

## **Fish: as Food and Human welfare**

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### **FISH: As Food**

- About 75% of the world fish production is used for the human consumption.
- Around 60% of people of developing countries depend on fish for their animal protein requirements

### **Role of Fish Lipids in Human Nutrition**

1. Food with low fat : low in calories and many types of fish do not contain any saturated fat
2. Reduce the cholesterol level in the blood: Unsaturated fats can help to reduce the cholesterol level in the blood, thus lowering the risk of heart disease. Oil-rich fish such as mackerel, sardines, herring and sprats are rich in unsaturated fats containing Omega-3 fatty acids which are valuable for health.
3. Source Omega-3 fatty acids:
  - a) Schizophrenia symptoms can be eliminated or at least vastly diminished by oral supplementation with EPA.
  - b) Omega-3 oils from fish -lowering effect on blood fats.
4. Prevent cancer: Fish oils can help to prevent cancer cells progressing to the tumor stage.

### **Role of Fish protein in Human Nutrition**

- Fish protein contain sufficient amounts of essential aminoacid similar to milk, egg and mammalian meat protein.
- Fish protein comprise :
  - 1) Structural proteins e.g. actin, myosin.
  - 2) Sarcoplasmic proteins e.g. myoalbumin, globulin.
  - 3) Stoma and connective tissue protein e.g. collagen
- Growing evidence- fish protein improves blood lipid profile in human (ICAR handbook, 2006)
- Best sources - Salmonids and herring.

### **Role of Fish Vitamins and minerals in Human Nutrition**

- More attention is given to fisheries products as a source of micronutrients such as vitamins and minerals.
- This is in particularly true for small sized species consumed whole with heads and bones, which can be an excellent source of many essential minerals such as iodine, selenium, zinc, iron, calcium, phosphorus, potassium, vitamins A and D, and several B vitamins.
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### **FISH : As bio-indicator of pollution**

- Fish have been widely documented as useful indicators of environmental water quality because of their differential sensitivity to pollution.
- Fish have the ability to uptake and concentrate metals directly from the surrounding water or indirectly from other organisms such as small fish, invertebrates, and aquatic vegetation
- In addition, fish are located at the end of the aquatic food chain and may accumulate metals and pass them to human beings.
- Fish diversity may be a useful biological indicator of water quality and this could be used in biomonitoring networks and programmes to assess water quality and in mapping out fish species hot-spot areas

## Conclusion

1. In recent years, with dramatic rises and increased volatility in food prices, there is a risk that the diets of the poor will become even less diverse and more dependent on starchy staples.
2. There is therefore a renewed emphasis on the production, access, distribution and utilization of common, micronutrient-rich foods. Fish, especially nutrient-rich small fish, from the wild and from aquaculture, can play a vital role in improving human nutrition, but this will require changes to government policies, investment in infrastructure and encouragement of research.
3. Means must be found to reduce post-harvest losses in fisheries, better utilize processing waste and to make use of the large quantities of small pelagic fish that are available for direct human consumption.
4. International organizations such as FAO, bilateral agencies such as USAID provide a platform for fish to contribute to human nutrition. These should be further strengthened and coordinated.

## As Nutritional Element:

### Fish : Nature's Superfood

- Fish plays an important role in fighting hunger and malnutrition.
- In many developing countries, fish is the main or only source of animal protein, and is essential for providing micronutrients to vulnerable populations
- Fish has a crucial role to play in this development.

