

Foreign Tuna Fleets Unloading in Phuket, Thailand During 1995-2009

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SUMMARY

Both of unloaded tuna from longline and purse seine fisheries are examined in term of effort, catch and value, species composition, landing production categorized by flag countries, size of fish as well as the relevance information and activity of port sampling and sampling size. The objective of this study is to follow up the data on tuna fisheries in the Indian Ocean, thus the available data at first from the beginning of tuna longliners unloading in Phuket until the year of 2009 and the data of tuna purse seiners unloading in Phuket during 2003 to 2009 are described in this paper. Besides the conclusion with the progression on improvement of the port sampling and monitoring currently in place, the encounter problems and recommendation are included.

INTRODUCTION

Tuna fisheries in the Indian Ocean took off in 1973 when the French, Russian, Japanese and Taiwanese fleets commenced their longline, purse seine and pole-and-line fisheries. The Taiwanese, Chinese and Indonesian fleets have well developed longline fishing techniques in the Eastern Indian Ocean. Large size of tuna caught by longliners is high value thus height profitable, because its meat is suitable for premium sashimi which is high demand in the Japanese raw fish markets. The tuna longliners landed in Singapore, Malaysia and Indonesia until 1994, after then, tuna catch production were unloaded at the Phuket fishing port which has well-developed infrastructures such as the landing port, processing plant, as well as the facility of international airport. In addition, the tuna purse seiners landed in Phuket for supplying tuna canning factories industrial in Thailand.

MATERIALS AND METHODS

For longliner landing survey were conducted monthly at the Phuket fishing port to collect data of tuna, tuna-like and by-catch species: e.g., landing catch (metric ton, mt), effort (number of trips), fishes were random to be measured the individual body weight (kg) and folk length (FL) pectoral-dorsal length (PDL) and pre-dorsal length (LD1) were conducted.

For purse seiners landing survey, the fishing master was interviewed and logbook was asked for to acquire the data of catch (metric ton, mt), effort (number of operating sets), fishing ground and etc. Port-sampling were conducted to measure the individual body weight, folk length (FL) and pre-dorsal length (LD1) (cm).

The unloaded quantity and value of fish from each vessel was verified with the data from customs office in Phuket.

RESULT AND DISCUSSION

1. Fresh Tuna Longliners

The fishing effort increased steadily from 187 trips in 1995 to the peak of 883 trips in 1999, after then it fluctuated in narrow scope and continuously decreased into 521 trips in 2009. The whole figure of total landing catch during 1995 to 2009 showed the increasing trend (1,416 to 6,821 mts) although it showed some distinct decreased in between, which decreased from 4,373 mts in 1999 to 3,118 mts in 2000 and decreased from 5,953 in 2005 to 4,830 mts in 2006. The landing per trip decreased opposite with the total landing catch and the fishing effort during 1995 to 1996 (from 8 into 5 mts/trip) after then it's steady until 2001 and increased continuously into 13 mts in 2009 (Figure 1 and 2). Due to fuel crisis since July 2003 to 2009, the longliners reduced their cost by transshipment at sea with other contracting fishing vessel, for this reason the fishing vessel could stay and fish longer at sea.

The main species composition were yellowfin tuna (YFT), bigeye tuna (BET), bill fish (BILLs) (*Makaira* spp., *Tetrapturus* spp, *Istiophorus* spp.) and swordfish (SWO) with the average composition 61 25 6 and 4% of total landing respectively, while miscellaneous species (MCS) (Sharks, *Lepidocybium* spp., *Coryphaena* spp., *Thunnus alalunga*, *Molar* spp., *Ruretius pretiosus*, *Sphyraena* spp. and *Taractichtis* spp.) contributed 4% of the total landing during 1995 to 2009. The total landing of yellowfin tuna, bigeye tuna, bill fish and swordfish in 2009 were 4,926 1,025 27 and 129 mts, respectively (Figure 3). Taking in to account of the percentage of main target species, yellowfin tuna fluctuated during 1995 to 2002 with the peak of 80.8% of total landing in 1998, while the percentage of bigeye tuna fluctuated opposite with yellowfin tuna during 1995 to 2002 with the peak of 49.7% of total landing in 2002, after then, it continued downward trend to 11.8% of total landing in 2007, increased to 22.9% in 2008 and decreased again to 15% in 2009. It was to be remarked that the declaration of sharks were disappear since 2000 while the miscellaneous fish was declared as frozen mixed fish and indicated more significant. In 2009, the frozen mixed fish accounted 10.5% of the total landing catch (Figure 4 and Table 1).

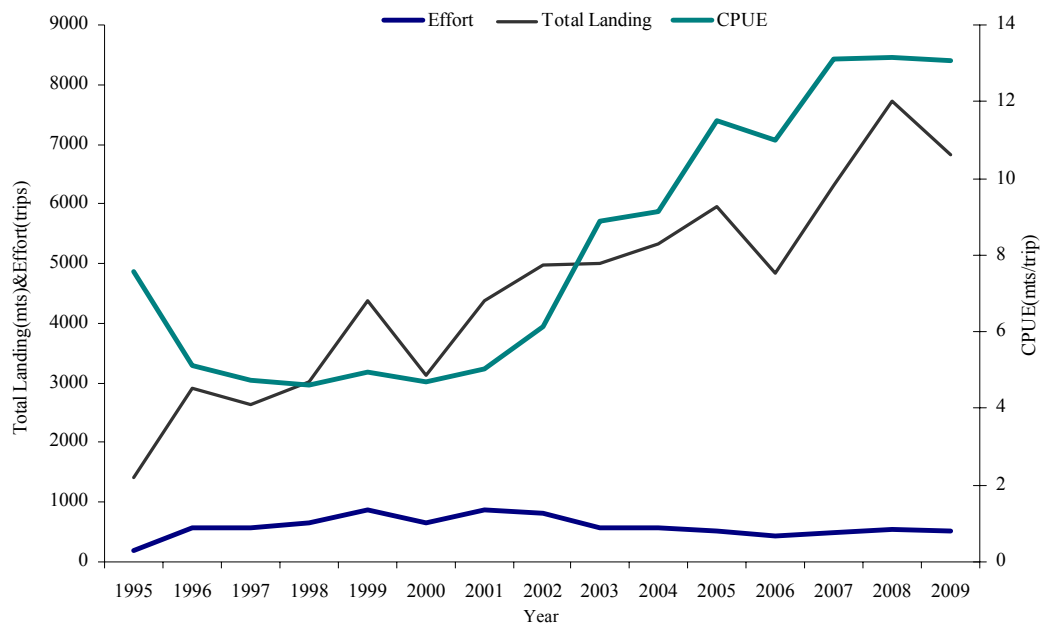


Figure 1 Change of fishing effort, total landing catch (mts), and CPUE (mts/trip) of longliner from 1995 to 2009.

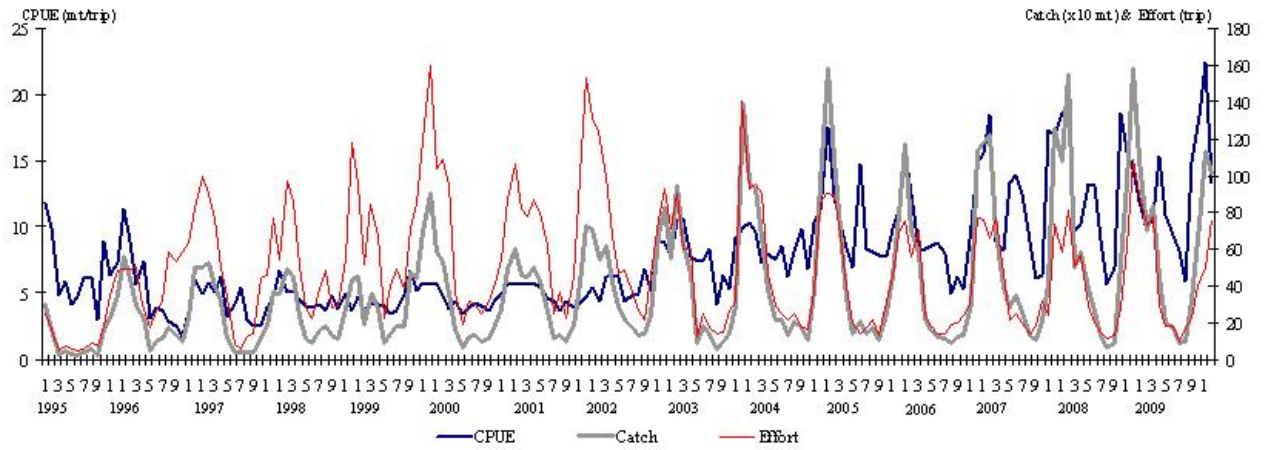


Figure 2 Changes of CPUE (mts/trip), total landing catch (mts) and fishing effort (trip) of longline fleets from 1995 to 2009.

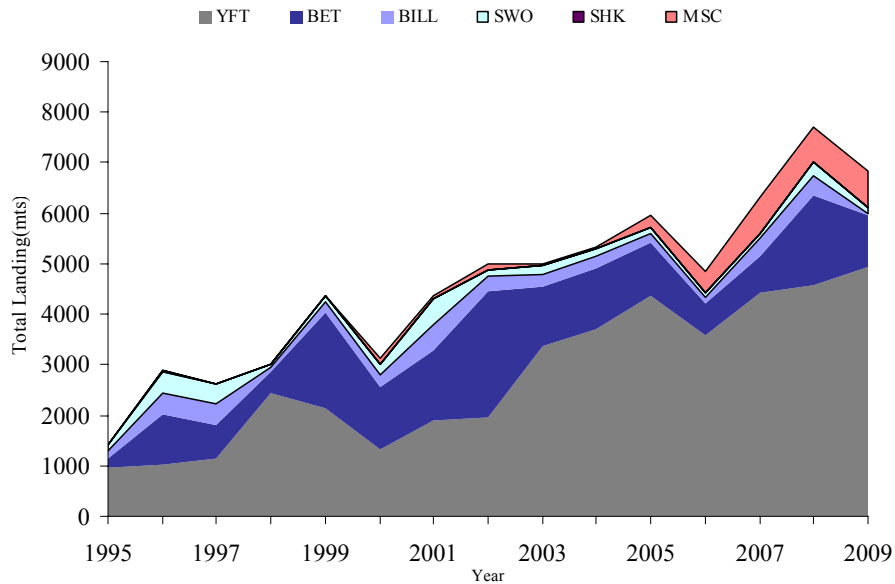


Figure 3 Total landing catch from longliners categorized by species, during 1995 to 2009.

