\prime}$ | $7^{\circ} 26^{\prime}$ | 0 | 0 | 5 | 40 | 110 | 165 | 225 | 307 | 240 | 63 | 0 | 0 | 1,155 |
|  | Kauru Town | 2112 | $10^{\circ} 35^{\prime}$ | $8^{\circ} 09^{\prime}$ | 0 | 1 | 7 | 31 | 115 | 171 | 253 | 320 | 216 | 60 | 0 | 0 | 1,174 |
|  | Miango Kent Academy | 2121 | $9^{\circ} 51$ | $8^{\circ} 43^{\prime}$ | 0 | 1 | 24 | 105 | 180 | 211 | 298 | 302 | 223 | 55 | 0 | 0 | 1,399 |
|  | Jebba Hydropower Station | 2012 | $9^{\circ} 34^{\prime}$ | $4^{\circ} 30^{\prime}$ | 2 | 2 | 23 | 49 | 148 | 179 | 152 | 187 | 210 | 88 | 1 | 0 | 1,041 |
|  | Sunti Sugar Company | 2072 | $9^{\circ} 02^{\prime}$ | $5^{\circ} 15^{\prime}$ | 1 | 0 | 5 | 44 | 121 | 161 | 166 | 185 | 182 | 72 | 0 | 0 | 937 |
|  | Shiroro Gorge NEPA | 2132 | $9^{\circ} 59^{\prime}$ | $6^{\circ} 43^{\prime}$ | 0 | 0 | 10 | 49 | 114 | 162 | 200 | 274 | 270 | 75 | 4 | 0 | 1,158 |
|  | Minna Met. | 2141 | $9^{\circ} 37$ | $6^{\circ} 31{ }^{\prime}$ | 0 | 0 | 22 | 38 | 134 | 161 | 203 | 236 | 211 | 77 | 3 | 0 | 1,085 |
|  | Bida Met. | 2141 | $9^{\circ} 06^{\prime}$ | $6^{\circ} 06^{\prime}$ | 0 | 0 | 18 | 57 | 127 | 157 | 226 | 218 | 187 | 76 | 0 | 0 | 1,066 |
|  | Lapai | 2150 | $9^{\circ} 05^{\prime}$ | $6^{\circ} 37$ | 0 | 2 | 17 | 92 | 107 | 161 | 206 | 180 | 178 | 76 | 1 | 0 | 1,020 |
|  | Kafanchan Town | 2161 | $9^{\circ} 36^{\prime}$ | $8^{\circ} 18^{\prime}$ | 3 | 1 | 20 | 75 | 159 | 223 | 275 | 301 | 264 | 158 | 12 | 0 | 1,491 |
|  | Abuja Met. | 2162 | $9^{\circ} 15^{\prime}$ | $7{ }^{\circ} 00^{\prime}$ | 3 | 3 | 33 | 47 | 117 | 188 | 227 | 297 | 301 | 125 | 6 | 0 | 1,347 |
| 111 | Bauchi Aerodrome | 3042 | $10^{\circ} 17^{\prime}$ | $9^{\circ} 49^{\prime}$ | 0 | 0 | 6 | 19 | 93 | 141 | 234 | 242 | 139 | 22 | 0 | 0 | 896 |
|  | Alkaleri (UBRBDA) | 3080 | $10^{\circ} 14^{\prime}$ | $10^{\circ} 21^{\prime}$ | 0 | 0 | 9 | 23 | 62 | 140 | 157 | 198 | 110 | 32 | 0 | 0 | 731 |
|  | Bajoga | 3042 | $10^{\circ} 52^{\prime}$ | $11^{\circ} 27^{\prime}$ | 0 | 0 | 0 | 7 | 37 | 86 | 194 | 175 | 84 | 29 | 0 | 0 | 612 |
|  | Billiri (UBRBDA) | 3050 | $9^{\circ} 51^{\prime}$ | $11^{\circ} 13^{\prime}$ | 0 | 0 | 5 | 16 | 72 | 117 | 168 | 126 | 171 | 37 | 0 | 0 | 712 |
|  | Deba (UBRBDA) | 3050 | $10^{\circ} 25^{\prime}$ | $11^{\circ} 23^{\prime}$ | 0 | - | 3 | 16 | 75 | 113 | 168 | 185 | 169 | 36 | 0 | 0 | 755 |
|  | Yola | 3013 | $9^{\circ} 14^{\prime}$ | $12^{\circ} 28^{\prime}$ | 0 | 0 | 9 | 44 | 125 | 119 | 214 | 221 | 136 | 58 | 1 | 0 | 927 |
|  | Kojoli | 3022 | $8^{\circ} 41^{\prime}$ | $12^{\prime} 28^{\prime}$ | 0 | 0 | 20 | 41 | 102 | 141 | 194 | 163 | 201 | 58 | 3 | 0 | 920 |
|  | Talasse (UBRBDA) | 3052 | $9^{\circ} 57$ | $11^{\circ} 43^{\prime}$ | 0 | 0 | 6 | 12 | 73 | 115 | 167 | 190 | 143 | 37 | 0 | 0 | 743 |
|  | Zing | 3070 | $9^{\circ} 00^{\prime}$ | $11^{\circ} 40^{\prime}$ | 0 | 0 | 6 | 41 | 118 | 109 | 177 | 193 | 184 | 69 | 0 | 0 | 897 |
|  | Tumu (UBRBDA) | 3080 | $10^{\circ} 03^{\prime}$ | $11^{\circ} 05^{\prime}$ | 0 | 0 | 8 | 38 | 63 | 123 | 165 | 149 | 115 | 39 | 0 | 0 | 700 |
|  | Mayo Belwa | 3022 | $9^{\circ} 10^{\prime}$ | $12^{\circ} 05^{\prime}$ | 0 | 0 | 5 | 53 | 116 | 163 | 196 | 242 | 146 | 67. | 0 | 0 | 978 |
|  | Numan | 3034 | $9^{\circ} 21^{\prime}$ | $12^{\circ} 02^{\prime}$ | 0 | 0 |  | 33 | 101 | 97 | 172 | 177 | 134 | 39 | 0 | 0 | 757 |
|  | Nafada (BSADP) | 3042 | $11^{\circ} 06^{\prime}$ | $11^{\circ} 21^{\prime}$ | 0 | 0 | 0 | 0 | 5 | 42 | 78 | 114 | 146 | 76 | 10 | 0 | 471 |
|  | Kumo (UBRBDA) | 3050 | $10^{\circ} 05^{\prime}$ | $11^{\circ} 11^{\prime}$ | 0 | 0 | 1 | 29 | 71 | 138 | 173 | 152 | 153 | 15 | 0 | 0 | 732 |
|  | Ganye | 3022 | $8^{\circ} 27^{\prime}$ | $12^{\circ} 06^{\prime}$ | 3 | 0 | 21 | 34. | 99 | 167 | 219 | 253 | 232 | 65 | 0 | 0 | 1,093 |
|  | Duku | 3042 | $10^{\circ} 50^{\prime}$ | $10^{\circ} 47{ }^{\prime}$ | 0 | 0 | 0 | 22 | 56 | 96 | 141 | 198 | 116 | 36 | 0 | 0 | 665 |

TABLE 3 SELECTED 89 RAINFALL STATIONS AND MEAN MONTHLY RANFALL (2/3)

| HA | Station | SHA | Coordinate |  | Mean Monthly Rainfall in the 1980's (mm) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lat. | Long. | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
| III | Garkida | 3032 | 10 ${ }^{\circ} 26^{\prime}$ | 12 ${ }^{\circ} 35^{\prime}$ | 0 | 0 | 4 | 32 | 80 | 109 | 188 | 158 | 152 | 59 | 2 | 0 | 784 |
|  | Manya | 3140 | $7{ }^{\circ} 15^{\prime}$ | $10^{\circ} 12^{\prime}$ | 0 | 4 | 40 | 106 | 184 | 222 | 251 | 310 | 319 | 184 | 10 | 0 | 1,630 |
|  | Gindin Dorowa | 3113 | $8^{\circ} 10^{\prime}$ | $10^{\circ} 03^{\prime}$ | 0 | 0 | 8 | 63 | 134 | 155 | 176 | 209 | 201 | 103 | 1 | 0 | 1,050 |
|  | Serti | 3130 | $7{ }^{\circ} 24^{\prime}$ | 11 ${ }^{\circ} 32^{\prime}$ | 7 | 6 | 50 | 78 | 150 | 249 | 345 | 309 | 323 | 151 | 6 | 0 | 1,674 |
|  | Bali | 3130 | $7{ }^{\circ} 51$ | $10^{\circ} 57^{\prime}$ | 5 | 5 | 26 | 60 | 238 | 291 | 361 | 390 | 460 | 232 | 2 | 0 | 2,070 |
|  | Bibinu | 3008 | $6^{\circ} 58$ | $10^{\circ} 47^{\prime}$ | 6 | 10 | 59 | 54 | 227 | 293 | 307 | 340 | 321 | 166 | 7 | 0 | 1,790 |
|  | Baissa | 3140 | $7{ }^{\circ} 14^{\prime}$ | $10^{\circ} 40^{\prime}$ | 7 | 1 | 40 | 97 | 209 | 222 | 281 | 363 | 362 | 260 | 13 | 0 | 1,855 |
|  | Donga | 3140 | $7{ }^{\circ} 43^{\prime}$ | $10^{\circ} 01^{\prime}$ | 2 | 0 | 16 | 75 | 140 | 174 | 215 | 210 | 296 | 165 | 4 | 0 | 1,297 |
|  | Song | 3012 | $9^{\circ} 49^{\prime}$ | $12^{\circ} 45^{\prime}$ | 0 | 0 | 8 | 12 | 60 | 110 | 170 | 171 | 157 | 58 | 3 | 0 | 749 |
|  | Suntai Bakundi | 3122 | $7{ }^{\circ} 41^{\prime}$ | $10^{\circ} 21^{\prime}$ | 6 | 3 | 36 | 101 | 181 | 216 | 264 | 267 | 352 | 147 | 6 | 0 | 1,579 |
|  | Gembu | 3140 | $6^{\circ} 41^{\prime}$ | $11^{\circ} 17^{\prime}$ | 12 | 11 | 124 | 161 | 184 | 207 | 279 | 274 | 305 | 191 | 29 | 4 | 1,781 |
| IV | Ibi | 4021 | $7{ }^{\circ} 52^{\prime}$ | $9^{\circ} 43^{\prime}$ | 0 | 1 | 14 | 44 | 141 | 117 | 209 | 189 | 204 | 81 | 0 | 0 | 1,000 |
|  | Lafia (LADP) | 4072 | $8^{\circ} 30^{\prime}$ | $8^{\wedge} 30^{\prime}$ | 0 | 3 | 26 | 71 | 140 | 130 | 219 | 240 | 230 | 80 | 3 | 0 | 1,142 |
|  | Kefi (PADP) | 4083 | $8^{\circ} 50^{\prime}$ | $7^{\circ} 52^{\prime}$ | 0 | 7 | 37 | 49 | 132 | 136 | 204 | 245 | 233 | 84 | 4 | 0 | 1,131 |
|  | Jos University | 4030 | $9^{\circ} 52^{\prime}$ | $8^{\circ} 55^{\prime}$ | 0 | 1 | 20 | 69 | 159 | 207 | 280 | 326 | 183 | 28 | 0 | 30 | 1,273 |
| V | Yonagoa Farm | 5050 | $4^{\circ} 65^{\prime}$ | $6^{\circ} 16^{\prime}$ | 28 | 38 | 174 | 202 | 262 | 403 | 403 | 322 | 465 | 297 | 79 | 30 | 2,703 |
|  | Port Harcourt | 5050 | $4^{\circ} 45^{\prime}$ | $6^{\circ} 50^{\prime}$ | 15 | 39 | 108 | 153 | 248 | 294 | 338 | 296 | 389 | 211 | 63 | 10 | 2,164 |
|  | Onitsha | 5041 | $6^{\circ} 09^{\prime}$ | $6^{\circ} 47^{\prime}$ | 5 | 29 | 78 | 87 | 220 | 239 | 306 | 236 | 306 | 178 | 25 | 7 | 1,716 |
|  | Nsukka University | 5020 | $6^{\circ} 52^{\prime}$ | $7{ }^{\circ} 24^{\prime}$ | 4 | 11 | 59 | 73 | 181 | 186 | 250 | 238 | 302 | 164 | 25 | 7 | 1,500 |
|  | Lokoja | 5011 | $7{ }^{\circ} 48^{\prime}$ | $6^{\circ} 44^{\prime}$ | 4 | 15 | 33 | 76 | 144 | 159 | 209 | 186 | 212 | 102 | 2 | 0 | 1,142 |
| VI | Ikeja Met. | 6032 | $6^{\circ} 35^{\prime}$ | $3^{\circ} 20^{\prime}$ | 10 | 29 | 69 | 104 | 186 | 297 | 153 | 131 | 199 | 123 | 57 | 14 | 1,372 |
|  | Abeokuta | 6023 | $7{ }^{\circ} 15^{\prime}$ | $3^{\circ} 18^{\prime}$ | 2 | 25 | 62 | 111 | 196 | 211 | 177 | 114 | 185 | 106 | 21 | 5 | 1,215 |
|  | IjebuOde | 6040 | $6^{\circ} 50^{\prime}$ | $3^{\circ} 55^{\prime}$ | 9 | 24 | 81 | 95 | 211 | 240 | 201 | 166 | 219 | 164 | 28 | 6 | 1,444 |
|  | Sepeteri | 6022 | $8^{\circ} 38^{\prime}$ | $3^{\circ} 39^{\prime}$ | 4 | 14 | 51 | 80 | 131 | 148 | 158 | 148 | 182 | 87 | 6 | 3 | 1,012 |
|  | Oyo Met. | 6023 | $7^{\circ} 50^{\prime}$ | $3^{\circ} 67$ | 6 | 23 | 60 | 103 | 137 | 140 | 175 | 123 | 212 | 123 | 28 | 14 | 1,144 |
|  | Oshogbo Met. | 6051 | $7{ }^{\circ} 47^{\prime}$ | $4^{\circ} 29^{\prime}$ | 3 | 26 | 67 | 113 | 163 | 192 | 132 | 148 | 230 | 198 | 39 | 8 | 1,319 |
|  | Akure Met. | 6080 | $7{ }^{\circ} 16^{\prime}$ | $5{ }^{\circ} 13^{\prime}$ | 5 | 43 | 111 | 126 | 187 | 201 | 165 | 215 | 234 | 130 | 29 | 0 | 1,446 |
|  | Ubiaja Agric | 6100 | $6^{\circ} 39^{\prime}$ | $6^{\circ} 06^{\prime}$ | 10 | 27 | 72 | 92 | 168 | 160 | 224 | 189 | 209 | 110 | 13 | 0 | 1,274 |
|  | Benin City | 6100 | $6^{\circ} 19^{\prime}$ | $5^{\circ} 36^{\prime \prime}$ | 13 | 51 | 95 | 109 | 190 | 212 | 272 | 289 | 327 | 242 | 46 | 10 | 1,856 |
|  | Warri Met. | 6100 | $5^{\circ} 31^{\prime}$ | $5^{\circ} 44^{\prime}$ | 15 | 53 | 121 | 167 | 276 | 346 | 450 | 392 | 429 | 324 | 99 | 39 | 2,711 |
|  | Forcados Sheel BP | 6093 | $5^{\circ} 21^{\prime}$ | $5^{\circ} 26^{\prime}$ | 45 | 44 | 146 | 183 | 327 | 489 | 699 | 416 | 692 | 336 | 98 | 42 | 3,417 |
| VII | Calabar Aerodrome | 7072 | $4^{\circ} 68^{\prime}$ | $8^{\circ} 21^{\prime}$ |  | 27 | 156 | 199 |  |  |  |  | 397 | 308 | 131 | 26 | 2,765 |
|  | Ibesit NIFOR | 7054 | $4^{\circ} 55^{\prime}$ | $7{ }^{\circ} 45^{\prime}$ | 32 | 37 | 154 | 130 | 363 | 286 | 265 | 325 | 307 | 239 | 71 | 8 | 2,217 |
|  | Oweri Met. | 7051 | $5^{\circ} 29^{\prime}$ | $7{ }^{\circ} 02^{\prime}$ | 31 | 21 | 125 | 154 | 258 | 351 | 336 | 340 | 395 | 249 | 55 | 14 | 2,329 |
|  | Uyo Met. | 7080 | $5^{\circ} 03^{\prime}$ | $7{ }^{\circ} 55^{\prime}$ | 43 | 21 | 126 | 158 | 277 | 252 | 305 | 263 | 302 | 208 | 75 | 21 | 2,051 |
|  | Akwete Rubber Estate | 7053 | $4^{\circ} 52^{\prime}$ | $7{ }^{2} 21$ | 29 | 19 | 133 | 179 | 276 | 256 | 341 | 299 | 322 | 215 | 95 | 20 | 2,184 |
|  | Enugu Met. | 7032 | $6^{\circ} 26^{\prime}$ | $7{ }^{\circ} 33^{\prime}$ | 6 | 9 | 57 | 106 | 228 | 207 | 241 | 260 | 296 | 167 | 16 | 0 | 1,593 |

table 3 SELECTED 89 rainfall stations and mean monthly rainfall (3/3)

| HA | Station | SHA | Coordinate |  | Mean Monthly Rainfall in the 1980's (mm) |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Lat. | long. | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Total |
| VIII | Flagore Agric | 8041 | $10^{\circ} 45^{\prime}$ | $8^{\circ} 50^{\prime}$ | 0 | 0 | 7 | 17 | 113 | 120 | 231 | 274 | 137 | 17 | 0 | 0 | 916 |
|  | Kano Met. | 8024 | $12^{\circ} 03^{\prime}$ | $8^{\circ} 32^{\prime}$ | 0 | 1 | 0 | 8 | 41 | 93 | 182 | 241 | 96 | 22 | 0 | 0 | 684 |
|  | Nguru Met. | 8082 | $12^{\circ} 53^{\prime}$ | $10^{\circ} 28^{\prime}$ | 0 | 0 | 2 | 4 | 5 | 41 | 182 90 | 137 | 52 | 2 | 0 | 0 | 333 |
|  | Ningi (BSADP) | 8052 | $1^{1} 003$ | $9^{\circ} 34^{\prime}$ | 0 | 0 | 2 | 9 | 37 | 118 | 174 | 262 | 131 | 9 | 0 | 0 | 742 |
|  | Jama'are Agric | 8052 | $11^{\circ} 42^{\prime}$ | $9^{\circ} 56^{\prime}$ | 0 | 0 | 4 | 11 | 48 | 69 | 134 | 191 | 84 | 20 | 0 | 0 | 561 |
|  | Potiskum Met. | 8102 | $11^{\circ} 42^{\prime}$ | $11^{\circ} 02^{\prime}$ | 0 | 0 | 0 | 24 | 40 | 89 | 184 | 199 | 84 | 14 | 0 | 0 | 634 |
|  | Marguba Vet. | 8134 | $11^{\circ} 42^{\prime}$ | $12^{\circ} 35^{\prime}$ | 0 | 0 | 2 | 8 | 33 | 49 | 134 | 158 | 54 | 0 | 0 | 0 | 438 |
|  | Maiduguri Met. | 8133 | $11^{\circ} 51{ }^{\prime}$ | $13^{\circ} 00^{\prime}$ | 0 | 0 | 1 | 7 | 23 | 59 | 137 | 139 | 84 | 5 | 0 | 0 | 455 |
|  | Bama Agric | 8142 | $11^{\circ} 32^{\prime}$ | $13^{\circ} 42^{\prime}$ | 0 | - | 0 | 2 | 20 | 61 | 109 | 167 | 98 | 22 | 1 | 0 | 480 |

TABLE 4 YEARLY RAINFALL AT SELECTED 89 STATIONS (1/3)
Note: - : Not Available

| HA | Rainfall Station | SHA | Yearly Rainfall (mm) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| 1 | Dutsin-Ma Jnr. School | 1010 | * | 741 |  | - |  | 1,069 |  | * | 935 | 782 | * | 705 | 645 | 440 | * | 665 | 625 |  | 776 |  |
|  | Funtua Mairuwa Dam | 1030 |  |  |  |  |  |  |  | 865 | 987 | 1,597 | 824 | 777 | 1,037 | 677 | 633 | 985 | 701 | 597 | 848 | 672 |
|  | Gusau Aerodrome | 1040 | 833 | 809 | 741 | 722 | 852 | 866 | 885 | 766 | 1,013 | 1,097 | 896 | 787 | 711 | 846 | 675 | 856 | 814 | 686 |  |  |
|  | Sokoto Aerodrome | 1042 | 634 | 483 | 609 | 390 | 476 |  | 874 | 812 | 690 | 600 | 661 | 586 | 568 | 621 | 466 | 435 | 475 | 323 | 697 | 525 |
|  | Kalmalo | 1052 |  |  |  |  |  | 455 |  | 282 | 531 | 378 | 522 | 299 | 297 | 324 | 457 | 321 | 368 | - |  |  |
|  | Anka Dam | 1082 | 811 | 789 | 726 | 703 | 831 | 843 | 862 | 746 | 1,097 | 1,077 | 873 | 756 | 691 | 824 | 656 | 807 |  |  |  |  |
|  | Yelwa | 1104 | 981 | 991 | 928 | 811 | 1,077 | 974 | 872 | 864 | 884 | 1,014 | 882 | 896 | 1,073 | 584 | 971 | 792 | 1,009 | 746 |  |  |
|  | Kainji Dam | 1113 | 790 | 1,094 | 898 | 910 | 939 | 890 | 815 | 871 | 938 | 1,134 | 1,001 | 964 | 1,034 | 640 | 1,050 | 980 | 1,028 | 949 | 860 | 1,179 |
| II | Egudu | 2040 | 1,363 | 1,326 | 1,333 | 1,359 | 1,664 | 1,710 | 1,552 | 938 | 1,185 | 2,016 | 2,119 | 1,493 | 1,538 | 1,072 | 1,829 | 2,084 | 2,055 | 2,547 | 2,302 | 2,300 |
|  | Ilorin Agba River W.W. | 2040 | 1,030 | 1,116 | 1,017 | 1,546 | 1,081 | 1,088 | 1,126 | 931 | 1,137 | 1,304 | 984 | 1,243 | 1,281 | 800 | 1,336 | 976 | 1,182 | 1,162 | 998 | 1,208 |
|  | Bactia Sugar Company | 2051 | 892 | 1,072 | 801 | 998 | 1,191 | 1,160 | 1,062 | 1,109 | 957 | 1,115 | 885 | 1,233 | 880 | 862 | 1,068 | 1,502 | 949 | 976 | 880 | 1,436 |
|  | Shika Agric. | 2111 | 935 | 978 | 990 | 966 | 1,108 | 857 | 1,281 | 771 | 1,205 | 1,089 | 728 | 1,078 | 715 | 618 | 1,025 | 1,229 | 1,071 | 1,151 | 1,070 | 768 |
|  | Birnin Gwar! | 2060 | 1,178 | 1,443 | 1,178 | 975 | 1,230 | 1,408 | 1,342 | 1,086 | 1,445 | 1,438 | 1,049 | 1,079 | 1,334 | 1,110 | 1,168 | 1,330 | 1,269 | 1,122 | 1,189 | 862 |
|  | Kontagora | 2060 | 1,107 | 914 | 931 | 742 | 1,078 | 1,321 | 1,392 | 982 | 1,283 | 1,385 | 824 | 1,233 | 969 | 543 | 1,688 | 1,110 | 1,003 | * | 863 | 1,144 |
|  | Ikara Town | 2111 |  |  |  |  |  |  | : - | - | 1,103 | 1,152 | 957 | 378 | 895 | 702 | 1,085 | 1,094 | 1,024 | 921 | 1,072 | 766 |
|  | Saminaka | 2111 |  |  |  | - |  | - | - | 852 | 1,102 | 977 | 1,420 | 1,306 | 1,042 | 1,090 | 990 | 1,091 | 926 | 1,183 | 1,392 | 1,357 |
|  | Kaduna South | 2122 | 1,168 | 1,266 | 1,348 | 1,492 | 1,199 | 1,372 | 1,243 | 1,025 | 1,596 | 1,128 | 1,224 | 1,321 | 1,197 | 968 | 1,025 | 1,177 | 1,105 | 1,097 | 1,369 | 1,061 |
|  | Kauru Town | 2112 |  | , |  | - |  |  |  |  |  |  |  | 1,383 | 1,184 | 1,006 | 952 | 1,324 | 932 | 1,039 | 1,520 | 1,228 |
|  | Miango Kent Academy | 2121 | 1,191 | 1,547 | 1,300 | 1,371 | 1,685 | 1,571 | 1,645 | 1,384 | 1,785 | 1,620 | 1,602 | 1,356 | 1,413 | 1,430 | 1,291 | 1,308 |  |  |  |  |
|  | Jebba Hydropower Station | 2012 |  |  |  |  |  |  |  |  |  |  |  |  | 997 | 906 | 1,163 | 1,406 | 946 | 809 | 960 | 1,126 |
|  | Sunti Sugar Company | 2072 |  |  |  |  | - |  |  |  |  |  | 995 | 874 | 938 | * | 754 | 866 | 964 | 877 | 831 | 1,214 |
|  | Shiroro Gorge NEPA | 2132 | 1,144 | 1,341 | 1,019 | * | 1,230 | * | 1,307 | 1,298 | 1,548 | 1,467 | 1,037 | 1,042 | 1,426 | 879 | 1,081 | 1,400 | 1,318 | 979 | 1,324 | 1,079 |
|  | Minna Met. | 2141 | 1,111 | 1,148 | 1,370 | 974 | 1,131 | 1,389 | 1,227 | 1,655 | 1,523 | 1,349 | 1,126 | 1,006 | 1,100 | 989 | 1,200 | 1,224 | 1,209 | 826 |  |  |
|  | Bida Met. | 214i | 1,251 | 1,158 | 837 | 1,159 | 1,280 | 1,386 | 1,118 | 1,080 | 1,408 | 917 | 1,278 | 1,085 | 997 | 899 | 1,168 | 1,167 | 1,080 | 1,060 | 888 | 1,029 |
|  | Lapa | 2150 | 1,258 | 1,124 | 994 | 1,150 | 1,143 | 1,224 | 1,211 | 1,070 | 1,556 | 1,228 | 1,432 | 931 | 576 | 595 | 930 | 1,014 | 1,102 | * | 959 | 1,089 |
|  | Kafanchan Town | 2161 |  |  |  |  | 2,240 | 2,033 | 1,530 | 1,327 | 2,066 | 1,658 | 1,917 | 1,725 | 1,230 | 1,152 | 1,461 | 1,590 | 1,460 | 1,550 | 1,530 | 1,281 |
|  | Abuja Met. | 2162 |  |  |  |  |  |  |  | - |  |  |  |  | 1,29? | 1,308 | 1,230 | 1,513 | 1,560 | 1,384 | 1,239 | 1,226 |
| III | Bauchi Acrodrome | 3042 | 898 | 1,100 | 973 | 739 | 1,171 | 1,140 | 1,249 | 816 | 1,140 | 991 | 989 | 1,243 | 903 | 769 | 884 | 722 | 972 | 738 | 843 | 892 |
|  | Alkaleri (UBRBDA) | 3080 |  |  |  |  |  |  |  |  |  |  |  | - | 855 | 533 | 654 | 835 | 708 | 455 |  | 904 |
|  | Bajoga. | 3042 | - |  | - |  | - | - | - |  | - |  | - |  | - | 492 | 498 | 646 | 506 | 541 | 795 | * |
|  | Billiri (UBRBDA) | 3050 | - |  | - | - | - | - | - | 834 | 782 | 799 | 825 | 612 | 602 | 605 | 740 | 801 | 848 | 372 |  | 1,008 |
|  | Deba (UBRBDA) | 3050 | - |  |  | - | - |  |  | 640 | 732 | 886 | 683 | 771 | 792 | 713 | 725 | 819 | 671 | 450 | 960 | 960 |
|  | Yola | 3013 | - |  | - | - | - | - | - | 893 | 994 | 1,153 | 1,043 | 964 | 957 | 882 | 967 | 972 | 901 | 679 |  | 983 |
|  | Kojoli | 3022 |  | - | - | - | - | - | - | - | - |  | - | * | 973 | 940 | 863 | 903 | 1,031 | 929 |  | 797 |
|  | Talasse (UBRBDA) | 3052 |  |  |  |  |  |  |  | 807 | 873 | 821 | 634 | 834 | 739 |  | 713 | 785 | 737 | 600 |  | 859 |

table 4 Yearly rainfall at selected 89 stations (2/3)

table 4 yearly rainfall at selected 89 Stations (3/3)

| HA | Rainfall Station | SHA | Yearly Rainfall (mm) |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | 1970 | 1971 | 1972 | 1973 | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
| VI | Ubiaja Agric | 6100 |  | - |  | - | - |  |  |  | - |  | 1,376 | 1,104 | 1,291 | 831 | 1,569 | 1,359 | 1,210 | * | * | 1,317 |
|  | Benin City | 6100 |  | - |  |  | - | - | . | - | - |  | 2,645 | 1,786 | 1,968 | 1,647 | 1,246 | 1,569 | 1,238 | 2,343 | 2,149 | 1,967 |
|  | Warri Met. | 6100 | - |  |  | - | - | - |  |  | - | - | 2,504 | 2,350 | 3,065 | 2,523 | 2,699 | 2,977 | 2,916 | 2,776 | 2,711 | 2,572 |
|  | Farcados Shell BP | 6093 | - |  | - | - | - | - |  | - | - | - | : $*$ | * | 3,230 | 3,233 | 3,318 | 3,853 | 3,026 | 3,985 | 3,158 | 3,778 |
| VII | Calabar Aerodrome | 7072 | 2,818 |  | 2,957 | 2,110 | 2,559 | 2,668 | 3,032 | 2,647 | 3,298 | 2,817 | 3,255 | 2,768 | 2,809 | 2,347 | 2,499 | 2,965 | 2,610 | * | 2,712 | 2,748 |
|  | Ibesit NIFOR | 7054 | 2,035 | 2,318 | 2,724 | 2,252 | 1,942 | 2,326 | 1,906 | 1,413 | 2,531 | 1,893 | 2,102 | 2,561 | 2,030 | 1,677 | 2,174 | 2,657 | 2,318 | 2,119 | 2,138 | 2,395 |
|  | Oweri Met. | 7051 |  |  |  |  | 2,494 | 2,132 | 2,381 | 1,867 | 2,397 | 2,686 | 2,398 | 2,433 | 2,429 | 1,758 | 2,156 | 2,399 | 2,484 | 2,076 | 2,564 | 2,584 |
|  | Uyo Met. | 7080 |  |  | - | - |  |  |  |  |  |  | - | 2,654 | * | 1,663 | 1,755 | 2,471 | 1,759 | 2,146 | 2,241 |  |
|  | Akwete Rubber Estate | 7053 |  |  | 2,217 | 2,046 | 1,963 | 2,282 | 2,118 | 2,095 | 2,001 | 2,593 | 2,456 | 2,499 | 2,349 | 1,781 | 2,313 | 2,567 | 2,263 | 1,836 | 1,926 | 1,831 |
|  | Enugu Met. | 7032 | * | 1,915 | 1,596 | 1,557 | 1,979 | 1,451 | 1,827 | 1,546 | 1,988 | 1,696 | 2,092 | 1,647 | 1,566 | 902 | 1,782 | 1,932 | 1,451 | 1,453 | 1,459 | 1,643 |
| VIII | Flagore Agric | 8041 |  |  | - |  |  |  | - |  |  | 1,025 | 1,103 | 832 | 846 | 734 | 537 | 947 | 1,220 | 967 |  | 1,057 |
|  | Kano Met. | 8024 | 922 | 704 | 669 | 416 | 424 | 713 | 542 | 786 | 931 | 723 | 914 | 576 | 638 | 498 | 586 | 634 | 733 | 515 | 1,049 | 699 |
|  | Nguru Met. | 8082 | 533 | 461 | 248 | 258 | 551 | 558 | 431 | 509 | 497 | 588 | 341 | 429 | 409 | 237 | 332 | 419 | 245 | 250 | 322 | 339 |
|  | Ningi (BSADP) | 8052 |  |  |  |  |  |  |  |  |  |  |  |  | * | 447 | 569 | 718 | 815 | 565 | 1,137 | 940 |
|  | Jama'are Agric | 8052 |  |  |  | - |  | - | - | - | - | - |  |  | 435 | 448 | 271 | ${ }^{*}$ | 748 | 460 | 798 | 696 |
|  | Potiskum Met. | 8102 | 574 | 627 | 686 | 403 | 892 | 595 | 631 | 678 | 593 | 738 | 684 | 556 | 574 | 525 | 462 | 544 | 806 | 369 | 968 | 856 |
|  | Marguba Vet. | 8134 | 699 |  |  |  |  | 452 | - |  | $\bigcirc$ | - |  |  |  | 217 | 385 | 464 | 661 | 469 |  |  |
|  | Maiduguri Met. | 8133 | 740 | 502 | 434 | 433 | 613 | 671 | 690 | 658 | 726 | 631 | 622 | 462 | 354 | 265 | 347 | 414 | 509 | 326 | 624 | 608 |
|  | Bama Agric | 8142 | 698 | 701 | 536 | 491 | 654 | 645 |  | 658 | 843 |  | 657 | 448 | 453 | 359 | 332 |  | - | 355 | 686 | 544 |

table 5 list of selected 90 River gaging stations (1/3)


