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Catch Monitoring Survey at Marine Landing Sites, Cambodia

MaFReDI Technical Report

June 2023

Marine Fisheries Research and Development Institute (MaFReDI)

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Table of Content

List of tables.....	i
List of figures	i
Annex	Error! Bookmark not defined.
Acknowledgements.....	iii
Abbreviations	iii
Executive Summary	iv
1. Introduction	1
2. Methodology	1
3. RESULTS	1
<i>3. 1. Number of vessels/landings recorded in June</i>	<i>1</i>
<i>3. 2. Catch per Unit of Effort by main gears.....</i>	<i>2</i>
<i>3. 3. Catch proportion by main gears.....</i>	<i>3</i>
<i>3.4. Species group catch contribution by landed weight</i>	<i>4</i>
<i>3.5. Species catch composition by reported catch weight for all landings</i>	<i>4</i>
<i>3.6. Species group contribution by landed value</i>	<i>5</i>
<i>3.7. Species catch composition by reported catch value for all landings</i>	<i>5</i>
<i>3.8. Total calculated catch</i>	<i>6</i>

List of tables

<i>Table 1. Number of the landings recorded by province and landing site.</i>	<i>1</i>
<i>Table 2. CPUE (kg/day) for main small- and middle-scale gears.....</i>	<i>2</i>
<i>Table 3. CPUE (kg/day) for trawlers by vessel size.</i>	<i>2</i>
<i>Table 4. Proportion of catch by main fishing gear for small-scale and middle-scale gears.....</i>	<i>3</i>
<i>Table 5. Catch composition by species for all landings.....</i>	<i>4</i>
<i>Table 6. Total value (1000 Riel) by species for all landing</i>	<i>6</i>
<i>Table 7. Total estimated catch by main vessel gear categories.</i>	<i>7</i>

List of figures

<i>Figure 1. Catch composition by species group for all landings combined.</i>	<i>4</i>
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Figure 2. The value of the catch by main species groups for all landings 5

Annex

Annex 1. Catch composition by species group for all landing, by weight and value. **Error! Bookmark not defined.**

Annex 2. Catch contribution by gear type and province. **Error! Bookmark not defined.**

Annex 3. Calculated CPUE by province..... **Error! Bookmark not defined.**

Annex 4. Species catch by province..... **Error! Bookmark not defined.**

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Abbreviations

CPUE	Catch per Unit Effort
EU	European Union
$\varepsilon\%$	Relative Standard Error
FAO	Food and Agriculture Organization
FCMAS	Fish Catch Monitoring Assessment Survey
FiA	Fisheries Administration
FiAC	Fisheries Administration Cantonment
KHR	Khmer Riel
MaFReDI	Marine Fisheries Research and Development Institute
MT	Metric Tons
nei	not elsewhere included
SD	Standard Deviation
US\$	United States Dollars

Executive Summary

The data for June 2023, shows that the CPUE of trawl fishing is the highest at 191.7 kg/fishing day, followed by middle-scale half-beak gillnet (101.2 kg/day), fish gillnet (78 kg/day) and Octopus trap long line (47 kg/day). There is a distinct difference in the CPUE for small and large trawlers, with trawlers of 6-12 meters reporting an average daily catch of 62.5 kg and trawlers 12-18 meters reporting 451 kg/day.

A total of 43 individual species are recorded with *Encrasicholina heteroloba* (shorthead anchovie) contributing more than 70% of the total recorded catch for 224 landings of **103,763** kg. In general, fish contribute 85% of the total reported catch, followed by Cephalopods 10%, Shrimps 2% and crabs at 1%. In terms of value, Cephalopods contribute 46%, fish 35%, Crabs 10% and shrimp 6%. The total value of the reported catch is **384,418,000** Riels.

The total estimated catch for June 2023, is calculated at 7,423 MT, with most of it from trawl fishing (66%) and with small-scale fishing contributing more than 17%. The total value of the estimated catch, using the average reported price, is **27,496,273,600** KHR or US\$ **6,706,408**.

1. Introduction

With technical assistance from FAO CAPFISH project under EU budget support, Marine Fisheries Research and Development Institute (MaFReDI) has been conducting scientific catch monitoring at landing site in four provinces since June 2021. The aim of the survey is to estimate the Catch per Unit of Effort (CPUE) in kg/fishing day, for the main fishing gears used, the monthly fishing effort, species catch and value, as well as the total estimated catch, from data collected at the main landing sites in Kampot, Kep, Koh Kong and Preah Sihanouk provinces. This report describes the main results for marine fish catch monitoring at national level in Cambodia for June 2023.

Additional details on findings for individual provinces based on priority needs and requests from fisheries administration cantonment (FiAC) are included in a number of annexes.

2. Methodology

The methodology, sampling design and survey form for the Fish Catch Monitoring Assessment Survey (FCMAS) is included in a manual, which is available from the FiA web-site:

Fisheries Administration (FiA) 2021. Manual for Fish Catch Monitoring Assessment for Marine Fisheries in Cambodia. Marine Fisheries Research and Development Institute of the Fisheries Administration, Phnom Penh, Cambodia. 38 pages.

