

# Role of Fish in Food and Nutrition Security among women and preschool children in Cambodia

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About 86% of Cambodia's land area is within the Mekong River catchment. The fish produced from the Mekong River system contains high levels of minerals and nutrients for human needs. This has made Cambodia ranked number four worldwide in inland fisheries production (approximately 400,000 tons/year) after China, India and Bangladesh. The coastal area also has a high potential for fisheries production (approximately 100,000 tons/year).

The total freshwater and marine capture fisheries production is estimated at about 400,000 to 500,000 tons per year, with the economic value of US\$ 1.2 – 1.6 billion, which contributes approximately 12% to total Gross Domestic Product (GDP). The catch of other aquatic animals (OAAs) such as shrimps, crabs, snails, frogs, freshwater edible insects, snakes, and turtles are at least 60,000-100,000 tons per year. More than six million people (approximately 45% of the total population) are involved in fisheries and fisheries related activities, and fish and rice are an integral part of the nation's staple food for daily consumption.



Figure 1: Fish harvesting (A) and household fish processing (B) at “Dai” fishery in Tonle Sap River, Cambodia

The 2<sup>nd</sup> activity in Investigation 5 “Enhancing food security and household nutrition vulnerability of women and children focus on nutrient dense commonly consumed fish from capture fisheries and aquaculture in Cambodia” under the project Titled: Improving Food Security, Household Nutrition, and Trade through Sustainable Aquaculture and Aquatic Resource Management in Cambodia and Vietnam, under the financial support from AquaFish, University of Oregon State University, through University of Connecticut.

Stung Treng province (Upstream Mekong River); Prey Veng province (Downstream Mekong River); and Kampong Thom province (Tonle Sap Area) were selected for study sites. The data collection was conducted in rainy season from 2 to 26 June, 2014. The target of the study subjects are women and preschool children (aged 6 months to 5 years old). Three hundred (300) eligible women and 343 eligible preschoolers were selected by using simple randomized sampling from the three provinces. Dietary intake

was conducted through face-to-face interview by using a single 24-hour food recall to estimate the amount of food that has been eaten in the past 24 hours. The ASEAN Food Composition Table (ASEANFCT, 2000) was used to calculate nutrient contents of food consumed. Energy, macronutrients (Protein, carbohydrate and fats) and key micronutrients such as Iron, Zinc, Calcium, and Vitamin A were evaluated. The nutrient intake of women and preschool children was then compared to the Recommended Dietary Allowances harmonization in Southeast Asia (Barba, 2008) to determine the level of nutritional adequacy of the food intake to estimate the amount of food that has been eaten. MS Excel 2013 and SPSS version 20.0 were used for data entry and analysis. Data coding, cleaning and cross-checking were conducted. The study aimed to examine the commonly consumed fish and OAAs species; and evaluate the current fish consumption status, and the contribution of fish to energy, and nutrient intakes of women and preschool children in the three target provinces

As a result from the above study, women consumed 43 of fish and OAAs species; and preschool children consumed 38 of fish and OAAs species, of which Trey Riel (*Cirrhinus sp.*), Trey Ros (*Channa striata*) and Trey Chhpin (*Hypsibarbus pierrei*) or Trey Kanhchus (*Mystus sp.*) ranked the 1st, 2nd and 3rd of commonly consumed species, respectively.

More importantly, fish play a very important role in food and nutrition security in Cambodia, especially among women and children. Women's average daily fish consumption is 145.3 g/person/day and preschool children consume 53g/person/day. This is 17% and 11%, respectively, of the total diet intake of women and preschool children of the Cambodian households in the three target provinces: Stung Treng, Prey Veng and Kampong Thom.

Fish provides up to 80% to the total animal protein, 69.7% of the total animal energy intake, 54% of the total animal fat intake, 74.5% of the total animal iron intake, 44.6% of the total animal zinc intake, 82.9% of the total animal calcium intake, and 87.4 % of the total animal vitamin A intake of Cambodian women.

Also, fish provides up to 78 % to the total animal protein, 72.1% of the total animal energy intake, 60% of the total animal fat intake, 57.1% of the total animal iron intake, 44.1% of the total animal zinc intake, 92.8% of the total animal calcium intake, and 56.1 % of the total animal vitamin A intake of Cambodian preschool children.



Figure 2: Activity of conducting food and nutrition consumption survey among women and preschoolers in June 2014 in Prey Veng province (A) and in Stung Treng province (B)