Note: O:Available A:Intermittent - : Not available

TABLE 5 LIST OF SELECTED 90 RIVER GAGING STATIONS (2/3)


Note: O:Available A:Intermittent -: Not available
table 5 List of selected 90 river gaging stations (3/3)


Note: O : Available
4 : Intermittent

- : Not available

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
BENUE RIVER (1/6)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Wuro Boki | 1960 | 187 | 109 | 86 | ${ }^{+170}$ | *440 | 544 | 3,385 | 8,635 | 10,894 | 7,165 | 1,475 | 450 | 33,540 |
| Station | : Wuro Boki | 1961 | 265 | 123 | 88 | 60 | *160 | 187 | 2,799 | 3,310 | *9,310 | *3,480 | *970 | * 670 | 21,422 |
| River | : Benue | 1962 | 112 | 51 | * 100 | * 140 | *300 | 653 | 1,339 | 4,042 | 10,109 | *5,900 | 1,172 | 474 | 24,392 |
| River Basin | : Niger | 1963 | 190 | 92 | 62 | 62 | 196 | 257 | 1,663 | 6,900 | 9,365 | 6,134 | 1,293 | 394 | 26,608 |
| Coordinate |  | 1964 | 134 | 80 | 59 | 75 | 171 | 285 | 1,722 | 5,340 | 7,574 | * 4,530 | * 1,420 | 510 | 21,900 |
| - Jat. | : $09^{\circ} 22$ | 1965 | 560 | 375 | 316 | 251 | 388 | 739 | 1,931 | 6,369 | 7,014 | 2,720 | 897 | 450 | 22,010 |
| - Long. | : $12^{\circ} 50^{\circ}$ | 1966 | 284 | 155 | 80 | 67 | 380 | 1,441 | 1,773 | 3,798 | 8,961 | 3,969 | 1;291 | 592 | 22,791 |
|  |  | 1967 | 356 | 232 | 142 | 88 | 169 | 604 | 2,483 | 3,814 | 5,959 | 3,648 | 920 | 528 | 18,943 |
| Area $\left(\mathrm{km}^{2}\right)$ | : 103,680 | 1968 | 340 | 227 | 153 | 80 | 182 | 902 | 2,553 | 4,818 | 7,133 | *3,440 | *690 | *350 | 20,868 |
| Year Established | : 103,680 | 1969 | 522 | 373 | 337 | 404 | 569 | 1,343 | *3,110 | *8,730 | *9,940 | 6,002 | 2,084 | 1,018 | 34,432 |
|  | : 1954 | Mean | 295 | 182 | 142 | 140 | 296 | + 696 | 2,276 | 5,576 | 8,626 | 4,699 | 1,221 | 544 | 24,693 |
|  |  | 1970 | 622 | 361 | 268 | 197 | 391 | 689 | 1,745 | 5,738 | 9,402 | 3,589 | 1,401 | 600 | 25,003 |
|  |  | 1971 | 378 | 232 | 185 | 62 | - | 168 | 2,286 | 4,232 |  | 1,946 | 412 | 214 |  |
|  |  | 1972 | 129 | 80 | 51 | 75 | 139 | 635 | 1,726 | 3,404 | 3,416 | 2,594 | 477 | 188 | 12,914 |
|  |  | 1973 | - | - | - | - | - | - | 1,546 | 4,143 | 5,421 | 3,082 | - | - | - |
|  |  | 1974 | - | - | - | - | - | - | 1,715 | 3,205 | 4,496 | 4,768 | - | - | - |
|  |  | 1975 | - | - | - | - | - | - | 2,278 | 4,039 |  | - | - | - | - |
|  |  | 1976 | 279 | 162 | 110 | 75 | 153 | 502 | 2,259 | 4,446 | 3,522 | 4,374 | 1,681 | 536 | 18,099 |
|  |  | 1977 | 303 | 186 | 129 | 54 | 86 | 381 | 2,045 | 3,744 | 6,625 | 2,575 | 611 | 292 | 17,031 |
|  |  | 1978 | 180 | 94 | 62 | 124 | 464 | 894 | 2,088 | 3,846 | 7,817 | 3,283 | 1,026 | 426 | 20,304 |
|  |  | 1979 | 255 | 162 | 113 | 80 | 528 | 935 | 1,962 | 3,980 | 4,859 | 1,881 | 798 | 279 | 15,832 |
|  |  | Mean | 307 | 182 | 131 | 95 | 294 | 601 | 1,965 | 4,078 | 5,695 | 3,121 | 915 | 362 | 17,746 |
|  |  | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1981 |  |  | 131 |  |  | - | 1,294 | 2,726 | - |  | 699 |  |  |
|  |  | 1983 | 3 | - | 96 | - | 300 | 306 | 941 | 1,704 | 2,932 | 1,037 | 389 | 297 | - |
|  |  | 1984 | 239 | 211 | 241 | 215 | 252 | 259 | - - | - | - | - | - | - | - |
|  |  | 1985 |  |  | $\because$ |  |  |  |  |  |  |  |  |  |  |
|  |  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |

Note: ( ${ }^{*}$ ) shows assumed value based on runoff correlation between Yola and Wuro Boki.
table 6 monthly runoff at selected river gaging stations
benue river (2/6)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | Yola | 1960 | 206 | 116 | 75 | 96 | 265 | 612 | 3,873 | 8,482 | 12,317 | 7,564 | 1,843 | 718 | 36,167 |
| River |  | 1961 | 404 | 181 | 115 | 65 | 94 | 456 | 3,142 | 3,648 | 10,365 | 3,592 | 915 | 565 | 23,542 |
| River | - Benue | 1962 | 190 | 72 | 62 | 80 | 182 | 832 | 1,663 | 3,924 | 9,834 | 5,874 | 1,200 | 562 | 24,475 |
| River Basin | : Niger | 1963 | 321 | 189 | 145 | 117 | 287 | 378 | 2,089 | 7,114 | 10,879 | 6,088 | 1,540 | 485 | 29,632 |
| Coordinate |  | 1964 | 257 | 142 | 96 | 161 | 238 | 485 | 1,918 | 3,059 | 6,978 | 4,668 | 1,335 | 429 | 19,766 |
| - Lat. | $\therefore 09^{\circ} 14$ | 1965 | 222 | 111 | 67 | 39 | 126 | 547 | 1,920 | 6,851 | 7,763 | 3,171 | 679 | 287 | 21,783 |
| - Iong. | : $12^{\circ} 28^{\prime}$ | 1966 | 161 | 75 | 43 | 26 | 319 | 1,330 | 1,902 | 4,152 | 9,803 | - | - | - | - |
| Catchment |  | 1967 | 170 | 80 | 121 | 78 | 131 | 399 | 2,496 | 4,125 | 6,591 | 4,339 | 741 | 608 | 19,879 |
| Area ( $\mathrm{km}^{2}$ ) | : 108,400 | 1968 | 179 | 99 | 67 | 47 | 80 | 630 | 2,515 | 5,614 | 9,388 | 3,549 | 653 | 292 | 23,113 |
| Year Established |  | 1969 | 155 | 94 | 80 | 52 | 54 | 557 | 3,581 | 9,420 | 11,024 | 6,996 | 2,136 | 573 | 34,722 |
|  |  | Mean | 227 | 116 | 87 | 76 | 178 | 623 | 2,510 | 5,639 | 19,494 | 5093 | 1,227 | 502 | 25,7? |
|  |  | 1970 | 297 | 152 | 83 | 54 | 129 | 319 | 1,356 | 6,344 | 13,641 | 4,259 | 1,487 | 649 | 28,770 |
|  |  | 197 | 407 | 162 | 67 | 49 | 51 | 233 | 2,466 | 4,955 | 7,731 | 4,068 | 1,831 | 1,225 | 23,245 |
|  |  | 1972 | 823 | - | , | - | 426 | 1,036 | 2,865 | 4,074 | 4,613 | 4,288 | 738 | 442 |  |
|  |  | 1973 | 276 | 167 | 113 | 21 | 169 | 414 | 1,069 | 5,674 | 6,102 |  | - | 574 | -- |
|  |  | 1974 | 472 | 409 | 533 | 480 | 456 | 526 | 1,667 | 3,838 | 5,216 | 5,052 | 2,261 | 1,747 | 22,657 |
|  |  | 1975 | 1,257 | 363 | - | - | - | - | 2,227 | 6,555 | 8,658 | 5,858 |  | 831 |  |
|  |  | 1976 | 740 | 370 | 250 | 168 | 257 | 660 | 2,388 | 5,108 | 4,007 | 5,073 | 2,442 | 791 | 22,254 |
|  |  | 1977 | 448 | 346 | 198 | 124 | 129 | 492 | 2,235 | 4,296 | - | 2,074 | 953 | 536 |  |
|  |  | 1978 | 337 | 213 | 166 | 236 | 525 | 985 | 2,196 | 4,095 | 9,200 | 4,026 | 1,387 | 825 | 24,191 |
|  |  | 1979 | 504 | 249 | 187 | 153 | 504 | 876 | 1,867 | 4,626 | 5,956 | 2,175 | 972 | 528 | 18,697 |
|  |  | Mean | 556 | 270 | 200 | 161 | 294 | 616 | 2,034 | 4,957 | 7,236 | 4,097 | 1,509 | 815 | 22,745 |
|  |  | 1980 | 337 | 203 | 163 | 111 | 233 | 578 | 2,204 | 6,254 | - | - | $\cdots$ | - | - |
|  |  | 1981 | 480 | 399 | 201 | 106 | 236 | 443 | 1,685 | 3,439 | 6,210 | 2,823 | 993 | 565 | 17,580 |
|  |  | 1982 | 348 | 242 | 187 | 174 | 249 | 500 | 1,288 | 3,359 | 4,220 | 2,319 | 884 | 490 | 14,260 |
|  |  | 1983 | 337 | 254 | 171 | 158 | 311 | 552 | 1,002 | 1,725 | 3,484 | 1,205 | 516 | 458 | 10,173 |
|  |  | 1984 | 410 | 341 | 372 | 355 | 442 | 417 | 948 | 1,543 | 2,201 | 1,835 | 568 | 410 | 9,842 |
|  |  | 1985 | 343 | 283 | 287 | 272 | 305 | 547 | 1,789 | 3,244 | 4,404 | 1,602 | 674 | 474 | 14,224 |
|  |  | 1986 | 303 | 327 | 367 | 376 | 404 | 534 | 1,087 | 4,470 | 4,155 | 2,212 | 700 | 394 | 15,329 |
|  |  | 1987 | 346 | 293 | 295 | 316 | 388 | 552 | 710 | 1,414 | 2,820 | 1,998 | 505 | 388 | 10,025 |
|  |  | 1988 | 356 | 288 | 268 | 238 | -- | - | -- | - | - | - | - | - | - |
|  |  | 1989 | 351 | 336 | 450 | 391 | 627 | 502 | 766 | 4,639 | 6,263 | 2,291 | 1,134 | 761 | 18,511 |
|  |  | Mean | 361 | 297 | 276 | 250 | 355 | 514 | 1,275 | 3,343 | 4,220 | 2,036 | 747 | 493 | 14,167 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS BENUE RIVER (3/6)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS BENUE RIVER (4/6)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dee. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station |  | 1980 | 461 | 181 | 62 | 74 | 407 | 1,903 | 5,279 | 14,831 | 24,139 | 17,430 | 5,927 | 1,419 | 72,113 |
|  |  | 1981 | 861 | 442 | 261 | 203 | 835 | 1,525 | 6,945 | 13,941 | 21,837 | 14,296 | - | 426 |  |
| River | Benue | 1982 | 619 | 325 | 289 | 266 | 625 | 1,488 | 5,390 | 9,444 | 16,572 | 15,651 | 6,886 | 1,493 | 59,048 |
| River Basin | : Niger | 1983 | 370 | 184 | 99 | 174 | 275 | 935 | 2,012 | 3,787 | 8,319 | 3,604 | 299 | 87 | 20,145 |
| Coordinate |  | 1984 | - |  | - | - | - | - | 1,410 | 4,368 | 6,459 | 4,759 | 1,283 | 442 | 40.533 |
| - Lat. | : 08 ${ }^{\circ} 11^{\prime}$ | 1985 | 338 | 191 | 157 | 445 | 374 | 1,589 | 4,087 | 11,369 | 17,931 | -9,868 | 2,587 | 597 | 49,533 |
| - Long. | : $09^{\circ} 45^{\circ}$ | 1986 | 250 | 174 | 158 | 328 | 248 | 867 | 3,280 | 10,378 4883 | 13,240 10,585 | 10,949 $\mathbf{9 , 9 4 5}$ | 3,701 1,523 | 999 | 44,572 |
| Catchment |  | 1987 | 371 | 43 | - | - |  | 283 | 2,143 | 4,883 8,547 | 10,585 19,724 | 10,945 19,993 | 1,523 3,240 | 1,119 | - |
| Area ( $\mathrm{km}^{2}$ ) | : 258,700 | 1988 | - | - | 311 | 354 | 1,384 | 2,030 | 5,561 | 8,884 13,254 | 19,84 23,457 | 19,993 17,247 | 3,240 | 1,19 | - |
| Year Established | : 1915 | Mean | 467 | 220 | 191 | 263 | 1,384 593 | 1,328 | 4,012 | $\begin{array}{r}13,288 \\ \hline 9,480\end{array}$ | 16,226 | 12,374 | 3,181 | 823 | 49,158 |

table 6 monthly runoff at selected river gaging stations
BENUE RIVER (5/6)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Noy. | Dee. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Makurdi | 1960 | 911 | 581 | 557 | 718 | 1,382 | 3,214 | 10,740 | 19,354 | 28,281 | 33,576 | 11,959 | 3,763 | 115,036 |
|  |  | 1961 | 1,478 | 888 | 745 | 850 | 1,018 | 2,488 | 10,914 | 12,660 | 19,940 | 29,221 | 3,834 | 2,373 | 86,409 |
| River | - Benue | 1962 | 1,050 | 694 | 825 | 1,283 | - | - |  |  | 28,263 | 32,615 | 12,729 | 4,979 | - |
| River Basin | : Niger | 1963 | 2,076 | 1,033 | 854 | 1,083 | 3,000 | 3,730 | 11,849 | 18,990 | 29,938 | 30,869 | 11,775 | 3,391 | 118,588 |
| Coordinate |  | 1964 | 1,669 | 977 | 897 | 1,122 | 2,065 | 4,487 | 9,988 | 13,590 | 23,613 | 30,052 | 13,279 | 3,790 | 105,529 |
| - Lat. | : $07{ }^{\circ} 45^{\prime}$ | 1965 | 1,987 | 1,200 | 1,130 | 1,029 | 1,454 | 4,313 | 9,321 | 19,705 | 27,994 | 23,198 | 6,451 | 2,486 | 100,268 |
| - Long. | : 08 ${ }^{\circ} 32^{\prime}$ | 1966 | 1,457 | 975 | 849 | 1,081 | 3,166 | 9,808 | 11,174 | 15,219 | 27,260 | 28,461 | 9,725 | 3,171 | 112,346 |
| Catchment |  | 1967 | 1,441 | 927 | 937 | 946 | 1,430 | 2,976 | 9,602 | 15,741 | 23,240 | 26,455 | 8,590 | 723 | 93,008 |
| $\text { Area }\left(\mathrm{km}^{2}\right)$ | : 305,500 | 1968 | 536 | - | 5 | - | , | , | , | - | , | , | 4,479 | - | - |
| Year Established | : 1914 | 1969 | 1,138 $\mathbf{1} 374$ | $448$ | 455 805 | 467 | 455 1746 | 6,721 | $14,876$ | $26,776$ | $35,899$ | $31,873$ | 11,223 9 | $4,639$ | $134,970$ |
|  |  |  |  | 858 | 805 | 953 |  |  |  | $.17,754$ |  |  |  |  |  |
|  |  | 1970 | - | - | - | - | - | - | 7,284 | 18,058 | 31,430 | 27,631 | 8,860 | 1,809 | - |
|  |  | 1971 | 1,809 | 939 | 949 | 1,083 | 1,072 | 2,673 | 12,960 | 17,819 | 23,411 | 22,204 | 5,054 | 1,900 | 91,873 |
|  |  | 1972 | 1,000 | 651 | 702 | 824 | 1,367 | 5,253 | 8,461 | 14,207 | 23,981 | 20,596 | 5,843 | 1,828 | 84,713 |
|  |  | 1973 | 1,005 | 595 | 649 | 580 | 780 | 1,450 | 4,623 | 13,947 | 20,332 | 16,249 | 4,330 | 1,410 | 65,850 |
|  |  | 1974 | 791 | 540 | 552 | 723 | 1,447 | 3,639 | 9,337 | 15,624 | 24,204 | 24,908 | 8,581 | 750 | 91,096 |
|  |  | 1975 | 911 | 586 | 584 | 627 | 954 | 2,277 | 6,917 | 16,171 | 24,934 | 32,790 | 8,578 | 2,854 | 98,183 |
|  |  | 1976 | 1,112 | 692 | 683 | 655 | 1,554 | 4,408 | 9,927 | 17,758 | 19,712 | 20,572 | 15,053 | 2,956 | 95,082 |
|  |  | 1977 | 1,077 | 600 | 555 | 610 | 632 | 1,298 | 7,426 | 12,036 | 24,507 | 25,556 | 4,478 | 1,233 | 80,008 |
|  |  | 1978 | 689 | 503 | 536 | 616 | 1,624 | 5,346 | 9,600 | 15,630 | 26,081 | 23,474 | 9,964 | 2,128 | 96,191 |
|  |  | 1979 | 858 | 545 | 547 | 539 | 1,225 | 2,202 | 10,433 | 16,426 | 25,675 | 16,284 | 6,361 | 1,597 | 82,692 |
|  |  | Mean | 1,028 | 628 | 629 | 695 | 1,184 | 3,172 | 8,697 | 15,768 | 24,427 | 23,026 | 7,710 | 1,847 | 88,811 |
|  |  | 1980 | 750 | 528 | 547 | 522 | 705 | 2,202 | 6,923 | 18,765 | 28,306 | 24,324 | 7,244 | 1,729 | 91,545 |
|  |  | 1981 | 730 | 508 | 482 | 518 | 1,217 | 2,461 | 10,452 | 17,688 | 27,195 | 19,066 | 4,618 | 1,225 | 86,160 |
|  |  | 1982 | 713 | 535 | 603 | 583 | 879 | 2,176 | 9,380 | 14,638 | 22,533 | 21,571 | 6,788 | 1,597 | 81,996 |
|  |  | 1983 | - | - | - | - | 705 | 1,818 | 5,958 | 10,500 | 18,912 | 10,329 | 1,746 | 804 |  |
|  |  | 1984 | 622 | 436 | 402 | 606 | 866 | 2,147 | 8,485 | 13,711 | 16,700 | 13,421 | 3,696 | 716 | 61,808 |
|  |  | 1985 | 678 | 491 | 536 | 663 | 753 | 2,002 | 12,877 | 22,397 | 23,792 | 16,793 | 3,095 | 1,182 | 85,259 |
|  |  | 1986 | 713 | 496 | 574 | 614 | 777 | 1,849 | 7,073 | 14,051 | 17,527 | 15,858 | 3,939 | 1,168 | 64,639 |
|  |  | 1987 | 702 | 519 | 536 | 550 | 574 | 1,572 | 3,430 | -5,379 | 17,001 | 6,507 | 3,087 | 1,005 | 40,862 |
|  |  | 1988 | 630 | 501 | 579 | 583 | 817 | 1,886 | 4,162 | 16,694 | 24,771 | 26,800 | 6,734 | 1,616 | 85,773 |
|  |  | 1989 | 836 | 508 | 536 | 557 | 1,993 | 2,368 | 8,351 | 18,409 | 28,291 | 25,543 | 10,497 | 1,838 | 99,727 |
|  |  | Mean | 708 | 502 | 533 | 577 | 929 | 2,048 | 7,609 | 15,223 | 22,503 | 18,021 | 6,144 | 1,288 | 75,085 |

TABLE 6 MONTHIY RUNOFF AT SELECTED RIVER GAGING STATIONS
BENUE RIVER (6/6)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug: | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | - Umaicha | 1970 | 2,304 | 915 | 731 | 525 | 790 | 1,571 | 4,886 | 9,393 | 29,048 | 33,434 | 11,315 | 4,396 | 99,308 |
| Station |  | 1971 | 1,669 | 686 | 618 | 663 | 745 | 1,735 | 4,618 | 11,027 |  | 20,485 |  | 1,357 |  |
| River | : Benue | 1972 |  |  |  | 547 | 1,178 |  | 7,884 | 14,785 | 26,815 | 21,313 | 14,064 | 6,679 |  |
| River Basin | : Niger | 1973 | 504 |  |  | 253 | 470 | 916 | 2,835 | 13,680 | 21,508 | 17,306 | 4,250 | 1,004 |  |
| Coordinate |  | 1974 |  |  | 166 | 279 | 911 | 2,402 | 9,066 | 15,695 | 25,664 | 28,174 | 9,310 | 1,655 |  |
| - Lat. | : $08^{\circ} 00^{\circ}$ | 1975 |  |  |  |  | 655 | 1,487 | 6,578 | 18,068 |  |  | 13,043 | 5,425 |  |
| - Jong. | : $07^{\circ} 14^{\prime}$ | 1976 |  | - | 365 | 383 | 859 | 3,057 | 9,386 | 18,041 | 20,565 | 23,034 | 16,777 | 6,229 |  |
| Catchment |  | 1977 | - | - |  |  | 218 | 776 | 6,236 | 11,898 | 25,299 | 29,451 | 4,922 | 911 |  |
| Area ( $\mathrm{km}^{2}$ ) | : 335,000 | 1978 | *460 | $\cdots$ |  |  |  | 4,019 | 9,425 | 17,717 | 29,471 | 29,271 | 11,557 | 1,695 |  |
| Year Established |  | 1979 | *690 | *270 | 217 | 206 | 814 | 4,683 | 10,398 | 17,714 | 26,099 | 19,451 | 6,428 | 1,251 | 88,221 |
|  | : 1955 | Mean | 1,125 | 624 | 419 | 408 | 738 | 2,294 | 7,131 | 14,802 | 25,559 | 24,658 | 10,185 | 3,060 | 91,003 |
|  |  | 1980 | 522 | 236 | 153 | 149 | 417 | 1,818 | 13,450 | 19,586 |  |  |  |  | 95,989 |
|  |  | 1981 | *620 | 259 | 183 | 203 | 1,185 | 1,770 | 9,244 | 19,223 | 33,624 | 22,77 | 5,788 | 1,183 | 95,989 |
|  |  | 1982 | *500 | 443 | 437 | 433 | 627 | 1,517 |  | 13,700 | 21,686 | 21,967 | 6,819 | 1,233 |  |
|  |  | 1983 | 650 | 457 | 376 | 339 | 484 | 1,410 | 5,315 | 10,294 | 17,609 | 10,751 | 1,235 | 455 | 49,375 |
|  |  | 1984 | 281 | 195 | 185 | 255 | 505 | 998 | 5,140 | 14,963 | 16,536 | 13,432 | 3,649 | 681 | 56,820 |
|  |  | 1985 | 384 | 224 | 181 | 455 | 491 | 1,856 | 8,359 | 16,824 | 26,607 | 18,200 | *3,100 | *1,130 | 77,811 |
|  |  | 1986 | *500 | *200 | 446 | 657 | 969 | 1,317 | 5,564 | 13,233 | 19,579 | 20,619 | 6,922 | 747 | 70,753 |
|  |  | 1987 | 976 | 615 | 537 | 633 | 604 | 2,329 | 5,444 | 9,983 | 20,784 | 20,302 | 3,696 | 756 | 66,659 |
|  |  | 1988 | 428 | 284 | 288 | 265 | 896 | 2,802 | 6,114 | 16,745 | 35,617 |  |  |  |  |
|  |  | 1989 | 628 | 267 | 197 | 190 | 1,068 | 2,642 | 10,631 | 17,166 | 29,294 | 28,378 | 6,265 4,676 | 965 894 | 97,591 76,668 |
|  |  | Mean | 539 | 318 | 298 | 358 | 725 | 1,846 | 7,696 | 15,172 | 24,593 | 19,653 | 4,676 | 894 | 76,668 |

Note: ( ${ }^{*}$ ) shows assumed value based on runoff correlation between Makurdi and Umaisha.
table 6 monthly runoff at selected river gaging stations

