FACTSHEET
Fish for nutrition

WorldFish

Background

More than 2 billion people worldwide, particularly in developing countries, are estimated to be deficient in micronutrients, including vitamin A, iron and zinc. These vitamin and mineral deficiencies are a form of undernutrition, which is caused by insufficient intake of quality foods and repeated infectious diseases. In children, undernutrition can manifest in different forms, including wasting (thinness) and stunting (inadequate growth for age), and increases the risk of infectious disease and death.

During pregnancy and early childhood, the consequences of undernutrition are long lasting and sometimes irreversible. Nutrient deprivation during these critical windows can permanently impair brain development and growth, making it difficult for children to learn in school and perform work later in life.

One means for alleviating this problem is to increase the availability, affordability and consumption of animal-source foods, particularly fish, milk, meat and eggs. Fish is an important and under-recognized source of micronutrients and essential fatty acids.

For many developing countries, especially in communities living close to coastal and inland waters, fish is the main animal-source food and often more affordable than other animal-source foods. According to the World Resources Institute, three-quarters of all fish consumed is in developing countries, making it an important source of nutrition.

Country	% Stunted	% Wasted
Bangladesh	41.4	15.7
Cambodia	40.9	10.8
Egypt	30.7	7.9
Malawi	47.8	4.1
Myanmar	35.1	7.9
Philippines	30.3	7.9
Solomon Islands	32.8	4.3
Timor-Leste	57.7	18.9
Zambia	45.8	5.6

Undernutrition in WorldFish countries' children aged 0–59 months.

Key Facts

- 3 billion people depend on fish for almost 20% of their average per capita intake of animal protein.
- Fish, particularly small fish, is rich in micronutrients like vitamin A, iron, calcium and zinc, as well as essential fatty acids.
- Marine fish and some freshwater fish have a high concentration of omega-3 fatty acids.
- The nutritional value of fish varies by species and what the fish eats.
- 165 million children younger than 5 years are estimated to be stunted.

Fish and human health

- A comprehensive analysis of studies by researchers from the Harvard School of Public Health found that consumption of 203 grams (g) of fatty fish a week reduces death from heart disease by more than a third.
- More than half of the brain is made up of fatty acids, including essential omega -3 fatty acids, which can be found in fish.
- Eating fish increases the amount of iron and zinc that the body absorbs from other foods in a meal.

Micronutrient deficiencies

- 2 billion people worldwide suffer from micronutrient deficiencies.
- 157,000 children under 5 years of age died from vitamin A deficiency in 2011.
- 116,000 children under 5 years of age died from zinc deficiency in 2011.

Fish in the first 1000 days of life

The first 1000 days of a child's life, from conception to 2 years of age, is a crucial time for growth and development. During pregnancy, women must consume adequate nutrients to sustain their pregnancy and to ensure their child develops correctly. This is also true for lactating mothers, whose breast milk must provide for the entire nutritional needs of their infants for the first 6 months of life. For some micronutrients, like vitamin A, iron and iodine, pregnant and lactating women must consume higher levels than normal.

Fish can be directly introduced to infants' diets at the commencement of complementary feeding after 6 months of age.

- A large study of more than 11,000 pregnant women found that consumption of at least two servings of fish (340 g/week) led to higher results on multiple tests of child development compared with those who consumed less than this.
- A systematic review and meta-analysis found that women receiving long-chain omega-3 fatty acids in pregnancy had a 26% lower risk of early preterm delivery.

Small indigenous fish and nutrition

In many parts of Asia and Africa, small indigenous fish are an important part of the diet. The nutrient values of commonly found small indigenous fish species, such as mola (*Amblypharyngodon mola*), dhela (*Ostreobrama cotio Cotio*) and darkina (*Esomus danricus*) in Bangladesh, have been found to be particularly rich in micronutrients, including vitamin A, iron, zinc and calcium. They are highly nutritious, as they are often consumed whole including the heads, organs and bones. Eating small fish also enhances the absorption of micronutrients from other foods in a meal. As they are typically preserved through drying, small fish are also accessible to resource-poor populations who lack refrigeration.

Small fish species are commonly found in countries such as Bangladesh, Cambodia and Zambia. In Bangladesh, the introduction of the micronutrient-rich small fish mola to the 4 million small, seasonal ponds across the country could meet the annual recommended vitamin A intake for over 6 million children. WorldFish has engaged with donors, nongovernmental organizations and government partners to introduce the technology of mola to ponds and natural wetlands throughout the country.

Resources on nutrition

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