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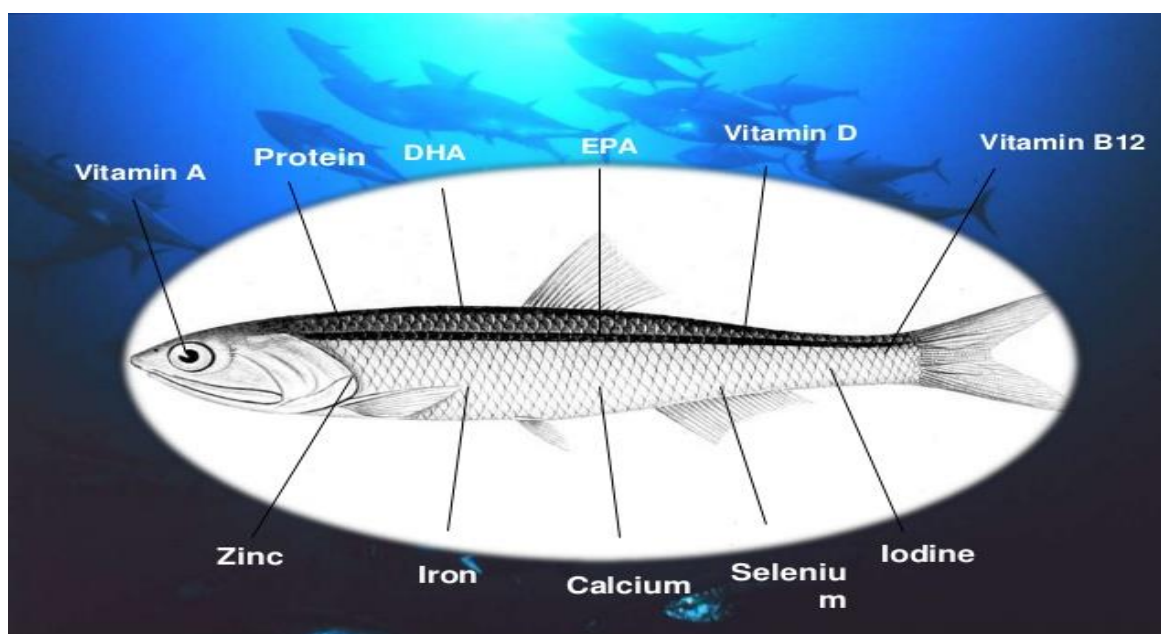
IMPORTANCE OF SMALL FISH IN HUMAN NUTRITION

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Introduction

It is a tragic irony that during a world where nearly 30 percent of the population suffers from malnutrition, the same numbers of individuals suffer from a plague of excess caloric intake and obesity. Nutritious food products are in high demand and aquatic food products represent an important component of the worldwide food basket. An often ignored resource is little pelagic fish, a highly abundant and productive renewable protein which today is usually wont to feed other fish or as an ingredient to feed livestock. Today, tons of this nutritious protein that would be available for human consumption particularly in developing countries is actually getting used for other purposes, *i.e.* fish meal as an ingredient in feed for livestock. Small-sized marine pelagic fish could provide a reasonable and far needed source of top quality animal protein and essential amino acids, omega-3 fatty acids, vitamins, minerals, and trace elements. Small fish are a standard food and an integral a part of the everyday carbohydrate rich diets of the many population groups in poor countries. These populations also suffer from under nutrition, including micronutrient deficiencies – the hidden hunger. Small fish are an upscale source of animal protein, essential fatty acids, vitamins and minerals.



Small fish are Good source of protein, essential fatty acids, vitamins and minerals

To make full use of this potential, further data on nutrient bioavailability, intra-household seasonal consumption, nutrient analyses, cleaning, processing and cooking methods of small fish species are needed. Advocacy, awareness and nutrition education on the role small fish can play in increasing diet diversity and micronutrient intakes must be strengthened. Measures to develop and implement sustainable, low cost technologies for the management, conservation, production, preservation, availability and accessibility of small fish must be undertaken. Also, an analysis of the



cost-effectiveness of micronutrient-rich small fish species in combating micronutrient deficiencies using the Disability-Adjusted Life Years (DALYs) framework should be administered. Fish is great way to keep your family healthy, because it is a rich source of different types of nutrient.

- Omega –3 fatty acid
- Vitamin A
- Polyunsaturated fatty acid
- Vitamin B12
- Vitamin D
- Zinc
- Iron
- Calcium

Omega-3 fatty acid : Omega –3 fatty acid is improving the brain functions and decreases the mental illnesses, heart disease etc. the inclusion of omega 3 fatty acid are show the batter result.

Vitamin A : Vitamin A is improving the eye sight, immunity and reproductive functions.

Polyunsaturated fatty acid : Polyunsaturated fatty acids are beneficial for heart disease and heart condition.

Vitamin B 12 : Vitamin B 12 is a vital source of formation of RBC and also responsible of metabolism of cells.

Vitamin D : Vitamin D are responsible for calcium absorptions for strong healthy teeth and bones, it is also preventing to rickets in children.

Zinc : Zinc is promotes the healthy immune system, healthy growth during childhood and also reduce the severity of diarrhea.

Iron : Iron is important for production of Reed Blood Cell and the prevention of anemia.

Calcium : Calcium is essential for strong the bone and teeth. Human heart and nerves system also need to calcium.

The studies in rural Bangladesh and Cambodia showed that tiny fish made up 50–80 percent of total fish intake within the peak fish production season. Although consumed in small quantities, the frequency of small fish intake was high. As many small fish species are eaten whole; with head, viscera and bones, they're particularly rich in bioavailable calcium, and a few also are rich in vitamin A, iron and zinc. A traditional daily meal of rice and sour soup, made with the iron-rich fish, “trei changwa pliang” (Mekong flying barb, *Esomus longimanus*), with the top intact can meet 45 percent of the daily iron requirement of a Cambodian woman. Small fish are a preferred food, supplying multiple essential nutrients and with positive perceptions for nutrition, health and well-being. Thus, in areas with fisheries resources and habitual fish intake, there's good scope to incorporate micronutrient-rich small fish in agricultural policy and programmers, thereby increasing intakes which may lead to improved nutrition and health. The results of the many studies and field trials conducted in Bangladesh with carps and little fish species have shown that the presence of native fish in pond polyculture and the stocking of the vitamin A-rich small fish, “mola” (*Amblypharyngodon mola*), didn't decrease the entire production of carps; however, the nutritional quality of the entire fish production improved greatly. In addition, mola breeds within the pond, and partial, frequent harvesting of small quantities is practiced, favoring home consumption. A production of only 10 kg/pond/year of mola within the estimated four million small, seasonal ponds in Bangladesh can meet the annual recommended intake of six million children. Successful



aquaculture trials with polyculture of small and enormous fish species have also been conducted in rice fields and wetlands. Thus, aquaculture features a large, untapped potential to combat hidden hunger.

Benefit of small fish eating:

- Small fish are easily available on cheap price.
- Small fish are good dietary sources of vitamin A and D
- Its may boost brain health.
- It is also good source of Omega-3 fatty acids are essential for growth and development.
- It is also reduce the risk of heart attacks and stroke.
- It is also may decrease the risk of depression, Alzheimer's disease, dementia, and diabetes.

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