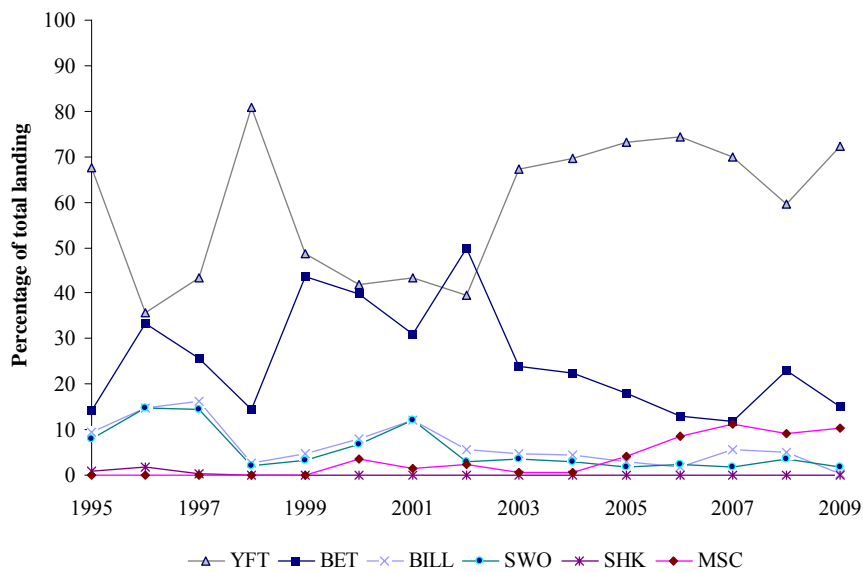


Figure 4 Total landing catch from longliner categorized by main target species, during 1995 to 2009.

Table 1 Fishing effort (no. of trip), catch (mt) and CPUE (mt/trip) by longliner landed at Phuket from 1995 to 2009.

| Year | Month | Effort | Total | YFT | BET | BILL | SWO | SHA | MSC | CPUE |
|------|--------------|------------|--------------|--------------|------------|------------|------------|-----------|-----|-------------|
| 1995 | Jan | 25 | 296 | 204 | 43 | 29 | 20 | 0 | - | 11.81 |
| | Feb | 16 | 161 | 133 | 2 | 13 | 13 | 0 | - | 10.07 |
| | Mar | 5 | 24 | 20 | 1 | 2 | 1 | 0 | - | 4.84 |
| | Apr | 7 | 41 | 33 | 3 | 3 | 2 | 0 | - | 5.88 |
| | May | 6 | 25 | 20 | 1 | 2 | 2 | 0 | - | 4.18 |
| | Jun | 5 | 23 | 17 | 3 | 1 | 2 | 0 | - | 4.71 |
| | Jul | 6 | 36 | 21 | 7 | 3 | 5 | 0 | - | 6.08 |
| | Aug | 9 | 57 | 38 | 5 | 8 | 6 | 0 | - | 6.29 |
| | Sep | 7 | 21 | 11 | 1 | 6 | 3 | 0 | - | 2.94 |
| | Oct | 18 | 161 | 136 | 14 | 6 | 5 | 0 | - | 8.95 |
| | Nov | 35 | 223 | 149 | 22 | 25 | 22 | 5 | - | 6.38 |
| | Dec | 48 | 348 | 176 | 98 | 35 | 31 | 8 | - | 7.24 |
| | Total | 187 | 1,416 | 958 | 200 | 133 | 113 | 13 | - | 7.57 |
| 1996 | Jan | 49 | 561 | 201 | 270 | 35 | 45 | 10 | - | 11.44 |
| | Feb | 49 | 439 | 161 | 172 | 39 | 50 | 17 | - | 8.96 |
| | Mar | 50 | 287 | 144 | 79 | 31 | 28 | 5 | - | 5.75 |
| | Apr | 30 | 221 | 65 | 102 | 26 | 22 | 6 | - | 7.35 |
| | May | 17 | 53 | 35 | 7 | 7 | 3 | 1 | - | 3.11 |
| | Jun | 26 | 103 | 55 | 22 | 8 | 18 | 0 | - | 3.92 |
| | Jul | 31 | 111 | 71 | 10 | 24 | 6 | 0 | - | 3.62 |
| | Aug | 58 | 167 | 87 | 44 | 28 | 8 | 0 | - | 2.89 |
| | Sep | 53 | 138 | 31 | 32 | 23 | 52 | 0 | - | 2.58 |
| | Oct | 58 | 100 | 41 | 12 | 17 | 20 | 10 | - | 1.72 |
| | Nov | 64 | 226 | 39 | 83 | 50 | 54 | 0 | - | 3.54 |
| | Dec | 82 | 497 | 108 | 132 | 138 | 119 | 0 | - | 6.06 |
| | Total | 567 | 2,903 | 1,038 | 965 | 426 | 425 | 49 | - | 5.12 |
| 1997 | Jan | 100 | 499 | 192 | 73 | 123 | 111 | 0 | - | 5 |
| | Feb | 90 | 522 | 202 | 143 | 91 | 86 | 0 | - | 5.8 |
| | Mar | 77 | 394 | 135 | 119 | 77 | 63 | 0 | - | 5.11 |
| | Apr | 50 | 309 | 88 | 91 | 66 | 64 | 0 | - | 6.17 |
| | May | 34 | 110 | 59 | 42 | 3 | 6 | 0 | - | 3.24 |
| | Jun | 8 | 34 | 21 | 11 | 2 | 0 | 0 | - | 4.17 |
| | Jul | 6 | 32 | 20 | 6 | 4 | 2 | 0 | - | 5.37 |
| | Aug | 12 | 35 | 21 | 11 | 3 | 0 | 0 | - | 2.96 |
| | Sep | 14 | 37 | 14 | 18 | 2 | 3 | 0 | - | 2.58 |
| | Oct | 44 | 114 | 76 | 15 | 14 | 8 | 1 | - | 2.59 |
| | Nov | 46 | 179 | 129 | 25 | 9 | 16 | 0 | - | 3.91 |
| | Dec | 77 | 367 | 181 | 122 | 31 | 24 | 9 | - | 4.77 |
| | Total | 558 | 2,632 | 1,138 | 676 | 425 | 383 | 10 | - | 4.72 |

Table 1 Cont.

| Year | Month | Effort | Total | YFT | BET | BILL | SWO | SHA | MSC | CPUE |
|------|--------------|------------|--------------|--------------|--------------|------------|------------|----------|------------|-------------|
| 1998 | Jan | 54 | 362 | 231 | 118 | 9 | 3 | 1 | - | 6.7 |
| | Feb | 97 | 492 | 271 | 194 | 21 | 6 | 0 | - | 5.07 |
| | Mar | 86 | 445 | 408 | 22 | 11 | 4 | 0 | - | 5.17 |
| | Apr | 51 | 232 | 195 | 28 | 6 | 3 | 0 | - | 4.54 |
| | May | 28 | 113 | 103 | 8 | 1 | 1 | 0 | - | 4.01 |
| | Jun | 23 | 90 | 86 | 3 | 0 | 1 | 0 | - | 3.92 |
| | Jul | 38 | 156 | 148 | 8 | 0 | 0 | 0 | - | 4.14 |
| | Aug | 48 | 177 | 163 | 11 | 2 | 1 | 0 | - | 3.69 |
| | Sep | 28 | 137 | 110 | 5 | 8 | 14 | 0 | - | 4.87 |
| | Oct | 29 | 109 | 82 | 2 | 7 | 18 | 0 | - | 3.8 |
| | Nov | 55 | 269 | 238 | 10 | 14 | 7 | 0 | - | 4.89 |
| | Dec | 118 | 433 | 400 | 23 | 5 | 5 | 0 | - | 3.67 |
| | Total | 655 | 3,015 | 2,435 | 432 | 84 | 63 | 1 | - | 4.6 |
| 1999 | Jan | 95 | 450 | 265 | 182 | 1 | 2 | 0 | - | 4.73 |
| | Feb | 52 | 190 | 125 | 56 | 4 | 4 | 1 | - | 3.64 |
| | Mar | 84 | 356 | 262 | 94 | 0 | 0 | 0 | - | 4.25 |
| | Apr | 67 | 275 | 200 | 75 | 0 | 0 | 0 | - | 4.12 |
| | May | 23 | 93 | 51 | 35 | 7 | 0 | 0 | - | 4.08 |
| | Jun | 40 | 141 | 43 | 91 | 5 | 2 | 0 | - | 3.49 |
| | Jul | 49 | 179 | 18 | 155 | 0 | 6 | 0 | - | 3.65 |
| | Aug | 38 | 183 | 48 | 119 | 16 | 0 | 0 | - | 4.82 |
| | Sep | 71 | 473 | 282 | 145 | 26 | 20 | 0 | - | 6.67 |
| | Oct | 84 | 441 | 174 | 196 | 36 | 35 | 0 | - | 5.26 |
| | Nov | 120 | 695 | 231 | 369 | 54 | 41 | 0 | - | 5.79 |
| | Dec | 160 | 897 | 425 | 391 | 51 | 30 | 0 | - | 5.6 |
| | Total | 883 | 4,373 | 2,124 | 1,909 | 200 | 140 | 1 | - | 4.95 |
| 2000 | Jan | 104 | 583 | 176 | 360 | 29 | 18 | - | 0 | 5.61 |
| | Feb | 109 | 531 | 230 | 257 | 27 | 17 | - | 0 | 4.87 |
| | Mar | 96 | 358 | 97 | 244 | 8 | 8 | - | 1 | 3.73 |
| | Apr | 37 | 162 | 67 | 70 | 14 | 8 | - | 3 | 4.38 |
| | May | 19 | 65 | 18 | 31 | 7 | 4 | - | 5 | 3.42 |
| | Jun | 31 | 123 | 33 | 43 | 24 | 17 | - | 6 | 3.97 |
| | Jul | 30 | 128 | 44 | 34 | 15 | 20 | - | 15 | 4.27 |
| | Aug | 25 | 101 | 44 | 32 | 7 | 8 | - | 10 | 4.04 |
| | Sep | 31 | 113 | 49 | 27 | 11 | 18 | - | 8 | 3.65 |
| | Oct | 42 | 192 | 121 | 26 | 17 | 26 | - | 2 | 4.57 |
| | Nov | 54 | 271 | 128 | 52 | 34 | 29 | - | 28 | 5.02 |
| | Dec | 87 | 491 | 303 | 68 | 54 | 36 | - | 30 | 5.64 |
| | Total | 665 | 3,118 | 1,310 | 1,244 | 247 | 209 | - | 108 | 4.69 |

Table 1 Cont.