## RIVER NIGER (1/8)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Jiddere Bode | 1970 | 5,770 | 5,662 | 6,029 | 3,641 | 1,219 | 451 | 533 | 2,998 | 6,164 | 5,633 | 4,124 | 4,538 | 46,762 |
| River | : Niger | 1971 | 4,742 | 4,266 | 2,612 | 856 | 198 | 24 | 987 | 2,035 | 5,853 | 4,709 | 4,090 | 4,690 | 35,062 |
| River | - Niger | 1972 | 4,286 | 5,036 | 2,092 | 619 | 204 | 214 | 570 | 2,601 | 4,264 | 4,319 | 3,952 | 4,499 | 32,656 |
| River Basin | : Niger | 1973 | 4,326 | 2,585 | 1,167 | 266 | 4 | 211 | 478 | 2,133 | 3,534 | 3,840 | 3,764 | 4,167 | 26,475 |
| Coordinate |  | 1974 | 3,687 | 1,795 | 710 | 149 | 0 | 14 | 1,007 | 3,323 | 6,553 | 6,100 | 4,500 | 4,843 | 32,681 |
| - Lat. | : $11^{\circ} 23^{\prime}$ | 1975 | 4,939 | 4,038 | 1,775 | 447 | 128 | 48 | 622 | 2,261 | 5,169 | 6,473 | 4,371 | 4,852 | 34,123 |
| - Long. | : 04007 | 1976 | 5,125 | 4,833 | 3,159 | 1,113 | 453 | 478 | 566 | 2,125 | 3,525 | 3,985 | 4,191 | 4,329 | 33,882 |
| Catchment |  | 1977 | 4,691 | 4,516 | 4,111 | 2,562 | 345 | 473 | 729 | 2,237 | 3,963 | 3,727 | 3,422 | 3,874 | 34,650 |
| Area ( $\mathrm{km}^{2}$ ) | 563,500 | 1978 | 3,650 | 2,054 | 826 | 355 | 370 | 531 | 690 | 2,798 | 5,423 | 4,148 | 4,044 | 4,397 | 29,286 |
| Year Established | : 1968 | $1979$ | 4,732 | 3,979 | 2,127 | 585 1059 | 139 | 271 | 810 | 2,317 | 5,471 | 5,721 | 4,688 | 4,934 | 35,774 |
|  |  | Mean |  |  |  |  |  | 272 | 699 |  |  |  |  | 4,512 | 34,136 |
|  |  | 1980 | 5,144 | 4,211 | 1,962 | 513 | 94 | 319 | 1,770 | 2,781 | 3,895 | 3,857 | 3,720 | 4,146 | 32,412 |
|  |  | 1981 | 3,834 | 2,159 | 948 | 196 | 79 | 136 | 804 | 2,272 | 4,097 | 4,146 | 3,988 | 4,409 | 27,068 |
|  |  | 1982 | 4,536 | 3,656 | 1,198 | 374 | 175 | 187 | 639 | 3,018 | 4,163 | 3,670 | 3,625 | 3,777 | 29,018 |
|  |  | 1983 | 3,236 | 1,562 | 672 | 151 | 4. | 211 | 737 | 2,028 | 3,176 | 3,396 | 3,243 | 3,549 | 21,965 |
|  |  | 1984 | 2,419 | 1,082 | 461 | 113 | 86 | 227 | 261 | 1,218 | 2,672 | 3,570 | 3,024 | 2,890 | 18,023 |
|  |  | 1985 | 1,771 | 740 | 298 | 33 | 1 | 110 | 1,048 | 3,115 | 4,625 | 4,083 | 3,574 | 4,085 | 23,483 |
|  |  | 1986 | 3,294 | 1,430 | 675 | 155 | 139 | 179 | 1,052 | 2,038 | 3,625 | 3,708 | 3,471 | 3,553 | 23,319 |
|  |  | 1987 | 2,726 | 1,243 | 613 | 219 | 105 | 482 | 541 | 1,505 | 2,769 | 3,457 | 3,166 | 3,423 | 20,249 |
|  |  | 1988 | 2,578 | 1,169 | 496 | 208 | 148 | 415 | 1,262 | 3,079 | 6,978 | 5,746 | 4,001 | 4,166 | 30,876 |
|  |  | 1989 | 2,944 | 1,251 | 596 | 233 | 145 | 225 | 1,034 | 2,901 | 4,317 | 4,006 | 3,390 | 3,530 | 24,572 |
|  |  | Mean | 3,248 | 1,850 | 792 | 220 | 98 | 249 | 915 | 2,459 | 4,032 | 3,964 | 3,520 | 3,753 | 25,100 |

table 6 monthly runoff at selected river gaging stations RIVER NIGER (2/8)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1970 | 5,245 | 5,193 | 5,791 | 4,628 | 2,870 | 2,515 | 3,002 | 4,486 | 3,657 | 5,826 | 6,066 | 6,507 | 55,786 |
| Station | ! Kainji Dam | 1971 | 4,090 | 3,991 | 3,288 | 2,196 | 2,334 | 4,794 | 3,109 | 3,524 | 2,797 | 2,680 | 2,631 | 2,838 | 38,272 |
| River | : Niger | 1972 | 4,384 | 2,781 | 2,983 | 2,846 | 2,822 | 2,647 | 2,495 | 1,509 | 1,355 | 1,404 | 1,427 | 3,570 | 30,223 |
| River Basin | : Niger | 1973 | 1,3430 | 2,848 | 1,780 | 1,440 | 1,662 | 1,645 | 1,747 | 1,662 | 1,590 | 1,643 | 1,966 | 2,506 | 23,919 |
| Coordinate |  | 1974 | 3,208 | 2,057 | 1,613 | 1,419 | 1,528 | 2,986 | 1,616 | 3,516 | 5,444 | 3,436 | 3,276 | 4,020 | 34,119 |
| - Lat. |  | 1975 | 4,776 | 4,000 | 2,546 | 2,380 | 2,171 | 2,067 | 2,441 | 2,953 | 2,142 | 2,251 | 3,463 | 4,186 | 35,376 |
| - Long. |  | 1976 | 4,762 | 4,390 | 3,200 | 2,411 | 2,573 | 2,660 | 2,956 | 2,616 | 2,233 | 1,771 | 1,849 | 1,718 | 33,139 |
| - Long. |  | 1977 | 2,270 | 3,509 | 3,907 | 2,991 | 2,471 | 2,181 | 2,653 | 3,280 | 2,771 | 2,811 | 1,997 | 1,664 | 32,505 |
| Catchment |  | 1978 | 1,694 | 1,539 | 1,680 | 1,526 | 1,536 | 2,088 | 2,187 | 1;723 | 1,668 | 2,401 | 2,416 | 2,522 | 22,980 |
| Arca (km ${ }^{2}$ ) | : 569,800 | 1979 | 3,173 | 3,020 | 2,259 | 1,764 | 1,962 | 2,155 | 2,760 2 | 3,873 2914 | 3,336 2,699 | 3,455 2768 | 2,647 <br> 2774 | 3,321 3,285 | $\begin{array}{r} 33,725 \\ 34,005 \end{array}$ |
|  |  | Mean | 3,703 | 3, 3 , 333 | 2,905 | 2360 | 2,193 | 2,574 | 2,497 | 2,914 | . 26699 |  | 2,774 | 3,285 |  |
|  |  | 1980 | 3,706 | 3,891 | 2,337 | 2,440 | 2,090 | 2,082 2,126 | 2,326 1,948 1 | 2,139 1,900 | 2,606 <br> 2,178 |  |  |  | 30,106 24,462 |
|  |  | 1981 1982 | 2,034 2,900 1,0 | 2,045 <br> 2,439 <br> 1,464 | $\begin{array}{r}2,039 \\ 2,182 \\ \hline 212\end{array}$ | 2,012 2,448 | 2,184 2,637 | 2,126 1,958 | 1,948 1,905 | 1,900 2,549 | 2,178 1,570 | 1,584 1,654 | 2,059 1,782 | 1,353 1,922 | 24,462 25,946 |
|  |  | 1983 | 1,498 | -1,464 | 2,123 | 2,044 | 2,085 | 1,753 | 1,962 | 1,989 | 1,557 | 1,704 | 1,378 | 1,139 | 20,696 |
|  |  | 1984 | 1,270 | +978 | 1,083 | 1,124 | 1,343 | 1,923 | 1,726 | 1,672 | 1,292 | 1,160 | 1,318 | 1,664 | 16,553 |
|  |  | 1985 | 1,412 | 1,256 | 1,289 | 1,121 | 1,085 | 997 | 681 | 737 | 2,025 | 2,680 | 1,873 | 2,910 | 18,066 |
|  |  | 1986 | 2,752 | 1,578 | 1,806 | 1,834 | 1,855 | 2,015 | 1,747 | 1,648 | 1,261 | 1,509 | 1,852 | 1,696 | 21,553 |
|  |  | 1987 | 1,860 | 1,733 | 1,847 | 1,717 | 1,613 | 1,966 | 1,522 | 1,367 | 1,238 | 1,182 | 1,598 | 1,812 | 19,455 |
|  |  | 1988 | 2,080 | 1,399 | 1,227 | 2,069 | 1,118 | 844 | 871 | 1,621 | 4,191 | 3,865 | 2,362 | 3,323 | 24,970 |
|  |  | 1989 | 2,278 | 1,437 | 1,592 | 1,997 | 2,208 | 1,497 | 1,605 | 1,763 | 1,823 | 1,139 | 2,248 | 2,806 | 22,393 |
|  |  | Mean | 2,179 | 1,822 | 1,763 | 1,881 | 1,822 | 1,716 | 1,629 | 1,739 | 1,974 | 1,928 | 1,889 | 2,090 | 22,422 |

table 6 monthly runoff at selected river gaging stations
RIVER NIGER (3/8)

- Unit: MCM -

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Jebba Power | 1980 |  | - | - | - | - | - | - | - |  | - |  | - | - |
|  | Station | 1981 | - | - | - | - | - | - |  |  |  | - | - | - | - |
| River | : Niger | 1982 | - | - | $-$ | - | - | - | - | - | - | - | - | - | - |
| River Basin | : Niger | 1984 | - | 983 | 1,139 | 1,137 | 1,402 | 1,616 | 2,123 | 2,326 | 2,062 | 2,144 | 1,186 | 1,378 | - ${ }^{-}$ |
| Coordinate |  | 1985 | 1,568 | 1,307 | 1,294 | 1,204 | 1,209 | 938 | 879 | 1,503 | 3,890 | 3,599 | 1,860 | 2,843 | 22,094 |
| - Lat. |  | 1986 | 2,747 | 1,566 | 1,750 | 1,655 | 2,072 | 1,987 | 2,128 | 2,002 | 1,639 | 2,031 | 2,126 | 1,769 | 23,472 |
| $\begin{aligned} & \text { - Lat. } \\ & \text { - Iong. } \end{aligned}$ | $: 090$ $: 04050$ | 1987 | 2,034 | 1,721 | 1,873 | 1,637 | 1,656 | 2,367 | 1,801 | 1,852 | 2,380 | 2,064 | 1,831 | 1,849 | 23,065 |
| Catchment |  | 1988 | 2,117 | 1,336 | 1,402 | 2,178 | 1,203 | 956 | 1,238 | 2,179 | 6,452 | 4,872 | 2,587 | 3,061 | 29,581 |
| Catchment |  | 1989 | 2,656 | 1,483 | 1,538 | 1,927 | 2,240 | 1,857 | 1,809 | 2,785 | 3,515 | 3,929 | 1,790 | 2,458 | 27,987 |
| Area ( $\mathrm{km}^{2}$ ) | : 631,800 | Mean | 2,224 | 1,339 | 1,499 | 1,623 | 1,630 | 1,620 | 1,663 | 2,108 | 3,323 | 3,107 | 1,897 | 2,226 | 24,319 |

TABLE 6 MONTHLY RUNOFF AT SEEECTED RIVER GAGING STATIONS RIVER NIGER (4/8)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Baro | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | - Niger | 1961 | - | -- | - | 3,445 | 1,117 | 640 | 2,989 | 6,958 | 11,949 | 12,712 | 5,215 | 4,272 | - |
| River | : Niger | 1962 | 4,438 | 4,192 | 4,101 | 1,664 | 485 | 920 | 3,252 | 6,910 | 18,787 | 20,217 | 9,891 | 5,560 | 80,417 |
| River Basin | : Niger | 1963 | 4,987 | 4,701 | 5,327 | 4,764 | 2,178 | 1,332 | 3,959 | 11,030 | 15,013 | 16,060 | 8,424 | 4,901 | 82,676 |
| Coordinate |  | 1964 | 4,794 | 4,618 | 4,848 | 3,097 | 1,270 | 1,760 | 2,089 | 8,041 | 17,649 | 16,228 | 6,638 | 4,968 | 76,000 |
| - Lat. | : $08^{\circ} 35^{\prime}$ | 1965 | 4,832 | 4,674 | 5,362 | 4,207 | 1,993 | 1,840 | 3,035 | 8,330 | 14,277 | 13,890 | 6,262 | 4,912 | 73,614 |
| - Long. | : $06^{\circ} 23^{\prime}$ | 1966. | 4,939 | 4,413 | 4,722 | 2,589 | 1,366 | 2,499 | 3,385 | 7,877 | 16,000 | 15,570 | 6,578 | 4,837 | 74,775 |
| Catchnent |  | 1967 | 4,885 | 4,701 | 5,100 | 2,862 | 1,184 | 495 | 2,893 | 6,814 | 15,531 | 17,680 | 7,361 | 5,346 | 74,852 |
| Area ( $\mathrm{km}^{2}$ ) | : 730,300 | 1968 | 5,547 | 5,598 | 6,152 | 5,039 | 2,654 | 2,748 | 6,792 | 15,444 | 14,310 | 8,019 | 5,202 | 4,733 | 82,238 |
| Year Established |  | 1969 | 4,489 | 4,821 | 4,052 | 2,991 | 3,115 | 2,042 | 5,542 | 9,356 | 15,549 | 11,038 | 8,186 | 5,373 | 76,554 |
|  | : 1914 | Mean | 4884 | 4,715 | 4.958 | 3,406 | 1,707 | 1,586 | 3,771 | 8,973 | 15,452 | 14,602 | 7,084 | 4,989 | 76,107 |
|  |  |  |  |  |  |  |  | 3,103 | 4,701 | 9,728 | 14,864 | 10,396 |  |  | 76,628 |
|  |  | 1971 | 4,023 | 4,160 | 3,409 | 2,126 | 2,439 | 2,896 | 5,084 | 10,699 | 13,885 | 8,927 | 3,271 | 2,873 | 63,792 |
|  |  | 1972 | 3,776 | 3,954 | 2,865 | 2,515 | 2,835 | 3,663 | 3,985 | 6,298 | 18,885 | 4,934 | 1,572 | 3,004 | 48,640 |
|  |  | 1973 | 3,339 | 2,720 | 1,603 | 1,103 | 1,364 | 1,660 | 2,396 | 6,378 | 8,850 | 6,700 | 2,362 | 2,517 | 40,992 |
|  |  | 1974 | 2,980 | 1,970 | 1,410 | 1,098 | 1,704 | 1,712 | 2,951 | 6,660 | 13,937 | 12,703 | 4,711 | 4,339 | 56,175 |
|  |  | 1975 | 4,470 | 4,266 | 2,760 | 2,393 | 2,608 | 2,655 | 5,438 | 6,587 | 11,538 | 12,978 $\mathbf{9 , 9 7 8}$ | 4,631 | 4,411 | 61,735 |
|  |  | 1976 | 4,762 | 4,516 | 3,516 | 2,427 | 2,948 | 3,851 | 5,046 | 5,097 | 5,835 | 10,015 | 6,115 | 2,299 | 56,427 |
|  |  | 1977 | 2,013 | 3,202 | 4,178 | 3,015 | 2,969 | 3,872 | 3,446 | 4,283 | 9,176 | -9,072 | 2,414 | 1,860 | 49,500 |
|  |  |  | 1,629 | 1,425 | 1,522 | 1,562 | 1,916 | 3,271 | 5,116 | 6,759 | 11,862 | 9,273 | 4,766 | 2,543 | 51,644 |
|  |  | $1979$ | $3,007$ | $2,732$ | 2,077 | 1,797 | 2,190 | 2,958 | 6,719 | 11,143 | 15,177 | 10,350 | $4,470$ | $\begin{aligned} & 2,045 \\ & 3,806 \end{aligned}$ | 65,426 |
|  |  | Mean | 3,648 | $3,438$ | $2944$ | $2328$ | 2,408 | 2,964 | 4,388 | 7, 7 , 363 | 11,436 | +0,235 | $3885$ | $3,159$ |  |
|  |  | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1981 | 2,191 | 2,035 | 2,108 |  |  |  |  |  | 12,177 |  |  |  |  |
|  |  | 1982 | 2,807 | 2,422 | 2,121 | 2,449 | 2,799 | 2,595 | 3,817 | 5,625 | 6,555 | 5,951 | 2,841 | 2,178 | 42,160 |
|  |  | 1983 | 1,623 | 1,398 | 2,078 | 1,957 | 2,062 | 2,112 | 2,866 | 3,782 | 4,588 | 2,290 | 1,192 | ${ }^{2} 1981$ | 26,939 |
|  |  | 1984 | 1,037 | 1,004 | 1,002 | 1,050 | 1,377 | 1,991 | 2,885 | 3,838 | 4,044 | 4,042 | 1,566 | 1,304 | 25,140 |
|  |  | 1985 | 1,438 | 1,272 | 1,197 | 1,122 | 1,267 | 1,361 | 2,266 | 7,186 | 13,808 | 11,375 | 3,385 | 3,452 | 49,129 |
|  |  | 1986 | 3,996 | 2,189 | 1,797 | 1,752 | 2,084 | 2,522 | 2,689 | 3,447 | 7,366 | 6,693 | 3,139 | 2,188 | 39,862 |
|  |  | 1987 | 2,244 | 1,923 | 2,705 | 3,248 | 2,914 | 3,123 | 2,571 | 3,766 | 8,839 | 7,430 | 2,659 | 2,625 | 44,047 |
|  |  | 1988 | 2,464 | 1,911 | 1,888 | 4,256 | 4,339 | 3,301 | 2,303 | 3,669 | 11,288 | 11,972 | 3,473. | 3,766 | 54,630 |
|  |  | 1989 | 3,104 | 1,863 | 1,768 | 2,216 | 4,537 | - | - | 7,679 | 12,807 | 7,907 | 3,953 | 4,095 | - |
|  |  | Mean | 2,323 | 1,780 | 1,852 | 2,235 | 2,673 | 2,482 | 3,035 | 5,201 | 9,052 | 7,340 | 2,823 | 2,549 | 43,345 |

table 6 monthly runoff at selected river gaging stations RIVER NIGER (5/8)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1960 | 5,992 | 5,003 | 4,998 | 4,025 | 3,367 | 4,476 | 14,932 | 29,594 | 47,988 | 60,114 | 23,649 | 8,927 | 213,065 |
| Station | : Lokoja | 1961 | 6,803 | 5,412 | 5,287 | 4,093 | 2,619 | 2,867 | 13,920 | 21,858 | 32,081 | 41,617 | 12,250 | 5,946 | 154,753 |
| River | : Niger | 1962 | 6,499 | 4,570 | 4,553 | 3,219 | 3,086 | 5,656 | 12,918 | 26,736 | 52,711 | 62,439 | 25,529 | 11,233 | 218,149 |
| River Basin | : Niger | 1963 | 7,162 | 5,620 | 5,903 | 4,940 | 4,502 | 4,717 | 11,279 | 31,546 | 50,671 | 55,071 | 23,160 | 7,529 | 212,100 |
| Coordinate |  | 1964 | 6,257 | 4,865 | 5,102 | 4,025 | 3,112 | 4,904 | 11,308 | 22,402 | 44,645 | 55,794 | 22,576 | 8,793 | 193,783 |
| - Lat. | : $07^{\circ} 49^{\prime}$ | 1965 | 6,717 | 5,690 | 5,917 | 4,795 | 3,501 | 5,135 | 12,417 | 29,623 | 48,247 | 43,511 | 14,111 | 7,317 | 186,981 |
| - Long. | $\vdots 06^{\circ}{ }^{4}{ }^{\prime}$ | 1966 | 6,013 | 5,092 | 5,156 | 3,427 | 3,755 | 11,825 | 16,536 | 25,469 | 49,510 | 53,796 | 18,274 | 8,308 | 207,161 |
| Catchment |  | 1967 | 6,192 | 6,221 | 5,394 | 3,445 | 2,488 | 3,463 | 12,634 | 24,673 | 42,055 | 52,850 | 17,193 | 7,958 | 183,566 |
| Area ( $\mathrm{km}^{2}$ ) | : 1,089,500 | 1968 | 6,707 | 5,813 | 6,409 | 5,568 | 4,749 | 10,205 | 20,150 | 36,831 | 48,955 | 42,013 | 13,294 28,113 | 10,304 | 221,414 251,164 |
| Year Established | : 1914 | 1969 | 5,909 | 5,458 5,274 | 4,835 5,355 | 4,243 4,178 | 5,359 3,654 | 6,905 6,015 | 21,095 14,719 | 39,689 28,842 | 61,010 47,787 | 58,244 52,545 | 19,815 | 9,704 | 204,213 |
|  |  | 1970 | 775 | 6,712 | 7,142 | 6,173 | 4,412 | 5,927 | 10,961 | 28,598 | 52,388 | 46,500 | 13,805 | 6,846 | 190,239 |
|  |  | 1971 | 5,856 | 5,219 | 4,371 | 3,392 | 3,559 | 5,037 | 13,628 | 32,341 | 45,679 | 36,470 | 8,993 | 5,041 | 169,586 |
|  |  | 1972 | ¢,509 | 5,218 | 3,874 | 3,672 | 4,177 | 8,176 | 11,958 | 21,749 | 36,161 | 27,549 | 8,051 | 5,052 | 141,146 |
|  |  | 1973 | 4,736 | 3,767 | 2,580 | 2,172 | 2,795 | 3,481 | 6,193 | 20,820 | 31,838 | 26,229 | 7,746 | 4,423 | 116,780 |
|  |  | 1974 | 4,389 | 3,014 | 2,427 | 2,157 | 3,636 | 4,718 | 12,791 | 23,485 | 41,354 | 45,972 | 15,467 | 7,405 | 166,815 |
|  |  | 1975 | 6,592 | 5,485 | 3,637 | 3,363 | 3,880 | 4,602 | 12,866 | 29,218 | 38,952 | 52,661 | 15,230 | 8,067 | 184,553 |
|  |  | 1976 | 6,832 | 6,248 | 4,824 | 3,389 | 4,652 | 7,670 | 14,543 | 26,380 | 27,271 | 32,409 | 24,578 | 5,629 | 164,425 |
|  |  | 1977 | 3,507 | 4,671 | 5,908 | 4,271 | 4,096 | 5,085 | 10,614 | 18,546 | 36,088 | 40,703 | 9,400 | 3,985 | 146,934 |
|  |  | 1978 : | 3,209 | 2,735 | 2,894 | 3,008 | 4,217 | 8,695 | 16,147 | 27,151 | 44,181 | 41,897 | 17,739 | 6,106 | 177,979 |
|  |  | 1979 | 4,761 | 4,674 | 3,893 | 3,364 | 8,216 | 16,711 | 29,590 | 29,597 | 46,320 | 32,696 | 12,417 | 6,979 | 199,218 |
|  |  | Mean | 4,617 | 4,774 | 4,161 | 3,496 | 4,364 | 7,010 | 13,929 | 25,789 | 40,023 | 388,309 | 13,343 | 5,953 | 165,768 |
|  |  | 1980 | 5,619 | 2,993 | 3,606 | 3,553 | 3,839 | 5,938 | 10,821 | 35,702 | 38,355 | 61,089 | 12,726 | 3,506 | 187,747 |
|  |  | 1981 | 3,791 | 3,439 | 3,518 | 3,423 | 4,746 | 6,020 | 16,564 | 29,213 | 46,601 | 34,474 | 9,952 | 4,479 | 166,220 |
|  |  | 1982 | 4,717 | 4,037 | 3,289 | 3,993 | 4,608 | 5,067 | 13,245 | 20,331 | 29,906 | 29,463 | 10,299 | 4,233 | 133,188 |
|  |  | 1983 | 3,220 | 2,585 | 3,607 | 3,372 | 3,903 | 4,653 | 9,144 | 17,724 | 23,665 | 14,548 | 3,412 | 2,303 | 92,136 |
|  |  | 1984 | 2,303 | 2,386 | 2,340 | 3,235 | 3,011 | 4,354 | 9,449 | 15,940 | 22,125 | 18,569 | 2,070 | 4,015 | 89,797 |
|  |  | 1985 | 3,070 | 2,826 | 2,966 | 2,686 | 6,612 | 4,487 | 11,834 | 22,935 | 41,246 | 32,885 | 9,017 | 5,805 | 145,369 |
|  |  | 1986 | 5,320 | 3,035 | 3,199 | 3,270 | 3,837 | 5,369 | 9,470 | 17,089 | 29,360 | 29,627 | 10,889 | 4,405 | 124,870 |
|  |  | 1987 | 4,053 | 2,994 | 4,443 | 5,056 | 5,525 | 6,523 | 8,091 | 14,107 | 30,477 | 28,730 | 6,514 | 4,280 | 120,793 |
|  |  | 1988 | 3,872 | 3,185 | 2,878 | 5,723 | 5,117 | 4,924 | 7,557 | 16,664 | 40,077 | 41,936 | 9,399 | 7,081 | 148,413 |
|  |  | 1989 | 6,324 | 4,661 | 2,859 | 3,833 | 8,400 | 6,361 | 12,681 | 25,515 | 42,259 | 41,403 | 10,464 | 5,792 | 170,552 |
|  |  | Mean | 4,229 | 3,214 | 3,271 | 3,814 | 4,860 | 5,370 | 10,886 | 21,522 | 34,407 | 33,272 | 8,474 | 4,590 | 137,909 |

table 6 monthly runoff at selected river gaging stations RIVER NIGER (6/8)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station |  | 1970 | 6,181 | 3,938 | 3,992 | 7,957 | 7,311 | 7,922 | 9,062 | 25,599 | 50,445 | 46,995 | 12,438 | 6,177 | 188,017 |
|  |  | 1971 | 5,870 | 4,494 | 4,876 | 4,546 | 4,466 | 4,503 | 11,738 | 30,347 | 45,924 | 35,308 | 8,462 | 5,033 | 165,567 |
| River | : Niger | 1972 | 4,572 | 4,299 | 4,596 | 4,322 | 4,452 | 7,363 | 10,609 | 19,434 | 36,185 | 27,146 | 8,718 | 5,223 | 136,919 |
| River Basin | : Niger | 1973 | 4,824 | 4,025 | 4,278 | 4,035 |  | 4,030 | - | 19,143 | 32,453 | 26,115 | 8,425 | - |  |
| Coordinate |  | 1974 | 4,371 | 3,223 | 2,796 | 2,223 | - | , | 12,555 | 22,375 | 40,581 | 46,454 | 16,248 | 7,372 |  |
| - Lat. | : $07{ }^{\circ} 06^{\prime}$ | 1975 | 6,229 | 5,259 | - | 3,285 | 4,079 | 5,650 | - | 28,267 | 37,964 | 53,004 | 15,657 | 1,590 | - |
| - Long. | : 06 ${ }^{\circ} 43^{\prime}$ | 1976 | 7,071 | 6,498 | 5,450 | 4,178 | 5,405 | 8,545 | 14,806 | 24,309 | 27,808 | 32,087 | 12,521 | 7,513 | 156,191 |
| Catchment |  | 1977 | 3,486 | 4,910 | 5,891 | 4,438 | 4,536 | 5,648 | 11,375 | 18,520 | 35,129 | 53,448 | 11,010 | 5,924 | 164,315 |
| Area ( $\mathrm{kn}^{2}$ ) | : 1,095,100 | 1978 | 4,956 | 4,282 | 4,652 | 4,540 | 5,817 | 9,402 | 15,546 | 25,840 | 43,814 | 42,662 | 18,574 | - | , |
| Year Established | : 1955 | 1979 | 3,265 | 4,709 | 4,854 | 4,448 | 5,319 | 11,014 | 16,856 | 27,336 | 45,760 | - | , | 6,092 | - |
|  |  | Mean | 5083 | 4,564 | 4,598 | 4397. | 5.173 | 7,120 | 12,818 | 24,117. | 39,606 | 40,358 | 12,450 | 5,616 | 165,900 |
|  |  |  | 5,306 | - |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1981 |  | 1,600 | 3,697 | 3,681 | 5,369 | 6,846 | 15,633 | 27,606 | 44,917 | 35,435 | 10,026 | - | - |
|  |  | 1982 | 5,520 | 4,732 | 4,026 | 4,396 | 4,942 | 5,079 | 11,502 | 19,244 | 28,084 | 39,010 | 11,040 | 6,346 | 143,921 |
|  |  | 1983 | 6,277 | 5,811 | 5,858 | 5,694 | 5,903 | 5,894 | 9,227 | 14,492 | 22,338 | 15,417 | 6,101 | 5,995 | 109,007 |
|  |  | 1984 | 6,064 | 5,477 | 5,918 | 5,895 | 6,135 | 6,110 | 9,870 | - | 20,798 | 17,914 | 8,647 | 7,136 | - |
|  |  | 1985 | 6,906 | 5,955 | 6,693 | 6,504 | 6,724 | 7,027 | 11,376 | 22,607 | 26,310 | 32,426 | 9,706 | 7,532 | 149,766 |
|  |  | 1986 | 6,848 | 5,999 | 6,592 | 6,495 | 6,805 | 6,881 | 9,198 | 16,621 | 27,582 | 30,255 | 10,641 | 6,988 | 140,905 |
|  |  | 1987 | 6,673 | 6,006 | 6,670 | 6,441 | 6,760 | 6,350 | 8,298 | 13,058 | 29,925 | 28,485 | 8,075 | 6,422 | 133,163 |
|  |  | 1988 | 6,164 | 5,683 | 5,816 | 5,888 | 6,314 |  | 8,173 | 15,038 | 39,083 | 43,240 | 10,404 | 6,440 | - |
|  |  | 1989 |  | 5,390 | 5,981 | 5,878 | 6,685 | 6,665 | 11,745 | 23,950 | 42,893 | 42,357 | - | 7,206 | - ${ }^{-}$ |
|  |  | Mean | 6,220 | 5,184 | 5,596 | 5,518 | 6,195 | 6,414 | 10,729 | 19,880 | 33,146 | 31,997 | 9,655 | 6,758 | 147,292 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
RIVER NIGER (7/8)

