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National Religion King



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Ministry of Agriculture Forestry and Fisheries
Fisheries Administration

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**Cambodia Programme for Sustainable and Inclusive Growth
in the Fisheries Sector: Capture Component**

Monthly Statistical Report
Scientific Catch Assessment of Inland Fisheries in Cambodia
October 2022

By Inland Fisheries Research and Development Institute

Funded by European Union
ACA/2018/041-466 and ACA/2019/041-594

1. Introduction

IFReDI, with technical assistance from FAO CAPFISH project under EU budget support, is implementing a scientific catch assessment survey, using a monthly household recall survey for inland fisheries in Cambodia. The aim is to obtain better information on catch and effort by small-scale household fisheries in Cambodia, and to develop a sustainable catch monitoring methodology for implementation by provincial fisheries administrations, supported by IFReDI. The current statistical report provides preliminary analysis based on the available data and focuses on the main indicators that are covered by the catch assessment survey. Therefore, the results do not represent final estimates and may be changed in future updates.

2. Methodology of data collection and analysis

A description of the methodology can be found in: Fisheries Administration (FiA). 2021. Manual for Scientific Catch Assessment by Recall survey of Inland Fisheries in Cambodia. Inland Fisheries Research and Development Institute of the Fisheries Administration, Phnom Penh, Cambodia. 47 pages.



The total estimated catch in this report is calculated using the proportion of fishing households found by the random household selection under the Household Selection Interview survey. This is taken to be representative for the proportion of fishing households for each fishing area and this is combined with the total number of rural households by fishing area from the NIS 2019 population census to estimate the total number of fishing households. The Fishing Activity Coefficient is estimated from proportion of households reporting fishing activities in the Household Catch Interview.

Estimates for CPUE, the average (mean) daily household catch and the mean monthly household catch used for extrapolating the total catch, come with a value for the relative standard error ($\epsilon\%$). This is used to indicate the accuracy of the estimate for the mean catch. If the $\epsilon\%$ is higher than 30% this indicates a high inaccuracy¹, due to high variation or low sample size and the resulting total estimate should not be used.

In tables with the proportion of reported catch obtained by habitat and fishing gear, the average daily catch by habitat or gear (CPUE) isn't included. The available data displays too much variation and the accuracy is too low for it to be statistically accurate and representative for the real CPUE. This will be included, where relevant in the annual report.

¹ For national statistical reports the rule of thumb states that if the *relative* standard error is higher than 30%, the average should not be reported. The current report includes all estimated values to indicate that an estimate is available, with the $\epsilon\%$ indicating the statistical accuracy.

3. Statistical tables and results

Table 1. Number of random selected households covered by the survey and proportion of target household by fishing area for October 2022.

Fishing Area	Villages	Household		
		Count	Target	Proportion
Floodplain	8	110	120	91.7%
Plateau	7	105	105	100.0%
Tonle Sap	9	123	135	91.1%
Total	24	338	360	93.9%

Table 2. Mean **daily** household catch (CPUE), with number of active fishing households, standard deviation and relative standard error, by fishing area.

Fishing Area	Active HH	Daily HH catch (Kg)	SD	ε%
Floodplain	62	2.63	2.50	12.1%
Plateau	75	2.84	3.54	14.4%
Tonle Sap	91	3.97	3.91	10.3%
Grand Total	228	3.23	3.49	7.2%

Mean daily catch calculated based on the reported 5-day catch and fishing days, with SD is Standard Deviation; ε% is relative Standard Error

Table 3. Mean **monthly** household catch, with proportion of active fishing households, standard deviation, relative standard error and total estimated catch by fishing area.

Fishing Area	% Active HH	Monthly HH catch (Kg)	SD	ε%	Total (MT)
Floodplain	56%	47.69	9.32	14.9%	17,211
Plateau	71%	63.45	17.20	18.8%	4,420
Tonle Sap	74%	90.92	19.24	13.3%	25,609
Grand Total	67%	70.13	16.60	9.4%	
Total estimated catch (MT)					47,240

SD is Standard Deviation; ε% is relative Standard Error

Table 4. Proportion of fishing days on which male and female adults and children are reporting fishing activities.

Fishing Area	Adult Female	Adult Male	Child Female	Child Male
Floodplain	6.9%	96.6%	2.3%	7.5%
Plateau	5.5%	100.0%	0.0%	0.0%
Tonle Sap	6.5%	91.1%	0.0%	5.1%
Grand Total	6.2%	95.7%	0.5%	3.8%

The maximum involvement of each gender and age group is 100% for each fishing area, if they are fishing on all reported fishing days, the total for each fishing area can be more than 100%.