| Year | Month | Effort | Total | YFT | BET | BILL | SWO | SHA | MSC | CPUE |
|------|--------------|------------|--------------|--------------|--------------|------------|------------|----------|------------|-------------|
| 2001 | Jan | 106 | 602 | 310 | 83 | 82 | 104 | - | 23 | 5.68 |
| | Feb | 82 | 461 | 243 | 119 | 37 | 61 | - | 1 | 5.62 |
| | Mar | 78 | 446 | 200 | 129 | 51 | 64 | - | 2 | 5.72 |
| | Apr | 87 | 503 | 190 | 152 | 74 | 81 | - | 6 | 5.78 |
| | May | 80 | 431 | 159 | 148 | 70 | 44 | - | 10 | 5.39 |
| | Jun | 62 | 262 | 85 | 131 | 26 | 14 | - | 6 | 4.63 |
| | Jul | 25 | 111 | 42 | 56 | 3 | 6 | - | 4 | 4.44 |
| | Aug | 36 | 130 | 60 | 45 | 16 | 9 | - | 0 | 3.61 |
| | Sep | 23 | 100 | 38 | 23 | 11 | 26 | - | 2 | 4.35 |
| | Oct | 45 | 178 | 53 | 82 | 24 | 12 | - | 7 | 3.96 |
| | Nov | 99 | 420 | 214 | 127 | 58 | 17 | - | 4 | 4.24 |
| | Dec | 153 | 728 | 301 | 283 | 79 | 62 | - | 3 | 4.76 |
| | Total | 876 | 4,372 | 1,895 | 1,378 | 531 | 500 | 0 | 68 | 4.99 |
| 2002 | Jan | 131 | 710 | 219 | 413 | 39 | 18 | - | 21 | 5.42 |
| | Feb | 125 | 546 | 244 | 266 | 22 | 14 | - | 0 | 4.37 |
| | Mar | 99 | 616 | 256 | 318 | 27 | 14 | - | 1 | 6.22 |
| | Apr | 68 | 423 | 195 | 209 | 12 | 6 | - | 1 | 6.22 |
| | May | 47 | 290 | 132 | 139 | 14 | 4 | - | 1 | 6.17 |
| | Jun | 48 | 214 | 67 | 127 | 17 | 3 | - | 0 | 4.46 |
| | Jul | 36 | 173 | 31 | 112 | 15 | 7 | - | 8 | 4.81 |
| | Aug | 26 | 130 | 39 | 64 | 15 | 11 | - | 1 | 5.00 |
| | Sep | 21 | 143 | 31 | 75 | 9 | 9 | - | 19 | 6.81 |
| | Oct | 46 | 241 | 67 | 134 | 9 | 8 | - | 13 | 5.24 |
| | Nov | 76 | 683 | 294 | 282 | 46 | 19 | - | 41 | 8.99 |
| | Dec | 93 | 828 | 385 | 336 | 56 | 32 | - | 4 | 8.90 |
| | Total | 816 | 4,971 | 1,960 | 2,475 | 281 | 145 | - | 110 | 6.12 |
| 2003 | Jan | 71 | 550 | 326 | 177 | 28 | 18 | - | 1 | 7.75 |
| | Feb | 91 | 950 | 674 | 197 | 31 | 29 | - | 18 | 10.44 |
| | Mar | 60 | 638 | 468 | 109 | 34 | 27 | - | 0 | 10.63 |
| | Apr | 60 | 467 | 309 | 141 | 7 | 10 | - | 0 | 7.78 |
| | May | 12 | 88 | 40 | 40 | 4 | 4 | - | 0 | 7.33 |
| | Jun | 25 | 185 | 89 | 82 | 9 | 6 | - | 0 | 7.40 |
| | Jul | 17 | 143 | 55 | 63 | 11 | 6 | - | 8 | 8.41 |
| | Aug | 14 | 58 | 20 | 31 | 4 | 3 | - | 0 | 4.14 |
| | Sep | 15 | 96 | 60 | 23 | 8 | 5 | - | 0 | 6.40 |
| | Oct | 26 | 139 | 52 | 62 | 22 | 3 | - | 0 | 5.35 |
| | Nov | 32 | 293 | 214 | 32 | 29 | 18 | - | 0 | 9.16 |
| | Dec | 140 | 1,389 | 1,053 | 237 | 53 | 46 | - | 0 | 9.92 |
| | Total | 563 | 4,996 | 3,360 | 1,194 | 240 | 175 | - | 27 | 8.87 |

Table 1 Cont.

| Year | Month | Effort | Total | YFT | BET | BILL | SWO | SHA | MSC | CPUE |
|------|--------------|------------|--------------|--------------|--------------|------------|------------|-----|------------|--------------|
| 2004 | Jan | 93 | 961 | 746 | 150 | 34 | 31 | - | 0 | 10.33 |
| | Feb | 96 | 929 | 630 | 220 | 39 | 40 | - | 0 | 9.68 |
| | Mar | 91 | 663 | 473 | 127 | 27 | 36 | - | 0 | 7.29 |
| | Apr | 47 | 376 | 275 | 70 | 23 | 8 | - | 0 | 8.00 |
| | May | 29 | 216 | 154 | 52 | 8 | 2 | - | 0 | 7.45 |
| | Jun | 25 | 215 | 130 | 57 | 24 | 4 | - | 0 | 8.60 |
| | Jul | 21 | 133 | 90 | 36 | 4 | 3 | - | 0 | 6.33 |
| | Aug | 25 | 202 | 110 | 73 | 14 | 5 | - | 0 | 8.08 |
| | Sep | 17 | 168 | 99 | 58 | 10 | 1 | - | 0 | 9.88 |
| | Oct | 16 | 108 | 84 | 13 | 9 | 2 | - | 0 | 6.75 |
| | Nov | 37 | 384 | 246 | 90 | 12 | 12 | - | 24 | 10.38 |
| | Dec | 85 | 962 | 671 | 251 | 31 | 9 | - | 0 | 11.32 |
| | Total | 582 | 5,317 | 3,708 | 1,197 | 235 | 153 | - | 24 | 9.14 |
| 2005 | Jan | 90 | 1578 | 1110 | 375 | 53 | 40 | - | 0 | 17.53 |
| | Feb | 89 | 1094 | 812 | 235 | 21 | 26 | - | 0 | 12.29 |
| | Mar | 68 | 706 | 543 | 105 | 10 | 2 | - | 46 | 10.38 |
| | Apr | 39 | 330 | 256 | 59 | 12 | 3 | - | 0 | 8.46 |
| | May | 20 | 139 | 96 | 28 | 12 | 2 | - | 1 | 6.95 |
| | Jun | 14 | 207 | 139 | 63 | 5 | 0 | - | 0 | 14.79 |
| | Jul | 17 | 143 | 74 | 35 | 4 | 0 | - | 30 | 8.41 |
| | Aug | 21 | 171 | 79 | 34 | 16 | 18 | - | 24 | 8.14 |
| | Sep | 13 | 103 | 76 | 22 | 4 | 1 | - | 0 | 7.92 |
| | Oct | 32 | 249 | 189 | 14 | 6 | 5 | - | 35 | 7.78 |
| | Nov | 45 | 444 | 358 | 22 | 10 | 5 | - | 49 | 9.87 |
| | Dec | 69 | 789 | 622 | 85 | 18 | 11 | - | 53 | 11.43 |
| | Total | 517 | 5,953 | 4,354 | 1,077 | 171 | 113 | - | 238 | 11.51 |
| 2006 | Jan | 75 | 1,177 | 916 | 106 | 14 | 4 | - | 137 | 15.69 |
| | Feb | 56 | 704 | 499 | 130 | 11 | 8 | - | 56 | 12.57 |
| | Mar | 70 | 576 | 443 | 86 | 15 | 6 | - | 23 | 8.23 |
| | Apr | 25 | 210 | 136 | 33 | 7 | 5 | - | 29 | 8.40 |
| | May | 18 | 155 | 80 | 33 | 2 | 1 | - | 39 | 8.61 |
| | Jun | 14 | 124 | 63 | 17 | 2 | 2 | - | 40 | 8.86 |
| | Jul | 14 | 111 | 55 | 10 | 15 | 3 | - | 28 | 7.93 |
| | Aug | 19 | 95 | 60 | 12 | 13 | 10 | - | 0 | 5.00 |
| | Sep | 20 | 124 | 58 | 7 | 2 | 5 | - | 52 | 6.20 |
| | Oct | 24 | 128 | 97 | 13 | 7 | 11 | - | 0 | 5.33 |
| | Nov | 30 | 305 | 244 | 32 | 16 | 13 | - | 0 | 10.17 |
| | Dec | 77 | 1,144 | 933 | 136 | 29 | 39 | - | 7 | 14.86 |
| | Total | 442 | 4,830 | 3,584 | 615 | 133 | 87 | - | 411 | 10.93 |

Table 1 Cont.

| Year | Month | Effort | Total | YFT | BET | BILL | SWO | SHA | MSC | CPUE |
|------|--------------|--------|------------|--------------|--------------|--------------|------------|------------|----------|------------|
| 2007 | Jan | 76 | 1,183 | 982 | 107 | 29 | 2 | - | 63 | 15.55 |
| | Feb | 66 | 1,607 | 840 | 64 | 65 | 24 | - | 74 | 16.16 |
| | Mar | 77 | 695 | 531 | 72 | 24 | 10 | - | 58 | 8.97 |
| | Apr | 47 | 390 | 296 | 46 | 24 | 6 | - | 18 | 8.30 |
| | May | 21 | 282 | 195 | 29 | 32 | 9 | - | 17 | 13.43 |
| | Jun | 25 | 350 | 218 | 20 | 17 | 23 | - | 72 | 14.00 |
| | Jul | 20 | 252 | 132 | 66 | 3 | 1 | - | 50 | 12.55 |
| | Aug | 14 | 126 | 55 | 6 | 6 | 9 | - | 50 | 8.93 |
| | Sep | 18 | 109 | 69 | 11 | 6 | 1 | - | 22 | 6.06 |
| | Oct | 32 | 204 | 148 | 17 | 13 | 2 | - | 24 | 6.38 |
| | Nov | 24 | 417 | 223 | 34 | 40 | 8 | - | 112 | 17.33 |
| | Dec | 74 | 1,248 | 721 | 276 | 87 | 10 | - | 146 | 16.97 |
| | Total | | 494 | 6,315 | 4,410 | 748 | 346 | 105 | - | 706 |
| 2008 | Jan | 58 | 1,076 | 651 | 294 | 48 | 41 | - | 42 | 18.60 |
| | Feb | 81 | 1,551 | 792 | 606 | 28 | 22 | - | 103 | 19.15 |
| | Mar | 51 | 499 | 204 | 185 | 6 | 30 | - | 74 | 9.78 |
| | Apr | 57 | 585 | 273 | 237 | 5 | 5 | - | 65 | 10.26 |
| | May | 29 | 385 | 183 | 92 | 8 | 7 | - | 95 | 13.28 |
| | Jun | 20 | 262 | 162 | 4 | 30 | 11 | - | 55 | 13.10 |
| | Jul | 15 | 136 | 83 | 10 | 26 | 13 | - | 4 | 9.07 |
| | Aug | 11 | 63 | 39 | 0 | 4 | 4 | - | 16 | 5.73 |
| | Sep | 13 | 89 | 55 | 1 | 6 | 3 | - | 24 | 6.85 |
| | Oct | 28 | 521 | 398 | 3 | 21 | 26 | - | 73 | 18.61 |
| | Nov | 61 | 963 | 714 | 74 | 51 | 38 | - | 86 | 15.79 |
| | Dec | 109 | 1,580 | 1,033 | 266 | 154 | 68 | - | 59 | 14.50 |
| | Total | | 533 | 7,710 | 4,587 | 1,772 | 387 | 268 | 0 | 696 |
| 2009 | Jan | 91 | 1,088 | 766 | 211 | 12 | 51 | - | 48 | 11.96 |
| | Feb | 72 | 699 | 571 | 117 | 1 | 1 | - | 9 | 9.71 |
| | Mar | 78 | 836 | 454 | 325 | 3 | 13 | - | 41 | 10.72 |
| | Apr | 29 | 445 | 268 | 100 | 1 | 27 | - | 49 | 15.34 |
| | May | 18 | 197 | 123 | 58 | - | - | - | 16 | 10.94 |
| | Jun | 18 | 169 | 72 | 13 | 5 | 8 | - | 71 | 9.39 |
| | Jul | 10 | 83 | 67 | - | 1 | - | - | 15 | 8.30 |
| | Aug | 17 | 100 | 41 | 3 | - | 1 | - | 55 | 5.88 |
| | Sep | 22 | 327 | 218 | 27 | - | - | - | 82 | 14.86 |
| | Oct | 40 | 738 | 568 | 94 | 3 | - | - | 73 | 18.45 |
| | Nov | 50 | 1,124 | 942 | 16 | - | 25 | - | 141 | 22.48 |
| | Dec | 76 | 1,015 | 836 | 61 | 1 | 3 | - | 114 | 13.36 |
| | Total | | 521 | 6,821 | 4,926 | 1,025 | 27 | 129 | 0 | 714 |