3. RESULTS

3. 1. Number of vessels/landings recorded in June

Data collection for June 2023 was conducted at 8 fishing landing sites, two in each coastal province (Table 1). Overall, landings for 52 small-scale vessels and 172 middle-scale vessels were recorded. Middle-scale vessels includes vessels with a length 12-24 meter and all trawlers regardless of size, as well as all vessels operating blood cockle dragnet.

Table 1. Number of the landings recorded by province and landing site.

Province	Landings	Vessel Class		Grand Total
		Small Scale	Middle Scale	
Kampot	Kampong Kandal	1	27	28
	Trapeang Ropov	13	15	28
Kep	Ampeng	9	19	28
	Ou Krasar	5	23	28
Koh Kong	Oknha Lyon Phat	12	16	28
	Thmasar	10	18	28
Preah Sihanouk	Stueng Hav		28	28
	Tumnup Rolok	2	26	28
Grand Total		52	172	224

All landing sites are covered for the same four consecutive survey days, recording the catches for seven random landings for each day, through a combination of interviews (recall survey) and trader/fisher records.

3. 2. Catch per Unit of Effort by main gears

As the FCMAS uses random sampling of landings, the number of records for fishing gears varies between months, but reflect the occurrence and frequency of gears used at the landing sites covered by the survey. Only gears with 2 or more observations, are included in Table 2, as this allows to assess the statistical accuracy by calculating the relative standard error ($\epsilon\%$) of the average CPUE. Trawling has the highest CPUE at 191.7 kg/fishing day, followed by middle-scale half-beak gillnet (101 kg/day), fish gillnet (78 kg/day), Mackerel gillnet (69.6 kg/day) and Octopus trap long line (46.8 kg/day). Small-scale gears with the highest CPUE are fish gillnet at 60.2 kg/day and Centipede trap (17.4 kg/day) and are largely comparable for the same gears used by middle-scale vessels.

Table 2. CPUE (kg/day) for main small- and middle-scale gears.

Middle Scale	CPUE	N	SD	$\epsilon\%$
Trawl	191.7	96	293.5	15.6%
Halfbeak gillnet	101.2	2	1.6	1.2%
Fish gillnet	78.0	5	26.8	15.4%
Mackerel Gillnet	69.6	2	42.9	43.6%
Octopus trap longline	46.8	10	12.5	8.4%
Shrimp gillnet	27.7	6	5.9	8.7%
Crab trap	22.1	10	6.3	9.0%
Crab gillnet	20.9	26	10.6	10.0%
Centipede trap	19.3	5	9.8	22.8%
Dragged basket for blood cockle	9.8	4	5.0	25.6%
Small-scale	CPUE	N	SD	$\epsilon\%$
Fish gillnet	60.2	13	42.5	19.6%
Centipede trap	17.4	12	4.3	7.1%
Bottom longline for Squid	15.5	11	21.6	42.1%
Crab gillnet	14.9	8	11.7	27.6%
Crab trap	13.9	2	1.6	8.3%

The value for $\epsilon\%$ indicates the statistical precision, or the expected margin of the estimated average CPUE around the real value of the CPUE. If the value for the $\epsilon\%$, is higher than 25%, this indicates that the estimated average value is not reliable and should not be used. As Table 2, shows this only is an issue for a few gears that have a high variation relative to the estimated CPUE, most likely caused by differences in the amount of gear deployed. For most gears, the statistical precision is acceptable.

Table 3. CPUE (kg/day) for trawlers by vessel size.

Trawlers	CPUE	N	SD	$\epsilon\%$
Small-scale 6-12m	62.5	63	113.1	22.8%
Middle-scale 12-18m	451.3	32	366.2	14.3%

Gears operated both by small- and middle-scale vessels see limited differences, except for active fishing gears like trawlers. The CPUE for trawlers sees a high difference between vessel size class (Table 3), with the CPUE for middle-scale trawlers 12-18 meter at over 450 kg/day, more than 7 times higher than for 6-12 meter trawlers at 62.5 kg/day.

3. 3. Catch proportion by main gears

Trawlers have the highest contribution to the total catch overall, with 85.8% of the reported catch by trawlers. Fish gillnet have the highest contribution to the total catch for small-scale vessels. Middle-scale fisheries, contribute more than 97% of the total recorded catch, besides trawlers, other middle-scale gears contribute 11.4% of the reported catches. Small-scale fishing only contributes 2.8% of the total recorded fisheries yield.