Table 5. Reported catch (Kg) with proportion caught by main boat type by fishing area.

Fishing Area	Catch (Kg)	No boat	Motorised	Non-motorised
Floodplain	386.1	47.4%	24.4%	28.2%
Plateau	593.6	47.1%	44.2%	8.7%
Tonle Sap	1093.7	84.5%	12.2%	3.3%
Grand Total	2073.4	66.9%	23.6%	9.5%

Overall proportion based on weighted average catch by main boat type and fishing area, not reported total catch²

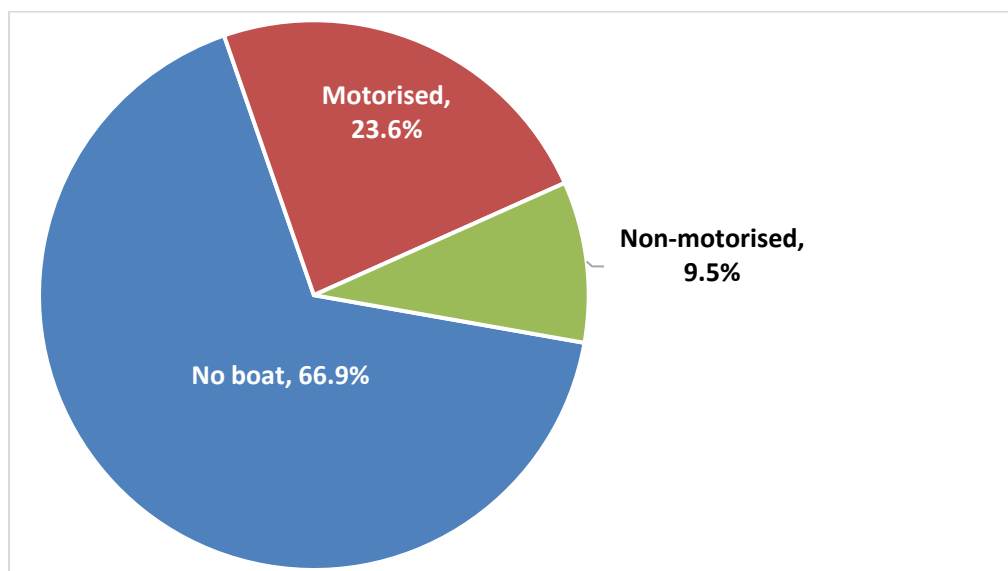


Figure 1. Overall contribution of the main boat types to total reported catch.

Table 6. Proportion and reported catch by habitat for single habitat catches by fishing area.

Fishing Habitats	Floodplain	Plateau	Tonle Sap	Grand Total
Sub-Stream	8.5%	35.2%	7.0%	18.4%
Floodplain: lakes and ponds	35.0%	22.3%	2.4%	17.7%
Floodplain: rice fields (rain)	23.8%	0.5%	30.0%	17.0%
Irrigation canals	2.5%	4.2%	23.4%	11.0%
Mekong Mainstream	9.7%	21.7%	0.0%	10.7%
Reservoir	4.7%	15.3%	4.6%	8.8%
Stream	0.0%	0.0%	16.1%	6.1%
Tributaries to Tonle Sap	0.0%	0.0%	12.6%	4.7%
Major Tributaries	15.9%	0.0%	0.0%	3.7%
Floodplain: rice fields (flooded)	0.0%	0.0%	3.9%	1.5%
Floodplain: flooded forest	0.0%	0.8%	0.0%	0.3%
Grand Total (kg)	421.3	713.8	688.6	1,823.7

Only catch for fishing days that report fishing in a single habitat is included.