Table 2 presented total landing and effort statistics by each vessel nationality (Taiwanese, Chinese, Indonesian, Thai, Vanuatu and Malaysian) during January in 2000 to December in 2009. The main fishing fleet still was Taiwanese followed by Indonesian. In January to

November of 2003, there was no landing of Chinese longliner because some of the fleet resigned the contract and moved back to their own country and some of the remainder vessels were repaired at the dock in Phuket then shifted to operate in the Oman water. Although the Chinese longliners came back to landing in Phuket again in 2004, after that year there were few and far between of landing. In 2007, the Thai longliner landed for five trips and there was one trip of landing from Vanuatu vessel, In 2008 and 2009 the Malaysian longliner was landed one trips per years. Average of landing catch of Taiwanese longliner showed higher than Chinese longliner while average of landing catch of Indonesian longliner was the highest variation (1 to 39.28 mts/trip). Cause of high landing catch of Taiwanese and Indonesian longliners longer of the fishing day, 25 - 35 days and 20 - 25 days, respectively, and the fishing was operated all hours a day while Chinese longliner 's fishing days was approximately 10-20 days and operated either day or night-time.

Figure 5 showed pie graphs of species composition during 2000-2009 from each vessel nationality which yellowfin tuna and bigeye were the main composition. In 2009, the main composition was yellowfin tuna followed by bigeye tuna and swordfish, respectively. As it was mentioned previously, the unidentified miscellaneous species were significant increasing, 38% from Malaysian, 15% from Taiwanese and 4% from Indonesian were unloaded.

Table 2 Fishing effort (no.of trip), catch (mt) and CPUE (mt/trip) by Taiwanese longliners landed at Phuket Province during January 2000 to December 2009.

| Taiwanese | | | | | | | | | |
|------------------|--------------|------------|--------------|--------------|--------------|------------|------------|-----------|-------------|
| Year | Month | effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2000 | Jan | 84 | 484 | 299 | 146 | 24 | 15 | 0 | 5.76 |
| | Feb | 86 | 431 | 209 | 187 | 21 | 14 | 0 | 5.01 |
| | Mar | 64 | 248 | 167 | 67 | 6 | 7 | 1 | 3.88 |
| | Apr | 16 | 84 | 36 | 35 | 8 | 4 | 1 | 5.25 |
| | May | 8 | 29 | 12 | 8 | 5 | 2 | 2 | 3.63 |
| | Jun | 15 | 70 | 23 | 23 | 15 | 9 | 0 | 4.67 |
| | Jul | 16 | 79 | 21 | 29 | 9 | 11 | 9 | 4.94 |
| | Aug | 8 | 41 | 13 | 18 | 3 | 3 | 4 | 5.13 |
| | Sep | 12 | 53 | 12 | 22 | 6 | 9 | 4 | 4.42 |
| | Oct | 20 | 108 | 11 | 84 | 1 | 11 | 1 | 5.40 |
| | Nov | 39 | 223 | 37 | 105 | 30 | 27 | 24 | 5.72 |
| | Dec | 71 | 435 | 60 | 277 | 39 | 32 | 27 | 6.13 |
| | Total | 439 | 2,285 | 900 | 1,001 | 167 | 144 | 73 | 5.21 |
| 2001 | Jan | 81 | 474 | 64 | 240 | 66 | 86 | 18 | 5.85 |
| | Feb | 64 | 352 | 99 | 177 | 27 | 49 | 0 | 5.50 |
| | Mar | 45 | 264 | 77 | 118 | 31 | 37 | 1 | 5.87 |
| | Apr | 51 | 354 | 86 | 137 | 54 | 74 | 3 | 6.94 |
| | May | 37 | 226 | 74 | 101 | 32 | 17 | 2 | 6.11 |
| | Jun | 34 | 168 | 83 | 59 | 13 | 9 | 4 | 4.94 |
| | Jul | 7 | 63 | 29 | 30 | 1 | 1 | 2 | 9.00 |
| | Aug | 15 | 76 | 26 | 39 | 7 | 4 | 0 | 5.07 |
| | Sep | 15 | 82 | 18 | 29 | 9 | 24 | 2 | 5.47 |
| | Oct | 23 | 118 | 58 | 35 | 14 | 7 | 4 | 5.13 |
| | Nov | 66 | 310 | 88 | 171 | 37 | 12 | 2 | 4.70 |
| | Dec | 111 | 553 | 200 | 248 | 56 | 46 | 3 | 4.98 |
| | Total | 549 | 3,040 | 902 | 1,384 | 347 | 366 | 41 | 5.54 |
| 2002 | Jan | 98 | 541 | 311 | 171 | 30 | 13 | 16 | 5.52 |
| | Feb | 97 | 437 | 197 | 210 | 18 | 12 | 0 | 4.51 |
| | Mar | 60 | 440 | 213 | 198 | 19 | 9 | 1 | 7.33 |
| | Apr | 36 | 243 | 114 | 119 | 6 | 3 | 1 | 6.75 |
| | May | 26 | 191 | 83 | 93 | 11 | 3 | 1 | 7.35 |
| | Jun | 24 | 140 | 82 | 46 | 11 | 1 | 0 | 5.83 |
| | Jul | 20 | 109 | 67 | 22 | 12 | 6 | 2 | 5.45 |
| | Aug | 18 | 90 | 45 | 28 | 10 | 6 | 1 | 5.00 |
| | Sep | 15 | 116 | 61 | 26 | 7 | 6 | 16 | 7.73 |
| | Oct | 20 | 134 | 73 | 42 | 6 | 5 | 8 | 6.70 |
| | Nov | 64 | 584 | 237 | 257 | 39 | 16 | 35 | 9.13 |
| | Dec | 78 | 740 | 294 | 359 | 56 | 27 | 4 | 9.49 |
| | Total | 556 | 3,765 | 1,777 | 1,571 | 225 | 107 | 85 | 6.77 |

Table 2 Cont.

| Taiwanese | | | | | | | | | |
|------------------|-------|------------|--------------|--------------|--------------|------------|------------|------------|--------------|
| Year | Month | effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2003 | Jan | 68 | 522 | 168 | 309 | 27 | 17 | 1 | 7.68 |
| | Feb | 88 | 923 | 190 | 656 | 30 | 29 | 18 | 10.49 |
| | Mar | 58 | 609 | 105 | 445 | 33 | 26 | 0 | 10.50 |
| | Apr | 53 | 390 | 123 | 253 | 6 | 8 | 0 | 7.36 |
| | May | 9 | 65 | 30 | 29 | 3 | 3 | 0 | 7.22 |
| | Jun | 24 | 184 | 81 | 88 | 9 | 6 | 0 | 7.67 |
| | Jul | 15 | 137 | 60 | 52 | 11 | 6 | 8 | 9.13 |
| | Aug | 12 | 51 | 29 | 15 | 4 | 3 | 0 | 4.25 |
| | Sep | 12 | 88 | 20 | 56 | 7 | 5 | 0 | 7.33 |
| | Oct | 19 | 117 | 52 | 42 | 20 | 3 | 0 | 6.16 |
| | Nov | 23 | 215 | 23 | 155 | 22 | 15 | 0 | 9.35 |
| | Dec | 115 | 1,098 | 187 | 838 | 39 | 34 | 0 | 9.55 |
| Total | | 496 | 4,399 | 1,068 | 2,938 | 211 | 155 | 27 | 8.87 |
| 2004 | Jan | 70 | 726 | 119 | 556 | 27 | 24 | 0 | 10.37 |
| | Feb | 80 | 726 | 146 | 518 | 30 | 32 | 0 | 9.08 |
| | Mar | 75 | 517 | 88 | 379 | 22 | 28 | 0 | 6.89 |
| | Apr | 29 | 220 | 53 | 153 | 12 | 2 | 0 | 7.59 |
| | May | 22 | 155 | 49 | 99 | 6 | 1 | 0 | 7.05 |
| | Jun | 17 | 155 | 39 | 103 | 12 | 1 | 0 | 9.12 |
| | Jul | 14 | 104 | 24 | 77 | 2 | 1 | 0 | 7.43 |
| | Aug | 25 | 202 | 73 | 110 | 14 | 5 | 0 | 8.08 |
| | Sep | 15 | 119 | 33 | 77 | 8 | 1 | 0 | 7.93 |
| | Oct | 14 | 104 | 12 | 81 | 9 | 2 | 0 | 7.43 |
| | Nov | 29 | 287 | 73 | 169 | 11 | 10 | 24 | 9.90 |
| | Dec | 73 | 716 | 202 | 479 | 27 | 8 | 0 | 9.81 |
| Total | | 463 | 4,031 | 911 | 2,801 | 180 | 115 | 24 | 8.71 |
| 2005 | Jan | 80 | 1,272 | 298 | 883 | 51 | 40 | 0 | 15.90 |
| | Feb | 80 | 930 | 194 | 691 | 20 | 25 | 0 | 11.63 |
| | Mar | 62 | 602 | 96 | 449 | 9 | 2 | 46 | 9.71 |
| | Apr | 31 | 285 | 50 | 223 | 10 | 2 | 0 | 9.19 |
| | May | 16 | 128 | 22 | 91 | 12 | 2 | 1 | 8.00 |
| | Jun | 13 | 199 | 61 | 133 | 5 | 0 | 0 | 15.31 |
| | Jul | 15 | 132 | 33 | 66 | 3 | 0 | 30 | 8.80 |
| | Aug | 20 | 169 | 34 | 77 | 16 | 18 | 24 | 8.45 |
| | Sep | 10 | 87 | 19 | 64 | 3 | 1 | 0 | 8.70 |
| | Oct | 26 | 216 | 7 | 164 | 5 | 5 | 35 | 8.31 |
| | Nov | 34 | 363 | 8 | 301 | 5 | 5 | 44 | 10.68 |
| | Dec | 57 | 677 | 54 | 546 | 15 | 9 | 53 | 11.88 |
| Total | | 444 | 5,060 | 876 | 3,688 | 154 | 109 | 233 | 11.40 |

Table 2 Cont.