Table 4. Proportion of catch by main fishing gear for small-scale and middle-scale gears

Middle Scale (97.2%)	Catch (%)
Trawl	85.8%
Octopus trap longline	2.6%
Halfbeak gillnet	2.4%
Unspecified gears	1.9%
Mackerel Gillnet	1.5%
Encircling seine	0.8%
Fish gillnet	0.7%
Crab gillnet	0.6%
Crab trap	0.4%
Squid tow longline	0.2%
Shrimp gillnet	0.2%
Other gears	0.2%

Small Scale (2.8%)	Catch (%)
Fish gillnet	0.8%
Fish trap	0.7%
Bottom longline for Squid	0.6%
Centipede trap	0.2%
Other gears	0.5%

	Total	Kampot	Kep	Koh Kong	Preah Sihanouk
Trawl	88,987.7	0.9%	0.6%	7.3%	91.2%
Other middle-scale	11,803.5	42.7%	4.8%	32.2%	20.3%
Small-scale	2,873	26.7%	8.9%	53.9%	10.4%
Total	103,664.2	6.4%	1.3%	11.4%	80.9%

In addition, when considering the fisheries production by province, for June 2023, the vast majority of the trawl fisheries production is reported from Preah Sihanouk followed at considerable distance by Koh Kong, with Kampot and Kep only contributing 1.5%. Most of the production by other middle-scale fisheries is by Kampot and Koh Kong, with most of the small-scale production reported in Koh Kong (see for additional details Annex 3).

3.4. Species group catch contribution by landed weight

The total reported catch for all species group was 103,664.2 kg, fish dominate the total reported catch with almost 85% of total weight followed by Cephalopods 10.2%, Shrimps at 2.2%, Crabs at 1.4% and unspecified species group at 1.2% (see Annex 1). Other species groups (sharks, rays and shellfish), contribute only 0.4%.

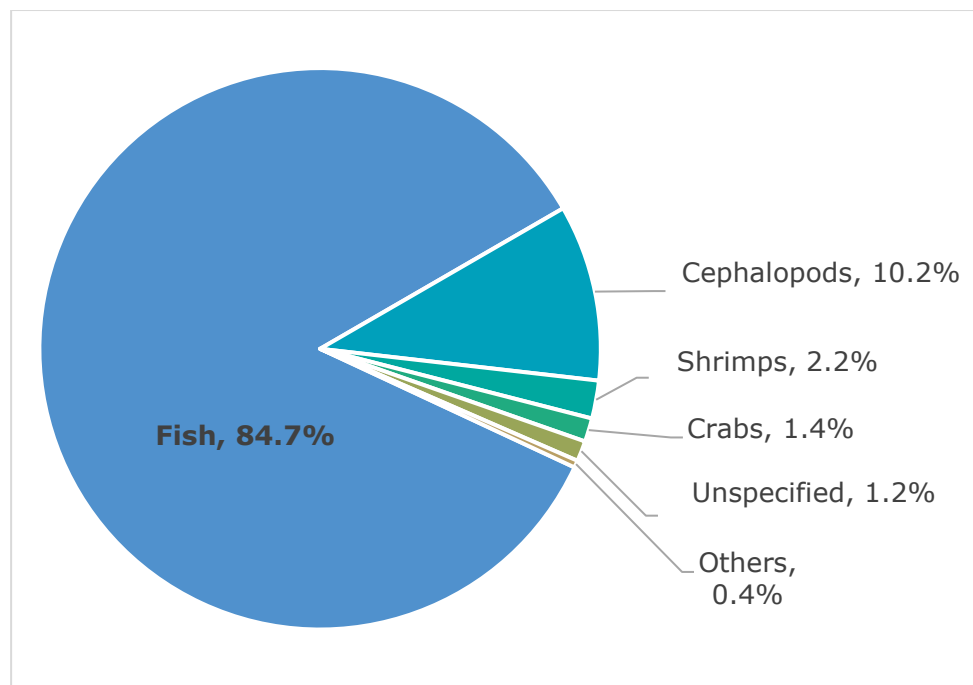


Figure 1. Catch composition by species group for all landings combined.

3.5. Species catch composition by reported catch weight for all landings

The total reported catch for June was 103,763 kg. The proportional catch by species is shown in Table 5. The most abundant species is the Shorthead anchovy (*Encrasicholina heteroloba*), which contributes 71.4% of the total reported catch. This is followed by a number of species groups, squids (5.7%), Other fish (4.7%), Octopus (2.7%) and trash fish (2.3%) and Black barred halfbeak (*Hemiramphus far*) with 1.4% and Swimming crab (*Portunus pelagicus*) with 1.2%. The top 20 species (and species groups) contribute 98.3% of the reported catch.

Table 5. Catch composition by species for all landings.

