

## Fish and Nutrition

Fish has been recognized as a nutritionally beneficial food source around the world. Fish provide high-quality protein and important micronutrients, such as vitamin A, vitamin D, and iodine, and they can also be a source of phosphorus, fluoride, and calcium if bones are consumed. Additionally, the benefits of consuming fish for Omega-3 fatty acids have recently been widely documented. In Nepal, the benefits of fish consumption have been linked with such outcomes as improving protein intake and increasing vitamin A and zinc ingestion. Approximately two-third of all fish produced in Nepal came from aquaculture, and it is believed that the majority of fish currently consumed in Nepal is produced through aquaculture practices, since nearly all fish sold in markets in Kathmandu and surrounding areas are raised in ponds.

## Increased consumption of fish in households with a fish pond?

We recently conducted a survey of 225 households in four places of southern Nepal (Kawasoti, Pragatinagar, Kathar, Majhui) to determine the frequency and amounts of fish eaten by children and women, from households with or without fish ponds and to evaluate the health characteristics of children from households with or without fish ponds. Mothers from locations that had access to fish ponds consumed 132% more fish than those without ponds, a significant increase in consumption ( $p < 0.05$ ). They also reported significantly higher rates of fish consumption (126% higher) by their children. They also consumed fish more frequently, particularly SIS. Again, these differences were all statistically significant, with overall consumption frequency being 97% higher in households with ponds.

## Better health of children in households with a fish pond?

Height at weight regressions and body mass index data were not significantly different between children from households with or without ponds. Health of children evaluated, using details on stunting and wasting, indicated that there were no significant differences between households with or without ponds ( $p > 0.05$ ). Overall, children from our study groups averaged 19% underweight, 18% stunted, and 12% wasted. These values are quite low compared to 2013 estimates for the entire country for stunted (40.5%) and underweight (28.8%), but not for wasted (10.9%) children (UNICEF 2015). Possibly the regions with fish ponds also were areas with better overall health and food availability due to their overall agriculture systems.

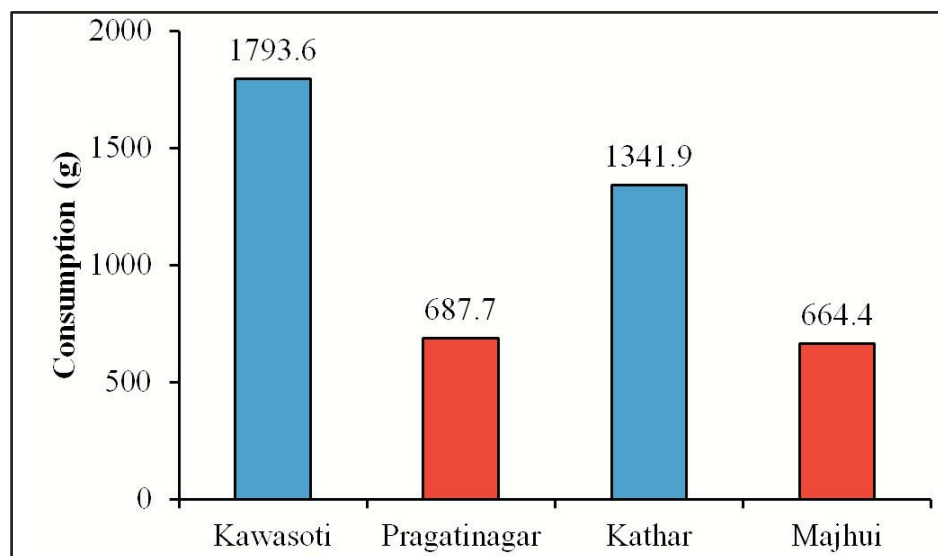


Figure 1. Monthly estimates of fish consumption by mothers interviewed from households with ponds (blue bars) and without ponds (red bars) in four locations in Nepal.

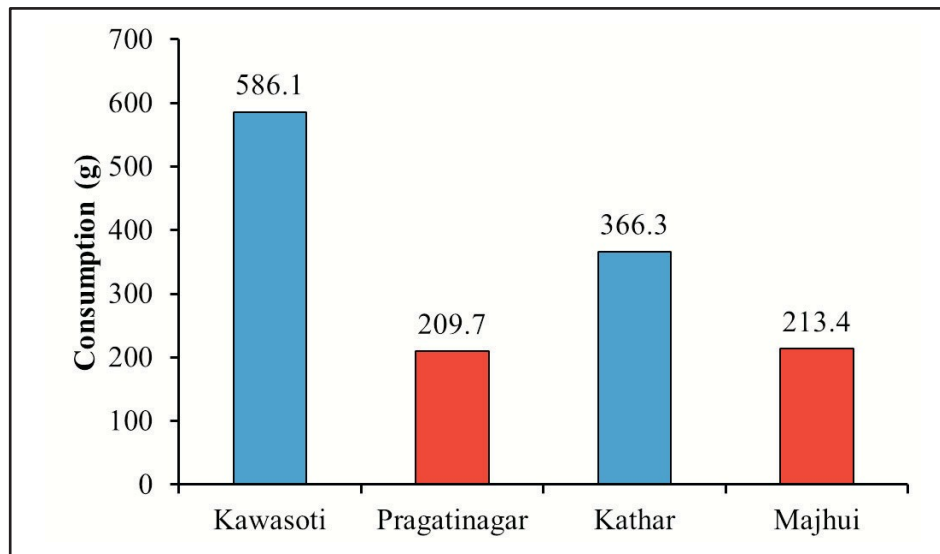


Figure 2. Monthly fish consumption by children estimated for households with or without ponds.



Figure 3. Farmers with fish pond at Kawasoti



Figure 4. Interview with farmer at Kawasoti.

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