| Taiwanese | | | | | | | | | |
|------------------|-------|------------|--------------|--------------|--------------|------------|------------|------------|--------------|
| Year | Month | effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2006 | Jan | 47 | 779 | 45 | 631 | 8 | 3 | 92 | 16.57 |
| | Feb | 33 | 449 | 69 | 324 | 7 | 5 | 44 | 13.61 |
| | Mar | 58 | 515 | 73 | 399 | 14 | 6 | 23 | 8.88 |
| | Apr | 16 | 134 | 17 | 81 | 4 | 3 | 29 | 8.38 |
| | May | 11 | 100 | 11 | 63 | 1 | 1 | 24 | 9.09 |
| | Jun | 9 | 101 | 12 | 51 | 2 | 1 | 35 | 11.22 |
| | Jul | 8 | 88 | 10 | 41 | 11 | 2 | 24 | 11.00 |
| | Aug | 15 | 75 | 7 | 47 | 11 | 10 | 0 | 5.00 |
| | Sep | 15 | 102 | 5 | 40 | 1 | 4 | 52 | 6.80 |
| | Oct | 20 | 102 | 5 | 83 | 5 | 9 | 0 | 5.10 |
| | Nov | 26 | 216 | 13 | 176 | 15 | 12 | 0 | 8.31 |
| | Dec | 57 | 560 | 46 | 478 | 21 | 8 | 7 | 9.82 |
| Total | | 315 | 3,221 | 313 | 2,414 | 100 | 64 | 330 | 10.23 |
| 2007 | Jan | 64 | 820 | 56 | 670 | 29 | 2 | 63 | 12.81 |
| | Feb | 59 | 890 | 50 | 690 | 56 | 20 | 74 | 15.08 |
| | Mar | 70 | 621 | 54 | 481 | 22 | 9 | 55 | 8.87 |
| | Apr | 42 | 331 | 38 | 251 | 21 | 5 | 16 | 7.88 |
| | May | 15 | 170 | 14 | 117 | 21 | 6 | 12 | 11.33 |
| | Jun | 19 | 241 | 14 | 139 | 11 | 22 | 55 | 12.68 |
| | Jul | 19 | 223 | 56 | 113 | 3 | 1 | 50 | 11.74 |
| | Aug | 13 | 123 | 6 | 55 | 6 | 9 | 47 | 9.46 |
| | Sep | 15 | 96 | 9 | 61 | 5 | 1 | 20 | 6.40 |
| | Oct | 26 | 158 | 10 | 113 | 11 | 2 | 22 | 6.08 |
| | Nov | 17 | 318 | 13 | 170 | 30 | 5 | 100 | 18.71 |
| | Dec | 68 | 1,137 | 248 | 660 | 79 | 9 | 141 | 16.72 |
| Total | | 427 | 5,128 | 568 | 3,520 | 294 | 91 | 655 | 12.01 |
| 2008 | Jan | 50 | 764 | 158 | 508 | 35 | 29 | 34 | 15.28 |
| | Feb | 69 | 1,159 | 391 | 629 | 20 | 18 | 101 | 16.80 |
| | Mar | 49 | 477 | 173 | 197 | 6 | 30 | 71 | 9.73 |
| | Apr | 55 | 542 | 215 | 255 | 5 | 4 | 63 | 9.85 |
| | May | 25 | 266 | 42 | 130 | 5 | 4 | 85 | 10.64 |
| | Jun | 10 | 139 | 2 | 76 | 13 | 5 | 43 | 13.90 |
| | Jul | 10 | 77 | 10 | 43 | 15 | 5 | 4 | 7.70 |
| | Aug | 7 | 36 | 0 | 17 | 1 | 2 | 16 | 5.14 |
| | Sep | 8 | 48 | 1 | 21 | 4 | 2 | 20 | 6.00 |
| | Oct | 20 | 288 | 3 | 213 | 10 | 14 | 48 | 14.40 |
| | Nov | 51 | 642 | 40 | 479 | 37 | 26 | 60 | 12.59 |
| | Dec | 92 | 1,124 | 153 | 767 | 111 | 50 | 43 | 12.22 |
| Total | | 446 | 5,562 | 1,188 | 3,335 | 262 | 189 | 588 | 12.47 |

Table 2 Cont.

| Taiwanese | | | | | | | | | |
|------------------|-------|------------|--------------|------------|--------------|-----------|-----------|------------|-------------|
| Year | Month | effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2009 | Jan | 70 | 651 | 48 | 510 | 3 | 50 | 40 | 9.30 |
| | Feb | 58 | 509 | 86 | 415 | 0 | 0 | 8 | 8.78 |
| | Mar | 64 | 552 | 183 | 316 | 1 | 11 | 41 | 8.63 |
| | Apr | 22 | 279 | 36 | 168 | 0 | 26 | 49 | 12.68 |
| | May | 11 | 116 | 35 | 69 | 0 | 0 | 12 | 10.55 |
| | Jun | 13 | 107 | 13 | 28 | 5 | 8 | 53 | 8.23 |
| | Jul | 6 | 42 | 0 | 27 | 0 | 0 | 15 | 7.00 |
| | Aug | 12 | 59 | 0 | 4 | 0 | 0 | 55 | 4.92 |
| | Sep | 13 | 140 | 2 | 77 | 0 | 0 | 61 | 10.77 |
| | Oct | 22 | 232 | 47 | 131 | 3 | 0 | 51 | 10.55 |
| | Nov | 31 | 377 | 13 | 271 | 0 | 0 | 93 | 12.16 |
| | Dec | 61 | 729 | 44 | 586 | 1 | 1 | 97 | 11.95 |
| Total | | 383 | 3,793 | 507 | 2,602 | 13 | 96 | 575 | 9.90 |

Table 3 Fishing effort (no.of trip), catch (mt) and CPUE (mt/trip) by Chinese longliners landed at Phuket Province during January 2000 to December 2009.

| Chainese | | | | | | | | | |
|-----------------|-------|------------|------------|------------|------------|-----------|-----------|-----------|-------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2000 | Jan | 20 | 99 | 61 | 30 | 5 | 3 | 0 | 4.95 |
| | Feb | 23 | 100 | 48 | 43 | 6 | 3 | 0 | 4.35 |
| | Mar | 31 | 105 | 73 | 29 | 2 | 1 | 0 | 3.39 |
| | Apr | 14 | 63 | 30 | 23 | 5 | 3 | 2 | 4.50 |
| | May | 10 | 28 | 15 | 9 | 1 | 1 | 2 | 2.80 |
| | Jun | 15 | 51 | 19 | 9 | 9 | 8 | 6 | 3.40 |
| | Jul | 11 | 38 | 10 | 11 | 5 | 7 | 5 | 3.45 |
| | Aug | 15 | 51 | 16 | 22 | 4 | 4 | 5 | 3.40 |
| | Sep | 17 | 56 | 14 | 25 | 5 | 8 | 4 | 3.29 |
| | Oct | 20 | 74 | 14 | 31 | 15 | 13 | 1 | 3.70 |
| | Nov | 13 | 36 | 14 | 15 | 3 | 1 | 3 | 2.77 |
| | Dec | 10 | 37 | 4 | 16 | 14 | 1 | 2 | 3.70 |
| Total | | 199 | 738 | 318 | 263 | 74 | 53 | 30 | 3.71 |
| 2001 | Jan | 13 | 41 | 6 | 19 | 6 | 8 | 2 | 3.15 |
| | Feb | 10 | 43 | 9 | 18 | 8 | 8 | 0 | 4.30 |
| | Mar | 20 | 91 | 36 | 35 | 8 | 11 | 1 | 4.55 |
| | Apr | 31 | 111 | 57 | 32 | 16 | 4 | 2 | 3.58 |
| | May | 42 | 203 | 73 | 57 | 38 | 27 | 8 | 4.83 |
| | Jun | 25 | 84 | 44 | 22 | 12 | 4 | 2 | 3.36 |
| | Jul | 16 | 40 | 23 | 9 | 2 | 4 | 2 | 2.50 |
| | Aug | 19 | 48 | 17 | 18 | 8 | 5 | 0 | 2.53 |
| | Sep | 5 | 12 | 3 | 6 | 1 | 2 | 0 | 2.40 |
| | Oct | 17 | 50 | 20 | 14 | 8 | 5 | 3 | 2.94 |
| | Nov | 31 | 104 | 38 | 40 | 19 | 5 | 2 | 3.35 |

Table 3 Cont.

| Chainesse | | | | | | | | | |
|------------------|--------------|------------|------------|------------|------------|------------|-----------|-----------|-------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| | Dec | 29 | 91 | 45 | 27 | 10 | 9 | 0 | 3.14 |
| | Total | 258 | 918 | 371 | 297 | 136 | 92 | 22 | 3.56 |
| 2002 | Jan | 22 | 71 | 47 | 17 | 3 | 2 | 2 | 3.23 |
| | Feb | 21 | 82 | 59 | 18 | 3 | 2 | 0 | 3.90 |
| | Mar | 32 | 129 | 83 | 36 | 6 | 4 | 0 | 4.03 |
| | Apr | 27 | 106 | 62 | 38 | 4 | 2 | 0 | 3.93 |
| | May | 19 | 87 | 53 | 30 | 3 | 1 | 0 | 4.58 |
| | Jun | 22 | 65 | 41 | 16 | 6 | 2 | 0 | 2.95 |
| | Jul | 15 | 62 | 44 | 8 | 3 | 1 | 6 | 4.13 |
| | Aug | 5 | 23 | 13 | 5 | 1 | 4 | 0 | 4.60 |
| | Sep | 4 | 20 | 11 | 3 | 2 | 2 | 2 | 5.00 |
| | Oct | 24 | 91 | 57 | 23 | 3 | 3 | 5 | 3.79 |
| | Nov | 7 | 27 | 15 | 7 | 2 | 1 | 2 | 3.86 |
| | Dec | 12 | 57 | 31 | 12 | 10 | 4 | 0 | 4.75 |
| | Total | 210 | 820 | 516 | 213 | 46 | 28 | 17 | 3.90 |
| 2003 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 5 | 25 | 9 | 11 | 1 | 4 | 0 | 5.00 |
| | Total | 5 | 25 | 9 | 11 | 1 | 4 | 0 | 5.00 |
| 2004 | Jan | 9 | 68 | 13 | 50 | 2 | 3 | 0 | 7.56 |
| | Feb | 7 | 94 | 67 | 20 | 4 | 3 | 0 | 13.43 |
| | Mar | 7 | 48 | 20 | 23 | 2 | 3 | 0 | 6.86 |
| | Apr | 11 | 70 | 14 | 45 | 6 | 5 | 0 | 6.36 |
| | May | 1 | 19 | 0 | 17 | 1 | 1 | 0 | 19.00 |
| | Jun | 7 | 47 | 18 | 15 | 11 | 3 | 0 | 6.71 |
| | Jul | 5 | 11 | 5 | 2 | 2 | 2 | 0 | 2.20 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 1 | 46 | 25 | 19 | 2 | 0 | 0 | 46.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | 48 | 403 | 162 | 191 | 30 | 20 | 0 | 8.40 |

Table 3 Cont.

| Chaineese | | | | | | | | | |
|------------------|--------------|--------|----------|----------|----------|----------|----------|----------|----------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2005 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 2 | 4 | 3 | 1 | 0 | 0 | 0 | 2.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 2 | 4 | 3 | 1 | 0 | 0 | 0 |
| 2006 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2007 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 1 | 5 | 0 | 5 | 0 | 0 | 0 | 5.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 1 | 5 | 0 | 5 | 0 | 0 | 0 |