Scientific name	English Name	Khmer name	Catch (kg)	Catch (%)
<i>Encrasicholina heteroloba</i>	Shorthead anchovy	កាកីម	74,100.0	71.4%
	Squids nei	មីក	5,902.0	5.7%
	Other fish nei	ប្រភេទត្រីចំរុះ	4,891.0	4.7%
	Octopus	មីកពឹងពាង	2,844.0	2.7%
	trash fish	ត្រីដី	2,378.0	2.3%
<i>Hemiramphus far</i>	Blackbarred halfbeak	ត្រីធ្នាំងផ្កា	1,500.0	1.4%
<i>Portunus pelagicus</i>	Swimming crab	ក្អមសេះ	1,339.9	1.3%
	Other catch nei	ផ្សេងៗ	1,220.0	1.2%

	Cephalopods (squids/cuttlefish)	ពពួកមីកស្លុកនិងមីកបំពង់	1,099.9	1.1%
<i>Anodontostoma chacunda</i>	Chacunda gizzard shad	ត្រីកាម៉ែយ	1,093.0	1.1%
<i>Penaeus sp.</i>	Prawns nei	បង្កា	1,087.0	1.0%
	Needlefish nei	ត្រីធ្មោង	932.0	0.9%
<i>Suborder Sepiina</i>	Cuttlefish	មីកស្លុក	693.9	0.7%
<i>Rastrelliger kanagurta</i>	Indian mackerel	ត្រីកាម៉ុងខ្លួនវែង	600.0	0.6%
<i>Metapenaeus spp.</i>	Shrimps	បង្កាឌីខាក់	532.9	0.5%
		ត្រីផ្កាចូ ឬត្រីកាម៉ុងខ្លួនខ្លី		
<i>Rastrelliger brachysoma</i>	Short mackerel		450.0	0.4%
<i>Siganus canaliculatus</i>	Whitespotted Spinefoot	ត្រីកន្តាំងក្រអូម	437.0	0.4%
	Small mixed shrimp nei	គី	310.0	0.3%
<i>Nemipterus furcosus</i>	Forktailed Threadfin Bream	ត្រីក្រហមស្រកាទន់	300.0	0.3%
<i>Decapterus maruadsi</i>	Round scad	ត្រីកូនគុំ	300.0	0.3%
	Other species		1,752.6	1.7%
Grand total			103,763.2	

3.6. Species group contribution by landed value

The total reported value for June was 384,418,000 Riels, Cephalopods contribute 46.3%, Fish 34.8%, Crabs 9.6% and Shrimps 6.3%. Unspecified species groups contribute 2.1%, while Sharks, rays and shellfish contribute 1% of the total value (more details are included in Annex 2).

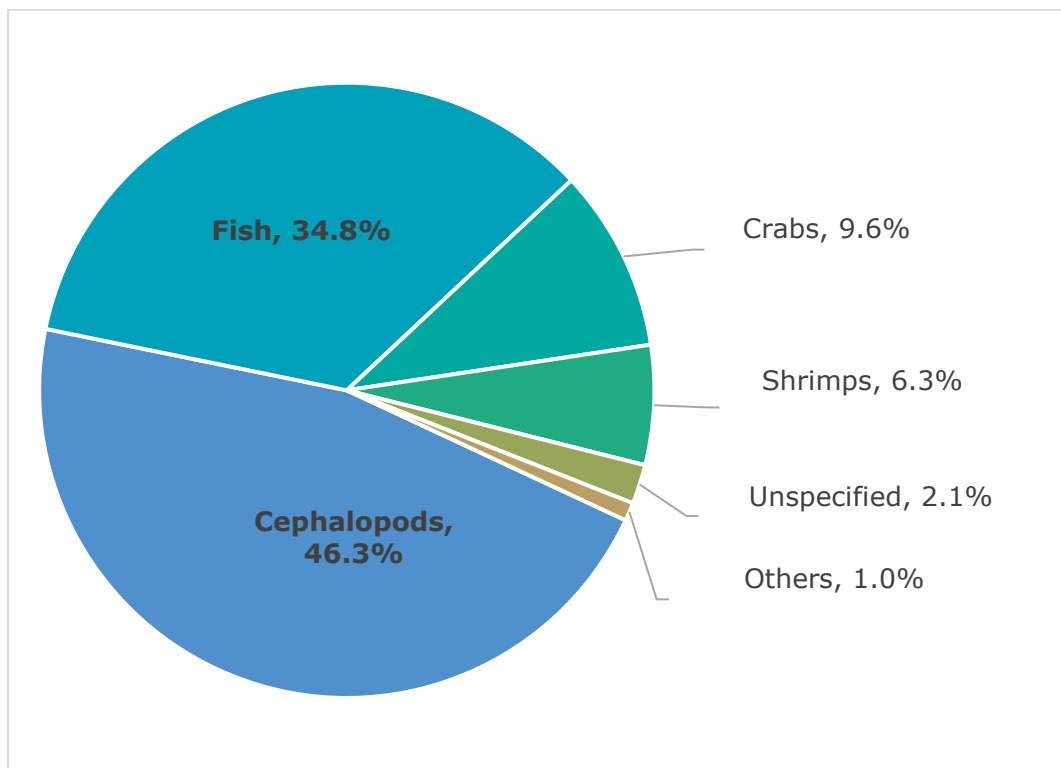


Figure 2. The value of the catch by main species groups for all landings

3.7. Species catch composition by reported catch value for all landings

The total reported value for June was 384,418,000 Riels for all species, the value and price for the top 20 species is shown in Table 6. The species (group) with the highest reported value is squids (30.1%), followed by Shorthead anchovy (17.3%), despite the low price of 875 Riel/kg, the high reported weight ensures this has a high contribution to the total catch. Besides a number of cephalopods species groups (Squids, Octopus and Cuttlefish), Swimming crabs (9.5%) and Cobia (5.2%), also are important, either through their bulk or high prices. Other fish (unspecified) contribute 3.2% of the total reported value.