² This is the standard way to calculate, but isn't done for habitat and gear catch, as this is complicated by fishing days where the reported catch is from multiple habitats or caught by multiple gears

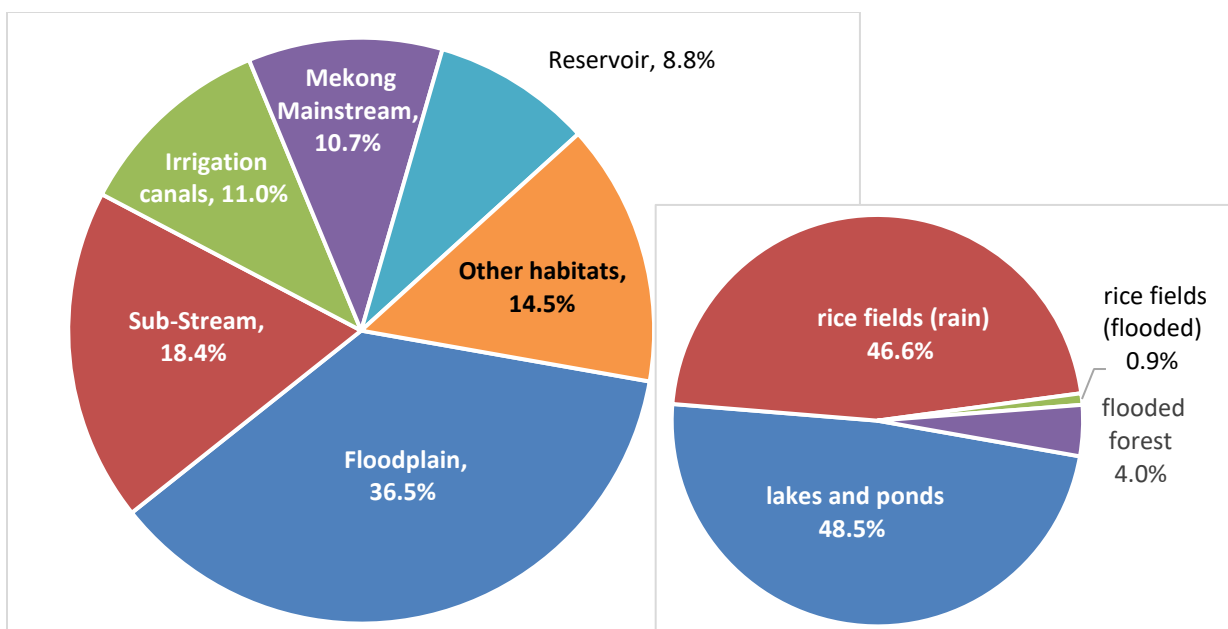


Figure 2. Overall contribution of the habitats to total reported catch, with proportion of catch for floodplain habitats.

Table 7. Proportion and reported catch by gear for single gear days, by fishing area.

Fishing habitats	Floodplain	Plateau	Tonle Sap	Grand Total
Stationary gillnet	21.7%	44.3%	24.5%	29.7%
Horizontal cylinder trap	24.0%	2.5%	43.7%	28.2%
Unspecified	0.8%	40.7%	0.2%	12.1%
Drifting gillnet	17.2%	0.0%	12.0%	9.4%
Cast net	1.7%	0.0%	12.4%	6.9%
Hook long line	12.7%	11.2%	0.0%	5.5%
Hand capture	4.4%	0.0%	2.3%	2.0%
Pole and line	0.0%	1.3%	2.5%	1.7%
Spear	8.4%	0.0%	0.0%	1.5%
Bamboo vertical cylinder trap	6.6%	0.0%	0.0%	1.2%
Push nets	0.0%	0.0%	1.7%	0.9%
Horizontal cylinder trap	2.4%	0.1%	0.0%	0.5%
Bag nets	0.0%	0.0%	0.6%	0.3%
Hook and line	0.2%	0.0%	0.1%	0.1%
Bow and guns	0.0%	0.0%	0.1%	0.1%
Grand Total (kg)	292.8	479.5	876.4	1,648.7

Only catch for fishing days that report fishing with a single gear is included, therefore the total is different from reported catch by habitat.