Table 3 Cont.

| Chaineese | | | | | | | | | |
|------------------|--------------|--------|----------|----------|----------|----------|----------|----------|-------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2008 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 1 | 1 | 0 | 1 | 0 | 0 | 0 |
| 2009 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 4 Fishing effort (no.of trip), catch (mt) and CPUE (mt/trip) by Indonesian longliners landed at Phuket Province during January 2000 to December 2009.

| Indonesian | | | | | | | | | |
|-------------------|--------------|-----------|------------|------------|------------|-----------|-----------|----------|-------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2000 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Mar | 1 | 5 | 4 | 1 | 0 | 0 | 0 | 5.00 |
| | Apr | 7 | 15 | 4 | 9 | 1 | 1 | 0 | 2.14 |
| | May | 1 | 8 | 4 | 1 | 1 | 1 | 1 | 8.00 |
| | Jun | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 2.00 |
| | Jul | 3 | 11 | 3 | 4 | 1 | 2 | 1 | 3.67 |
| | Aug | 2 | 9 | 3 | 4 | 0 | 1 | 1 | 4.50 |
| | Sep | 2 | 4 | 1 | 2 | 0 | 1 | 0 | 2.00 |
| | Oct | 2 | 10 | 1 | 6 | 1 | 2 | 0 | 5.00 |
| | Nov | 2 | 12 | 1 | 8 | 1 | 1 | 1 | 6.00 |
| | Dec | 6 | 19 | 4 | 10 | 1 | 3 | 1 | 3.17 |
| | Total | 27 | 95 | 26 | 46 | 6 | 12 | 5 | 3.52 |
| 2001 | Jan | 12 | 87 | 13 | 51 | 10 | 10 | 3 | 7.25 |
| | Feb | 8 | 66 | 11 | 48 | 2 | 4 | 1 | 8.25 |
| | Mar | 13 | 91 | 16 | 47 | 12 | 16 | 0 | 7.00 |
| | Apr | 5 | 38 | 9 | 21 | 4 | 3 | 1 | 7.60 |
| | May | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 2.00 |
| | Jun | 3 | 10 | 4 | 4 | 1 | 1 | 0 | 3.33 |
| | Jul | 2 | 8 | 4 | 3 | 0 | 1 | 0 | 4.00 |
| | Aug | 2 | 6 | 2 | 3 | 1 | 0 | 0 | 3.00 |
| | Sep | 3 | 6 | 2 | 3 | 1 | 0 | 0 | 2.00 |
| | Oct | 5 | 10 | 4 | 4 | 2 | 0 | 0 | 2.00 |
| | Nov | 2 | 6 | 1 | 3 | 2 | 0 | 0 | 3.00 |
| | Dec | 13 | 84 | 38 | 26 | 13 | 7 | 0 | 6.46 |
| | Total | 69 | 414 | 105 | 214 | 48 | 42 | 5 | 6.00 |
| 2002 | Jan | 11 | 98 | 55 | 31 | 6 | 3 | 3 | 8.91 |
| | Feb | 7 | 27 | 10 | 16 | 1 | 0 | 0 | 3.86 |
| | Mar | 7 | 47 | 22 | 22 | 2 | 1 | 0 | 6.71 |
| | Apr | 5 | 74 | 33 | 38 | 2 | 1 | 0 | 14.80 |
| | May | 2 | 12 | 3 | 9 | 0 | 0 | 0 | 6.00 |
| | Jun | 2 | 9 | 4 | 5 | 0 | 0 | 0 | 4.50 |
| | Jul | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 2.00 |
| | Aug | 3 | 17 | 6 | 6 | 4 | 1 | 0 | 5.67 |
| | Sep | 2 | 7 | 3 | 2 | 0 | 1 | 1 | 3.50 |
| | Oct | 2 | 6 | 4 | 2 | 0 | 0 | 0 | 3.00 |
| | Nov | 5 | 71 | 30 | 30 | 5 | 2 | 4 | 14.20 |
| | Dec | 3 | 31 | 11 | 14 | 5 | 1 | 0 | 10.33 |
| | Total | 50 | 401 | 182 | 176 | 25 | 10 | 8 | 8.02 |

Table 4 Cont.

| Indonesian | | | | | | | | | |
|-------------------|--------------|--------|-----------|------------|------------|------------|-----------|-----------|----------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2003 | Jan | 3 | 28 | 9 | 17 | 1 | 1 | 0 | 9.33 |
| | Feb | 3 | 27 | 7 | 18 | 1 | 0 | 1 | 9.00 |
| | Mar | 2 | 29 | 4 | 23 | 1 | 1 | 0 | 14.50 |
| | Apr | 7 | 77 | 18 | 56 | 1 | 2 | 0 | 11.00 |
| | May | 3 | 23 | 10 | 11 | 1 | 1 | 0 | 7.67 |
| | Jun | 1 | 1 | 0.50 | 0.50 | 0 | 0 | 0 | 1.00 |
| | Jul | 2 | 6 | 3 | 3 | 0 | 0 | 0 | 3.00 |
| | Aug | 2 | 7 | 2 | 5 | 0 | 0 | 0 | 3.50 |
| | Sep | 3 | 8 | 3 | 4 | 1 | 0 | 0 | 2.67 |
| | Oct | 7 | 22 | 10 | 10 | 2 | 0 | 0 | 3.14 |
| | Nov | 9 | 78 | 9 | 59 | 7 | 3 | 0 | 8.67 |
| | Dec | 20 | 266 | 41 | 204 | 13 | 8 | 0 | 13.30 |
| | Total | | 62 | 571 | 116 | 410 | 28 | 16 | 1 |
| 2004 | Jan | 14 | 167 | 18 | 140 | 5 | 4 | 0 | 11.93 |
| | Feb | 9 | 109 | 7 | 92 | 5 | 5 | 0 | 12.11 |
| | Mar | 9 | 98 | 19 | 71 | 3 | 5 | 0 | 10.89 |
| | Apr | 7 | 86 | 3 | 77 | 5 | 1 | 0 | 12.29 |
| | May | 6 | 42 | 3 | 38 | 1 | 0 | 0 | 7.00 |
| | Jun | 1 | 13 | 0 | 12 | 1 | 0 | 0 | 13.00 |
| | Jul | 2 | 18 | 7 | 11 | 0 | 0 | 0 | 9.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 3.00 |
| | Oct | 2 | 4 | 1 | 3 | 0 | 0 | 0 | 2.00 |
| | Nov | 8 | 97 | 17 | 77 | 1 | 2 | 0 | 12.13 |
| | Dec | 12 | 246 | 49 | 192 | 4 | 1 | 0 | 20.50 |
| | Total | | 71 | 883 | 124 | 716 | 25 | 18 | 0 |
| 2005 | Jan | 10 | 306 | 77 | 227 | 2 | 0 | 0 | 30.60 |
| | Feb | 9 | 164 | 41 | 121 | 1 | 1 | 0 | 18.22 |
| | Mar | 6 | 104 | 9 | 94 | 1 | 0 | 0 | 17.33 |
| | Apr | 8 | 45 | 9 | 33 | 2 | 1 | 0 | 5.63 |
| | May | 2 | 7 | 3 | 4 | 0 | 0 | 0 | 3.50 |
| | Jun | 1 | 8 | 2 | 6 | 0 | 0 | 0 | 8.00 |
| | Jul | 2 | 11 | 2 | 8 | 1 | 0 | 0 | 5.50 |
| | Aug | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 2.00 |
| | Sep | 3 | 16 | 3 | 12 | 1 | 0 | 0 | 5.33 |
| | Oct | 6 | 33 | 7 | 25 | 1 | 0 | 0 | 5.50 |
| | Nov | 11 | 81 | 14 | 57 | 5 | 0 | 5 | 7.36 |
| | Dec | 12 | 112 | 31 | 76 | 3 | 2 | 0 | 9.33 |
| | Total | | 71 | 889 | 198 | 665 | 17 | 4 | 5 |

Table 4 Cont.

| Indonesian | | | | | | | | | |
|-------------------|--------------|--------|------------|--------------|------------|--------------|------------|-----------|------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2006 | Jan | 28 | 398 | 61 | 285 | 6 | 1 | 45 | 14.21 |
| | Feb | 23 | 255 | 61 | 175 | 4 | 3 | 12 | 11.09 |
| | Mar | 12 | 58 | 13 | 44 | 1 | 0 | 0 | 4.83 |
| | Apr | 9 | 76 | 16 | 55 | 3 | 2 | 0 | 8.44 |
| | May | 7 | 55 | 22 | 17 | 1 | 0 | 15 | 7.86 |
| | Jun | 5 | 23 | 5 | 12 | 0 | 1 | 5 | 4.60 |
| | Jul | 6 | 23 | 0 | 14 | 4 | 1 | 4 | 3.83 |
| | Aug | 4 | 20 | 5 | 13 | 2 | 0 | 0 | 5.00 |
| | Sep | 5 | 22 | 2 | 18 | 1 | 1 | 0 | 4.40 |
| | Oct | 4 | 26 | 8 | 14 | 2 | 2 | 0 | 6.50 |
| | Nov | 4 | 89 | 19 | 68 | 1 | 1 | 0 | 22.25 |
| | Dec | 20 | 564 | 90 | 455 | 8 | 11 | 0 | 28.20 |
| | Total | | 127 | 1,609 | 302 | 1,170 | 33 | 23 | 81 |
| 2007 | Jan | 11 | 362 | 50 | 312 | 0 | 0 | 0 | 32.91 |
| | Feb | 7 | 177 | 14 | 150 | 9 | 4 | 0 | 25.29 |
| | Mar | 5 | 68 | 15 | 50 | 2 | 1 | 0 | 13.60 |
| | Apr | 3 | 50 | 8 | 36 | 3 | 1 | 2 | 16.67 |
| | May | 5 | 108 | 15 | 74 | 11 | 3 | 5 | 21.60 |
| | Jun | 5 | 104 | 6 | 76 | 6 | 1 | 15 | 20.80 |
| | Jul | 1 | 29 | 10 | 19 | 0 | 0 | 0 | 29.00 |
| | Aug | 1 | 3 | 0 | 0 | 0 | 0 | 3 | 3.00 |
| | Sep | 3 | 13 | 2 | 8 | 1 | 0 | 2 | 4.33 |
| | Oct | 6 | 46 | 7 | 35 | 2 | 0 | 2 | 7.67 |
| | Nov | 7 | 99 | 21 | 53 | 10 | 3 | 12 | 14.14 |
| | Dec | 6 | 103 | 28 | 61 | 8 | 1 | 5 | 17.17 |
| | Total | | 60 | 1,162 | 176 | 874 | 52 | 14 | 46 |
| 2008 | Jan | 8 | 312 | 136 | 143 | 13 | 12 | 8 | 39.00 |
| | Feb | 12 | 392 | 215 | 163 | 8 | 4 | 2 | 32.67 |
| | Mar | 2 | 22 | 12 | 7 | 0 | 0 | 3 | 11.00 |
| | Apr | 2 | 43 | 22 | 18 | 0 | 1 | 2 | 21.50 |
| | May | 4 | 119 | 50 | 53 | 3 | 3 | 10 | 29.75 |
| | Jun | 9 | 122 | 2 | 85 | 17 | 6 | 12 | 13.56 |
| | Jul | 5 | 59 | 0 | 40 | 11 | 8 | 0 | 11.80 |
| | Aug | 4 | 27 | 0 | 22 | 3 | 2 | 0 | 6.75 |
| | Sep | 5 | 41 | 0 | 34 | 2 | 1 | 4 | 8.20 |
| | Oct | 8 | 233 | 0 | 185 | 11 | 12 | 25 | 29.13 |
| | Nov | 9 | 283 | 34 | 202 | 12 | 10 | 25 | 31.44 |
| | Dec | 17 | 456 | 113 | 266 | 43 | 18 | 16 | 26.82 |
| | Total | | 85 | 2,109 | 584 | 1,218 | 123 | 77 | 107 |