Table 6. Total value (1000 Riel) by species for all landing

Species name	Common name	Value (1000 Riels)	Value (%)	Price (Riel/kg)
	Squids nei	115,760	30.1%	21,700
<i>Encrasicholina heteroloba</i>	Shorthead anchovy	66,400	17.3%	875
<i>Portunus pelagicus</i>	Swimming crab	36,349	9.5%	24,925
	Octopus	31,606	8.2%	10,750
<i>Rachycentron canadum</i>	Cobia	20,000	5.2%	80,000
	Cephalopods (squids/cuttlefish)	17,274	4.5%	13,600
<i>Suborder Sepiina</i>	Cuttlefish	13,191	3.4%	13,225
	Other fish nei	12,348	3.2%	3,100
<i>Metapenaeus spp.</i>		10,718	2.8%	18,300
<i>Hemiramphus far</i>	Blackbarred halfbeak	9,000	2.3%	6,000
	Other catch nei	7,958	2.1%	11,675
<i>Penaeus sp.</i>	Prawns nei	7,930	2.1%	13,100
<i>Rastrelliger kanagurta</i>	Indian mackerel	3,600	0.9%	6,000
<i>Rastrelliger brachysoma</i>	Short mackerel	3,600	0.9%	8,000
<i>Epinephelus coioides</i>	Orange-spotted grouper	3,500	0.9%	17,500
	Needlefish nei	3,396	0.9%	7,525
<i>Siganus canaliculatus</i>	Whitespotted Spinefoot	2,576	0.7%	4,325
<i>Anodontostoma chacunda</i>	Chacunda gizzard shad	2,057	0.5%	1,725
<i>Decapterus maruadsi</i>	Round scad	1,800	0.5%	6,000
	Shrimps nei	1,779	0.5%	9,325
	Other species	13,579	3.5%	
Grand Total		384,418		

The comparatively high proportion of low value anchovy in the reported catches, means that the average price is about 3705 KHR/kg.

3.8. Total calculated catch

The total estimated catch is calculated separately for a number of vessel-gear classes to reduce the variability in the observed CPUE. In view of the importance of trawl fisheries and high variability in CPUE which is closely related to vessel length and engine power, trawlers are separated into three size-based classes¹, in addition to standard FiA vessel classes. Monthly vessel yield is based on independent estimates for the CPUE (average daily catch) and the monthly fishing days, while extrapolation uses number of vessels for each vessel-gear category obtained from the 2018 vessel census, while assuming only 85% are operating².

¹ Trawl gears are not reported by type in the 2023 data

² Based on information by FiAC staff

The total calculated catch for June 2023, is 7,423.4 MT. As for the reported catch, by far the largest contribution to the total estimated catch is by trawlers, for a total of 66.6%, with small-scale vessels contributing more than 17%. Because of insufficient observations for some vessel-gear categories for individual months, the monthly total estimated catch calculation in **Error! Not a valid bookmark self-reference.**, is using the annual average values for the CPUE and Effort for Small-scale < 6-meter, Trawler 18-24 meter and Large-scale > 24 meter. Only a few landings for these vessel-gear classes are recorded over the year, the value for ε% therefore represents the annual values.

Table 7. Total estimated catch by main vessel gear categories.

Vessel-gear category	Recorded landings	CPUE	ε%	Effort	Monthly vessel yield (kg)	Active Vessels (85%)	Total Monthly yield (MT)	%Total
Very small<6 meter	1	5.5	(7.0%)	5.0	27.5	775.2	21.3	0.3%
Small-scale 6-<12 meter	51	28.3	15.2%	17.3	490.5	2658	1,303.8	17.6%
Trawl 6-<12 meter	63	62.5	22.8%	19.6	1,225.1	952.0	1,166.3	15.7%
Trawl 12-18 meter	32	451.3	14.3%	23.6	10,661.9	339.2	3,616.0	48.7%
Trawl 18-<24 meter	1	220.8	(88.7%)	16.0	3,533.3	42.5	150.2	2.0%
Other gears 12-18 m	75	32.9	9.2%	16.1	531.4	1588.7	844.2	11.4%
Other gears 18-<24 m	1	100.0	-	20.0	2,000.0	55.3	110.5	1.5%
Large-scale 24+ meter	0	1,340.7	(63.8%)	17.5	23,462.5	9.0	211.2	2.8%
June Total Estimated Catch							7,423.4	

While the values for ε%, for most of the vessel-gear categories is acceptable, even when taking annual estimates, the statistical precision for vessels larger than 18 meters is insufficient. However, since these vessel-gear classes contribute less than 6.3% to the total estimated catch, there is confidence that the total catch is close to the actual value.

