

Presentation at the **7th Asian Fisheries Forum**,
November 30 – December 4, 2004, Penang, Malaysia.



Socioeconomics and Values of Aquatic Resources in Cambodia: Results from a Sample Survey of Tonle Sap Lake Area

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OBJECTIVES

- To understand socioeconomics of the fishing households in the Tonle Sap Area
- To determine level of fishing effort and productivity of the fishers
- To circumscribe values of the aquatic resources and its importance to the livelihoods
- To measure dependence of the households on the resources of Tonle Sap

RESEARCH METHODS (I)

- Made exploratory field visits to villages and interviewed village chiefs.
- Selected nine villages from three Provinces, namely Siem Reap, Kendal and Kampong Chnang, three villages from each province.
- From each province three villages – fishing village, fishing cum farming village, farming village were selected.
- Households of each village were stratified into three groups – poor, middle and upper, and 15 households from each group were selected randomly.

RESEARCH METHODS (II)

- A detailed questionnaire was prepared, field tested and finalized; three teams were formed and trained.
- First round data collection began in the first week of September and finished by the end of September 2003.
- Second round data collection was conducted in January 2004.

RESULTS

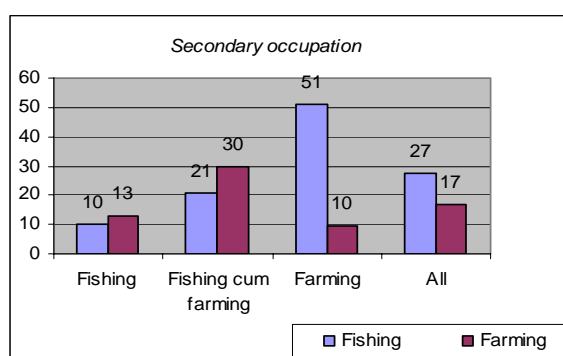
BACKGROUND

Primary occupation of the eligible members

Principal occupation	Fishing villages	Fishing cum farming	Farming villages	All villages
Fishing	52.53%	34.84%	10.57%	31.65%
Farming	7.28%	25.30%	47.36%	27.61%
Student	23.42%	26.36%	27.20%	25.78%

BACKGROUND

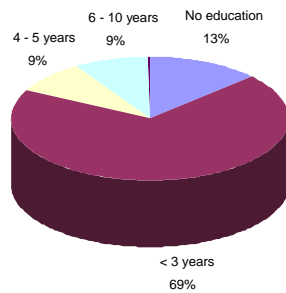
Secondary occupation of the household heads



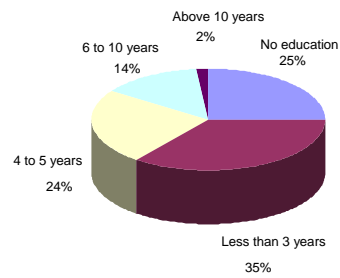
BACKGROUND

Level of education of the household heads and all members of the households

Household heads



All members of the households



ASSETS

Average values of household assets and house by village type in USD.

Asset type	Fishing	Fishing cum farming	Farming	All
House	1608.11	2377.03	1750.14	1907.71
Electronic appliances	109.05	59.82	49.6	73.41
Transport equipment	2419.75	561.85	296.4	1114.03
Furniture and fixtures	56.85	22.36	22.31	34.21
Cell phone	73.5	15.35	1.12	30.74
Generator	75.86	13.81	6.31	32.7
Tube wells	2.27	4.22	9.62	5.31
Livestock	15.83	80.19	270.2	120.16
Poultry	0.59	4.9	4.96	3.43
Modern farm equipment	5.67	164.26	153.65	106.25
Traditional farm equipment	2.88	20.57	57.54	26.57
<i>All assets without house</i>	2796.64	786.7	680.01	1443.05
<i>All assets</i>	4413.31	3348.56	2641.34	3483.59

ASSETS

Average value of fishing equipment (US\$)

Type of equipment	Fishing cum farming			
	Fishing	farming	Farming	
Bamboo fenced-eel trap	56.09	112.50	0.00	59.41
Bamboo fence	461.63	273.89	79.21	319.36
Bamboo trap	171.62	65.40	90.19	104.09
Big vertical slit trap	57.50	20.00	0.00	38.75
Cast net	218.75	23.75	17.00	95.14
Folded woven trap	71.10	47.04	62.50	67.70
Funnel trap	3.50	56.25	18.75	35.59
Gillnet	110.54	54.18	31.41	70.61
Harpoon	7.14	7.11	4.80	6.74
Hook long line	26.03	15.67	9.71	18.25
Lift net	13.44	2.81	15.00	8.89
Seine net1	1,396.65	861.11	0.00	1,211.27
Small vertical slip trap	131.56	0.00	50.25	96.71
Mosquito net	0.00	52.75	27.81	45.63
Shrimp blast bunch	0.00	172.58	30.00	159.61
Single hooked line	0.00	0.00	0.25	0.25
Handled pick out-cone shaped hard trap	0.00	0.00	4.63	4.63

FISHING EFFORT

Number of household members caught fish during last week (from the date of interview) by village type (Closed season, 2003)

	Fishing village	Fishing cum farming	Farming	All
Male	1.59	1.63	1.29	1.53
Female	0.70	0.43	0.17	0.48
Male and female	2.30	2.05	1.46	2.00
Days per week	6.14	5.80	6.40	6.10
Hours per person per week	11.38	7.68	7.16	9.18
Hours per person per day	1.98	1.78	1.42	1.77