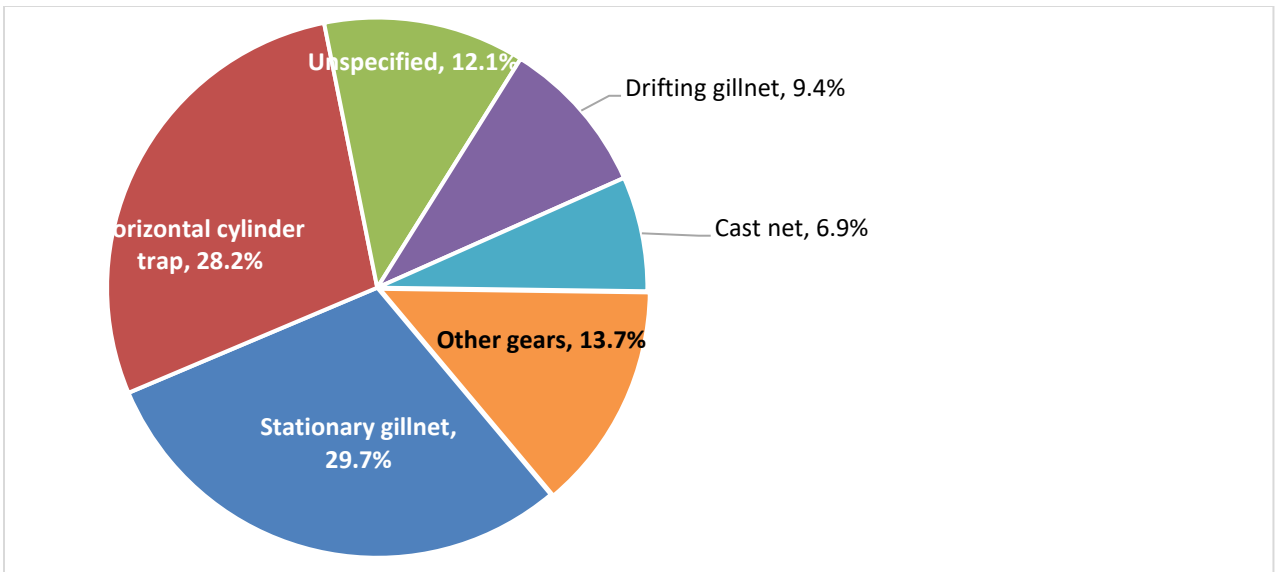


Figure 3. Overall contribution of the gears to total reported catch.

Table 8. Reported disposal by fishing area in weight and proportion.

Fishing Area	Sold Kg	% Sold	Consumed Kg	% Consumed	Other use Kg	% Other use
Floodplain	238.9	21.9%	218.3	21.9%	35.6	6.2%
Plateau	354.7	32.5%	375.7	37.7%	62.7	10.9%
Tonle Sap	498.7	45.7%	403.1	40.4%	477.2	82.9%
Grand Total	1,092.3	100.0%	997.1	100.0%	575.5	100.0%

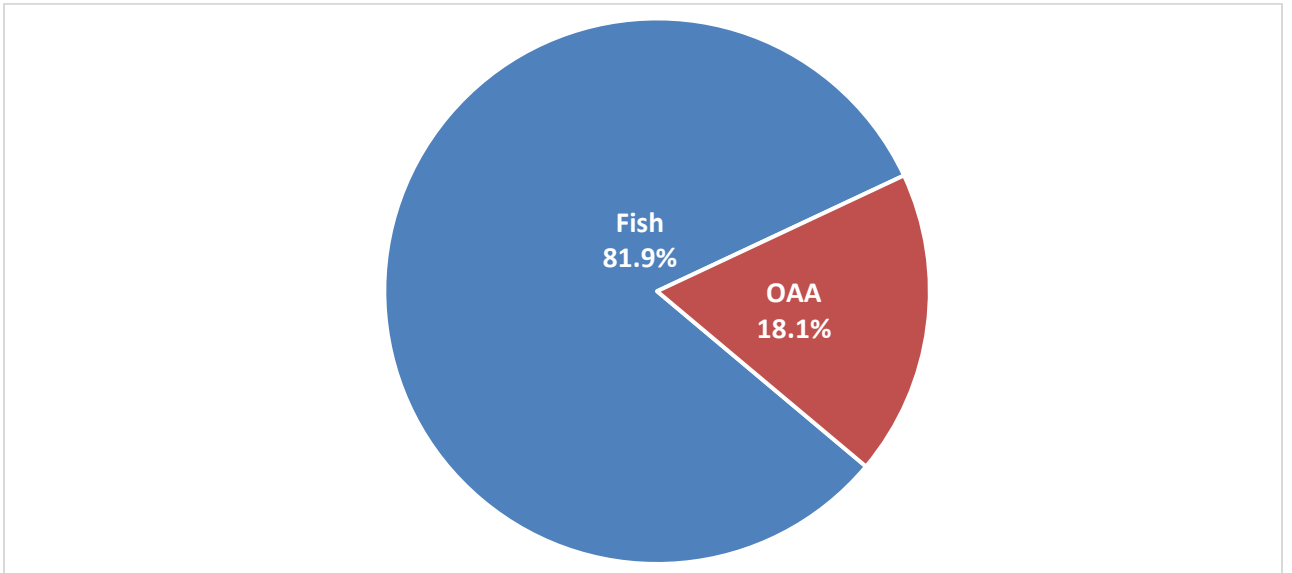


Figure 4. Catch contribution for fish and other aquatic animals.