Using the average reported price, the total value of the estimated catch can be calculated as **27,496,273,600 KHR** or **US\$ 6,706,408**. However, the uncertainty over how well the sample represents catches by middle-scale fishing, also applies here and the calculated value is only indicative of the actual value.

Annex 1. Catch composition by species group for all landing, by weight and value.

Species group	Total weight (kg)	Total weight% (kg)
Fish	87,899.0	84.7%
Cephalopods	10,539.8	10.2%
Shrimps	2,265.7	2.2%
Crabs	1,411.2	1.4%
Unspecified	1,220.0	1.2%
Shellfish	365.0	0.4%
Rays	60.5	0.1%
Sharks	2.0	0.0%
Grand Total	103,763.2	

Species Group	Total value (1000 Riels)	Total value (%)
Cephalopods	177,830	46.3%
Fish	133,885	34.8%
Crabs	36,887	9.6%
Shrimps	24,169	6.3%
Other	7,958	2.1%
Shellfish	2,929	0.8%
Rays	750	0.2%
Sharks	12	0.0%
Grand Total	384,420	
Average price	3,705 KHR/kg	

Annex 2. Catch contribution by gear type and province.

Gear Type	Koh Kong	Preah Sihanouk	Kampot	Kep	Grand Total
Trawl	7.3%	91.2%	0.9%	0.6%	88,987.7
Octopus trap longline	88.4%	11.6%	-	-	2,657.0
Halfbeak gillnet	-	-	100.0%	-	2,535.0
Others	-	100.0%	-	-	2,150.0
Mackerel Gillnet	-	-	100.0%	-	1,550.0
Fish gillnet	-	-	97.9%	2.1%	1,532.5
Encircling seine	100.0%	-	-	-	810.0
Bottom longline for Squid	100.0%	-	-	-	730.0
Fish trap	100.0%	-	-	-	730.0
Crab gillnet	23.9%	-	-	76.1%	688.1
Crab trap	46.4%	-	50.1%	3.5%	430.8
Centipede trap	23.3%	-	-	76.7%	332.3
Squid tow longline	77.4%	22.6%	-	-	310.0
Shrimp gillnet	-	100.0%	-	-	166.3
Dragged basket blood cockle	100.0%	-	-	-	39.0
Fish bottom longline	100.0%	-	-	-	10.0
Hand push net	-	-	100.0%	-	5.5
Multiple gears	-	-	100.0%	-	92.0
Grand Total	11.4%	80.9%	6.4%	1.3%	103,756.2

The multiple gears category includes landings using combinations of different types of trawl, fish gillnets and/or traps

Annex 3. Calculated CPUE by province

Province	Vessel Class	Gear Type	Average CPUE	N	SD	ε%
Kampot	Middle Scale	Crab trap	22.6	9	6.5	9.6%
		Fish gillnet	78.0	5	26.8	15.4%
		Halfbeak gillnet	101.2	2	1.6	1.2%
		Mackerel Gillnet	69.6	2	42.9	43.6%
		Trawl	34.2	23	15.3	9.3%
		Small Scale	Fish gillnet	68.2	11	41.2
Province: Kep						
	Middle Scale	Centipede trap	19.1	4	11.4	29.7%
		Crab gillnet	22.7	21	9.9	9.6%
		Trawl	31.2	17	5.0	3.9%
	Small Scale	Centipede trap	16.9	9	4.6	9.2%
		Crab gillnet	19.0	2	14.1	52.6%
		Fish gillnet	16.3	2	12.4	53.8%
Province: Koh Kong						
	Middle Scale	Crab gillnet	13.2	5	10.8	36.6%
		Dragged basket for blood cockle	9.8	4	5.0	25.6%
		Octopus trap longline	45.7	8	13.9	10.8%
		Trawl	69.9	12	68.0	28.1%
	Small Scale	Bottom longline for Squid	15.5	11	21.6	42.1%
		Centipede trap	19.0	3	3.0	9.2%
		Crab gillnet	13.6	6	11.9	35.8%
Province: Preah Sihanouk						
	Middle Scale	Octopus trap longline	51.2	2	1.6	2.3%
		Others	102.5	2	53.0	36.6%
		Shrimp gillnet	27.7	6	5.9	8.7%
		Trawl	369.3	44	359.4	14.7%