| Station Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station : Onitsha | 1960 |  |  |  |  |  |  |  |  |  |  |  | 6867 |  |
| River : Niger | 1961 | 7,358 5 5 | 5,409 4739 | 5,520 4,642 | 4,474 3,494 | 2,973 <br> 3,241 | 3,069 5,848 | 14,611 14,686 | 15,371 25,204 | 30,400 49,227 | 43,000 67,710 | 14,907 | - 12,888 | 163,959 231,156 |
| River Basin : Niger | 1963 | 7,714 | 6,154 | 6,760 | 5,174 | 5,266 | 5,270 | 10,010 | 30,716 | 48,636 | 57,722 | 29,378 | 9,390 | 222,190 |
| Coordinate | 1964 | 6,798 | 6,492 | 5,609 | 4,717 | 3,736 | 5,772 | 11,316 | 22,900 | 39,279 | 59,752 | 26,563 | 9,873 | 201,807 |
| - Lat. $\quad 000^{\circ} 10^{\prime}$ | 1965 | 7,170 | 5,010 | 5,560 | 5,347 | 4,063 | 5,474 | 13,467 | 29,853 | 46,687 | 47,609 | 16,705 | 8,073 | 195,018 |
| - Long. . $06^{\circ} 45^{\circ}$ | 1966 | 6,584 | 5,255 | 5,534 | 3,955 | 4,213 | 11,397 | 17,069 | 24,526 | 45,153 | 57,848 | 21,780 | 9,144 | 212,458 |
| Catchment | 1967 | 6,914 | 5,711 | 5,816 | - | - |  |  | - | - | - | - | - | - - |
| Area $\left(\mathrm{km}^{2}\right) \quad: 1,100,800$ | 1968 | - | - |  | - |  | - | - | - | - | - | - | - |  |
| Year Established : 1914 | $\begin{gathered} 1969 \\ \text { Mean } \end{gathered}$ | 6,868 | 5,396 | 5,634 | 4,527 | 3,915 | 6,138 | 13,527 | 24,762 | 43,230 | 55,607 | 23,930 | 9,321 | 202,855 |
|  | 1970 | - | - | - | - | -- | 6,698 | 11,361 | 26,103 | - | - | - | - | - ${ }^{-}$ |
|  | 1971 | 6,078 | 5,201 | 4,564 | 3,574 | 3,691 | 5,385 | 13,944 | 31,482 | 46,102 | 43,076 | 11,818 | 5,741 | 180,556 |
|  | 1972 | 4,583 | 4,850 | 3,642 | 3,616 | 4,478 | 10,425 | 13,931 | 22,986 | 38,539 | 30,908 | 11,839 | 5,534 | 155,331 |
|  | 1973 | 4,398 | 3,603 | 2,854 | 1,987 | 2,466 | 3,393 | 6,561 | 21,014 | 31,906 | 30,748 | 10,518 | 5,183 | 124,631 |
|  | 1974 | 3,781 | 2,585 | 2,031 | 1,738 | 3,543 | 5,242 | 15,541 | 24,602 | 50,091 | 51,804 | 20,404 | 8,991 | 190,353 |
|  | 1975 | 6,478 | 5,097 | 3,232 | 2,748 | 3,645 | 4,968 | 12,508 | 28,810 | 35,183 | 53,975 | 19,358 | 8,935 | 184,937 |
|  | 1976 | 6,705 | 5,549 | 4,620 | 3,124 | 4,371 | 8,203 | 15,587 | 24,568 | 28,446 | 32,141 | 29,759 | *9,420 | 172,493 |
|  | 1977 | *3,480 | 4,480 | 4,220 | 2,810 | 3,473 | 4,703 | 11,620 | 19,648 | 34,133 | 42,231 | 14,082 | 4,945 | 149,825 |
|  | 1978 | 3,484 | 2,234 | 2,128 | 2,673 | 4,752 | 9,858 | 16,643 | 26,494 | 41,233 | 45,139 | 21,355 | 9,115 | 185,108 |
|  | 1979 |  | - |  |  | - | - | 13077 | - ${ }^{-}$ | 46,734 | 35,684 | 15,483 | 7,903 7307 | 168029 |
|  | Mean | 4,873 | 4,200 | 3,411 | 2,784 | 3,790 | 6,542 | 13,077 | 25,079 | 39,152 | 40,634 | 17,180 | 7,307 | 168,029 |
|  | 1980 | 5,414 | 5,019 | 3,457 | 2,815 | 3,733 | 6,680 | 12,044 | 28,740 | 43,406 | 39,474 | 20,842 | 5,907 | 177,531 |
|  | 1981 | 4,044 | 2,889 | 2,648 | 2,489 | 4,360 | 6,408 | 17,492 | 28,982 | 46,462 | 39,991 | 18,089 | 5,569 | 179,423 |
|  | 1982 | 4,612 | 3,938 | 3,026 | 3,958 | 4,714 | 6,459 | 14,737 | 21,652 | 30,101 | 31,546 | 17,014 | 8,766 | 150,523 |
|  | 1983 | 4,942 | 3,896 | 4,234 | 4,362 | 4,912 | 6,050 | 11,792 | 11,269 | 26,195 | 22,078 | 4,823 | 2,492 | 107,045 |
|  | 1984 | *3,810 | 3,270 | 3,110 | 3,340 | 2,937 | 5,965 | 12,800 | 19,264 | 27,205 | 22,282 | 8,974 | 3,795 | 116,752 |
|  | 1985 | 2,471 | 1,825 | 1,734 | 2,082 | 2,476 | 4,960 | 11,430 | 26,658 | 38,314 | 35,304 | 7,327 | 5,454 | 140,035 |
|  | 1986 | 3,465 | 2,405 | 2,407 | 2,720 | 2,986 | 5,152 | 7,984 | *17,600 | 29,363 | 32,792 | 9,205 | 5,119 | 121,198 |
|  | 1987 | 3,420 | 2,333 | 3,055 | 3,582 | 3,929 | 4,856 | 9,535 | 15,161 | 30,243 | 32,640 | 13,828 | 3,398 | 125,980 |
|  | 1988 | 2,919 | 2,485 |  | 3,002 | 3,505 | 4,737 | 8,764 | 16,635 | - ${ }^{-}$ | - | - | - | - |
|  | 1989 |  | 3,416 | 2,156 | 2,092 | 7,486 | 6,882 | 14,196 | 25,922 | 41,184 | 42,881 | 14,658 | $\stackrel{-}{7}$ | 141000 |
|  | Mean | 3,900 | 3,148 | 2,870 | 3,044 | 4,140 | 5,815 | 12,077 | 21,188 | 34,719 | 33,221 | 12,751 | 5,063 | 141,900 |

table 6 monthly runoff at selected river gaging stations
RIVER NIGER (8/8)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Aboh | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Niger | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Niger | 1972 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coordinate |  | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Lat. | : $05^{\circ} 32^{\prime}$ | 1975 | 8,782 | 7,700 | 5,893 | 5,335 | 6,362 | 7,234 | 13,842 | 31,490 | 35,996 | 50,489 | 22,064 | 11,098 | 206,285 |
| - Long. | : 06931 | 1976 | 9,273 | 7,679 | 7,357 | 5,662 | 6,888 | 10,026 | 16,463 | 25,824 | 30,142 | 34,269 | 31,070 | 10,238 | 194,891 |
| Catchment |  | 1977 | 6,590 | 6,031 | 7,282 | 5,636 | 5,617 | 6,762 | 12,735 | 19,856 | 36,224 | 45,614 | 15,183 | 6,912 | 174,442 |
| Area ( $\mathrm{km}^{2}$ ) | : 1,112,800 | 1978 | 4,942 | 3,942 | 4,001 | 4,232 | 6,652 | 11,243 | 17,672 | 27,612 | 42,142 | 45,927 | 23,686 | 9,637 | 201,688 |
| Year Established | $: 1954$ | $\begin{array}{r} 1979 \\ \text { Mean } \end{array}$ | 7,453 | 5,895. | 5,473 | 4,385 | 5,867 | 10,184 | 17,755 | 30,271 | 45,729 | 38,908 | 16,441 | 10,428 | 198,789 |
|  |  |  |  |  |  |  |  |  |  |  |  | 41,218 | 18,003 | 9,616 | 197,600 |
|  |  | 1981 | 6,960 | 5,486 | 5,454 | 5,154 | 7,131 | 8,876 | 18,082 | 29,855 | 45,455 | 41,484 | 15,123 | 8,115 | 197,175 |
|  |  | 1982 | 7,332 | 6,328 | 5,448 | 5,931 | 7,174 | 8,578 | 15,378 | 21,496 | 32,160 | 34,269 | 15,651 | 8,587 | 168,332 |
|  |  | 1983 | 6,317 | 4,593 | 5,162 | 5,001 | 5,657 | 7,374 | 12,304 | 16,804 | 25,162 | 20,639 | 7,793 | 5,306 | 122,112 |
|  |  | 1984 | 4,342 | 3,674 | 3,532 | 3,898 | 5,140 | 7,490 | 11,929 | 18,781 | 24,566 | 23,238 | 11,365 | 6,692 | 124,647 |
|  |  | 1985 | 5,132 | 4,196 | 4,183 | 4,626 | 5,154 | 7,135 | 13,649 | 22,989 | 39,052 | 38,128 | 13,613 | 9,286 | 167,143 |
|  |  | 1986 | 8,212 | 5,651 | 5,684 | 5,996 | 6,566 | 8,420 | 12,258 | 18,728 | 29,593 | 34,690 | 14,794 | 8,865 | 159,457 |
|  |  | 1987 1988 | 10,063 | 5,813 | 6,598 | 6,532 | 7,512 | 8,026 | 11,280 | 15,608 | 31,725 | 34,111 | 11,549 | - | - |
|  |  | 1989 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Mean | 7,069 | 5,395 | 5,274 | 6,289 | 6,322 | 8,060 | 13,517 | 21,739 | 33,979 | 33,472 | 13,486 | 8,067 | 161,669 |

table 6 monthly runoff at selected river gaging stations HA-I(1/11)

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1970 | 0 | 0 | 0 | 0 | 19 | 31 | 57 | 236 | 114 | 14 | 0 | 0 | 471 |
| Station | : Gusau | 1971 | 0 | 0 | 0 | 0 | 11. | 25 | 76 | 242 | 168 | 1 | 0 | 0 | 523 |
| River | : Sokoto | 1972 | 0 | 0 | 0 | 0 | 9 | 18 | 16 | 85 | 9 | 6 | 0 | 0 | 143 |
| River Basin | : Sokoto-Rima | 1973 | 0 | 0 | 0 | 0 | 1 | 14 | 73 | 80 | 34 | 1 | 0 | 0 | 203 |
| IIA | : 1 | 1974 | 0 | 0 | 0 | 0 | 7 | 14 | 200 | 246 | 170 | 48 | 0 | 0 | 685 |
| SHA | : 1041 | 1975 | 0 | 0 | 0 | 0 | 12 | 5 | 75 | 113 | 214 | 0 | 0 | 0 | 419 |
| Coordinate | . 1041 | 1976 | 0 | 0 | 0 | 0 | 81 | 130 | 125 | 104 | 51 | 1 | 0 | 0 | 492 |
| Coordinate |  | 1977 | 0 | 0 | 0 | 0 | 81 | 35 | 22 | 91. | 97 | 12 | 0 | 0 | 338 |
| - Lat. <br> - Long. | $: 122^{\circ} 10^{\prime}$ $: 06^{\circ} 40^{\prime}$ | 1978 | 0 | 0 | 0 | 0 | 14 | 53 | 104 | 66 | 58 | 13 | 0 | 0 | 308 |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) |  | 1979 | 0 | 0 | 0 | 0 | 69 30 | 101 | 108 | 143 | 166 | 13 | 0 | 0 | 419 |
|  | : 2,570 | Mean | 0 | 0 |  |  |  | 13 | 81 | 131 | 80 | 12 | 0 | 0 | 331 |
|  |  | 1980 | 0 | 0 | 0 | 0 | 1 | 13 | 21 21 | 252 | 57 | 13 | 0 | 0 | 358 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 42 | 45 | 51 | 166 | 120 | 29 | 0 | 0 | 453 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 2 | 72 | 48 | 148 | 71 | 0 | 0 | 0 | 341 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 31 | 34 | 51 | 57 | 64 | 30 | 0 | 0 | 267 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 18 | 36 | 111 | 170 | 92 | 44 | 0 | 0 | 471 |
|  |  | 1986 | - | - | - | - | - | - | - | - | - | - | - | - |  |
|  |  | 1987 | - | - | - | - | - | - | - | - | $\bullet$ |  | - | - |  |
|  |  | 1988 | - | - | - | - | - | - | - | - | - | $\bar{\square}$ | - | - | - |
|  |  | 1989 | 0 | 0 | 0 | 0 | 18 | $3{ }^{-}$ | 61 | 154 | 81 | 21 | 0 | 0 | 371 |

table 6 monthly runoff at selected river gaging stations
HA-1 (2/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Bakolori Dam | 1970 | 0 | 0 | 0 | 0 | 17 | 53 | 289 | 448 | 248 | 80 | 0 | 0 | 1,135 |
| River | - Sokoto | 1971 | 0 | 0 | 0 | 0 | 9 | 32 | 249 | 373 | 402 | 0 | 0 | 0 | 1,065 |
| River | : Sokoto | 1972 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 172 | 42 | 0 | 0 | 0 | 261 |
| River Basin | : Sokoto-Rima | 1973 | 0 | 0 | 0 | 0 | 0 | 168 | 465 | 232 | 117 | 2 | 0 | 0 | 984 |
| HA | : I | 1974 | 0 | 0 | 0 | 0 | 47 | 28 | 290 | 324 | 494 | 10 | 0 | 0 | 1,193 |
| SHA | : 1042 | 1975 | 0 | 0 | 0 | 0 | 20 | 8 | 127 | 191 | 362 | 0 | 0 | 0 | 708 |
| Coordinate |  | 1976 | 0 | 0 | 0 | 0 | 146 | 235 | 227 | 189 | 93 | 0 | 0 | 0 | 890 |
| Coordinate <br> - Lat. <br> - Iong. <br> Catchment <br> Area (km ${ }^{2}$ ) |  | 1977 | 0 | 0 | 0 | 0 | 126 | 54 | 34 | 141 | 151 | 19 | 0 | 0 | 525 |
|  | ${ }^{:} 12{ }^{\circ}{ }^{\circ}{ }^{\prime}$ | 1978 | 0 | 0 | 0 | 0 | 20 | 78 | 153 | 97 | 85 | 20 | 0 | 0 | 453 |
|  | : $06^{\circ} 10^{\prime}$ | 1979 | 0 | 0 | 0 | 0 | 132 | 193 | 206 | 274 | 319 | 25 | 0 | 0 | 1,149 |
|  |  | Mean | 0 | 0 | 0 | 0 | 52 | 85 | 209 | 244 | 231 | 16 | 0 | 0 | 837. |
|  | : 4,800 | 1980 | 0 | 0 | 0 | 0 | 21 | 20 | 124 | 200 | 123 | 19 | 0 | 0 | 507 |
|  |  | 1981 | 0 | 0 | 0 | 0 | 2 | 21 | 35 | 403 | 92 | 20 | 0 | 0 | 573 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 74 | 80 | 90 | 293 | 211 | 50 | 0 | 0 | 798 |
|  |  | 1983 | 0 | 0 | 0 | 4 | 0 | 112 | 74 | 231 | 110 | 0 | 0 | 0 | 531 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 41 | 45 | 67 | 76 | 85 | 40 | 0 | 0 | 354 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 32 | 64 | 198 | 304 | 165 | 78 | 0 | 0 | 841 |
|  |  | 1986 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|  |  | 1987 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|  |  | 1988 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|  |  | 1989 | 0 | - | 0 | i | 88 | 57 | 98 | 251 | 131 | 35 | 0 | - | 601 |
|  |  | Mean | 0 | 0 | 0 | 1 | 28 | 57 | 98 | 251 | 131 | 35 | 0 | 0 | 601 |

TABIE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-I (3/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1970 | 4 | 3 | 3 | 0 | 1 | 11 | 117 | 773 | 801 | 427 | 9 | 5 | 2,154 |
| Station | : Wamako | 1971 | 4 | 3 | 3 | 2 | 2 | 16 | 171 | 576 | 658 | 103 | 9 | 5 | 1,552 |
| River | : Sokoto | 1972 | 0 | 0 | 0 | 3 | 4 | 61 | 90 | 273 | 194 | 17 | 3 | 2 | 647 |
| River Basin | : Sokoto-Rima | 1973 | 11 | 1 | 1 | 1 | 1 | 20 | 150 | 315 | 137 | 5 | 1 | 1 | 644 |
| HA | : I | 1974 | 1 | 1 | 1 | 1 | 1 | 8 | 196 | 717 | 662 | 248 | 6 | 3 | 1,845 |
| SHA | : 1052 | 1975 | 1. | 1 | 1 | 1 | 5 | 51 | 173 | 508 | 568 | 153 | 11 | 3 | 1,476 |
| Coordinate |  | 1976 | 3 | 1 | 1 | 1 | 1 | 39 | 120 | 251 | 119 | 78 | 18 | 3 | 635 |
| Coordinate |  | 1977 | 1 | 1 | 1 | 0 | 0 | 4 | 98 | 354 | 571 | 62 | 2 | 1 | 1,095 |
| - Lat. | : $13^{\circ} 02^{\prime}$ | 1978 | 0 | 0 | 0 | 3 | 18 | 92 | 286 | 432 | 485 | 145 | 1 | 0 | 1,462 |
| - Long. | $: 05^{\circ} 06^{\prime}$ | 1979 | 1 | 0 | 0 | 0 | 3 | 6 | 72 | 523 | 611 | 5 | 3 | 0 | 1,224 |
| Catchment Area ( $\mathrm{km}^{2}$ ) | : 40,160 | Mean | 3 | 1 | 1 | 1 | 4 | 31 | 147 | 472 | 481 | 124 | 6 | 2 | 1,273 |
|  |  | 1980 | 0 | 0 |  | 0 | 0 | 13 | 91 | 605 | 340 | 7 | 2 | 0 | 1,058 |
|  |  | 1981 | 0 | 0 | - | - | - | 7i | 21 | 405 |  | 10 | - | 0 |  |
|  |  | 1982 | 0 | 0 | 0 | 0 | 0 | 71 | 121 | 465 | 297 | 10 | 0 | 0 | 964 1,033 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 0 | 128 | 195 | 441 | 267 | $\begin{array}{r}2 \\ 36 \\ \hline\end{array}$ | 0 | 0 | 183 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 33 | 210 | 343 | 161 | 36 0 |  | 0 | 1,869 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 0 | 153 | 475 | 819 | 422 | 0 | 0 | . |  |
|  |  | 1986 | - | - | - | - | - | - |  | $\square$ |  | - | - | - |  |
|  |  | 1987 | - | - | - | - | - | - |  | - | - | - | - | - |  |
|  |  | 1988 | - | - | - | - | - | - | - | - | - | - | - | - |  |
|  |  | 1989 | - | 0 | 0 | 0 | 0 | 80 | 218 | 535 | 297 | 11 | 0 | 0 | 1,141 |
|  |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-I (4/11)

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Funtua Yashi Road |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Karaduwa | 1971 1972 | 0 | 0 | 0 | 0 | 0 | 10.9 | 23.8 | 30.0 | 8.3 | 0 | 0 | 0 | 73.0 |
| River Basin | : Rima | 1973 | 0 | 0 | 0 | 0 | 0 | 2.3 | 4.2 | 10.8 | 45.7 | 0.1 | 0 | 0 | 63.1 |
|  | : 1 | 1974 | 0 | 0 | 0 | 0 | 0 | 0.4 | 28.8 | 13.5 | 5.6 | 0 | 0 | 0 | 48.3 |
| SHA | : 1021 |  | 0 | 0 | 0 | 0 | 0.8 | 1.5 | 25.6 | 32.4 | 20.7 | 0 | 0 | 0 | 81.0 |
| Coordinate | . 1021 | 1976 | 0 | 0 | 0 | 0 0 | 0 0 | 2.2 0 | 6.3 6.5 | 5.6 28.3 | 2.5 13.1 | 0 | 0 | 0 | 16.6 47.9 |
| - Lat. | : $12^{\circ} 14^{\prime}$ | 1977 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 6.5 | 28.3 | 13.1 | 0 | 0 | 0 | 47.9 |
| - Long. | : $07^{\circ} 50^{\prime}$ | 1979 | - | - | - | - | - | - | . | - | $\cdot$ | - | - | $\cdot$ | - |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) | : 425 | Mean | 0 | 0 | 0 | 0 | 0.1 | 2.9 | 15.9 | 20.1 | 16.0 | 0 | 0 | 0 | 55.0 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA - I (5/11)

table 6 monthly runoff at selected river gaging stations HA-I (6/11)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

$$
H A-I(7 / 11)
$$

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dee. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1970 | 0 | 0 | 0 | 0 | 16 | 54 | 183 | 316 | 276 | 4 | 0 | 0 | 849 |
| Station | : Kaura Namoda | 1971 | 0 | 0 | 0 | 0 | 7 | 12 | 158 | 302 | 307 | 1 | 0 | 0 | 787 335 |
|  | : Gagere | 1972 | 0 | 0 | 0 | 0 | 34 | 55 | 80 | 133 | 32 | 1 | 0 | 0 | 335 371 |
| River Basin | : Rima | 1973 | 0 | 0 | 0 | 0 | 2 | 40 | 191 | 109 | 22 | $\begin{array}{r}8 \\ 78 \\ \hline\end{array}$ | 0 5 | 0 | 381 |
| HA | : I | 1974 | 0 | 0 | 0 | 0 | 30 | 79 | 280 | 284 | 107 | $\begin{array}{r}78 \\ 2 \\ \hline\end{array}$ | 0 | 0 | 679 |
| SHA | : 1030 | 1975 | 0 | 0 | 0 0 | 0 | 26 19 | 45 80 | 222 | 195 160 | 189 93 | 70 | 5 | 0 | 532 |
| Coordinate |  | 1977 | 0 | 0 | 0 | 0 | 23 | 111 | 104 | - | - | - | . | - |  |
| - Lat. | $: 12^{\prime} 36{ }^{\prime}$ | 1978 | . | - | - | . | . | - | . | - | - | - | - | - |  |
| - Long. | $: 06^{3} 35^{\prime}$ | 1979 | . | - | . | - | - | - | - | - | - | - | i | 0 | 630 |
| Catchment <br> Area (km ${ }^{2}$ ) | :6,500 | Mean | 0 | 0 | 0 | 0 | 20 | 60 | 165 | 214 | 147 | 23 | 1 | 0 | 630 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA. I (8/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Goronyo Dam | 1970 | 1 | 1 | 1 | 1 | 0 | 0 | 35 | 346 | 542 | 240 | 5 | 0 | 1,172 |
| River | - Cima | 1971 | 2 | 2 | 2 | 1 | 1 | 2 | 64 | 250 | 362 | 59 | 5 | 3 | 753 |
| River | : Rima | 1972 | 2 | 2 | 2 | 2 | 0 | 12 | 31 | 207 | 178 | 16 | 2 | 1 | 455 |
| River Basin | : Sokoto Rima | 1973 | 0 | 0 | 0 | 0 | 0 | 15 | 101 | 211 | 92 | 3 | 2 | 1 | 425 |
| HA | : 1 | 1974 | 0 | 0 | 0 | 0 | 0 | 5 | 107 | 392 | 361 | 135 | 4 | 3 | 1,007 |
| SHA | : 1052 | 1975 | 0 | 0 | 0 | 0 | 0 | 32 | 97 | 285 | 319 | 80 | 7 | 4 | 830 |
| Coordinate |  | 1976 | 0 | 0 | 0 | 0 | 0 | 28 | 81 | 169 | 80 | 52 | 12 | 2 | 424 |
| L <br> - Long. <br> Catchment <br> Area (kmin) |  | 1977 | 0 | 0 | 0 | 0 | 0 | 3 | 58 | 209 | 338 | 37 | 0 | 0 | 645 |
|  | : $13^{\circ} 27$ ' | 1978 | 0 | 0 | 0 | 0 | 0 | 64 | 162 | 244 | 273 | 80 | 0 | 0 | 823 |
|  | : 05 ${ }^{\circ}{ }^{\text {4 }}$ | 1979 | 0 | 0 | 0 | 0 | 0 | 6 | 41 | 303 | 354 | 3 | 2 | 0 | 709 |
|  |  | Mean | 1 | 1. | 1 | 0 | 0 | 17 | 78 | 262 | 290 | 71 | 4 | 1. | 726 |
|  | : 21,450 | 1980 | 0 | 0 | 0 | 0 | 0 | 7 | 54 | 360 | 202 | 5 | 1 | 0 | 629 |
|  |  | 1981 | . | 0 | - | - | - | - | $\checkmark$ | - | - | 5 | - | - |  |
|  |  | 1982 | 0 | 0 | 0 | 0 | 0 | 41 | 69 | 266 | 170 | 5 | 0 | 0 | 551 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 0 | 73 | 111 | 251 | 152 | 1 | 0 | 0 | 588 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 19 | 122 | 199 | 93 | 20 | 0 | 0 | 453 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 0 | 85 | 264 | 456 | 235 | 0 | 0 | 0 | 1,040 |
|  |  | 1986 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|  |  | 1987 | - | - | - | - | - | - | - | - | - | . | - | - | - |
|  |  | 1988 | - | - | - | - | - | - | $\because$ | - | - | - | - | - | - |
|  |  | 1989 | - | - | 0 | - | 0 | 45 | 12 | ${ }^{-}$ | 170 | - | 0 | 0 | 651 |
|  |  | Mean | 0 | 0 | 0 | 0 | 0 | 45 | 124 | 306 | 170 | 6 | 0 | 0 | 651 |

table 6 monthly runoff at selected river gaging stations

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | - Anka | 1970 | 0 | 0 | 0 | 0 | 0 | 50 | 201 | 312 | 229 | 2 | 0 | 0 | 794 |
| Station | : Anka | 1971 | 0 | 0 | 0 | 0 | 0 | 19 | 101 | 308 | 263 | 31 | 0 | 0 | 722 |
| River | : Zamfara | 1972 | 0 | 0 | 0 | 0 | 14 | 41 | 62 | 114 | 96 | 17 | 0 | 0 | 344 |
| River Basin | : Sokoto-Rima | 1973 | 0 | 0 | 0 | 0 | 0 | 117 | 119 | 227 | 183 | 17 | 0 | 0 | 663 |
| HA | : I | 1974 | 0 | 0 | 0 | 0 | 0 | 80 | 220 | 371 | 378 | 59 | 0 | 0 | 1,108 |
| SHA | : 1082 | 1975 | 0 | 0 | 0 | 0 | 33 | 25 | 95 | 143 | 207 | 1 | 0 | 0 | 504 |
| ChA | :1082 | 1976 | 0 | 0 | 0 | 0 | 119 | 191 | 185 | 154 | 76 | 0 | 0 | 0 | 725 |
| Coordinate |  | 1977 | 0 | 0 | 0 | 0 | 119 | - 51 | 32 | 134 | 143 | 18 | 0 | 0 | 497 |
| - Lat. | : $12^{\circ} 07^{\prime}$ | 1978 | 0 | 0 | 0 | 0 | 20 | 78 | 153 | 97 | 85 | 20 | 0 | 0 | 453 |
| - Long. | : $05^{\circ} 55^{\prime}$ | 1979 | 0 | 0 | 0 | 0 | 102 | 149 | 159 | 211 | 246 | 19 | 0 | 0 | 886 |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) |  | Mean | 0 | 0 | 0 | 0 | 41. | 80 | 133 | 207 | 191 | 18 | 0 | 0 | 670 |
|  | : 4,140 | 1980 | 0 | 0 | 0 | 0 | 20 | 19 | 119 | 192 | 118 | 18 | 0 | 0 | 486 527 |
|  |  | 1981 | 0 | 0 | 0 | 0 | 2 | 19 | 32 | 371 | 85 | 18 | 0 | 0 | 527 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 62 | 67 | 75 | 245 | 176 | 42 | 0 | 0 | 667 437 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 23 | 127 | 122 | 120 | 45 | 0 | 0 | 0 | 432 530 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 72 | 113 | 199 | 108 | 38 | 0 | 0 | 530 |
|  |  | 1985 | - | - | - | - | - | - | - | - | \% | - | - | - | . |
|  |  | 1986 | - | - | - | - | - | - | - | - | - | - | - | - | - |
|  |  | 1987 | - | - | - | - | $-$ | - | - | - | - | - | - | - | - |
|  |  | 1988 | $\bullet$ | - | $\bigcirc$ | - | - | - | - | - | - | - | - | - | - |
|  |  | 1989 | - | 0 | $\cdots$ | - | 21 | 61 | 9 | 25 | 106 | 23 | 0 | 0 | 528 |
|  |  | Mean | 0 | 0 | 0 | 0 | 21 | 61 | 92 | 225 | 106 | 23 | 0 | 0 | 628 |