FISHING EFFORT

Number of household members caught fish during last week (from the date of interview) by village type (Open season, 2004)

	Fishing village	Fishing cum farming	Farming	All
Male	1.25	0.87	0.40	0.84
Female	0.23	0.23	0.03	0.16
Male and female	1.48	1.10	0.43	1.00
Days per week	5.26	3.58	2.26	3.71
Hours per person per week	7.68	4.49	3.87	5.36
Hours per person per day	1.66	1.26	0.53	1.15

FISH CATCH AND PRICE

Average fish catch (kg) and price (US\$) during the week before the date of interview (closed season, August 2003)

Village type	Catch	Sold	FF	Price(\$)
Fishing village	16.88	12.91	2.21	0.38
Fishing cum farming	15.10	10.61	2.54	0.37
Farming village	03.03	01.72	0.19	0.46
All villages	12.60	09.15	1.78	0.39

FISH CATCH AND PRICE

Average fish catch (kg) and price (US\$) during the week before the date of interview (open season, Feb. 2004)

Village type	Catch	Sold	FF	Price(\$)
Fishing village	77.04	65.27	6.02	0.33
Fishing cum farming	5.87	2.92	1.28	0.47
Farming village	20.80	7.23	5.20	0.36
All villages	44.30	33.86	4.75	0.36

FISH CATCH AND PRICE

Share of species caught by the households during last week from the date of survey (closed season, August 2003)

Species	Quantity (kg)	Share (%)	Av.price (\$)
Trey kampfleah semari	2445	13.29	0.21
Trey kampfleanh phluk	1320	7.23	0.18
Trey riel	1245	6.82	0.41
Kampeus	1110	6.08	0.44
Trey chhkok	968	5.30	0.44
Trey kros	809	4.43	0.27
Trey chhpin	781	4.28	0.44
Trey chhlaing	761	4.17	0.54
Trey kranh srai	745	4.08	0.29
Trey kantrob	696	3.81	0.33
Top 10 together	10880	59.49	0.33

FISH CATCH AND PRICE

Share of high value species caught by the households during last week from the date of survey (closed season, August 2003)

Species	Quantity	Share	Price (\$)
Trey andaing tonle	3.0	0.02	1.25
Trey riel/tob	14.0	0.08	1.00
Trey chhlaing	21.0	0.11	0.83
Trey ka port	165.0	0.90	0.81
Antung	438.0	2.40	0.70
Trey promah	71.0	0.39	0.68
Trey prorlung	26.0	0.14	0.66
Trey krorang	67.0	0.37	0.63
Trey kchoeung	32.0	0.18	0.63
Top ten together	837.0	4.59	0.72

FISH UTILIZATION

Average catch and utilization of fish by village type during closed season (2003)

	Fishing	Fishing cum farming	Farming	All
Total catch(kg)	885	433	128	489
Consumption (kg)	78	56	50	61
Sold (kg)	681	319	66	361
Processed (kg)	6	11	1	6
Fish feed (kg)	120	47	11	60

FISH UTILIZATION

Average catch and utilization of fish by village type during open season (2004)

	Fishing	Fishing cum farming	Farming	All
Total catch(kg)	7612	2441	244	3501
Consumption (kg)	304	141	70	174
Sold (kg)	5717	1836	155	2621
Processed (kg)	787	163	9	327
Fish feed (kg)	804	301	9	379

FISH CULTURE

Number of ponds/cages and average production (kg) of fish by village type (2003)

	Fishing villages	Fishing cum farming	Farming villages
Number of pond/cages	37	40	36
Area (sq m)	22	216	91
Production (kg):			
Giant snakehead	1670	1282	00
Shark catfish	1612	1426	283
Black ear	467	00	00
Chevron snakehead	4000	754	417
Total	7749	3512	745

FISH CONSUMPTION

Average consumption of meat and fish during last week (closed season 2004) by village type

Fish/meat	Fishing	Fishing cum farming	Farming	All
Meat (kg)	2.29	3.03	2.47	2.54
Fish (kg)	8.81	8.47	6.41	7.91
Processed (kg)	2.70	3.17	2.39	2.95
Fish sauce (liter)	0.97	0.77	0.62	0.77

DEPENDENCY ON NATURAL RESOURCES

Dependence of the households on Tonle Sap natural resources

Resources	% of hhs	Av. Quantity (kg)	Average value (\$)
Animal grazing	15.44	133.76	22.26
Bamboo/canes	6.83	14.86	9.88
Kanchet	17.07	4.61	0.53
Lotus/lotus roots	26.69	8.61	1.29
Mat making materials	20.00	97.99	7.10
Morning glory	84.88	43.76	4.61
Firewood	99.76	1943.3	29.06
Phkasnor	63.41	5.31	1.13
Rat	7.73	3.10	1.13
Saomaoprey	5.61	2.85	0.31
Sundaune (fruit)	41.71	8.56	1.63
Sundaune (leaves)	2.00	3.12	0.32
Traditional medicine	16.34	4.10	2.19
Transportation	41.71		1.62
Water lily	65.12	16.81	2.47
Wild animal/birds	5.37	2.05	0.55
Total		267.75	6.80

HOUSEHOLD INCOME

Average household income by sources

Sources of Income	Average income (\$)
Fishing	495.97
Fish culture	207.09
Fish processing	19.74
Fish trade	24.61
Farming	230.55
Wage income	25.11
Govt/NGO jobs	32.86
Small trading	51.34
Other	104.06
Total	1158.47

Thank You