Annex 4. Species catch by province

Scientific Name	Khmer Name	English Name	Koh Kong	Preah Sihanouk	Kampot	Kep	Total (kg)	
<i>Encrasicholina heteroloba</i>	កាកីម	Shorthead anchovy	0.0%	100.0%	0.0%	0.0%	74100.0	71.4%
	មីក	Squids nei	80.0%	19.9%	0.1%	0.0%	5902.0	5.7%
	ប្រភេទត្រីចំរុះ	Other fish nei	40.9%	53.1%	3.6%	2.4%	4891.0	4.7%
	ត្រីជី	trash fish	1.7%	89.8%	0.0%	8.5%	2378.0	2.3%
	ពពួកមីកពីងពាង	Octopus	99.5%	0.5%	0.0%	0.0%	2110.0	2.0%
<i>Hemiramphus far</i>	ត្រីផ្ទោងផ្កា	Blackbarred halfbeak	0.0%	0.0%	100.0%	0.0%	1500.0	1.4%
<i>Portunus pelagicus</i>	ក្តាមសេះ	Swimming crab	24.4%	17.4%	22.4%	35.8%	1339.9	1.3%
	ផ្សេងៗ	Other catch nei	0.0%	0.0%	96.6%	3.4%	1220.0	1.2%
	ពពួកមីកស្តុកនិងមីកបំពង់	Cephalopods (squids/cuttlefish)	0.0%	98.5%	0.9%	0.5%	1099.9	1.1%
<i>Anodontostoma chacunda</i>	ត្រីកាកីមយ	Chacunda gizzard shad	0.0%	1.2%	98.8%	0.0%	1093.0	1.1%
<i>Penaeus sp.</i>	បង្កា	Prawns nei	21.9%	56.9%	1.8%	19.4%	1087.0	1.0%
	ត្រីផ្ទោង	Needlefish nei	0.0%	0.0%	96.6%	3.4%	932.0	0.9%
<i>Suborder Sepiina</i>	មីកស្តុក	Cuttlefish	34.6%	55.8%	3.9%	5.8%	693.9	0.7%
<i>Rastrelliger kanagurta</i>	ត្រីកាកីមខ្លុងវែង	Indian mackerel	0.0%	0.0%	100.0%	0.0%	600.0	0.6%
<i>Metapenaeus spp.</i>	បង្កាខ្លីខាត់		13.8%	86.2%	0.0%	0.0%	532.9	0.5%
	មីកពីងពាង	Octopus	0.0%	74.8%	23.1%	2.1%	484.0	0.5%
<i>Rastrelliger brachysoma</i>	ត្រីផ្កាចូ ឬត្រីកាកីមខ្លុងខ្លី	Short mackerel	11.1%	0.0%	88.9%	0.0%	450.0	0.4%
<i>Siganus canaliculatus</i>	ត្រីកន្តាំងក្រអូម	Whitespotted Spinefoot	80.1%	0.0%	19.9%	0.0%	437.0	0.4%
	ត្រី	Small mixed shrimp nei	0.0%	100.0%	0.0%	0.0%	310.0	0.3%

<i>Nemipterus furcosus</i>	ត្រីក្រហមស្រកាទន់	Forktailed Threadfin Bream	100.0%	0.0%	0.0%	0.0%	300.0	0.3%
<i>Decapterus maruadsi</i>	ត្រីកូនគុំ	Round scad	100.0%	0.0%	0.0%	0.0%	300.0	0.3%
	ខ្យង មីក ក្តាមផ្សេងៗ	Shellfish nei	100.0%	0.0%	0.0%	0.0%	270.0	0.3%
(blank)	មីកពីងពាង	Octopus	100.0%	0.0%	0.0%	0.0%	250.0	0.2%
<i>Rachycentron canadum</i>	ត្រីធ្នាក់សមុទ្រ	Cobia	100.0%	0.0%	0.0%	0.0%	250.0	0.2%
	ពពួកបង្កាគ្រប់ប្រភេទទាំងអស់	Shrimps (unsorted)	0.0%	100.0%	0.0%	0.0%	239.0	0.2%
<i>Rastrelliger faughni</i>	ត្រីប៉ាឡាំង	Island mackerel	0.0%	0.0%	100.0%	0.0%	130.0	0.13%
<i>Epinephelus coioides</i>	ត្រីតុកកែកៅ	Orange-spotted grouper	100.0%	0.0%	0.0%	0.0%	100.0	0.10%
<i>Nemipterus hexodon</i>	ត្រីអាងតីមលី	Ornate treadfin bream	100.0%	0.0%	0.0%	0.0%	80.0	0.08%
<i>Carangoides bajad</i>	ត្រីឆែកាម	Orangespotted trevally	100.0%	0.0%	0.0%	0.0%	60.0	0.06%
	បង្កងកណ្តុប	Mantis shrimp	19.9%	3.4%	76.8%	0.0%	59.4	0.06%
	ត្រីសេក	Parrot fish	0.0%	0.0%	71.4%	28.6%	56.0	0.05%
	សប្បីសត្វ ពពួកខ្យង គ្រុំ ងាវ	Mollusks nei	8.9%	0.0%	0.0%	91.1%	56.0	0.05%
	ត្រីកូចិន	Lizardfish	0.0%	0.0%	100.0%	0.0%	50.0	0.05%
	ពពួកក្តាម (រួមទាំងក្តាមសេះ ក្តាមថ្ម ក្តាមជ័រ ជាដើម)	Crabs nei	0.0%	0.0%	0.0%	100.0%	41.0	0.04%
<i>Anadara granosa</i>	ត្រែងឈាម	Blood cockle	100.0%	0.0%	0.0%	0.0%	39.0	0.04%
<i>Pseudorhombus arsius</i>	ត្រីអណ្តាតឆ្កែ	Large tooth flounder	8.3%	77.8%	0.0%	13.9%	36.0	0.03%
	បបែល	Rays nei	0.0%	100.0%	0.0%	0.0%	34.0	0.03%
<i>Brevitrygon imbricata</i>	បបែលមាន់	Scaly whipray	0.0%	0.0%	0.0%	100.0%	23.5	0.02%
<i>Myrophis microchir</i>	អន្ទង់សមុទ្រ	Ordinary Snake eel	0.0%	0.0%	0.0%	100.0%	21.0	0.02%