table 6 monthly runoff at selected river gaging stations
HA-I (10/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Banaga Dam | 1970 | 0 | 0 | 0 | 0 | 0 | 11 | 62 | 161 | 236 | 44 | 6 | 0 | 520 |
| Staton | - Buabina | 1971 | 0 | 0 | 0 | 0 | 0 | 29 | 98 | 195 | 211 | 22 | 7 | 0 | 562 |
| River | : Gulbinka | 1972 | 0 | 0 | 0 | 0 | 0 | 21 | 51 | 82 | 142 | 19 | 5 | 0 | 320 |
| River Basin | : Sokoto-Rima | 1973 | 0 | 0 | 0 | 0 | 0 | 16 | 41 | 141 | 61 | 16 | 5 | 0 | 280 |
| HA | : I | 1974 | 0 | 0 | 0 | 0 | 0 | 39 | 98 | 230 | 223 | 105 | 9 | 0 | 704 |
| SHA | : 1091 | 1975 | 0 | 0 | 0 | 0 | 0 | 16 | 70 | 88 | 231 | 62 | 10 | 0 | 477 |
| Coordinate | . 1091 | 1976 | 0 | 0 | 0 | 0 | 0 | 54 | 65 | 63 | 35 | 33 | 31 | 0 | 281 |
| Coordinate |  | 1977 | 0 | 0 | 0 | 0 | 0 | 36 | 26 | 155 | 188 | 36 | 13 | 0 | 454 |
| - Lat. |  | 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 83 | 196 | 79 | 13 | 0 | 420 |
| - Long. | : $05^{\circ} 58^{\prime}$ | 1979 | 0 | 0 | 0 | 0 | 0 | 84 | 110 | 167 | 208 | 51 | 17 | 0 | 637 |
| Catchment Area (km ${ }^{2}$ ) |  | Mean | 0 | 0 | 0 | 0 | 0 | 31 | 67 | 137 | 173 | 47 | 12 | 0 | 467 |
|  | :3,170 | 1980 | 0 | 0 | 0 | 0 | 0 | 14 | 111 | 136 | 72 | 10 | 4 | 0 | 347 |
|  |  | 1981 | 0 | 0 | 0 | 0 | 0 | 15 | 25 | 285 | 65 | 14 | 0 | 0 | 404 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 0 | 46 | 72 | 135 | 143 | 23 | 5 | 0 | 424 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 0 | 45 | 46 | 97 | 43 | 6 | 1 | 0 | 238 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 33 | 70 | 125 | 89 | 26 | 1 | 0 | 344 |
|  |  | 1985 | - | - |  | - | - |  | - |  | $\cdots$ | - | - | $\because$ |  |
|  |  | 1986 | - | - | - | - | - |  | - | - | - - | - | - | - |  |
|  |  | 1987 | - | - | - | - | - | - | - | - | - | - |  | - |  |
|  |  | 1988 | - | - | - | - | - | - | - | - | - | - | - | - |  |
|  |  | 1989 | - | - | - | - | - | $\cdots$ | - | $\bigcirc$ | $\because$ | - | - | - |  |
|  |  | Mean | 0 | 0 | 0 | 0 | 0 | 31 | 65 | 156 | 82 | 16 | 2 | 0 | 352 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA- ( (1/11)

table 6 monthly runoff at selected river gaging stations
HA-II (1/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Kaduna South | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Kaduna | 1971 |  |  |  | 13 | 210 | 368 | 628 | 2,017 | 1,492 | 532 | 138 | 24 | - |
| River Basin | : Niger | 1973 | 12 | 5 | 5 | 10 | 21 | 215 | 489 | 1,947 | 1,543 | 403 | 78 | 18 | 4,746 |
| HA | : II | 1974 | 10 | 5 | 10 | 18 | 217 | 251 | 612 | 1,455 | 2,413 | 342 | 160 | 29 | 5,522 |
| SHA | : 2122 | 1975 | 14 | 6 | 3 | 47 | 317 | 307 | 943 | 1,872 | 2,585 | 667 | 200 | 34 | 6,995 |
| Coordinate | - 2122 | 1976 | 16 | 5 | 6 | 19 | 152 | 351 | 901 | 1,230 | 1,249 | 1,035 | 357 | 93 | 5,414 |
| Coordinate |  | 1977 | 21 | 9 | 2 | 8 | 66 | 33 | 16 | 88 | 1,294 | 454 | 40 | 16 | 2,047 |
| - Lat. | $: 107^{\circ} 26^{\prime}$ | 1978 | 13 | 12 | 15 | $\square$ | - | ${ }^{-}$ |  | 1301 |  | 459 | 101 | 22 | 4570 |
| Catchment  <br> Area $\left(\mathrm{km}^{2}\right)$ $: 18,420$ <br> Year Established $: 1944$ |  | 1979 Mean | 21 15 | 8 | 3 | 10 | 120 | 170 | 631 | 1,301 1,416 | 1,729 | 556 | 153 | 34 | 4965 |
|  |  | 1980 | 9 | 3 | 7 | 5 | . 164 | 356 | 863 | 1,455 | 1,141 | 335 | 86 | 23 | 4,447 |
|  |  | 1981 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1982 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1983 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1984 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1985 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1987 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1988 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |

table 6 monthly runoff at selected river gaging stations
HA-II (2/13)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-H (3/13)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-II (4/13)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-II (5/13)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

## HA.II (6/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Malendo Road | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Tubo | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Kaduna | 1972 | - | - | - | 2 | 16 | 34 | 16 | 239 | 168 | 46 | 12 | 5. | $\because \quad{ }^{-}$ |
| HA | : 11 | 1973 | 3 | 0 | 0 | 2 | 4 | 9 | 24 | 129 | 162 | 118 | 5 | 4 | 460 |
| SHA | : 2091 | 1974 | 6 | $\cdots 6$ | 4 | 2 | 6 | 8 | 48 | 272 | 464 | 13 | 8 | 3 | 840 |
| Coordinate |  | 1975 | 3 | $\bigcirc 2$ | 1 | $\bigcirc 3$ | 23 | 16 | 88 | 217 | 478 | 81 | 13 | 5. | - 930 |
| - Lat. | : $10^{\circ} 35^{\circ}$ | 1976 | 3 | $\cdots 4$ | - 2 | $\because 4$ | 15 | $\times \quad 42$ | 134 | 183 | 96 | 156 | - 42 | 8 | 689 |
| -- Long. | : $07^{\circ} 13$ | 1977 | 4 | $\cdots 2$ | 1 | 1 | 1 | 21 | 24 | . 91 | 286 | 57 | -4 | 2 | 494 |
| Catchment |  | 1978 | 1 | $\therefore 1$ | 1 | 8 | 19 | 75 | 129 | 202 | $\because 313$ | 121 | 41 | 10 | 921 |
| Area ( $\mathrm{km}^{2}$ ) | : 5,900 | 1979 | - | - | - | - | 12 | ¢ 29 | $0 \cdot$ | 190 | ¢88 | 85 | $\therefore \quad 18$ | 5 | 697 |
| Year Established | : 1959 | Mean | 3 | 3 | 2 | 3 | 12 |  | 66 | 190 | $\because 281$ | 85 | 18 | 5 | 697 |

# table 6 monthiy runoff at selected river gaging stations 

 HA.II (7/13)

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

## HA-II (8/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | Komi | 1980 |  |  |  |  |  |  |  |  |  | , |  |  |  |
| River | : Kontagora | 1981 |  |  |  |  |  |  |  |  | 0 |  |  |  |  |
| River Basin | : Niger | -1982 |  | $\because$ |  |  |  |  |  |  |  |  |  |  | : |
| HA | : 11 | 1983 |  |  |  |  |  |  |  |  |  |  |  |  | 202 |
| SHA | : 2031 | 1984 | 2.7 | 2.4 | 2.7 | 17.1 67 | 16.6 | 30.3 9.6 |  | 23.2 $\times 110.5$ | 42.0 59.4 | 16.7 | 6.5 10.7 | 5.4 8.7 | 292 |
| Coordinate |  | 1985 | 6.7 | 5.8 | 9.4 | 6.7 | 11.3 13.9 | 9.6 16.4 | 22.3 30.0 | 110.5 $: \quad 36.3$ | 59.4 130.4 | 30.7 46.5 | 10.7 19.1 | 8.7 11.1 | 292 |
| - Lat. | $: 099^{\circ} 3^{\prime}$ $-048^{\circ}$ | 1986 | 7.0 10.4 | 6.6 7.6 | 6.5 | 12.7 6.2 | 13.9 7.5 | 16.4 39.6 | 30.0 35.0 | $\begin{array}{r}36.3 \\ \hdashline \quad 65.4\end{array}$ | $\begin{array}{r}130.4 \\ \quad 68.2 \\ \hline\end{array}$ | 46.5 31.3 | 19.1 13.0 | 11.1 | 292 |
| Catchment - Long. |  | 1987 1988 | 10.4 9.9 | 7.5 | 6.1 | 6.2 7.1 | $\begin{array}{r}6.6 \\ \hline 6.7\end{array}$ | 11.4 | 14.7 | + 26.5 | 109.9 | 33.4 | 12.2 | 11.3 | 257 |
| Area ( $\mathrm{km}^{2}$ ) | : 2,250 | 1989 | 10.2 | 8.5 | 7.8 | - 7.3 | 7.2 | 18.7 | 15.3 | 75.6 |  | 55.9 | 16.8 | 12.1 | 316 283 |
|  |  | Mean | 7.8 | 6.4 | 6.7 | 9.5 | 10.5 | 21.0 | 25.7 | 54.6 | 81.7 | 35.6 | 13.1 | 9.9 | 283 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-II (9/13)

table 6 monthiy runoff ar selected river gaging stations HA-II (10/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Kachia | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Gurara | 1971 |  |  |  |  | 15.8 | 2.1 | 4.5 | 66.5 | 61.8 | 20.7 | 5.3 | 3.0 | - |
| River Basin | : Niger | 1973 | 2.1 | 1.5 | 1.9 | 4.0 | 1.8 4.4 | 12.6 | 24.1 | 67.2 | 80.9 | 26.9 | 4.3 | 1.1 | 231 |
| HA | : II | 1974 | 0.8 | 0.5 | 0.5 | 2.9 | 16.6 | 11.2 | 47.8 | 65.7 | 94.4 | 19.6 | 5.7 | 3.1 | 269 |
| SHA | : 2161 | 1975 | 2.1 | 1.4 | 1.5 | 3.7 | 12.5 | 14.3 | 61.1 | 55.7 | 76.6 | 21.6 | 5.5 | 3.3 | 259 |
|  | . 2161 | 1976 . | 2.5 | 2.0 | 0.9 | 16.6 | 10.2 | 18.5 | 33.9 | 43.5 | 41.6 | 34.9 | 10.2 | 6.8 | 222 |
| Coordinate - Lat. |  | 1977 | 5.6 | 3.6 | 3.4 | 2.8 | 6.6 | 19.2 | 25.6 | 30.0 | 44.0 | 30.5 | 6.1 | 3.9 | 181 |
| - Lat. <br> - Iong. | $\begin{aligned} & : 09^{\circ} 52^{\prime} \\ & : \end{aligned}$ | 1978 | 2.8 | 1.8 | 5.2 |  |  |  |  | - | - | - | - | - | - |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) |  | 1979 | 1.0 | 0.6 | 0.5 | 1.2 | 8.5 | 3.8 | 68.6 | 38.7 | 55.8 | 43.2 | 9.1 | 2.3 | 233 |
|  |  | Mean | 2.4 | 1.6 | 2.0 | 4.6 | 10.7 | 11.7 | 37.9 | 52.5 | 65.0 | 28.2 | 6.6 | 3.4 | 227 |
|  | : 562 | 1980 | 1.1 | 0.5 | 0.2 | - | 8.5 | 21.1 | 53.0 | 57.6 | 62.2 | 38.9 | 9.4 | 2.7 | - |
|  |  | 1981 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1982 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1983 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1984 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1985 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1987 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1988 |  |  |  |  |  |  |  | : |  |  |  |  |  |
|  |  | 1989 Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |

table 6 monthly runoff at selected river gaging stations

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | 1970 |  | - |  | 15 | 91 | 156 | 418 | 1,176 | 1,550 | 419 | 89 | 29 | $\square$ |
| Station |  | 1971 | 17 | 7 | 5 | 34 | 76 | 178 | 469 | 1,308 | 1,335 | 619 | 119 | 29 | 4,196 |
| River | : Gurara | 1972 | 15 | 6 | 9 | 24 | 162 | 432 | 689 | 1,645 | 814 | 447 | 85 | 36 | 4,364 |
| River Basin | : Niger | 1973 | 22 | 9 | 4 | 23 | 51 | 121 | 261 | 1,127 | 1,023 | 443 | 123 | 47 | 3,254 |
| HA | : II | 1974 | 21 | 8 | 3 | 25 | 164 | 164 | 624 | 866 | 1,748 | 623 | 126 | 49 | 4,421 |
| SHA | : 2162 | 1975 | 25 | 11 | 8 | 34 | 102 | 185 | 594 | 1,126 | 1,395 | 1,068 | 114 | 17 | 4,679 |
| Coordinate | .. 2162 | 1976 | 9 | 10 | 8 | 11 | 126 | 257 | 516 | 740 | 676 | 1,017 | 291 | - |  |
| Coordinate |  | 1977 | 106 | 87 | 69 | 142 | 279 | 223 | 497 | 571 | 980 | 749 | 87 | 21 | 3,811 |
| - Lat. <br> - Long. | $\bigcirc 07^{\circ} 02$ | 1978 | 9 | 3 | 17 | 73 | 146 | 328 | 696 | 774 | 2,071 | 991 | - | 72 | ${ }^{-}$ |
| Catchment Area (km ${ }^{2}$ ) | : 7,650 | 1979 | 41 29 | 25 18 | 17 | 44 | 264 | 271 | 697 546 | 952 1,029 | 1,255 1,285 | 727 | 186 | 41 | 4,248 |
|  |  |  |  |  |  |  | 70 | 271 | 826 | 840 | 1,072 | 596 | 160 | 63 | 3,947 |
|  |  | 1981 | 38 | 19 | 88 | 17 | 166 | 197 | 580 | 936 |  |  |  |  |  |
|  |  | 1982 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1983 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1984 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1985 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1988 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |

table 6 monthly runoff at selected river gaging stations
HA-II (12/13)

- Unit : MCM


YABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-II (13/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Badeggi | 1970 | 14 | 8 | 7 | 6 | 10 | 13 | 23 | 265 | 676 | 309 | 49 | 31 | 1,411 |
| River | : Gbako | 1971 | 13 | 10 | 14 | 13 | 25 | 34 | 136 | 363 | 605 | 236 | 78 | 23 | 1,550 |
| River Basin | : Niger | 1972 | 17 | 13 | 12 | 11 | 21 | 31 | 127 | 333 | 457 | 172 | 40 | 16 | 1,250 |
| IIA | : II | 1973 | 13 | 10 | 9 | 8 | 8 | 15 | 58 | 202 | 330 | 211 | 36 | 6 | 906 |
| SHA | : 2141 | 1974 | 4 | 3 | 3 | 3 | 7 | 23 | 44 | 162 | 450 | 319 | 50 | 12 | 1,080 |
| Coordinate |  | 1975 | 5 | 4 | 4 | 6 | 8 | 9 | 140 | 144 | 444 | 463 | 50 | 16 | 1,293 |
| - Lat. | : $09^{\circ} 05^{\prime}$ | 1976 | 7 | 6 | 5 | 4 | 6 | 38 | 56 | 103 | 147 | 272 | 195 | 26 | 865 |
| - Iong. | : 06007 | 1977 | 5 | 4 | 4 | 4 | 7 | 13 | 30 | 233 | 462 | 392 | 61 | 11 | 1,226 |
| Catchment |  | 1978 | 5 | 4 | 4 | 14 | 14 | 28 | 87 | 336 | 569 | 314 | 105 | 21 | 1,501 |
| Area ( $\mathrm{km}^{2}$ ) | : 5,480 | 1979 | 6 | 5 | 6 | 4 | 5 | 45 | 71 | 367 | 465 | 236 | 51 | 13 | 1,274 |
|  |  | Mean | 9 | 8 | 7 | 7 | 11 | 25 | 77 | 251 | 461 | 292 | 72 | 18 | 1,238 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Mbu/Tepkwar | 1980 1981 | 44 | 33 | 32 | 49 | 104 | 110 | 191 | 227 | 359 | 211 | 79 | 41 | 1,480 |
| River | : Donga | 1982 | 40 | 34 | 59 | 60 | 99 | 120 | 244 | 278 | 269 | 312 | 100 | 63 | 1,678 |
| River Basin | : Benue | 1983 | 58 | 34 | 27 | 42 | 61 | 102 | 160 | 236 | 234 | 100 | 61 | 46 | 1,161 |
| HA | : 11 | 1984 | 30 | 24 | 52 | 88 | 63 | 108 | 232 | 261 | 399 | 210 | 97 | 39 | 1,603 |
|  |  | 1985 | 34 | 20 | 42 | 66 | 74 | 113 | 171 | 203 | 209 | 163 | 67 | 36 | 1,198 |
| SHA | : 3140 | 1986 | 25 | 16 | 51 | 40 | 50 | 70 | 140 | 230 | 280 | 170 | 60 | 30 | 1,162 |
| Coordinate |  | 1987 | 20 | 20 | 40 | 98 | 69 | 296 | 217 | 358 | 482 | 370 | 44 | 29 | 2,043 |
| - Lat. | : $06^{\circ} 42^{\prime}$ | 1988 | 24 | 19 | 43 | 50 | 54 | 54 | 107 | 108 | 226 | 107 | 41 | 30 | 863 |
| - Long. | $: 11^{\circ} 08^{\prime}$ | 1989 | 22 | 16 | 24 | - | $\cdots$ | - | $\checkmark$ | - | $\bigcirc$ | - | $\bigcirc$ | $\cdots$ |  |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) | : 2,120 | Mear | 33 | 24 | 41 | 62 | 72 | 122 | 183 | 238 | 307 | 205 | 69 | 39 | 1,395 |

rable 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-III (2/13)

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jut. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Manya | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Donga | 1981 | 124 97 | 60 60 | 53 67 | 87 60 | 219 | 276 440 | 1,098 1,192 | 1,713 1,755 | 2,261 2,129 | 1,664 1,877 | 482 523 | 184 | 8,194 8,545 |
| River Basin | : Benue | 1983 | 115 | 63 | 46 | 69 | 122 | 303 | $\xrightarrow{1} 602$ | 1,283 | 2,115 | 867 | 206 | 103 | 5,894 |
| HA | : III | 1984 | 56 | 29 | 59 | 120 | 144 | 301 | 1,065 | 1,259 | 1,927 | 1,435 | 441 | 176 | 7,012 |
| SIIA |  | 1985 | 113 | 59 | 84 | 199 | 224 | 479 | 1,006 | 1,316 | 1,959 | 1,470 | 451 | 179 | 7,539 |
| Coordinate | :3122 | 1986 | $\cdots$ | $\because$ | - | 110 | 180 | 320 | 770 | 1,630 | 1,720 | 1,980 | 740 | 190 | - |
| - Lat. | : $07^{\circ} 19^{\prime}$ | 1987 | 90 | 50 | 70 | 103 | 108 | 471 | 1,377 | 2,009 | 2,485 | 1,827 | - | 185 | $7{ }^{\circ}$ |
| - Long. | $: 10^{\circ} 15^{\prime}$ | 1988 1989 | 94 86 | 58 | 137 67 | 145 | 201 | 298 | 718 | 1,361 | 2,100 | 1,536 | 453 | 174 | 7,275 |
| Catchment Area (km ${ }^{2}$ ) | : 6,350 | Mean | 97 | 53 | 73 | 112 | 170 | 361 | 979 | 1,541 | 2,086 | 1,582 | 471 | 170 | 7,695 |

table 6 monthly runoff at selected river gaging stations
HA-III (3/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Donga | 1970 | 512 | 319 | 311 | 355 | 563 | 938 | 1,252 | 2,503 | 3,165 | 3,532 | 1,204 | 632 | 15,286 |
| River | : Donga | 1971 | 343 | 242 | 410 | 383 | 370 | 536 | 2,080 | 4,473 | 3,535 | 3,138 | 1,083 |  |  |
| River Basin | : Benue | 1972 | 241 | 261 |  | 394 |  | 917 | 1,509 978 | 2,010 | 3,898 | 3,792 | 894 | 300 |  |
| HA | : III | 1973 <br> 1974 <br> 1 | 241 316 | 261 | 256 268 | 394 412 | 429 579 | 562 1,036 | 978 2,350 | 1,651 2,208 | 2,912 4,198 | 4,698 | 1,725 | 619 | 18,651 |
| SHA | : 3113 | 1975 | 402 | 317 | 354 | 456 | 555 | 764 | 1,771 | 2,101 | 3,450 | 3,776 | 1,303 | 702 | 15,951 |
| Coordinate |  | 1976 | 466 | 370 | 386 | 407 | 807 | 1,158 | 1,847 | 2,894 | 2,707 | 4,545 | 2,098 | 734 | 18,419 |
|  |  | 1977 | 429 | 315 | - | 282 | 442 | 619 | 1,150 | 1,525 | 4,103 | 4,133 | 829 | 541 |  |
| - Long. | $: 10^{\circ} 05^{\prime}$ | 1978 | 434 | 261 | 322 | 440 | 614 | 1,158 | 1,868 | 1,948 | 3,126 | 3,205 | 1,388 | 549 |  |
|  |  | 1979 | 362 | 264 | 311 | 360 | 646 | 1,127 |  |  |  |  | 1,189 | 726 |  |
| $\begin{aligned} & \text { Catchment } \\ & \text { Area }\left(\mathrm{km}^{2}\right) \end{aligned}$ | : 11,910 | Mean | 389 | 291 | 327 | 388 | 556 | 882 | 1,645 | 2,368 | 3,455 | 3,852 | 1,301 | 600 | 16,054 |
| Year Established | : 1955 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-lil (4/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Gindin Dorowa | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Donga | 1981 | 493 | 329 | 311 | 354 | 740 | 837 | 2,347 | 3,529 | 4,368 | 3,761 | 1,385 | 648 | 19,102 |
| River Basin | - Benue | 1982 | 447 | 319 | 368 | 369 | 576 | 976 | 2,208 | 2,860 | 3,641 | 4,119 | 1,491 | 676 | 18,050 |
| River Basin | : Benue | 1983 | 416 | 270 | 240 | 264 | 418 | 737 | 1,380 | 2,223 | 3,547 | 2,057 | 793 | 481 | 12,826 |
| 1HA | : III | 1984 | 348 | 248 | 308 | 413 | 518 | 1,407 | 1,085 | 1,864 | 3,801 | 1,882 | 635 | 118 | 12,627 |
| SHA | : 3122 | 1985 | 356 | 238 | 253 | 385 | 409 | 796 | 1,612 | 2,641 | 3,533 | 2,946 | 1,319 | 580 | 15,068 |
| Coordinate |  | 1986 |  |  | $\cdots$ | - | - |  |  |  | - | - | 1,310 | - |  |
| - Lat. |  | 1987 |  |  |  |  | - |  |  |  |  |  |  |  |  |
| - Long. | $: 10^{\circ} 03^{\prime}$ | 1988 1989 | - |  | - | - | - |  | - - |  |  | - |  |  |  |
| Catchment |  | 1989 | 412 | 281 | 296 | 357 | 532 | 951 | 1,726 |  | 3.778 | 2953 | 1125 | 501 |  |
| Area ( $\mathrm{km}^{2}$ ) | : 18,800 | Mean | 412 |  | 296 | 357 | 632 | 951 | 1,26 | 2,623 | 3,778 | 2,953 | 1,125 | 501 | 15,535 |

table 6 MONTHLY RUNOFF at SELECTED RIVER GAGING STATIONS
HA-II (5/13)

table 6 monthly runoff at selected river gaging stations
HA-III (6/13)

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Bantaji |  |  |  |  |  |  |  |  | 725 |  | 843 | 209 | 50 | 3,512 |
| River | : Suntai | 1981 | 43 14 | 8 | 4 | 3 | 13 | 19 | 430 | 488 | 1,037 856 | 712 | 266. | 58 | 2,939 |
| River Basin | : Donga | 1983 | 12 | $\bigcirc 4$ | 2 | 2 | 24 | 95 | 243 | 297 | 701 | 405 | 60 | 13 | 1,858 |
| HA | : III | 1984 | 4 | 1 | 1 | 1 | 18 | 71 | 340 | 514 | 877 | 619 | 246 | 29 | 2,721 |
| SHA | : 3121 | 1985 | 13 | 5 | 2 | 5 | 11 | 70 | 376 | 595 | 922 | 641 | 260 | 19 | 2,909 |
| Coordinate |  | 1986 | - | - | - | - | - | - | - |  | - |  |  | - |  |
| Coordinate - Lat. | : $08^{\circ} 10^{\prime}$ | 1987 | - | - |  |  |  | $\because$ | - |  | - | - | - |  |  |
| - Long. | : $10^{\circ} 10^{\prime}$ | 1989 | - |  | - | - |  | - | - | $\cdots$ | - | - | - |  |  |
| Catchment Area ( $\mathrm{km}^{2}$ ) | : 5,350 | Mean | 17 | 4 | 3 | 3 | 20 | 89 | 365 | 524 | 879 | 644 | 206 | 34 | 2,788 |

table 6 monthly runoff at selected river gaging stations
HA-III (7/13)

| Station | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Scp. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Bali | 1980 | 35 | 28 | 29 | 28 |  |  |  | ${ }^{-}$ | - | - |  |  |  |
| River | : Taraba | 1981 | 40 | 25 | 20 | 28 | 94 | 196 | 931 | 2,330 | 2,598 | 2,250 | 652 | 261 | 9425 |
| River | : Taraba | 1982 |  |  | - |  |  | 697 | 1,053 | 1,679 | 2,332 | 1,924 | 863 | 126 | $\bigcirc$ |
| River Basin | : Benue | 1983 | 53 | 30 | 19 | 19 | 33 | 226 | 537 | 1,173 | 2,119 | 821 | 204 | 84 | 5,318 |
| HA | : III | 1984 | 50 | 34 | 31 | 67 | 215 | 197 | 535 | 1,750 | 2,278 | 1,380 | 344 | 197 | 7,078 |
| SIIA | : 3111 | 1985 | 41 | 21 | 19 | 129 | 71 | 276 | 1,175 | 1,049 | 3,178 | 1,021 | 208 | 37 | 7,225 |
|  |  |  | - | - | - | 10 | 20 | 100 | 580 | 1,300 | 1,700 | 1,170 | 400 | 50 |  |
| Coordinate - Lat. |  | 1987 | 8 | 5 | 3 | 10 | 16 | 10 | 127 | 297 | 801 | 791 | 611 | 71 | 2,750 |
| - Lat. <br> - Long. | $\begin{aligned} & : 07^{\circ} 52^{\prime} \\ & : 10^{\circ} 58^{\prime} \end{aligned}$ | 1988 | 15 | 10 | - | 18 | 35 | 56 | 247 | 485 | 1,681 | - | 440 | . |  |
| Catchment |  | 1989 | - | - | 67 |  |  | - |  |  | - | - |  |  |  |
| Area ( $\mathrm{km}^{2}$ ) | : 10,850 | Mean | 35 | 22 | 27 | 39 | 69 | 220 | 648 | 1,258 | 2,086 | 1,337 | 465 | 118 | 6,324 |
| Year Established | : 1958 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAUGING STATIONS HA-III (8/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Tela | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Taraba | 1981 | 105 | 38 | 23 | 27 | 300 | 467 | 2,067 | 2,318 | 4,838 <br> 4 <br> 4 | 3,803 3 | 742 | 306 306 | 15,034 15,408 |
| River Basin | : Benue | 1982 1983 | 189 | 105 | 102 | 115 96 | 218 189 | 397 | 1,851 739 | 2,790 1,554 | 4,678 2,975 | 3,956 1,038 | 801 | 306 119 | 15,488 7,819 |
| IIA | : III | 1984 | 62 | 30 | 22 | 61 | 168 | 261 | 1,168 | 2,113 | 2,930 | 2,101 | 569 | 233 | 9,718 |
| SHA | : 3113 | 1985 | 161 | 93 | 95 | 180 | 177 | 379 | 1,052 | 3,436 | 6,977 | 3,312 | 417 | 305 | 16,584 |
| Coordinate |  | 1986 | 193 | 161 | 149 | 10 | 20 | 100 | 580 | 1,300 | 1,700 | 1,170 | 400 | 50 | 5,833 |
| - Lat. |  | 1987 | 8 | 5 | 3 | 81 | 64 | 405 | 1,153 |  | $\because$ - | 2,248 | 536 | 249 | - |
| - Long. | $\begin{aligned} & : 08^{\circ} 26^{\prime} \\ & : 10^{\circ} 2 \end{aligned}$ | 1988 | 128 | 73 | 83 | - | - | - | - | - |  | . |  |  |  |
| Catchment |  |  |  |  | $7{ }^{-}$ |  | 162 | 344 | 1230 | 252 | 4,000 | 2518 | 528 |  |  |
| Area ( $\mathrm{km}^{2}$ ) | : 22,350 |  | 132 |  |  | 81 | 162 | 344 | 1,230 | 2,252 | 4,000 | 2,018 | 528 | 224 | 11,628 |