Table 4 Cont.

| Indonesian | | | | | | | | | |
|-------------------|-------|------------|--------------|------------|--------------|-----------|-----------|------------|--------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2009 | Jan | 21 | 437 | 163 | 256 | 9 | 1 | 8 | 20.81 |
| | Feb | 14 | 190 | 31 | 156 | 1 | 1 | 1 | 13.57 |
| | Mar | 14 | 284 | 142 | 138 | 2 | 2 | 0 | 20.29 |
| | Apr | 7 | 166 | 64 | 100 | 1 | 1 | 0 | 23.71 |
| | May | 7 | 81 | 23 | 54 | 0 | 0 | 4 | 11.57 |
| | Jun | 5 | 62 | 0 | 44 | 0 | 0 | 18 | 12.40 |
| | Jul | 4 | 41 | 0 | 40 | 1 | 0 | 0 | 10.25 |
| | Aug | 5 | 41 | 3 | 37 | 0 | 1 | 0 | 8.20 |
| | Sep | 9 | 187 | 25 | 141 | 0 | 0 | 21 | 20.78 |
| | Oct | 18 | 506 | 47 | 437 | 0 | 0 | 22 | 28.11 |
| | Nov | 18 | 707 | 3 | 646 | 0 | 25 | 33 | 39.28 |
| | Dec | 15 | 286 | 17 | 250 | 0 | 2 | 17 | 19.07 |
| Total | | 137 | 2,988 | 518 | 2,299 | 14 | 33 | 124 | 21.81 |

Table 5 Fishing effort (no.of trip), catch (mt) and CPUE (mt/trip) by Thai longliners landed at Phuket Province in 2007.

| Thai | | | | | | | | | |
|--------------|-------|----------|-----------|----------|-----------|----------|----------|----------|-------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2007 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 2 | 6 | 3 | 0 | 0 | 0 | 3 | 3.00 |
| | Apr | 1 | 4 | 0 | 4 | 0 | 0 | 0 | 4.00 |
| | May | 1 | 4 | 0 | 4 | 0 | 0 | 0 | 4.00 |
| | Jun | 1 | 5 | 0 | 3 | 0 | 0 | 2 | 5.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Total | | 5 | 19 | 3 | 11 | 0 | 0 | 5 | 3.80 |

Table 6 Fishing effort (no.of trip), catch (mt) and CPUE (mt/trip) by Vanuatu longliners landed at Phuket Province in 2007.

| Vanuatu | | | | | | | | | |
|----------------|-------|----------|----------|----------|----------|----------|----------|----------|-------------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2007 | Jan | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| Total | | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1.00 |

Table 7 Fishing effort (no.of trip), catch (mt) and CPUE (mt/trip) by Malaysian longliners landed at Phuket Province during 2008 to 2009.

| Malaysia | | | | | | | | | |
|-----------------|--------------|--------|----------|-----------|----------|-----------|----------|----------|-----------|
| Year | Month | Effort | Total | BET | YFT | MAR | SWO | MSC | CPUE |
| 2008 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 1 | 38 | 0 | 33 | 2 | 2 | 1 | 38.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 1 | 38 | 0 | 33 | 2 | 2 | 1 |
| 2009 | Jan | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1.00 |
| | Feb | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Mar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Apr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | May | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jun | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Jul | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Aug | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Sep | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Oct | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Nov | 1 | 40 | 0 | 25 | 0 | 0 | 15 | 40.00 |
| | Dec | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.00 |
| | Total | | 1 | 40 | 0 | 25 | 0 | 0 | 15 |

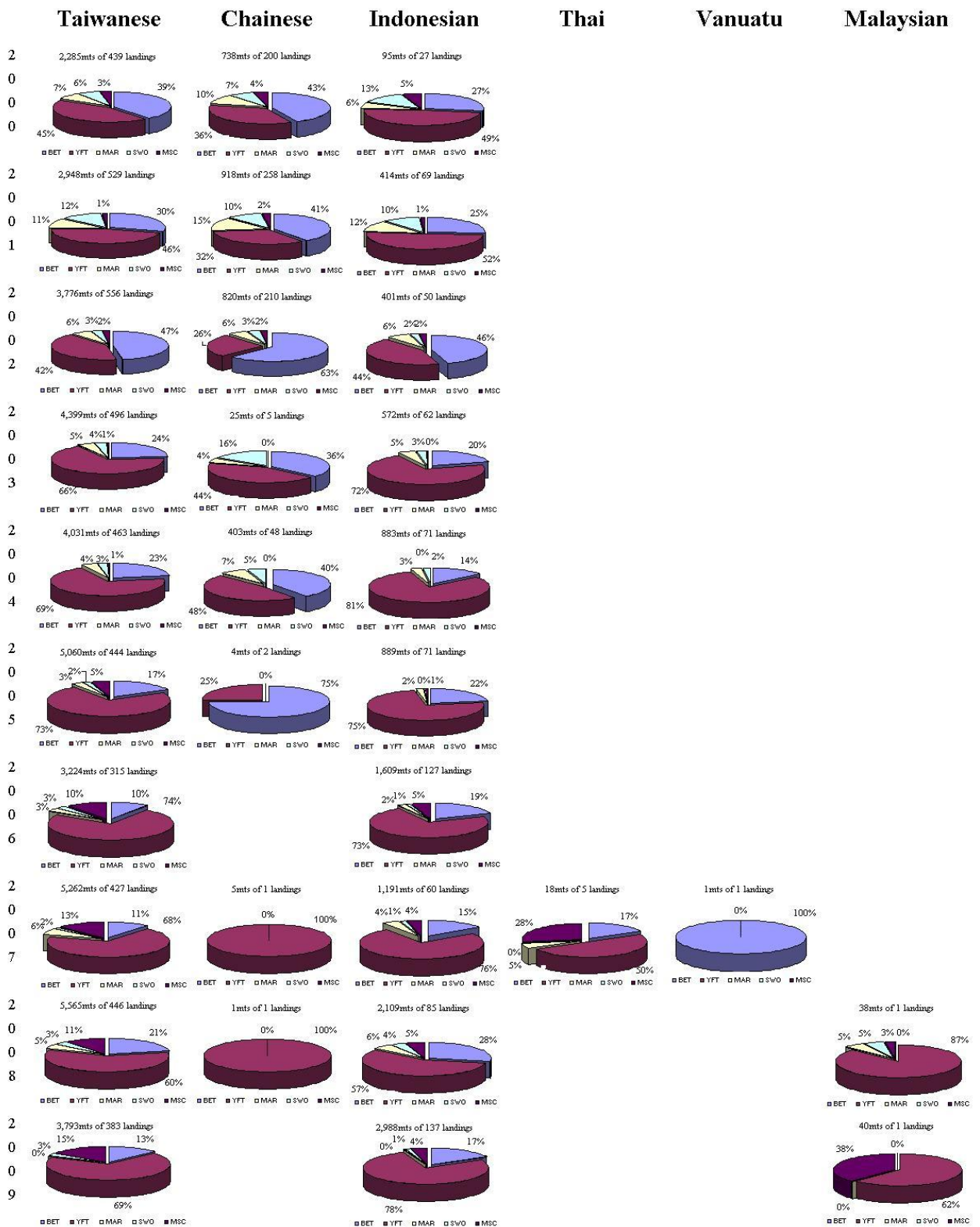


Figure 5 Species composition from tuna longliners landing in Phuket during 2000-2009, categorized by flag countries.

Table 8 and Table 9 present the sampling size of measure at length and weight of tuna, tuna-like and by-catch species during April 2000 to December 2009 including relevance activities of longliners port sampling in Phuket.

During April 2000 to December 2006, there was the Sampling Program on Fresh Tuna Longliner Unloading in Phuket. The Outcome showed the high progress of sampling method and port sampling activities. Although during the years after the finishing of the programme, AFDEC's officers were limited to conduct port sampling completely as previous period, however the monitoring and port sampling on fresh tuna longliner landing in Phuket have to be carried continuously. The sampling coverage percentage in 2009 was 3.0 % of total landing.

Table 8 Size range and number of samples size of tuna, tuna-like and by-catch species during April 2000 - December 2009.

| Species | Size Range (Weight' kg) | | Number of individual Measured Fish | | |
|------------------------|----------------------------|-----|------------------------------------|-------------|----------------|
| | Min | Max | LD1 (cm) | PDL (cm) | Weight (kg) |
| Yellowfin Tuna | 2 | 123 | 19,053 | | 144,261 |
| Bigeye Tuna | 5 | 145 | 8,848 | | 70,418 |
| TUNA | 2 | 90 | | | 4,728 |
| Swordfish | 2 | 184 | | 976 | 5,900 |
| Black marlin | 7 | 310 | | 314 | 1,770 |
| Blue marlin | 6 | 352 | | 424 | 2,012 |
| Stripped marlin | 9 | 340 | | 275 | 1,525 |
| Indo-Pacific sailfish | 5 | 58 | | 223 | 680 |
| Short-billed spearfish | 4 | 66 | | 32 | 227 |
| BILL | 9 | 220 | | 117 | 1,622 |
| Sharks | 2 | 95 | | 73 | 750 |
| Others | 1 | 130 | | 50 | 2,194 |
| Albscore | 3 | 45 | 271 | | 1,402 |
| Total | | | 28,172 | 2,484 | 237,489 |

Table 9 Longliners Port Sampling Activities in Phuket, Thailand from January 2000 to December 2009

| Year | Total no. of landing | Total no. of sampled vessel | % of coverage sampling size | Total catch (mts) from customs | Total no. of weight samples | Total no. of interview | Total no. of body length measured samples | Total no. of others activities | | |
|--------------|----------------------|-----------------------------|-----------------------------|--------------------------------|-----------------------------|------------------------|---|--------------------------------|---------------|------------|
| | | | | | | | | Shark | Other species | Otolith |
| 2000 | 665 | 62 | 9.3 | 2,667 | 29,306 | 91 | 4,015 | 197 | 333 | 81 |
| 2001 | 876 | 230 | 26.3 | 2,493 | 59,040 | 44 | 6,324 | 163 | 540 | 52 |
| 2002 | 816 | 194 | 23.8 | 2,072 | 40,458 | 50 | 5,513 | 12 | 26 | 142 |
| 2003 | 563 | 201 | 35.7 | 3,162 | 44,864 | 29 | 3,739 | 14 | 41 | 318 |
| 2004 | 582 | 152 | 26.1 | 5,197 | 23,356 | 36 | 2,492 | - | - | 59 |
| 2005 | 517 | 152 | 29.4 | 5,120 | 21,502 | 52 | 4,760 | - | - | - |
| 2006 | 442 | 159 | 36.0 | 3,114 | 16,433 | 57 | 3,938 | - | - | - |
| 2007 | 494 | 56 | 11.3 | 10,114 | 6,158 | - | 1,321 | - | - | - |
| 2008 | 533 | 38 | 7.1 | 7,551 | 2,512 | - | - | - | - | - |
| 2009 | 521 | 15 | 2.8 | 6,802 | 5,366 | 1 | 62 | - | - | - |
| Total | 6,009 | 1,259 | 21 | 48,292 | 248,995 | 360 | 32,164 | 386 | 940 | 652 |

2. Tuna Purse Seiners

There were only Japanese tuna purse seiners landed in Phuket during the last six years which were the six vessels of the size range 349-477 (GRT, Gross Ton Net) 63.24-75.97 m (LOA, length overall). Type of preservation was brine and fish was kept as frozen. During 2003 to 2006, there was only Nippon Maru landed for 2-6 trips/year. In the later year, 2007, they were five vessels with totally landed of 12 trips. In 2008 there were five vessels with totally landed of 10 trips and four vessels with totally landed of 8 trips in 2009.