<i>Pampus argenteus</i>	ត្រីចាបស	Silver pomfret	0.0%	0.0%	0.0%	100.0%	20.0	0.02%
<i>Lactarius lactarius</i>	ត្រីស្លឹកខ្នុរ	False trevally	0.0%	0.0%	100.0%	0.0%	20.0	0.02%
<i>Penaeus monodon</i>	បង្កាខ្លីង	Giant tiger prawn	0.0%	100.0%	0.0%	0.0%	19.0	0.02%
	បង្កងប៉ាក	Shrimps nei	0.0%	100.0%	0.0%	0.0%	18.4	0.02%
	ត្រីកិ	Pony fishes	0.0%	100.0%	0.0%	0.0%	18.0	0.02%
<i>Sillago ingenuua</i>	ត្រីព្រលួសធម្មតា	Bay sillago	0.0%	0.0%	0.0%	100.0%	10.0	0.01%
<i>Episesarma versicolor</i>	ក្ដាមជ័រ	Violet vinegar crab	100.0%	0.0%	0.0%	0.0%	10.0	0.01%
<i>Diagramma pictum</i>	ត្រីកាដី	Painted sweetlips	0.0%	0.0%	0.0%	100.0%	10.0	0.01%
<i>Arius maculatus</i>	ត្រីក្អក	Spotted catfish	100.0%	0.0%	0.0%	0.0%	10.0	0.01%
	ក្ដាមផ្សេងៗ		0.0%	0.0%	0.0%	100.0%	10.0	0.01%
<i>Cheilinus diagrammus</i>	ត្រីសេកថ្ពាល់ឆ្មុត	Cheeklinedmaori wrasse	0.0%	0.0%	0.0%	100.0%	9.5	0.01%
<i>Acanthurus sp.</i>	ត្រីកាតាំង	Surgeonfish	50.0%	0.0%	50.0%	0.0%	6.0	0.01%
	ត្រីកន្តាំង	Rabbitfish	0.0%	100.0%	0.0%	0.0%	6.0	0.01%
<i>Sillago sihama</i>	ត្រីព្រលួស	Silver sillago	54.5%	0.0%	0.0%	45.5%	5.5	0.01%
<i>Scylla serrata</i>	ក្ដាមថ្មី	Mud crab	100.0%	0.0%	0.0%	0.0%	5.3	0.01%
<i>Saurida undosquamis</i>	ត្រីកូចិនអុជខ្មៅ	Bushtooth lizarfish	0.0%	100.0%	0.0%	0.0%	5.0	0.005%
<i>Portunus spp.</i>	ក្ដាមសេះ	Swimming crabs	0.0%	0.0%	0.0%	100.0%	5.0	0.005%
<i>Crenimugil seheli</i>	ត្រីក្បក	Bluespot mullet	100.0%	0.0%	0.0%	0.0%	5.0	0.005%
<i>Maculabatis gerrardi</i>	បំបែលអុជ	Whitespottted whipray	0.0%	0.0%	0.0%	100.0%	3.0	0.003%
<i>Leiognathus leuciscus</i>	ត្រីកិ	Whipfin ponyfish	0.0%	100.0%	0.0%	0.0%	3.0	0.003%
<i>Decapterus macrosoma</i>	ត្រីកាម៉ុងឬត្រីប្លាធូ	Shortfin scad	0.0%	100.0%	0.0%	0.0%	2.5	0.002%
<i>Thryssa hamiltonii</i>	ត្រីស្លឹកឬស្សី	Hamilton's thryssa	0.0%	100.0%	0.0%	0.0%	2.0	0.002%

<i>Scomberomorus sp.</i>	ត្រីបែក	Spanish mackerel species nei	0.0%	100.0%	0.0%	0.0%	2.0	0.002%
	ឆ្មា	Sharks	0.0%	100.0%	0.0%	0.0%	2.0	0.002%
<i>Eleutheronema tetradactylum</i>	ត្រីកាំវែ	Fourfinger threadfin	100.0%	0.0%	0.0%	0.0%	0.5	0.0001%
Grand Total							103,763.2	