table 6 monthly runoff at selected river gaging stations
HA-III (9/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Gassol | 1970 | 96 | 19 | 0 | 3 | 56 | 300 | 1,110 | 2,605 | 3,781 | 2,230 | 963 | 214 | 11,377 |
| Station | - Gassol | 1971 | 24 | 2 | 3 | 3 | 3 | 140 | 1,067 | 820 | 2,393 | 1,986 | 329 |  |  |
| River | - Taraba | 1972 | 3 | 0 | 0 | 5 | 62 | 461 | 1,107 | 1,549 | 3,170 | 2,860 | 899 | 188 | 10,304 |
| River Basin | : Benue | 1973 | 16 | 2 | 0 | 0 | 16 | 148 | 796 | 1,597 | 2,650 | 1,822 | 464 | 29 | 7,540 |
| HA | : 11 I | 1974 | 0 | 0 | 0 | 5 | 289 | 756 | 1,533 | 2,023 | 2,673 | 2,801 | 862 | 276 | 11,218 |
| SHA | : 3112 | 1975 | 67 | 27 | 13 | 18 | 83 | 220 | 445 | 1,193 | 2,292 | 2,404 | 461 | 941 | 8,164 |
| Coordinate | :312 | 1976 | 850 | 440 | 21 | 23 | 182 | 404 | 1,343 | 2,149 | 2,292 | 3,323 | 1,696 | 488 | 13,211 |
| Coordinate - Lat. |  | 1977 | 188 |  | 19 | 0 | 40 | 243 | 1,034 | 635 | 2,877 | 2,948 | 730 | 212 |  |
| - Lat. <br> - Long. | $: 08^{\circ} 31^{\prime}$ $: 10^{\circ} 31^{\prime}$ | 1978 | 72 | 29 | 21 | 96 | 324 | 857 | 1,619 | 1,954 | 3,092 | 2,227 | 1,218 | 306 | 11,815 |
| - Long. |  | 1979 | 110 | 44 | 48 | 54 | 316 | 842 | 1,613 | 2,709 | 2,937 | 2,208 | 1,013 | 437 | 12,331 |
| Catchment Area (km ${ }^{2}$ ) <br> Year Established |  | Mean | 143 | 63 | 13 | 21 | 137 | 437 | 1,167 | 1,723 | 2,816 | 2,481 | 864 | 343 | 10,208. |
|  | : 20,700 | 1980 |  | 48 | 25 | 23 | 232 | 592 | 1,153 | 2,082 | 4,042 | 2,767 | 1,020 | 360 | 12,511 |
|  | : 1955 | 1981 | 93 |  | 11 | 10 | 169 | 420 | 1,735 | 2,359 |  | 2,936 | 780 | 221 |  |
|  |  | 1982 | 82 | 59 |  |  | 252 | 337 | - | 2,200 |  | 2,806 | 948 | 343 | - |
|  |  | 1983 | 104 | 28 | 26 | 23 | 112 | 358 | 663 | 1,288 | 2,586 | 1,183 | 273 | 81 | 6,725 |
|  |  | 1984 | 22 | 10 | 30 | 37 | 178 | 299 | 936 | 1,586 | 2,677 | 1,961 | 585 | 222 | 8,543 |
|  |  | 1985 |  | . | 11 | 71 | 73 | 313 |  | 2,315 |  | 2,589 | 757 | 113 | - |
|  |  | 1986 | - | - |  |  | 121 | 255 |  | 1,362 | 1,549 | 1,897 | 585 | 307 |  |
|  |  | 1987 |  | - | - | - |  | - | - | . | 2,258 | 2,041 | 490 | 126 |  |
|  |  | 1988 | - | - | - | - |  | - | - | - | - | - |  | - |  |
|  |  | 1989 | 94 | 36 | 21 | 33 | 162 | 368 | 1,122 | 1,885 | 2,622 | 2,273 | 680 | 222 | 9,518 |
|  |  | Mean | 94 | 36 | 21 | 33 | 162 | 368 | 1,122 | 1,885 | 2,622 | 2,273 | 680 |  |  |

table 6 monthly runoff at selected river gaging stations
HA-III (10/13)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Maisamari | 1980 |  |  |  |  |  |  |  | 44 | 32 | 54 | 23 | 7 |  |
| River | : Jigwal | 1981 |  |  |  | 3 | 3 | 7 | 52 | 43 | 67 | 26 | 17 | 8 | 242 |
| River Basin | - Taraba | 1983 | 5 | 3 | 2 | 2 | 10 | 24 | 29 | 29 | 58 | 28 | 8 | 5 | 203 |
| HA | : 111 | 1984 | 3 | 2 | 3 | 6 | 13 | 26 | 66 | 48 | 47 | 40 | 16 | 7 | 277 |
| SHA | :3111 | 1985 | 5 | 3 | 3 | 3 | 3 | 16 | 27 | 35 | 39 | 25 | 7 | 4 | 170 |
| Coordinate |  | 1986 | 2 | 2 | 3 | 3 | 15 | 16 | 29 | 31 | 45 | 30 | 20 | 9 | 205 |
| - Jat. | : $07^{\circ} 06^{\prime}$ | 1987 | 3 | 2 | 2 | 3 | - | 56 | 9 | 43 | 47 | 44 | 13 | 5 | - |
| - Long. | ${ }^{1} 11^{\circ} 08^{\prime}$ | 1988 | 3 | 3 | 2 | 4 | 6 | 11 | 27 | 26 | 29 | 21 | 9 | 4 | 145 |
| Catchment |  | 1989 | 3 | $\stackrel{2}{2}$ | - | - |  |  | - | - | - | $\cdots$ | $\cdots$ | - |  |
| Area ( $\mathrm{km}^{2}$ ) | : 562 | Mean |  |  |  |  | 8 | 22 | 3 | 37 |  |  |  |  | 215 |

table 6 monthly runoff at selected river gaging stations
HA-III (11/13)

table 6 monthly runoff at selected river gaging stations
HA-III (12/13)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-III (13/13)

| Station | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Garkida | 1970 | 0 | 0 | 0 | 0 | 16 | 23 | 46 | 332 | 249 | 86 | 18 | 13 | 783 |
| River |  | 1971 | 11 | 5 | 0 | 0 | 3 | 8 | 126 | 322 | 199 | 0 | 0 | 0 | 674 |
| River | : Hawal | 1972 | 0 | 0 | 0 | 0 | 35 | 44 | 105 | 113 | 85 | 11 | 3 | 0 | 396 |
| River Basin | : Gongola | 1973 | 0 | 0 | 0 | 0 | - | 52 | 75 |  | 49 | 3 | 0 | 0 | - |
| HA | : III | 1974 | 0 | 0 | 0 | 0 | 3 | 8 | 142 | 177 | 186 | 11 | 0 | 0 | 527 |
| SHA | : 3032 | 1975 | 0 | 0 | 0 | 0 | 0 | 10 | 190 | 228 | 495 | 64 | 21 | 13 | 1,021 |
| Coordinate |  | 1976 | 13 | 10 | 3 | 0 | 0 | 62 | 91 | 145 | 93 | 80 | 23 | 13 | 533 |
| Coordinate |  | 1977 | 11 | 7 | 0 | 0 | 0 | 52 | 129 | 431 | 176 | 86 | 8 | 5 | 905 |
| -Long. | $\bigcirc 12^{\circ} 32^{\prime}$ | 1978 | 5 | 5 | 0 | 0 | 0 | 60 | 228 | 268 | 210 | 40 | 13 | 5 | 834 |
|  |  | 1979 | 0 | 0 | 0 | 0 | 19 | 83 | 161 | 456 | 181 | 131 | 5 | 3 | 1,039 |
| Catchment Area $\left(\mathrm{km}^{2}\right)$ | :- | Mean |  |  |  |  | 8 | 40 | 129 | 275 | 192 | 51 | 9 | 5 | 716 |
| Year Established | : 1955 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

table 6 monthly runoff at selected river gaging stations
HA-IV (1/2)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-IV (2/2)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Sevar | 1980 |  |  |  |  |  |  |  |  |  |  |  | 863 |  |
| River | : Katsina Ala | 1981 | 98 | 317 222 | 281 472 | 411 | 1,515 $\mathbf{9 8 2}$ | 1,910 $\mathbf{2 , 2 1 5}$ | 3,958 4,718 | 4,413 5,048 | 6,404 6,366 | 6,185 1,800 | 2,487 | 1,036 | 25,949 |
| River Basin | : Benue | 1982 | 98 632 | 222 359 | 472 292 | 505 | 982 687 | 1,215 1,608 | 4,718 2,924 | 5,048 3,844 | 6,366 6,886 | 3,505 | 1,179 | -643 | 21,916 |
| HA |  | 1984 | 381 | 132 | 174 | 414 | 604 | 1,447 | 3,443 | 4,052 | 6,655 | 5,241 | 1,816 | 926 | 24,285 |
| Coordinate |  | 1985 | 616 | 396 | 404 | 964 | 1,059 | 2,122 | 2,052 | 4,656 | 7,230 | 6,010 | 2,005 | 1,076 | 28,590 |
| - Lat. | : $07^{\circ} 28^{\prime}$ | 1986 | 653 | 414 | 496 | 585 | 930 | 1,436 | 2,756 | 3,810 | 5,011 | 6,245 | 2,695 | 1,100 | 26,131 |
| - Long. | : 099 $13^{\prime}$ | 1987 | 665 | 385 | 332 | 435 | 448 | 1,215 | 3,002 | 3,522 | 5,805 | 5,147 | 1,542 | 954 | 23,452 |
| Catchment |  | 1988 | 689 | 532 | 515 | 665 | 978 | 1,740 | 2,091 | 2,220 | 4,733 | 5,550 | 1,962 | 1,067 | 22,752 |
| Area ( $\mathrm{km}^{2}$ ) | : 22,100 | 1989 | 757 | 497 | 280 | 418 | 1,365 | 2,391 | 3,811 | 5,372 | 6,560 | 6,716 | 2,082 | 895 | 31,144 |
|  |  | Mean | 561 | 362 | 361 | 528 | 952 | 1,787 | 3,195 | 4,104 | 5,961 | 5,042 | 2,003 | 954 | 25,810 |

table 6 monthly runoff at selected river gaging stations

| Sta | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | Sepeteri | 1980 |  |  |  |  |  | 1.4 | 4.1 | 28.2 | 72.1 | 80.9 | 23.9 | 7.5 |  |
| River | Ogun | 1981 | - | - | - | - | 0.0 | 2.0 | 1.8 | 15.3 | 44.8 | 35.2 | 1.8 | - |  |
| River Basin | Ogun | 1982 | - | - | - | - | - | 1.8 | 0.6 |  | - | 32.4 | 10.9 | - | - |
| HA | VI | 1983 | - | - | - | - | 0.4 | 4.9 | 4.8 | - |  |  | - | - | - |
| SHA | - 6022 | 1984 | - | - | - | - | . | 10.4 | 28.3 | 123.7 | - | 55.6 | 2.8 | $0^{-}$ | - |
| Coordinate |  | 1985 | . | - | . | - | - |  | 22.6 | 64.2 | 94.4 | 105.3 | 56.0 | 4.0 | - |
| - Lat. | 089 $38^{\prime}$ | 1986 | . | - | - | - | = |  | 0.7 |  | 15.1 | 21.6 | 5.3 | 0.9 | - |
| - Long. | 03 $0{ }^{\circ} 39^{\prime}$ | 1987 | - | - | - | - |  | 10 | 0.5 | 53.6 | 88.7 | 38.7 | 5.6 | 0.6 | - |
| Catchment |  | 1988 | - | - | - | - |  | 1.0 | 63.9 | 87.6 121.8 |  | 110.8 | 16.6 39.9 |  | - |
| Area ( $\mathrm{km}^{2}$ ) | 1,060 | 1989 Mean | - | - | $\cdots$ | - | 0.2 | 2.2 3.4 | 38.2 16.6 | 121.8 70.6 | 118.2 79.6 | 60.1 | 39.9 19.9 | 1.9 | 253 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-VI (2/7)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Ofiki Town | 1980 | 0.0 | 0.2 | 0.0 |  | - | 1.3 | 4.0 | 17.8 | 99.3 | 51.5 | 8.8 | 0.8 |  |
| River | : Ofiki | 1981 | 0.0 | 0.0 | 0.0 | - | - | 4.2 | 3.8 | 28.4 | 32.3 | 35.4 | 3.0 | 0.4 |  |
| River Basin | : Ogun | 1982 | 0.0 | 0.0 | 0.0 | - | - | 0.4 | 0.5 |  | 4.3 | 20.0 | 2.7 | . | - |
| HA | : V1 | 1983 | 0.0 | 1.9 | 0.0 | - | 3.0 | 1.5 | 0.8 | 1.1 | 1.8 | 1.2 | - | - | - |
| SHA | : 6021 | 1984 | 0.0 | 0.0 | 0.0 | 0.3 | . | . | - | - | . | - | 9.5 | - | - |
| Coordinate |  | 1985 | 0.0 | 0.0 | 0.0 | - |  | - | 10.1 | 125.6 | 210 | 15. | - | - |  |
| - Lat. | : $08^{\circ} 28^{\prime}$ | 1986 | 0.0 | 0.0 | 0.0 | - |  | 1.4 | 3.8 | 4.0 | 21.0 | 15.6 | 2.7 | - | - |
| - Long. | : $03^{\circ} 19^{\prime}$ | 1987 | 0.0 | 0.0 | 0.0 | - |  | 9.4 | 9.3 | 116.9 | 114.2 | 27.8 | . |  |  |
| Catchment |  | 1988 | - | - |  | - |  | - |  |  | $\cdots$ | - |  |  |  |
| Area (km ${ }^{2}$ ) |  | 1989 |  | - | 0 | $\bigcirc$ | 0 | $\bigcirc$ | - | 0 | - | - | 53 | 0.6 | 137 |
|  |  | Mean | 0.0 | 0.3 | 0.0 | 0.3 | 3.0 | 3.0 | 4.6 | 49.0 | 45.5 | 25.3 | 6.3 | 0.6 | 137 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-VI (3/7)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | Iganna | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | Ofiki | 1981 | 2 | $\bigcirc 1$ | 1 | 1 |  | 38 7 | 6 | 35 3 | 36 4 | 46 13 | ${ }_{16}^{2}$ | 2 6 | 63 |
| River Basin | Ogun | 1982 | 1 | $\therefore 1$ | 1 | 2 | 3 2 | 7 | 6 | 3 2 | 4 | 13 2 | 1 | - | 6 |
| HA | : VI | 1983 | 1 | $\therefore$ | - | - | $\stackrel{2}{2}$ | 10 | $\begin{array}{r}6 \\ 48 \\ \hline\end{array}$ | 215 | 382 | 365 | 119 | 2 | - |
| SHA | : 6021 | 1984 | - | $\because$ | - | 0 | 2 1 | 10 | 48 | 215 |  | ${ }^{3}$ - |  | 2 | $\square$ |
| Coordinate |  | 1985 | $:$ |  | - | 0 | 1 | - | 268 | 185 | 267 | 268 | 166 | 23 | - |
| - Lat. | : $08^{\circ} 06^{\prime}$ | 1986 | 3 | 3 | 2 | $i$ | 2 | 39 | 80 |  | - | 197 | 94 | 33 | - |
| Catchment - Long. | : 03 ${ }^{\circ} 14^{\prime}$ | 1987 1988 | 3 1 | 3 1 | 2 1 | 1 | 1 | 17 | 175 | 296 | - | 296 | 47 | 2 | . |
| Catchment Area $\left(\mathrm{km}^{2}\right)$ |  | 1988 | 7 | - 0 | 1. | 1 | 5 | 19 | 98 | 316 | - | 64 | 39 | 34 | - |
|  |  | Mean | 3 | 1 | 1 | 1 | 3 | 20 | 97 | 150 | 138 | 156 | 61 | 13 | 644 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS
HA.VI (4/7)

table 6 monthly runoff at selected river gaging stations
HA-VI (5/7)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Apoje | 1980 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Oshun | 1981 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Oshun | 1982 | 217 | 181 | 196 | 195 | 269 | 359 | 374 | 253 | 308 | 567 | 306 | 217 | 3,442 3,000 |
| HA | : VI | 1983 | 193 | 174 | 193 | 191 | 313 | 190 | 294 | 251 | 455 | 350 | 213 | 183 | 3,000 |
| SHA | : 6052 | 1984 | 193 | 180 | 193 | - | 205 | 329 | 418 | 475 | 441 | 483 | 285 | 218 |  |
| Coordinate |  | 1985 | 169 | - | 179 | - | 215 | 290 | 540 | 368 | 379 | 583 | 398 | 242 |  |
| - Lat. | : $06^{\circ} 59^{\prime}$ | 1986 | 98 | 210 | 299 | 216 | 216 | 281 | 345 | 361 | 416 | - | 399 | - |  |
| - Long. | : 04007 | 1987 | 189 | 174 | 193 | 187 | 197 | - | - | - | - | - | - |  |  |
| Catchment |  | 1988 |  | - | - | - | - | - | - | - | $\square$ | - |  |  |  |
| Area ( $\mathrm{km}^{2}$ ) | : 8,170 | 1989 Mean | 177 | 184 | 209 | 197 | 236 | 290 | 394 | 342 | 400 | 496 | 320 | 215 | 3,460 |
|  |  | Mean | 177 | 184 | 209 | 197 | 236 | 290 | 394 | 342 | 400 | 496 | 320 | 215 | 3,460 |

TABLE 6 MONTHLY RUNOFF AT SEIECTED RIVER GAGING STATIONS HA-VI (6/7)

table 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-VI (7i)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Oyo-Ogbomosho Rood | 1980 |  |  |  |  |  |  |  |  |  |  |  | 1 |  |
| River | : Oba | 1981 | 0 | 0 | 0 | - | 12 | 10 |  | 6 <br> 3 | -6 | 186 62 | 12 | 1 |  |
| River Basin | : Oshun | 1982 | 0 | 0 | 0 | - | 12 | 19 | 15 4 | 3 $\times 1$ | 22 8 | 62 9 | 12 | - | - |
| HA | : V1 | 1983 | 0 | 0 | 0 | $\bigcirc$ | 5 | 5 19 | 4 23 | 55 | 60 |  | 4 | . | . |
| SHA | : 6051 | 1984 | 0 | 0 | 0 0 | $\because$ | 5 | 19 8 | 23 70 | 129 | 60 167 | 82 | 4 | - | . |
| Coordinate ${ }^{\text {- }}$ |  | 1985 1986 | 0 | 0 | 0 | - | - | 2 | 14 | 129 | 65 | 84 | 9 | 1 | - |
| - Leat. | $: 07^{\circ} 50^{\prime}$ $=04^{\circ} 04^{\prime}$ | 1987 | 0 | 0 | 0 | - | . | 5 | 3 | 110 | 174 | 120 | 10 | 5 | - |
| Catchment |  | 1988 | 0 | 0 | 1 | 1 |  | ${ }_{5}^{5}$ | 40 | 15 | 100 | 107 | 5 | - | $\square$ |
| Area ( $\mathrm{km}^{2}$ ) | : 1,580 | 1989 | 0 | 0 | 0 | 0 1 | 5 | 13 10 | 44 31 | 44 41 | 91 77 | 47 <br> 82 | 7 | 2 | 259 |
|  |  | Mean | 0 | 0 | 0 |  | 7 |  |  |  |  |  |  |  |  |

# table 6 monthly runoff at selected river gaging stations 

HA-VII (1/11)

| Station Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station : Ikom | 1970 |  |  |  |  |  | - |  |  | 4,776 | 5,923 | 3,029 | 462 |  |
| Station : Trom | 1971 | 58 | 49 | 465 | 472 | 713 | 2,502 | 6,379 | 8,280 | 7,165 | 4,145 | 1,542 | 833 | 32,963 |
| River : Cross | 1972 | 425 | 297 | 874 | 690 | 1,084 | 2,640 | 3,793 | 6,222 | 7,690 | 4,983 | 1,370 | 612 | 30,680 |
| River Basin : Cross | 1973 | 358 | 218 | 300 | 538 | 1,083 | 1,397 | 2,660 | 3,763 | 2,152 | 3,930 | 1,632 | 650 | 18,681 |
| HA : : VII | 1974 | 276 | 109 | 227 | 665 | 1,182 | 2,775 | 2,942 | 4,922 | 6,850 | 5,744 | 1,152 | 851 | 27,695 |
| SHA : 7041 | 1975 | 412 | 250 | 267 | 490 | 993 | 1,238 | 1,065 | 4,676 | 5,910 | 7,401 | 4,152 | 560 | 27,414 |
| Coordinate - | 1976 | 734 | 573 | - | 435 | 351 | . |  | - | 6,719 | 6,588 |  |  |  |
| Coordinate | 1977 |  |  | 193 | 310 | 683 |  | 5,001 | 5,628 | 6,682 | 5,269 | - | 53 |  |
| - Lat. : 05 ${ }^{\circ} 29^{\prime}$ | 1978 |  |  |  |  |  |  |  |  | 4,165 | 5,504 | 1,733 | 533 |  |
| - Long. : 089 ${ }^{\circ} 43^{\prime}$ | 1979 |  | $\cdots$ | $8{ }^{-}$ | 514 |  | - ${ }^{\circ}$ | 3,724 | 6,673 5 | 5,796 | 3,738 | 1,697 | 622 |  |
| Catchment | Mean | 377 | 249 | 388 | 514 | 870 | 2,110 | 3,703 | 5,738 | 5,791 | 5,323 | 2,038 | 640 | 27,741 |
| Area (km ${ }^{2}$ ) : 16,900 | 1980 | 271 | 203 | 313 | 283 | 850 | 2,334 | 3,732 | 5,978 | 6,956 | 5,369 | 2,311 | 799 | 29,399 |
| Year Established: 1953 | 1981 | 476 | 236 | 794 | 508 | 1,652 | 1,881 | 5,388 | 6,298 | 6,443 | 3,717 | 1,875 | 707 | 29,975 |
|  | 1982 | 476 | 317 | 406 | 574 | 1,365 | 3,011 | 4,883 | 7,134 | 6,892 | 5,010 | 2,038 | 825 | 32,931 25,423 |
|  | 1983 | 460 | 241 | 114 | 305 | 635 | 1,995 | 4,950 | 6,709 | 5,843 | 3,152 | 325 | 694 | 25,423 |
|  | 1984 | 380 | 202 | 304 | 521 | 715 | 1,618 | 3,162 | 3,263 | 5,036 | 4,475 | 825 |  |  |
|  | 1985 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1986 | 500 | 414 | 549 | 448 | 1,084 | 3,676 | 4,636 | 5,188 | 6,242 | 5,866 | 1,913 | 690 | 22,206 |
|  | 1987 | 466 | 416 | 482 | 456 | 1,085 | 1,696 | 2,299 | 3,883 | 5,423 | 4,961 | 1,222 | 584 | 22,973 |
|  | 1988 | 338 | 138 | 201 | 306 | 627 | 1,380 | 2,838 | 4,363 | 5,219 | 6,757 | 1,494 | 654 | 28,315 24,875 |
|  | 1989 | 322 | 131 | 115 | 355 | 839 | 1,585 | 2,852 | 5,282 | 5,973 | 5,408 | 1,469 | 544 |  |
|  | Mean | 410 | 255 | 364 | 417 | 984 | 2,131 | 3,860 | 5,344 | 6,003 | 4,857 | 1,497 | 687 | 26,809 |

table 6 monthly runoff at selected river gaging stations


TABLE 6 MONTHLY RUNOFF AT SELEGTED RIVER GAGING STATIONS
HA-VII (3/11)

| Station Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station : Obubra | 1970 |  |  |  |  | 2,274 | 4,909 | 6,269 | 7,868 | 10,282 | 7,358 |  | 851 |  |
| River : Cross | 1971 | 441 | 214 | 318 | 1,099 | 816 | 2,403 | 6,524 | 9,290 | 10,380 | 9,993 | 6,202 | 3,295 | 50,875 |
| $\begin{array}{ll}\text { River } \\ \text { River Basin } & \text { : Cross } \\ \text { O }\end{array}$ | 1972 | 533 | 362 | 613 | 1,240 | 1,531 | 4,128 | 4,459 | 5,969 | 9,856 | 8,250 | 2,111 | 798 | 39,850 |
| River Basin : Cross | 1973 | 481 | 185 | 219 | 542 | 1,225 | 1,996 | 2,617 | 5,510 | 8,277 | 6,862 | 2,190 | 885 | 30,989 |
| $\mathrm{HA} \quad: \mathrm{W}$ | 1974 | 393 | 160 | 230 | 715 | 1,616 | 3,421 | 5,555 | 9,319 | 11,509 | 11,251 | 3,557 | 971 | 48,697 |
| SIIA : 7043 | 1975 | 421 | 255 | 272 | 479 | 1,338 | 1,826 | 4,252 | 4,622 | 7,658 | 10,205 | 2,780 | 1,294 | 35,402 |
| Coordinate | 1976 | 599 | 584 | 850 | 1,084 | 2,348 | 4,477 | 7,449 | 8,645 | 8,791 | 10,398 | 5,536 | 1,196 | 51,957 |
| - Lat. : $06^{\circ} 06^{\prime}$ | 1977 |  | 324 | 176 | 286 | 692 | 2,855 | 5,489 | - | 10,984 | 8,476 | - | - |  |
| - Long. : 080 $20^{\circ}$ | 1978 |  |  |  | - |  | - |  |  |  | 9,761 |  |  |  |
| Catchment | Mean | 478 | 298 | 383 | 778 | 1,480 | 3,252 | 5,327 | 7,318 | 9,717 | 9,162 | 3,729 | 1,327 | 43,249 |
| Area ( $\mathrm{km}^{2}$ ) : 35,800 | 1980 |  | - | 301 | 382 | 1,116 | 3,654 | 5,606 | 9,679 | 12,248 | 10,353 | 3,657 |  |  |
| Year Established : 1953 | 1981 | - |  |  |  |  | - | 7,471 | 10,410 | 11,538 | 7,333 |  | 846 |  |
|  | 1982 | - |  |  |  | - | - | - |  |  | - |  | - |  |
|  |  |  |  |  |  |  |  |  |  |  |  | - | - |  |
|  |  |  |  |  |  |  |  |  |  | 9,087 | 7,665 | 2,545 | 1,034 |  |
|  | 1986 | 456 | 239 | 412 | 472 |  | - | - | - |  |  | - |  |  |
|  | 1987 | 324 | 116 | 155 | 287 | 817 | 1,875 | 3,894 | 6,159 | 10,303 | 8,228 | 1,777 | 686 | 34,621 |
|  | 1988 | 348 | 128 | 169 | 321 | 887 | 1,777 | 4,695 | 9,734 | 10,769 | 8,228 | 1,665 | 632 | 39,343 |
|  | 1989 | 314 | 104 | 231 | 280 | 554 |  |  | - |  | - | - | - |  |
|  | Mean | 385 | 167 | 237 | 329 | 811 | 2,435 | 5,680 | 9,031 | 10,501 | 8,361 | 2,411 | 800 | 41,148 |

table 6 monthly runoff at selected river gaging stations

| Station Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station : Afikpo | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River : Cross | 1971 |  |  |  |  |  |  | 5,261 | 7,611 | 11,814 | 10,586 | 2,585 | 1,044 | 49,508 |
| River Basin: : Cross | 1972 1973 | 748 | 443 | 689 | 1,281 808 | 2,099 | 5,286 $\mathbf{2 , 8 5 6}$ | 3,249 | 7,110 | 10,367 | 8,775 | 2,636 | 1,014 |  |
| HA : VI | 1974 | 633 | 379 | 457 | 945 | 1,965 | 4,187 | 7,582 | 11,178 |  |  |  |  |  |
| SHA $\quad: 7060$ | 1975 | 658 | -459 | 533 | 755 | 2,117 | 2,716 | 5,518 | 6,527 | 9,022 | 11,586 | 3,730 | 1,596 | 45,237 |
| Sha 006 | 1976 | 867 | 812 | 1,161 | 1,334 | 3,227 |  | 8,516 | 9,662 | 10,519 |  | 6,862 | 1,511 |  |
| Coordinate | 1977 | 890 | 529 | 399 | 477 | 983 | 2,819 | 7,425 | 9,928 |  |  | 2,335 | 938 |  |
| - Lat. : 05 ${ }^{\circ}{ }^{\prime}$ | 1978 | 579 | 383 | 531 | 1,168 | 2,094 | 5,812 | 5,792 | 8,079 | 11,846 | 11,546 | 4,074 | 1,162 | 53,066 |
| - Long. : 075 ${ }^{\circ}$ | 1979 | 626 | 511 | 618 | 859 | 2,254 | 5,109 | 7,401 | 10,507 | 11,385 | 7,471 | 3,153 | 1,128 | 51,022 |
| Catchment   <br> Area $\left(\mathrm{km}^{2}\right)$ $:$ 46,200 <br> Year Established $:$ 1953 | Mean | 719 | 503 | 615 | 953 | 2,038 | 4,112 | 6,343 | 8,825 | 10,826 | 9,993 | 3,625 | 1,230 | 49,782 |
|  | 1980 | 650 | 388 | 454 | 537 | 1,496 | 4,398 | 6,939 | 10,970 |  | - | 4,431 | 1,388 |  |
|  | 1981 | 740 | 439 | 437 | 746 | 2,875 | 2,931 | 9,076 | 12,160 | 13,830 | 9,663 | 3,387 | 1,135 | 57,419 |
|  | 1982 | 736 | 437 | 662 | 801 | 2,104 | 4,957 | 9,088 | 10,670 | 13,130 | 12,430 | 3,815 | 1,299 | 60,129 |
|  | 1983 | 707 | 418 | 316 | 409 | 979 | 3,188 |  | 10,700 | 11,050 | 5,148 | 1,720 | 991 |  |
|  | 1984 | 605 | 369 | 445 | 763 | 1,312 | 3,462 | 4,838 | 6,884 | 9,904 | 7,998 | 2,739 | 1,095 | 40,414 |
|  | 1985 |  |  |  | 957 | 1,770 | 2,588 | 8393 |  |  |  | 2989 |  | 47,918 |
|  | 1986 | 492 | 286 | 455 | 555 | 1,402 | 2,271 | 8,393 | 7,188 | 11,840 | 11,190 | 2,989 | 857 | 47,918 |
|  | 1987 | 430 | 253 | 225 | 318 |  |  |  |  |  | : - |  | - |  |
|  | 1988 |  |  |  |  |  |  |  |  |  | - |  |  |  |
|  | 1989 | - | 350 | 191 | 453 | 1,331 |  |  | 9,762 |  | 9.286 | 3,180 | 1,128 | 60,036 |
|  | Mean | 623 | 368 | 398 | 615 | 1,659 | 3,399 | 1,667 | 9,762 | 11,951 | 9.286 | 3,180 | 1,128 |  |