Table 9. Top 15 reported species and species groups by weight in reported household catch, with reported weight and proportion of catch by individual species and species groups.

No.	Scientific name	Khmer name	Catch (kg)	Catch contribution	
				%Catch	%Cum.
1	<i>Channa striata</i>	ត្រីវិស័/ឆ្មក់	278	10.4%	10.4%
2	<i>Anabas testudineus</i>	ត្រីក្រាញ់	226	8.5%	18.9%
3	<i>Somanniathelphusa sp.</i>	ក្តាមស្រែ	185.5	7.0%	25.9%
4	<i>Barbonymus gonionotus</i>	ត្រីឆ្អិនប្រាក់	148	5.6%	31.4%
5	Mixed small or juvenile fish	ត្រីល្អិតចម្រុះ	139.4	5.2%	36.7%
6	<i>Henicorhynchus lobatus</i>	ត្រីរៀលអង្កាម	119.8	4.5%	41.2%
7	<i>Trichopodus trichopterus</i>	ត្រីកំភ្លាញស្រែ	113.5	4.3%	45.4%
8	<i>Macrogathus siamensis</i>	ត្រីឆ្លូញ	94	3.5%	48.9%
9	Small mixed shrimps	កំពឹសចម្រុះ	88.7	3.3%	52.3%
10	<i>Hemibagrus spilopterus</i>	ត្រីឆ្មាំង	83	3.1%	55.4%
11	<i>Clarias batrachus</i>	ត្រីអណ្តែងរឹង	82.6	3.1%	58.5%
12	<i>Puntiplites proctoysron</i>	ត្រីច្រកែង	78.8	3.0%	61.4%
13	<i>Henicorhynchus siamensis</i>	ត្រីរៀលតុប	72.7	2.7%	64.2%
14	<i>Puntius orphoides</i>	ត្រីអំពិលទុំ	66.3	2.5%	66.7%
15	<i>Fejervarya limnocharis</i>	កង្កែប	65.5	2.5%	69.1%
16	Other	ផ្សេងទៀត	823.1	30.9%	100.0%
Total reported catch			2,664.9		

Table 10. Top 15 reported species by value (1000 Riel) in reported catch, with reported value, proportion of value by individual species and species groups.

No.	Scientific name	Khmer name	Value (1000 Riel)	Value Contribution	
				%Value	%Cum.
1	<i>Channa striata</i>	ត្រីវិស័/ឆ្មក់	4,309	20%	20%
2	<i>Macrogathus siamensis</i>	ត្រីឆ្លូញ	1,692	8%	28%
3	<i>Barbonymus gonionotus</i>	ត្រីឆ្អិនប្រាក់	1,332	6%	35%
4	<i>Anabas testudineus</i>	ត្រីក្រាញ់	1,243	6%	41%
5	<i>Hemibagrus spilopterus</i>	ត្រីឆ្មាំង	996	5%	45%
6	<i>Henicorhynchus lobatus</i>	ត្រីរៀលអង្កាម	899	4%	50%
7	<i>Clarias batrachus</i>	ត្រីអណ្តែងរឹង	826	4%	54%
8	<i>Puntius orphoides</i>	ត្រីអំពិលទុំ	663	3%	57%
9	<i>Trichopodus trichopterus</i>	ត្រីកំភ្លាញស្រែ	624	3%	60%
10	<i>Henicorhynchus siamensis</i>	ត្រីរៀលតុប	582	3%	62%
11	<i>Somanniathelphusa sp.</i>	ក្តាមស្រែ	557	3%	65%
12	<i>Hemibagrus wyckioides</i>	ត្រីខ្សា	535	3%	68%
13	<i>Clarias cf. batrachus</i>	ត្រីអណ្តែងរឹង	522	2%	70%
14	Mixed small or juvenile fish	ត្រីល្អិតចម្រុះ	488	2%	72%
15	<i>Puntiplites proctoysron</i>	ត្រីច្រកែង	433	2%	74%
16	Others		5,388	25.55%	100%
Total report value			21,088		

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