Table 10 Number of foreign tuna purse seines landed in Phuket during 2003 - 2009.

| Type of vessel | Number of landing | | | | | | | Total |
|---------------------------|-------------------|------|------|------|------|------|------|-----------|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | |
| Tuna Purse Seiners | 4 | 3 | 6 | 2 | 12 | 10 | 8 | 45 |

Fishing Ground

The tuna purse seiners operated in the fishing grounds between latitude 05° 00' N to 10° 41' S and longitude 59° 12' E to 98° 48' E. The most intensive fishing effort were operated in the West of Indonesia and the areas around Maldives and Chagos while there were scantily fishing in the East of Somalia and around Seychelles. During 2003 to 2009 the tuna purse seiners operated only the fishing grounds where were near by the landing site, West of Indonesia and the areas around Maldives and Chagos. Thus it saved the cost of fuel (Figure 6).

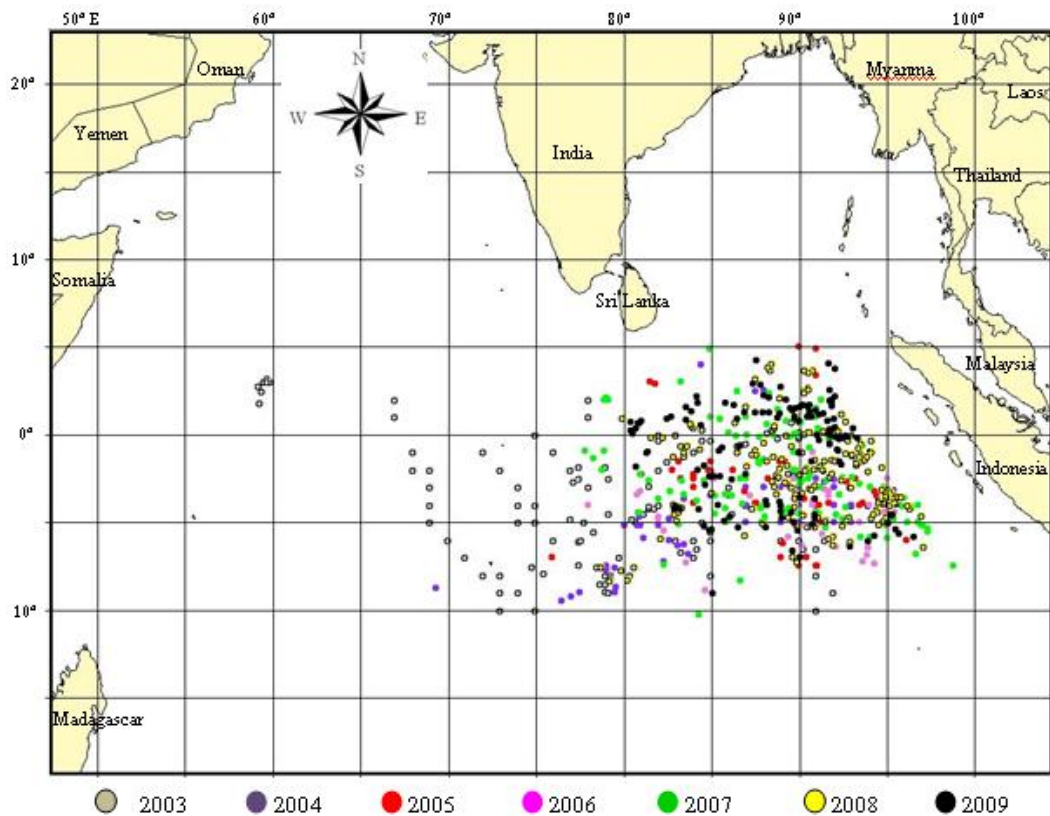


Figure 6 Fishing grounds of tuna purse seiners which landing in Phuket, 2003- 2009.

Species composition, Catch and Value

Catch and percentage composition of skipjack, yellowfin tuna and bigeye tuna during 2003 to 2009 were 16,177 (63.8%), 4,164 (16.3%) and 5,147 mts (19.9%) with the value of 549.7, 176.9 and 189.9 million baht, respectively. The total catch of the three species during 2003 to 2009 were 25,488 mts with the value of 914.4 million baht (Table 11). There was a few of bycatch which the most frequented observed species was triggerfish, *Abalistes stellaris* (Bloch & Schneider, 1801).

Table 11 Catch and value of tunas caught by foreigners purse seine landed in Phuket Province during 2003 - 2009.

| Year | Catch (mts) and Value (million baht) | | | | | | | | | | |
|-------|--------------------------------------|------|---------|-------|------|---------|-------|------|---------|--------|---------|
| | SKJ | | | YFT | | | BET | | | total | |
| | Catch | | Value | Catch | | Value | Catch | | Value | Catch | Value |
| | Mts | % | Million | Mts | % | Million | Mts | % | Million | Mts | Million |
| 2003 | 1,755 | 61.6 | 52.6 | 465 | 16.3 | 13.4 | 630 | 22.1 | 18.5 | 2,850 | 84.6 |
| 2004 | 1,602 | 66.8 | 47.6 | 324 | 13.5 | 10.2 | 474 | 19.8 | 14.8 | 2,400 | 72.6 |
| 2005 | 3,246 | 65.7 | 108.2 | 998 | 20.2 | 33.5 | 696 | 14.1 | 24.1 | 4,940 | 165.9 |
| 2006 | 895 | 66.3 | 32.5 | 220 | 16.3 | 10.1 | 235 | 17.4 | 10.8 | 1,350 | 52.2 |
| 2007 | 3,074 | 62.8 | 121.3 | 754 | 15.4 | 42.7 | 1,066 | 21.8 | 49.4 | 4,894 | 212.4 |
| 2008 | 2,435 | 60.7 | 114.9 | 874 | 21.8 | 52.9 | 703 | 17.5 | 37.3 | 4,012 | 205.1 |
| 2009 | 3,170 | 62.9 | 72.6 | 529 | 10.5 | 14.1 | 1,343 | 26.6 | 35.0 | 5,042 | 121.6 |
| Total | 16,177 | 63.8 | 549.7 | 4,164 | 16.3 | 176.9 | 5,147 | 19.9 | 189.9 | 25,488 | 914.4 |

AFRDEC pursued the port sampling continuously and it has the consistent improvement in the sampling activity. The sampling coverage during the last seven year was 82.2% or 37 samples of totally 45 landings while 88.8% or 40 copied logbooks were received (Table12). About seven thousand of individual fish were measured fork length and weight while 319 samples were measured LD1, 8,530 samples were identified and counted as well. The sampling size of each species showed in Table 13.

Table 12 Number of foreigners purse seines landed at Phuket Deep Sea Port and percentage of port sampling during 2003 to 2009.

| Flag | Number of Landing | | | | | | | Total |
|----------------------|-------------------|----------|----------|----------|-----------|-----------|----------|-----------|
| | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | |
| Total Landing | 4 | 3 | 6 | 2 | 12 | 10 | 8 | 45 |
| Port Sampling | 3 | 3 | 3 | 2 | 9 | 9 | 8 | 37 |
| % | 75.0 | 100.0 | 50.0 | 100.0 | 75.0 | 90.0 | 100 | 82.2 |
| Provided | 4 | 2 | 3 | 2 | 11 | 10 | 8 | 40 |
| % | 100.0 | 66.7 | 50.0 | 100.0 | 91.7 | 100.0 | 100 | 88.8 |

Table 13 Size range and number of samples size of tunas caught by tuna purse seiners during January 2003 to 2009.

| Species | Fish Size | | | | | | Sampling size (No. of individual fish) | | | |
|---------|--------------|------|---------|-------------------|-------|---------|--|-------|-----|---------|
| | (Weight, kg) | | | (Fork length, cm) | | | Measuring | | | Counted |
| | Min. | Max. | Average | Min. | Max. | Average | Weight | FL | LD1 | |
| SKJ | 0.4 | 7.8 | 2.2 | 24.0 | 70.0 | 54.4 | 2,180 | 2,180 | | 8,440 |
| YFT | 0.6 | 40.2 | 6.9 | 25.5 | 151.1 | 59.0 | 1,629 | 1,629 | 271 | 32 |
| BET | 0.5 | 25.8 | 4.0 | 19.6 | 108.9 | 49.6 | 3,763 | 3,763 | 48 | 58 |
| Total | | | | | | | 7,572 | 7,570 | 319 | 8,530 |
| Samples | | | | | | | | | | |

ENCOUNTERED PROBLEMS AND RECOMMENDATION

Although the port sampling and surveying have been carried on, it seems to have some problems in connection with data collection and statistics these include.

1. Outcome of Sampling Program on Fresh Tuna Longline Vessels Unloading in Phuket during April 2000 to December 2006 had improved a lot of knowledge on the activities, total landing, species breakdown and size composition for each species caught by surface longliner for IOTC, OFCF and AFRDEC, DOF Thailand. Even the AFRDEC term would get many problems that cooperated from fishing agency. Anyhow we tried to deal again and again by many ways and now the situation is better. Consequence, the sampling program would be continuous monitoring, which support fund from relevant countries or IOTC.
2. The lack of logsheet of foreigner longliner unloaded at Phuket fishing port, only the interview data have been taken from the export company and master fishermen. Then, the data collection system of longliner has to be better established, so that all data users (such as the IOTC) researcher and fishermen may be satisfied.
3. The data collection and statistics address of tuna and billfish should have cooperated between the fleet nations and the port nations have been unloaded or transshipped (such as log sheet for foreigner tuna purse seine and lonliner fisheries in the Eastern Indian Ocean).
4. The logistic of fresh tuna longline should be established in the Eastern Indian Ocean, including the port sampling approach should be establish as well from IOTC.