TABLE 6 MONTHL.Y RUNOFF AT SELECTED RIVER GAGING STATIONS
HA-VII (5/11)

| Station Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station : Ikot Okpara | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River : Cross | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin : Cross | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| $\mathrm{HA} \quad$ : H | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SIIA : 7060 | 1975 | 822 | 754 | 443 | 783 | 1,903 | 2,708 | 5,771 | 7,002 | 9,242 | 12,198 | 4,225 | 1,635 | 47,486 |
| Coordinate | 1976 | 766 | 798 | 980 | 1,248 | 2,950 | 5,484 | 8,376 | 9,884 | 10,947 | 12,232 | 7,668 | 1,424 | 62,757 |
| - Lat - $05^{\circ} 24^{\prime}$ | 1977 | 775 | 445 | 192 | 377 | 828 | 3,065 | 7,263 | 10,279 | 13,129 | 12,940 | 2,645 | 1,098 | 53,036 |
| - Lat. : 05 $24^{\prime}$ | 1978 | 659 | 378 | 668 | 1,353 | 2,123 | 5,871 | 6,263 | 8,640 | 12,179 | 12,168 | 4,304 | 1,278 | 55,884 |
| - Long. : 0804' | 1979 | 533 | 298 | 373 | 560 | 2,189 | 5,651 | 7,592 | 10,495 | 12,009 | 7,854 | 3,310 | 1,285 | 52,149 |
| Catchment | Mean | 711 | 535 | 531 | 864 | 1,999 | 4,556 | 7,053 | 9,260 | 11,501 | 11,478 | 4,430 | 1,344 | 54,262 |
| Area (km ${ }^{2}$ ) : 48,300 | 1980 | 628 | 45 | 342 | 464 | 1,467 | 4,647 | 7,045 | 12,207 | 14,298 | 13,463 | 4,900 | - | - |
|  | 1981 | 737 | 450 | 433 | 692 | 2,898 | 3,173 | 9,164 | 12,773 | 14,454 | 10,396 | 3,561 | 1,050 | 59,781 |
| Year Established : 1973 | 1982 | 649 | 359 | 589 | 711 | 2130 | 5,185 | 9,353 | 11,048 | 13,696 | 12,858 | 4,290 | 1,195 | 62,063 |
|  | 1983 | 601 | 336 | 328 | 404 | 881 | 3,135 | 7,756 | 11,312 | 11,402 | 5,744 | 2,203 | 815 | 44,917 |
|  | 1984 | 549 | 320 | 383 | 712 | 1,352 | 3,744 | 5,288 | 7,309 | 11,059 | 8,364 | 2,905 | 1,046 | 43,031 |
|  | 1985 | 531 | 294 | 260 | 1,014 | 1,955 | 2,982 | 5,088 | 8,619 | 10,880 | 10,179 | 3,381 | 1,017 | 46,200 |
|  | 1986 | 568 | 327 | 577 | 826 | 1,717 | 2,678 | 8,748 | 8,149 | 12,000 | 11,900 | 3,989 | 1,042 | 52,521 |
|  | 1987 | 587 | 339 | 316 | 567 | 718 | 2,064 | 4,730 | 7,424 | 13,131 | 9,988 | 2,347 | 847 | 43,058 |
|  | 1988 | 501 | 373 | 383 | 466 | 935 | 2,290 | 4,143 | 7,341 | 10,821 | 11,781 | 3,160 | 1,219 | 43,413 |
|  | 1989 | 539 | 213 | 131 | 484 | 1,587 | 3,302 | 5,810 | 10,530 | 13,825 | 13,697 | 3,986 | 1,214 | 55,318 |
|  | Mean | 589 | 335 | 374 | 634 | 1,564 | 3,320 | 6,713 | 9,671 | 12,557 | 10,837 | 3,472 | 945 | 51,011 |

table 6 monthly runoff at selected river gaging stations HA-VII (6/11)

table 6 monthly runoff at selected river gaging stations HA-VII (7/11)

| Station Parliculars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Ulakwo | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Oramiriukwa | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Imo | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : W1 | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHA | : 7051 | 1975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coordinate |  | 1976 1977 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Lat. | $\therefore 05^{\circ} 25^{\prime}$ | 1977 1978 |  |  |  |  |  | 6.0 | 7.0 | 5.7 | 12.6 | 10.9 | 6.7 | 4.3 | - |
| - Long. | : $07^{\circ} 07^{\prime}$ |  | 4.2 | 3.9 | 4.2 | 3.7 | 4.3 | 6.7 | 6.8 | 8.2 | 10.5 | 9.3 | 6.2 | 4.3 | 72.3 |
| Catchment Area ( $\mathrm{km}^{2}$ ) |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 795 | 1980 | 4.2 | 3.5 | 3.9 | 4.1 | 4.7 | 6.7 | 7.4 | 9.1 | 10.2 | 11.5 | 6.0 | 5.7 | 77.0 |
|  |  | 1981 | 5.6 | 4.6 | 5.3 | 4.9 | 6.5 | 5.4 | 7.9 | 8.2 | 11.1 | 8.6 | 6.0 | 4.8 | 78.9 |
|  |  | 1982 | 4.7 | 3.8 | 4.7 | 4.7 | 5.6 | 9.2 | 9.7 | 9.5 | 9.5 | 11.9 | 7.3 | 5.9 | 86.5 |
|  |  | 1983 | 5.7 | 5.1 | - | 4.7 | 5.8 | 6.7 | 7.6 | 6.5 | 10.4 | 8.0 | 3.3 | 3.2 | - |
|  |  | 1984 | 2.3 | 2.1 | 2.7 | 2.4 | 3.0 | 5.6 | 6.6 | 6.4 | 5.9 | 5.4 | 2.5 | 1.7 | 46.6 |
|  |  | 1985 | 1.4 | 1.2 | 1.3 | 2.2 | 2.0 | 2.4 | 7.4 | 14.3 | 10.5 | 5.8 | 4.7 | 3.8 | 57.0 |
|  |  | 1986 | 3.6 | 2.9 | 3.5 | 3.0 | 3.8 | 4.3 | 6.0 | 5.7 | 10.0 | 9.4 | 4.7 | 3.1 | 60.0 |
|  |  | 1987 | 2.9 | 2.4 | 2.7 | 2.4 | 2.2 | 3.2 | 3.9 | 8.7 | 12.6 | 8.2 | 3.1 | 0.5 | 52.8 |
|  |  | 1988 | 2.0 | 1.6 | 1.9 | 3.6 | 2.2 | 3.2 | 3.6 | 4.0 | 7.7 | 10.5 | 4.0 | 3.1 | 47.4 |
|  |  | 1989 | 2.1 | 1.7 | 2.1 | - | - | - | - | - | $\cdots$ | - | - | - | - |
|  |  | Mean | 3.5 | 2.9 | 3.1 | 3.6 | 4.0 | 5.2 | 6.7 | 8.0 | 9.8 | 8.8 | 4.6 | 3.5 | 63.7 |

table 6 monthly runoff at selected river gaging stations
HA-VII (8/11)

| Stat | Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station <br> River <br> River Basin <br> HA <br> SIIA <br> Coordinate <br> - Lat. <br> - Long. <br> Catchment <br> Area (km²) | : Ndimoko | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : Imo | 1971 1972 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : Imo | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 17 | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 7052 | 1975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1976 1977 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | $: 05^{\circ} 52^{\prime}$ | 1977 |  | - | - | 2.9 | 6.5 | 12.4 | 20.6 | 10.2 | 27.7 | 19.9 | 11.9 | 5.4 | - |
|  | :07 ${ }^{\circ} 15^{\prime}$ | 1979 | 4.0 | 2.7 | 3.0 | 3.1 | 6.4 | 15.4 | 16.7 | 11.8 | 21.9 | 20.3 | 8.7 | 5.1 | 119 |
|  |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 160 | 1980 | 3.6 | 2.7 | 3.1 | 2.2 | 4.4 | 5.0 | 16.9 | 14.4 | 15.8 | 18.1 | 7.8 | 4.3 | 98 |
|  |  | 1981 | 3.2 | 1.7 | 2.0 | 3.2 | 5.1 | 5.5 | 33.9 | 9.8 | 26.1 | 16.3 | 8.7 | 3.7 | 119 |
|  |  | 1982 | 2.0 | 2.2 | 3.7 | 2.0 | 11.6 | 13.4 | 14.8 | 12.9 | 17.2 | 24.5 | 7.9 | 4.2 | 116 |
|  |  | 1983 | 2.6 | 1.5 | 1.9 | 1.2 | 3.9 | 3.0 | 6.9 | 6.4 | 23.3 | 12.5 | 4.7 | 1.3 | 69 |
|  |  | 1984 | 0.1 | 1.5 | 1.9 | 2.0 | 2.4 | 14.5 | 8.4 | 11.1 | 17.3 | 13.1 | 3.6 | 1.7 | - |
|  |  | 1985 | 1.1 | 2.1 | 2.7 | 8.1 | 7.2 | 6.0 | 17.9 | 23.0 | 19.4 | 15.0 | 4.1 | 2.1 | 109 |
|  |  | 1986 | 1.2 | 3.6 | 3.8 | - | - | - | - | - | - | - | - | - | - |
|  |  | 1987 | - | - | - | $\cdots$ | - | - | - | - | - | - | - | - | - |
|  |  | 1988 | - | - | - | - | - | - |  |  | - | - | - | - | - |
|  |  | 1989 | 0 | 23 | $\stackrel{\circ}{0}$ | 3.1 | 58 | 79 | 165 | 129 | 19.9 | ${ }_{16.6}$ | 6.1 | 2.9 | 99 |
|  |  | Mean | 2.0 | 2.3 | 2.9 | 3.1 | 5.8 | 7.9 | 16.5 | 12.9 | 19.9 | 16.6 | 6.1 | 2.9 | 99 |

table 6 MONTHLY runoff at selected river gaging stations
HA-VH (9/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Umuna | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Ino | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Imo | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : 11 | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHA | : 7052 | 1975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coordinate |  | 1976 1977 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Lat. | : $05^{\circ}{ }^{\circ} 7^{\prime}$ | 1977 1978 | - | - | - | 5.4 | 12.5 | 24.9 | 63.9 | 25.5 | 99.2 | 68.6 | 27.7 | 11.8 | - |
| - Long. | : $07^{\circ} 18^{\prime}$ | 1979 | 7.7 | 5.9 | 7.6 | 5.5 | 17.7 | 62.3 | 69.5 | 36.8 | 86.2 | 66.2 | 29.7 | 11.0 | 406 |
| Catchment <br> Area (km ${ }^{2}$ ) |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 490 | 1980 | 7.5 | 6.4 | 6.0 | 5.7 | 10.5 | 18.7 | 43.7 | 51.2 | 66.7 | 79.7 | 27.5 | 10.2 | 334 |
|  |  | 1981 | 8.3 | 5.2 | 5.4 | 14.3 | 14.7 | 13.7 | 51.5 | 28.4 | 34.7 | 34.3 | 19.9 | 9.4 | 240 |
|  |  | 1982 | 7.0 | 5.6 | 7.8 | 6.0 | 17.7 | 26.2 | 25.7 | 27.8 | 26.9 | 34.6 | 16.3 | 8.3 | 210 |
|  |  | 1983 | 5.9 | 4.1 | 4.0 | 5.7 | 11.9 | 12.1 | 27.5 | 20.2 | 89.3 | 35.6 | 11.3 | 9.4 | 237 |
|  |  | 1984 | 7.2 | 5.8 | 6.3 | 7.7 | 10.4 | 53.2 | 51.7 | 90.3 | 100.5 | 65.2 | 12.1 | 10.5 | 421 |
|  |  | 1985 | 9.3 | 6.5 | 5.6 | 18.2 | 17.8 | 22.9 | 82.0 | 110.6 | 64.8 | 48.2 | 16.4 | 10.1 | 412 |
|  |  | 1986 | 12.5 | 5.9 | 7.0 | 6.6 | 15.4 | 17.3 | 27.8 | 25.8 | 60.4 | 57.7 | 17.6 | 7.2 | 261 |
|  |  | 1987 | 4.4 | 3.7 | 4.1 | 3.9 | 4.0 | 10.6 | 95.0 | 108.5 | 137.5 |  | - | 7.0 | - |
|  |  | 1988 | 5.8 | 4.3 | 5.0 | 6.8 | 6.1 | 9.5 | 26.9 | 22.1 | 96.5 | 92.9 | 14.7 | 10.8 | 301 |
|  |  | 1989 | 6.2 | 4.5 | 5.1 | - | - |  |  |  |  |  | - | - | - |
|  |  | Mean | 7.4 | 5.2 | 5.6 | 8.3 | 12.1 | 20.5 | 48.0 | 53.9 | 75.3 | 56.0 | 17.0 | 9.2 | 319 |

table 6 monthly runoff at selected river gaging stations
HA-VII (10/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Scp. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Umuopara | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Imo | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Imo | - 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : VII | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHA | : 7052 | -1975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coordinate |  | 1976 1977 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Lat. | $\therefore 05^{\circ} 33^{\prime}$ | 1978 | - | - | - | 30 |  | 70 | 190 | 116 | 352 | 162 | 55 | 31 |  |
| - Long. | : $07^{\circ} 25^{\prime}$ | 1979 | 29 | 26 | 32 | 8 | 40 | 141 | 175 | 115 | 240 | 169 | 67 | 19 | 1,061 |
| Catchment Area ( $\mathrm{km}^{2}$ ) |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 1,450 | 1980 | 16 | 11 | 14 | - | - |  | - | - | - | - |  | - |  |
|  |  | 1981 | - | - |  | - | - | - | $\therefore$ | - | - | - | - | - |  |
|  |  | 1982 | $\cdots$ | - | - | - | 40 | 56 | 106 | 58 | 231 | 271 | - | - | $\square$ |
|  |  | 1983 | 25 | - | 25 | 42 | 40 54 | 56 161 | 106 | 188 | 218 | 132 | 82 | 84 |  |
|  |  | 1984 | 25 | 21 | 25 | 42 | 54 111 | 161 | 183 243 | 188 | 277 | 158 | 86 | 55 | 1,614 |
|  |  | 1985 | 80 | 54 | 37 | 92 | 111 | 116 87 | 243 | 114 | 223 | 193 | 69 | 46 | 1,092 |
|  |  | 1986 | 47 | 38 | 46 | 45 | 63 | 87 | 121 | 114 | 223 | 265 | - | . |  |
|  |  | 1987 | 39 | 33 | 39 | 36 | 37 | 68 | 158 | 203 | 290 | 265 | - | 57 | - |
|  |  | 1988 | - | 32 | 35 | 45 | 44 | 69 | $\cdots$ | - | - | - | $\square$ | 5. |  |
|  |  | 1989 | 41 | 33 32 | 40 34 | 52 | 58 | 91 | 162 | 174 | 248 | 204 | 79 | 61 | 1,236 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

table 6 monthly runoff at selected river gaging stations
HA-VII (11/11)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Obigbo | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Imo | 1971 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Imo | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : Vil | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHA | : 7052 | 1975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coordinate |  | 1976 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| - Lat. | $: 04^{\circ} 52^{\prime}$ | - 1978 | - |  |  | 266 | 326 | 321 | 396 | 315 | 431 | 471 | 349 | 270 |  |
| - - Long. | : 07\% ${ }^{\circ} 1{ }^{\prime}$ | 1979 | 262 | 223 | 247 | 268 | 278 | 295 | 427 | 380 | 523 | 519 | 392 | 310 | 4,124 |
| Catchment Area ( $\mathrm{km}^{2}$ ) |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 5,600 | 1980 | 288 | 250 | 277 | 265 | 285 | 294 | 324 | 447 | 492 | 534 | 421 | 320 | 4,197 |
|  |  | 1981 | 297 | 254 | 281 | 273 | 308 | 287 | 382 | 386 | 387 | 485 | 387 | - |  |
|  |  | 1982 |  |  |  | - |  | 389 | 471 | 418 | 470 | 553 | 387 | - |  |
|  |  | 1983 | $\cdot$ |  |  | $\cdots$ | 277 | 282 | 328 | 301 | 377 | 473 | 302 | 297 |  |
|  |  | 1984 | 285 | 261 | 278 | 255 | 277 | 333 | 399 | 543 | 417 | 412 | 367 | 315 | - |
|  |  | 1985 | 294 | 248 | 269 | 303 | 315 | 323 | 412 | 511 | 550 | 434 | 406 | 299 | 4,364 |
|  |  | 1986 | 288 | 269 | 273 | 265 | 255 | 297 | 349 | 337 | 413 | 465 | 383 | 340 | 3,934 |
|  |  | 1987 | 280 | 226 | 254 | 256 | 263 | 268 | 363 | 296 | 478 | 431 | 321 | 381 | 3,817 |
|  |  | 1988 | 275 | 253 | 259 | 279 | 258 | 277 | 287 | 333 | 390 | 542 | 395 | 370 | 3,918 |
|  |  | 1989 | 289 | 256 | 280 |  | $\bigcirc$ | $\bigcirc$ | 08 | $\bigcirc$ | $\cdots$ | - | - | 332 | - |
|  |  | Mean | 287 | 252 | 271 | 271 | 280 | 306 | 368 | 397 | 442 | 481 | 374 | 332 | 4,061 |

table 6 monthly runoff at selected river gaging stations
HA-VIII (1/20)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Challawa Gorge | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Challawa | 1961 |  |  |  |  |  |  |  |  |  |  |  |  | : |
| River Basin | : Hadejia | 1962 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : 四 | 1964 | 0 | 0 | 0 | 0 | 25 | 67 | 187 | 281 | 138 | 7 | 0 | 0 | 705 |
| SIIA | : 8032 | 1965 | 0 | 0 | 0 | 0 | 25 | 68 | 190 | 285 | 140 | 7 | 0 | 0 | 715 |
| Cordinate |  | 1966 | 0 | 0 | 0 | 0 | 27 | 73 | 206 | 309 | 152 | 8 | 0 | 0 | 775 |
| Coordinate |  | 1967 | 0 | 0 | 0 | 0 | 15 | 40 | 112 | 167 | 82 | 4 | 0 | 0 | 420 |
| - Lat. | : $11{ }^{\circ}{ }^{\circ} 02^{\prime}$ | 1968 | 0 | 0 | 0 | 0 | 13 | 34 | 95 | 143 | 70 | 3 | 0 | 0 | 358 |
| Catchment <br> Arca (km ${ }^{2}$ ) <br> Year Established | : $08{ }^{\circ} 02^{\prime}$ | 1969 | 0 | 0 | 0 | 0 | 24 | 65 | 183 | 276 | 135 | 7 | 0 | 0 | 690 |
|  |  | Mean | 0 | 0 | 0 | 0 | 22 | 58 | 162 | 244 | 120 | 6 | 0 | 0 | 612 |
|  | : 3,859 | 1970 | 0 | 0 | 0 | 0 | 23 | 61 | 170 | 254 | 125 | 7 | 0 | 0 | 640 |
|  | : 1963 | 1971 | 0 | 0 | 0 | 0 | 0 | 7 | 64 | 237 | 136 | 2 | 0 | 0 | 446 |
|  |  | 1972 | 0 | 0 | 0 | 0 | 10 | 42 | 52 | 175 | 12 | 1 | 0 | 0 | 292 |
|  |  | 1973 | 0 | 0 | 0 | 0 | 0 | 14 | 74 | 70 | 33 | 0 | 0 | 0 | 191 |
|  |  | 1974 | 0 | 0 | 0 | 0 | 20 | 17 | 91 | 172 | 70 | 16 | 0 | 0 | 386 |
|  |  | 1975 | - 0 | 0 | 0 | 0 | 0 | 10 | 278 | 222 | 273 | 1 | 0 | 0 | 784 |
|  |  | 1976 | 0 | 0 | 0 | 0 | 2 | 44 | 72 | 74 | 27 | 21 | 1 | 0 | 241 |
|  |  | 1977 | 0 | 0 | 0 | 0 | 8 | 61 | 77 | 441 | 141 | 2 | 0 | 0 | 730 |
|  |  | 1978 | 0 | 0 | 0 | 0 | 19 | 38 | 193 | 137 | 149 | 2 | 0 | 0 | 538 |
|  |  | 1979 | 0 | 0 | 0 | 0 | 38 | 108 | 229 | 180 | 36 | 1 | 0 | 0 | 592 |
|  |  | Mean | 0 | 0 | 0 | 0 | 12 | 40 | 130 | 196 | 100 | 5 | 0 | 0 | 483 |
|  |  | 1980 | 0 |  | 0 | 0 | 40 | 21 | 18 | 150 | 18 | 0 | 0 | 0 | 247 |
|  | . | 1981 | 0 | 0 | 0 | 1 | *11 | ${ }^{*} 13$ | 89 | 68 | *65 | 0 | 0 | 0 | 247 |
|  |  | 1982 | 0 | 0 | 0 | 0 | - 5 | 35 | *24 | ${ }^{*} 60$ | 44 | 3 | 0 | 0 | 171 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 17 | 48 | 128 | - 131 | 37 | 0 | 0 | 0 | 361 |
|  |  | 1984 | 0 | 0 | 0 | 0 | - 35 | ${ }^{*} 15$ | *46 | 87 | 69 | 12 | 0 | 0 | 264 |
|  |  | 1985 | 0 | 0 | 0 | 0 | $\bigcirc 0$ | - 6 | *88 | *143 | * 159 | *51 | 0 | 0 | 447 |
|  |  | 1986 | 0 | 0 | $\because 0$ | 0 | -6 | 12 | 71 | 249 | 54 | 1 | 0 | 0 | 393 |
|  | - | 1987 | 0 | 0 | 0 | 0 | - 0 | 72 | 34 | 97 | 8 | 6 | 0 | 0 | 217 |
|  |  | 1988 | 0 | 0 | 0 | 0 | 1 | 78 | 12 | 585 | 156 | 1 | 0 | 0 | 833 |
|  |  | 1989 | 0 | 0 | 0 | 0 | 1 | 3 30 | 36 | 130 170 | 8 | 5 | 0 | 0 | 183 |
|  |  | Mean | 0 | 0 | 0 | 0 | 12 | 30 | 55 | 170 | 62 | 8 | 0 | 0 | 337 |

table 6 monthly runoff at selected river gaging stations
HA-VIII (3/20)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

## HA-VIII (5/20)


table 6 monthly runoff at selected river gaging stations
HA-VIII (6/20)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Wudil | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Hadejia | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : K. Yobe | 1962 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : VI | 1964 | 0 | 0 | 0 | 0 | 0 | 104 | 438 | 1,270 | 813 | 62 | 9 | 2 | 2,698 |
| SHA | : 8071 | 1965 | 1 | , | 0 | 0 | 0 | 305 | 380 | 871 | 790 | 18 | 3 | 1 | 2,369 |
| Coordinate |  | 1966 | 0 | 0 | 0 | 0 | 89 | 164 | 49 | 806 | 1,066 | 197 | 17 | 4 | 2,371 |
| Coordinate - Lat. |  | 1967 | 0 | 0 | 0 | 0 | 0 | 43 | 346 | 807 | 631 | 119 | 8 | 1 | 1,955 |
| - Lat. <br> - Long. | $\begin{aligned} & : 11^{\circ} 49^{\prime} \\ & : 08^{\circ} 50^{\prime} \end{aligned}$ | 1968 | 0 | 0 | 0 | 39 | 102 | 127 | 441 | 465 | 123 | 18 | 2 | 0 | 1,317 |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established |  | 1969 | 0 | 0 | 0 | 1 | 1 | 80 | 437 | 727 | 616 | 66 | 4 | 1 | 1,933 |
|  |  | Mean | 0 | 0 | 0 | 7 | 32 | 137 | 349 | 824 | 673 | 77 | 7 | 2 | 2,108 |
|  | : 16,380 | 1970 | 0 | 0 | 0 | 0 | 5 | 23 | 343 | 1,029 | 813 | 32 | 8 | 1 | 2,254 |
|  | : 1963 | 1971 | 0 | 0 | 0 | 0 | 9 | 26 | 196 | 784 | 638 | 33 | 3 | 0 | 1,689 |
|  |  | 1972 | 0 | 0 | 0 | 0 | 59 | 127 | 179 | 729 | 192 | 18 | 0 | 0 | 1,304 |
|  |  | 1973 | 0 | 0 | 0 | 0 | 0 | 40 | 265 | 450 | 116 | 11 | 0 | 0 | 882 |
|  |  | 1974 | 0 | 0 | 0 | 0 | 24 | 14 | 248 | 512 | 179 | 83 | 2 | 0 | 1,062 |
|  |  | 1975 | 0 | 0 | 0 | 0 | 22 | 38 | 308 | 315 | 382 | 9 | 2 | 1 | 1,077 |
|  |  | 1976 | 4 | 2 | 3 | 3 | 5 | 76 | 97 | 97 | 98 | 116 | 22 | 21 | 544 |
|  |  | 1977 | 21 | 14 | 28 | 24 | 34 | 129 | 154 | 712 | 697 | 127 | 90 | 92 | 2,122 |
|  |  | 1978 | 80 | 76 | 101 | 113 | 182 | 210 | 381 | 414 | 355 | 93 | 72 | 102 | 2,179 |
|  |  | 1979 | 107 | 95 | 95 | 73 | 112 | 228 | 356 | 546 | 441 | 204 | 111 | 134 | 2,502 |
|  |  | Mean | 21 | 19 | 23 | 21 | 45 | 91 | 253 | 559 | 391 | 73 | 31 | 35 | 1,562 |
|  |  | 1980 | 138 | 135 | 147 | 142 | 212 | 218 | 253 | 600 | 215 | 98 | 123 | 167 | 2,448 |
|  |  | 1981 | 170 | 159 | 187 | 210 | 295 | 295 | 434 | 370 | 340 | 171 | 135 | 276 | 3,042 |
|  |  | 1982 | 412 | 353 | 450 | 500 | 400 | 600 | 629 | 715 | 426 | 237 | 3 | 7 | 4,732 |
|  |  | 1983 | 3 | 8 | 11 | 9 | 25 | 25 | 68 | 105 | 57 | 3 | 7 | 7 | 318 |
|  |  | 1984 | 22 | 22 | 22 | 26 | 62 | 36 | 64 | 92 | 60 | 19 | 8 | 5 | 438 |
|  |  | 1985 | 18 | 15 | 13 | 11 | 11 | 98 | 257 | 225 | 133 | 5 | 4 | 9 | 799 |
|  |  | 1986 | 42 | 36 | 35 | 16 | 8 | 48 | 139 | 291 | 143 | 56 | 36 | 36 | 886 |
|  |  | 1987 | 44 | 31 | 31 | 34 | 42 | 113 | 137 | 263 | 100 | 64 | 57 | 65 | 971 |
|  |  | 1988 | 42 | 40 | 36 | 37 | 27 | 82 | 126 | 345 | 287 | 149 | 67 | 28 | 1,266 |
|  |  | 1989 | 23 | 24 |  |  | - | $\bigcirc$ | $\bigcirc$ | - |  | - | 4 | C | - |
|  |  | Mean | 91 | 82 | 104 | 109 | 120 | 168 | 233 | 334 | 196 | 89 | 49 | 66 | 1,641 |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-VIII (7/20)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-VIII (8/20)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul, | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Hadejia | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Hadejia | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : K. Yobe | 1962 1963 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : 䧃 | 1964 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHA | : 8073 | 1965 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Coordinate |  | 1966 | a |  |  | 0 | 0 | 107 | 54 | 143 | 239 | 212 | 29 | 8 | - |
| - Lat. | : $12^{\circ} 26^{\prime}$ | 1967 | 3 | 1 | 0 | 0 | 0 | $\therefore 0$ | 90 | 179 | 251 | 152 | 15 | 4 | 695 |
| - Long. | $: 10^{\circ} 04^{\prime}$ | 1968 | 1 | 1 | - | 1 | - |  |  |  |  | - | 29 | 6 | - |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established |  | Mean |  |  |  |  |  |  |  |  | 254 | 172 |  | 6 | - |
|  | : 25,900 | 1970 |  | 1 |  | 0 | 0 | 23 | 88 | 230 | 278 | 142 | 15 | 5 | 784 |
|  | : 1963 | 1971 | 2 | 1 | - 0 | 0 | 0 | 13 | 75 | 169 | 272 | 133 | 10 | 3 | 678 |
|  |  | 1972 | 1 | 0 | $\bigcirc 0$ | 0 | 7 | 54 | 73 | 136 | 198 | 32 | 4 | 2 | 508 |
|  |  | 1973 | 1 | 0 | 0 | 0 | 0 | 1 | 97 | 190 | 129 | 29 | 5 | 4 | 456 |
|  |  | 1974 | 1 | 0 | 0 | 0 | 1 | 2 | 136 | 305 | . 339 | 121 | 7 | 2 | 914 |
|  |  | 1975 | 1 | 0 | 0 | 0 | 5 | 27 | 99 | 189 | 332 | 93 | 10 | 1 | 757 |
|  |  | 1976 | 2 | 1 | 0 | 0 | 0 | 17 | 104 | 185 | 64 | 35 | 11 | 0 | 419 |
|  |  | 1977 | 0 | 0 | 0 | 0 | 0 | 48 | 78 | 156 | 354 | 102 | 20 | 32 | 790 |
|  |  | 1978 | 23 | 22 | 22 | 19 | 38 | 127 | 183 | 272 | 272 | 178 | 23 | 20 | 1,199 |
|  |  | 1979 | 25 | 19 | 17 | 8 | 10 | 88 | 164 | 246 | 286 | 54 | 11 | 22 | 950 |
|  |  | Mean | 6 | 4 | 4 | 3 | 6 | 40 | 110 | 208 | 252 | 92 | 12 | 9 | 746 |
|  |  | 1980 | 22 | 24 | 20 | 23 | 50 | 114 | 106 | 216 | 244 | 81 | 23 | 40 | 963 |
|  |  | 1981 | 39 | 31 | 34 | 47 | 95 | 87 | 178 | 264 | 269 | 67 | 46 | 28 | 1,185 |
|  |  | 1982 | 0 | 32 | 36 | 72 | 33 | 109 | 185 | 198 | 194 | 67 | 7 | 13 | 985 |
|  |  | 1983 | 5 | 10 | 11 | 8 | 14 | 55 | 157 | 231 | 214 | 15 | 14 | 17 | 751 |
|  |  | 1984 | 18 | 20 | 12 | 17 | 62 | 61 | 88 | 140 | 83 | 36 | 4 | 3 | 544 |
|  |  | 1985 | 3 | 1 | 0 | 7 | 2 | 60 | 232 | 292 | 232 | 14 | 4 | 1 | 848 |
|  |  | 1986 | 11 | 7 | 4 | 2 | 0 | 17 | 105 | 261 | 262 | 120 | 22 | 19 | 830 |
|  |  | 1987 | 0 | 0 | 0 | 7 | - 5 | 49 | 80 | 152 | 354 | 192 | 34 | 36 | 909 |
|  |  | 1988 | 37 | 25 | 1 | 3 | 1 | 10 | 137 | 271 | 363 | 279 | 80 | 27 | 1,234 |
|  |  | 1989 | 8 | 10 | 8 | 12 | 27 | 55 | 169 | 282 | 306 | 220 | 35 | 24 | 1,156 |
|  |  | Mean | 14 | 16 | 13 | 20 | . 29 | 62 | 144 | 231 | 252 | 109 | 27 | 21 | 938 |

table 6 monthly runoff at selected river gaging stations
HA-VIII (9/20)


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-VIII (10/20)

| Station Particulars | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station : Foggo | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River : Jama'are | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin : K. Yobe | 1962 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA : Vill | 1964 | 0 | 0 | 0 |  | 0 | 161 | 404 | 1,995 | 1,412 | 96 | 15 | 3 | 4,086 |
| SHA : 8052 | 1965 | 2 | 1 | 0 | 0 | 0 | 145 | 196 | 823 | 797 | 417 | 3 | 1 | 2,385 |
| Coordinate : 8052 | 1966 | 0 | 0 | 0 | 0 | 59 | 188 | 178 | 838 | 1,464 | 166 | 25 | 6 | 2,924 |
| Coordinate | 1967 | 2 | 0 | 0 | 0 | 0 | 32 | 189 | 803 | . 818 | 92 | 10 | 2 | 1,948 |
| $\begin{array}{ll}\text { - Sat. } & : 11055^{\circ} \\ \text { - Long. } & : 090\end{array}$ | 1968 | 0 | 0 | 0 | 0 | 93 | 255 | 579 | 837 | 327 | 54 | 6 | 0 | 2,151 |
| Catchment   <br> Area $\left(\mathrm{km}^{2}\right)$ $: 9,660$  <br> Year Established $:$ 1962 | 1969 | 0 | 0 | 0 | 0 | 9 | 54 | 430 | 940 | 1,100 | 336 | 47 | 9 | 2,925 |
|  | Mean | 1 | 0 | 0 | 0 | 27 | 139 | 329 | 1,039 | 986 | 194 | 18 | 4 | 2,737 |
|  |  |  |  | 0 | 0 | 5 | 52 | 261 | 1,342 | 1,048 | 92 | 7 | 3 | 2,814 |
|  | 1971 | 1 | 0 | 0 | 0 | 19 | 61 | 268 | 1,127 | . 817 | 104 | 15 | 4 | 2,416 |
|  | 1972 | 1 | 0 | 0 | 0 | 0 | 18 | 142 | 633 | 367 | 44 | 17 | 4 | 1,226 |
|  | 1973 | 0 | 0 | 0 | 0 | 6 | 47 | 276 | 1,002 | 205 | 23 | 5 | 4 | 1,568 |
|  | 1974 | 0 | 0 | 0 | 0 | 85 | 49 | 255 | 866 | 483 | 196 | 10 | 2 | 1,946 |
|  | 1975 | 0 | 0 | 0 | 0 | 12 | 31 | 254 | 780 | 1,140 | 116 | 7 | 2 | 2,342 |
|  | 1976 | 0 | 0 | 0 | 0 | 19 | 17 | 197 | 288 | - 329 | 72 | 12 | 1 | 935 |
|  | 1977 | 0 | 0 | 0 | 0 | 0 | 27 | 102 | 867 | 502 | 38 | 5 | 1 | 1,542 |
|  | 1978 | 0 | 0 | 0 | - | - | - | - | $\cdots$ | - | - | - | - | - |
|  | 1979 Mean | 0 | 0 | 0 | 0 | 18 | 38 | 219 | $863$ | $611$ | $86$ | 10 | 3 | 1,848 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1980 | 0 | 0 | 0 | 0 | 43 | 51 | 512 | 443 | 380 | 70 | 0 | 2 | 1,501 |
|  | 1982 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1983 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1984 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1985 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 1987 |  |  |  |  |  |  |  |  | $\because$ |  |  |  |  |
|  | 1988 |  |  |  |  |  | $\because$ |  |  | - |  |  |  |  |
|  | Mean |  |  |  |  |  | : |  |  | \% |  |  |  |  |

TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS HA-VIII (11/20)

table 6 monthly runoff at selected river gaging stations HA-VIII (12/20)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Iggi Bridge | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Iggi | 1961 1962 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Jama'are | 1963 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| HA | : WIII | 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 32.8 | 193.6 | 155.0 | 10.1 | 1.0 | 0.3 | 393 |
| SHA | : 8060 | 1965 | 0 | 0 | 0 | 0 | 0 | 10.4 | 16.1 | 81.4 | 11.6 | 5.3 | 1.0 | 0.4 | 126 |
| Coordinate |  | 1966 | 0.2 | 0.2 | 0 | 0 | 0 | 7.3 | 1.4 | 15.8 | 70.8 | 14.4 | 0.7 | 0 | 111 |
| - Lat. | : 11932 | 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 2.2 | 30.1 | 52.9 | 8.2 | 0.5 | 0 | 94 |
| - Long. | : $09^{\circ} 20^{\circ}$ | $\begin{aligned} & 1968 \\ & 1969 \end{aligned}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established |  | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | $: 1,334$ | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 1963 | 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 15.3 | 49.3 | 36.3 | 2.9 | 1.0 | 0.8 | 106 |
|  |  | 1972 | 0.3 | 0 | 0 | 0 | 0.5 | 1.3 | 4.8 | 114.4 | 35.7 | 3.2 | 0.5 | 2.9 | 164 |
|  |  | 1973 | 0.5 | 0 | 0 | 0 | 0 | 0 | 9.4 | 69.9 | 17.1 | 1.3 | 1.0 | 0.8 | 100 |
|  |  | 1974 | 0 | 0 | 0 | 0 | 9.1 | 6.2 | 9.9 | 40.2 | 19.2 | 6.2 | 4.7 | 4.6 | 100 |
|  |  | 1975 | 0 | 0 | 0 | 0 | 0 | 0.5 | 12.3 | 48.2 | 108.3 | 4.6 | 0.3 | 0.3 | 175 |
|  |  | 1976 | 0.4 | 0.3 | 0.3 | 0 |  | - | , | - | - | - | - | - | - |
|  |  | 1977 | 0 | 0 | 0 | 0 | 0.3 | 3.9 | 18.5 | 101.8 | 56.5 | 5.6 | 0.8 | 0 | 187 |
|  |  | 1978 | - |  | - | - | - | $\because$ | - | $\bigcirc$ | . | - | . | - | - |
|  |  | 1979 | 02 | - | 0 | 0 | - 17 | - | 117 | 70 | 45 | - | 14 | - | 139 |
|  |  | Mean | 0.2 | 0 | 0 | 0 | 1.7 | 2.0 | 11.7 | 70.6 | 45.5 | 4.0 | 1.4 | 1.6 | 139 |
|  |  | 1980 |  | 0 | 0 | 0 | 0.3 | 8.8 | 32.2 | 140.4 | 52.6 | 5.6 | 1.0 | 0 | 241 |
|  |  | 1981 | 0 | 0 | 0 | 0 | 7.0 | 6.7 | 32.4 | 50.7 | 33.7 | 4.0 | 0.3 | 0 | 135 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 0 | 5.4 | 7.8 | 21.4 | 40.9 | 2.7 | 0.3 | 0.3 | 79 |
|  |  | 1983 1984 | 0.3 | 0 | 0 | 0 | 0 | 7.0 | 8.3 | 44.5 | 26.2 | 3.8 | 2.8 | 2.4 | 95 |
|  |  | 1988 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1986 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1987 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1988 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1989 | 0.1 |  | 0 |  |  |  | 202 |  |  |  |  | 07 |  |
|  |  |  |  |  |  |  | 1.8 |  |  |  | 38.4 | 4.0 |  |  | 138 |

TABLE 6 MONTHL.Y RUNOFF AT SELECTED RIVER GAGING STATIONS


TABLE 6 MONTHLY RUNOFF AT SELECTED RIVER GAGING STATIONS

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec: | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Geidam | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Yobe | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : K. Yobe | 1962 1963 |  |  | - | 0 | 0 | 0 | 16 | 82 | 129 | 169 | 186 | 120 |  |
| HA | : VII | 1964 | 8 | 1 | 0 | 1 | 0 | 0 | 48 | 117 | 174 | 227 | 330 | 281 | 1,187 |
| SHA | : 8081 | 1965 | 130 | 17 | 7 | 4 | 2 | 2 | 54 | 129 | 166 | 198 | 219 | 175 | 1,103 |
| Coordinate |  | 1966 | 27 | 6 | 3 | 2 | 1 | 16 | 94 | 113 | 143 | 182 | 210 | 223 | 1,020 |
| Coordinate |  | 1967 | 62 | 13 | 6 | 3 | 1 | 0 | 12 | 96 | 152 | 194 | 218 | 109 | 866 |
| - Lat. | :1205 ${ }^{\circ}$ | 1968 | 19 | 7 | 4 | 1 | 0 | 32 | 108 | 174 | 173 | 207 | 150 | 20 | 895 |
| - - Eong. |  | 1969 | 7 | 3 | 1 | 0 | 0 | 0 | 163 | 207 | 164 | 205 | 234 | 202 | 1,186 |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established |  | Mean | 42 | 8 | 4 | 2 | 1 | 7 | 71 | 131 | 157 | 197 | 221 | 161 | 1,002 |
|  | : 58,500 | 1970 | 28 | 9 | 11 | 0 | 0 | 0 | 12 | 111 | 165 | 219 | 252 | 265 | 1,072 |
|  | : 1963 | 1971 | 45 | 13 | 3 | 0 | 0 | 1 | 31 | 117 | 163 | 208 | 233 | 106 | 920 |
|  |  | 1972 | 19 | 5 | 0 | 0 | 0 | 2 | 36 | 99 | 142 | 173 | 92 | 12 | 580 |
|  |  | 1973 | - | - | - | 0 | 0 | 0 | 3 | 72 | 151 | 182 | 26 | 5 |  |
|  |  | 1974 | 1 | 0 | 0 | 0 | 0 | 0 | 25 | 112 | 158 | 192 | 219 | 50 | 757 |
|  |  | 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 97 | 149 | 185 | 35 | 491 |
|  |  | 1976 | 3 | 1 | 0 | 0 | 0 | 0 | 16 | 93 | 164 | 209 | 116 | 13 | 615 |
|  |  | 1977 | 6 | 3 | 2 | 0 | 0 | 0 | 5 | 33 | 36 | 71 | 49 | 7 | 212 |
|  |  | 1978 | 4 | 2 | 0 | - | $\cdots$ | - | - | - | - | - | - | - | - |
|  |  | 1979 | - | - | - | 0 | 0 | 0 | 22 | 129 | 192 | 244 | 243 | 23 | - |
|  |  | Mean | 13 | 4 | 2 | 0 | 0 | 0 | 17 | 88 | 141 | 183 | 157 | 57 | 662 |
|  | . | 1980 | 8 | 6 | 7 | 6 | 0 | 7 | 47 | 136 | 193 | 243 | 133 | 10 | 796 |
|  |  | 1981 | 7 | 6 | 7 | 5 | 0 | 7 | 51 | 110 | 198 | 238 | 118 | 13 | 760 |
|  |  | 1982 | 8 | 7 | 7 | 3 | 0 | 0 | 25 | 98 | 166 | 199 | 83 | 8 | 604 |
|  |  | 1983 | 6 | 0 | 0 | 0 | 0 | 0 | 9 | 66 | 176 | 189 | 11 | 7 | 464 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 93 | 116 | 41 | 5 | 0 | 266 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 160 | 227 | 228 | 13 | 7 | 681 |
|  |  | 1986 | 0 | 0 | 0 | - | \% | - | - | $\cdots$ |  | - |  | - |  |
|  |  | 1987 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1988 |  |  |  |  |  |  |  |  | $\cdots$ |  |  |  |  |
|  |  | 1989 |  |  |  |  |  |  |  |  | 17 |  |  |  |  |
|  |  | Mean | 4 | 3 | 3 | 2 | 0 | 2 | 32 | 111 | 179 | 190 | 61 | 8 | 595 |

table 6 monthly runoff at selected river gaging stations
HA-Vill $(15 / 20)$

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Kari | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Misau | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : K. Yobe | 1963 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| IIA | : K17 | 1964 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 979 | 442 | 52 | 20 | 3 | 1,557 |
| SIA | : 8102 | 1965 | 0 | 0 | 0 | 0 | 0 | 22 | 19 | 138 | 182 | 8 | 1 | 0 | 370 |
|  |  | 1966 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 51 | 158 | 26 | 2 | 0 | 259 |
| Coordinate |  | 1967 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 295 | 257 | 12 | 1 | 0 | 573 |
| - Lat. | $: 11^{\circ} 15$ | 1968 | 0 | 0 | 0 | 0 | 0 | 26 | 69 | 162 | 66 | 12 | 0 | 0 | 335 |
| - Long. |  | 1969 | 0 | 0 | 0 | 0 | 0 | 3 | 93 | 187 | 325 | 56 | 6 | 0 | 670 |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established |  | Mean | 0 | 0 | 0 | 0 | 0 | 10 | 44 | 302 | 238 | 28 | 5 | 1 | 628. |
|  | : 5,865 | 1970 | 0 | 0 | 0 | 0 | 0 | 0 | 49.8 | 334.2 | 450.4 | 42.1 | 4.9 | 0 | 881 |
|  | : 1963 | 1971 | 0 | 0 | 0 | 0 | 0 | 0 | 35.1 | 232.1 | 168.9 | 8.0 | 0 | 0 | 444 |
|  |  | 1972 | 0 | $\cdots$ | 0 | 0 | 0 | 10.9 | 30.0 | 54.9 | 19.9 | 0.8 | 0 | 0 | 117 |
|  |  | 1973 | 0 | - 0 | 0 | 0 | 0 | 0 | 5.9 | 68.1 | 108.0 | 26.0 | 0.8 | 0 | 209 |
|  |  | 1974 | 0 | - 0 | 0 | 0 | 4.0 | 3.9 | 68.1 | 295.1 | 162.7 | 22.8 | 0 | 0 | 557 |
|  |  | 1975 | 0 | 0 | 0 | 0 | 0 | 0 | 61.1 | 129.2 | 429.4 | 15.8 | 0.8 | 0 | 636 |
|  |  | 1976 | 0 | 0 | 0 | 0 | 0 | 0 | 4.8 | 45.0 | 53.9 | 2.9 | 0 | 2.9 | 110 |
|  |  | 1977 | 0 | 0 | 0 | 0 | 0 | 0.8 | 46.9 | 293.2 | 205.9 | 3.8 | 0 | 0 | 551 |
|  |  | 1978 | 0 | 0 | 0 | 0 | 0 | 8.8 | - 33.8 | 79.0 | 49.0 | 1.9 | 0 | 0 | 173 |
|  |  | 1979 | 0 | 0 | 0 | 0 | 0 | 2.1 | 12.1 | 50.9 | 65.0 | 13.9 | 0 | 0.8 | 145 |
|  |  | Mean | 0 | 0 | 0 | 0 | 0.4 | 2.7 | 34.8 | 158.2 | 171.3 | 13.8 | 0.7 | 0.4 | 382. |
|  |  |  |  |  | 0 | 0 | 0 | 0.8 | 56.0 | 76.9 | 8.8 | 1.9 | 0 | 0 | 144 |
|  |  | 1981 | 0 | 0 | 0 | 0 | 0 | 7.8 | 52.0 | 38.1 | 55.9 | 0 | 0 | 0 | 154 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 0 | 2.8 | 2.9 | 167.0 | 28.0 | 0.8 | 0 | 0 | 202 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 7.0 | 24.9 | 8.8 | 0.8 | 0 | 0 | 42 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 23.6 | 35.4 | 10.4 | 8.6 | 0 | 0 | 78 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 0 | 89.9 | 105.1 | 34.0 | 37.8 | 1.9 | 0 | 0 | 269 |
|  |  | 1986 | 0 | 0 | 0 | 0 | 3.6 | 29.2 | 86.9 | 67.8 | 71.1 | 12.5 | 0 | 0 | 271 |
|  |  | 1987 | 0 | 0 | 0 | 0 | 0 | 43.8 | 118.5 | 36.6 | 41.4 | 3.3 | 0 | 0 | 244 |
|  |  | 1988 | 0 | 0 | 0 | 0 | 0 | 6.8 | 67.5 | 105.2 | 25.9 | 0.5 | 0 | 0 | 206 |
|  |  | 1989 | 0 | 0 | 0 | - | - | - | - | - | - | - | 0 | - | - |
|  |  | Mean | 0 | 0 | 0 | 0 | 0.4 | 20.1 | 57.7 | 65.1 | 32.0 | 3.4 | 0 | 0 | 179 |

table 6 monthly runoff at selected river gaging stations
HA-VIII (16/20)

table 6 monthly runoff at selected river gaging stations

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Damasak | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : K. Yobe | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Lake Chad | 1963 | - |  |  | - | - | - | 17 | 66 | 98 | 123 | 133 | 136 | - |
| HA | : 相 | 1964 | 26 | 8 | 0 | 0 | 0 | 0 | 0 | 70 | 103 | 119 | 147 | 176 | 649 |
| SIIA | : 8110 | 1965 | 146 | 27 | 9 | 4 | 0 | 0 | 28 | 86 | 110 | 125 | 129 | 144 | 808 |
| Coordinate | - 810 | 1966 | 44 | 9 | 5 | 3 | 1 | 0 | 69 | 87 | 97 | 115 | 122 | 137 | 689 |
| Coordinate |  | 1967 | 81 | 8 | 31 | 0 | 0 | 0 | 0 | 60 | 99 | 121 | 127 | 141 | 668 |
| - Lat. | : $13^{\circ} 28^{\prime}$ $=122^{\circ} 1^{\prime}$ | 1968 | 45 | 5 | - | - | - | - | 54 | 100 | 113 | 129 | 131 | 23 | - |
| - Long. |  | 1969 | 5 | 0 | - | - | $\bigcirc$ | - | 3 | 60 | 98 | 122 | 130 | 137 | - |
| Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established |  | Mcan | 58 | 10 | 11 | 2 | 0 | 0 | 24 | 76 | 103 | 122 | 131 | 128 | 665 |
|  | : 82,560 |  |  |  | 13 | 7 | 3 | 1 | 1 | 60 | 83 | 109 | 124 | 161 | 638 |
|  | : 1959 | 1971 | 77 | 15 | 8 | 3 | 0 | 0 | 2 | 43 | 72 | 89 | 99 | 78 | 486 |
|  |  | 1972 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 36 | 65 | 82 | 62 | 2 | 254 |
|  |  | 1973 |  | . | . | - | . |  | - | 24 | 60 | 78 | 27 | 1 | - |
|  |  | 1974 | - | - | - | - | . | - | 3 | 44 | 73 | 94 | 112 | 65 | $\cdot$ |
|  |  | 1975 | 21 | 13 | 9 | 5 | 0 | 0 | 0 | 63 | 133 | 188 | 228 | 109 | 769 |
|  |  | 1976 | 6 | 0 | 0 | 5 | 0 | 0 | 8 | 106 | 107 | 201 | 190 | 15 | 638 |
|  |  | 1977 | 56 | 42 | 0 | 0 | 0 | 0 | 1 | 39 | 129 | 150 | 45 | 47 | 509 |
|  |  | 1978 | 17 | 13 | 12 | 0 | 0 | 0 | 3 | 22 | 128 | 160 | 362 | 107 | 824 |
|  |  | 1979 |  | - | - | - | - | - | - | $\square$ | - | - | 139 | 65 | 3 |
|  |  | Mean | 34 | 15 | 6 | 3 | 0 | 0 | 3 | 49 | 94 | 128 | 139 | 65 | 536 |

table 6 monthiy runoff at selected river gaging stations

## HA-VIII (18/20)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station <br> River <br> River Basin <br> HA <br> SHA <br> Coordinate <br> - Lat. <br> - Long. <br> Catchment <br> Area ( $\mathrm{km}^{2}$ ) <br> Year Established | : Yau | 1960 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : K. Yobe | 1961 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : Lake Chad | 1963 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : WIII | 1964 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : 8110 | 1965 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1966 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | $: 13^{\circ} 34^{\prime}$ $=135^{\circ} 15^{\prime}$ | 1968 | - | - | - | 4.2 | 4.2 | 4.3 | 18.0 | 34.0 | 50.7 | 60.0 | 624 | - | - |
|  |  | 1969 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 84,140 | Mean |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | - 1959 | 1970 | - |  | - | 0 | 0 | 0 | 0 | 24.0 | 46.4 | 58.0 | 67.4 | 74.0 | - |
|  |  | 1971 | 71.0 | 11.9 | 2.0 | 0 | 0 | 0 | 3.0 | 34.0 | 52.4 | 64.0 59.6 | 81.6 | 98.0 | 418 276 |
|  |  | 1972 | 42.8 | 0.8 | 0 | 0 | 0 | 0 |  | 16.4 | 56.6 | 79.1 | 51.2 | . |  |
|  |  |  | - |  | - | . | $-$ | - | - | 28.5 | 41.6 | 49.8 | 61.5 | 60.4 | . |
|  |  | 1975 | 8.2 | 3.2 | - | - | - | - | $\cdot$ | - | - | . | - | - | - |
|  |  | 1976 | 1.3 | 0 | 0 | 0 | 0 | 0 | 0 | 26.2 | 47.7 | 65.1 | 76.3 | 31.1 | 248 |
|  |  | 1977 | 1.8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 110.0 | 59.7 | 46.0 | 25.5 | 243 |
|  |  | 1978 | 0 | 0 | 0 | 0 | 0 | 0 | 47.7 | 48.0 | 68.2 | 32.4 | 82.9 | 49.1 | 328 |
|  |  | 1979 | - | - | - | - | - | - | - | - | $\bigcirc$ |  | -- | - |  |
|  |  | Mean | 20 | 3 | 0 | 0 | 0 | 0 | 9 | 26 | 69 | 58 | 66 | 51 | 292 |

table 6 monthly runoff at selected river gaging stations

table 6 monthly runoff at selected river gaging stations HA-VIII (20/20)

| Station Particulars |  | Year | Jan. | Feb. | Mar. | Apr. | May | Jun. | Jul. | Aug. | Sep. | Oct. | Nov. | Dec. | Annual |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Station | : Bama Bridge | 1970 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River | : Yedseram |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| River Basin | : Lake Chad | 1973 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| H/ | : VII | 1974 |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SHA | : 8142 | 1975 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1976 | 0 |  |  |  |  |  | 12.3 | 34.6 | 40.1 | 26.5 | 13.7 | 0.8 | 128 |
| - Lat. |  | 1977 | 0 | 0 | 0 | 0 | 0 | 0 | 4.8 | 196.7 | 36.3 | 32.7 | 5.2 | 0.8 | 277 |
| - Long. | ${ }^{\vdots} 113^{\circ} 41^{\prime}$ | 1978 | 0 | 0 | 0 | 0 | 1.5 | 3.1 | 15.3 | 133.5 | 149.7 | 11.5 | 6.2 | 0.5 | 321 |
| Catchment <br> Area ( $k \mathrm{~m}^{2}$ ) <br> Year Established |  | 1979 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  | 1981 | 0 | 0 |  | 0 | 0 | 0 | 22.2 | 38.3 | 70.7 | 4.3 | 0.3 | 0.3 | 136 |
|  |  | 1982 | 0 | 0 | 0 | 0 | 0 | 0 | 7.2 | 71.8 | 68.4 | 1.1 | 6.7 | 0 | 155 |
|  |  | 1983 | 0 | 0 | 0 | 0 | 0 | 0 | 1.1 | 4.0 | 11.9 | 5.9 | 1.0 | 0 | 24 |
|  |  | 1984 | 0 | 0 | 0 | 0 | 0 | 0 | 17.7 | 5.6 | 4.1 | 4.6 | 0.5 | 0 | 33 |
|  |  | 1985 | 0 | 0 | 0 | 0 | 0 | 1.3 | 10.1 | 34.0 | 35.7 | 4.0 | 1.0 | 0 | 86 |
|  |  | 1986 | 0 | 0 | 0 | 0 | 0 | 0.5 | 7.2 | 12.3 | 38.3 | 52.0 | 4.1 | 0.5 | 115 |
|  |  | 1987 | 0 | 0 | 0 | 0 | 0 | - | - |  |  | - | i | $1{ }^{-}$ | - |
|  |  | 1988 | 0 | 0 | 0 | 0 | 0 | 0 | 6.7 | 90.6 | 118.6 | 33.2 | 3.1 | 1.3 | 254 |
|  |  | 1989 | 0 | 0 | - | 0 | - | 03 | 10.3 | 36.7 | 497 | 15.0 | 2. | 0.3 | 115 |
|  |  | Mean | 0 | 0 | 0 | 0 | 0 | 0.3 | 10.3 | 36.7 | 49.7 | 15.0 | 2.4 | 0.3 | 115 |

