

Fisheries Contribution to Food and Nutrition Security: A Comprehensive Review

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ABSTRACT

Fisheries play a significant role food and security since they are sources of quality animal protein, micronutrients and are sources of employment to millions of people. This article focuses on the diversity option of the fisheries based on health, livelihoods and culture. Fish contributes to the consumption of approximately 17% of the total animal protein it is the food containing beneficial nutrients like omega-3 fatty acids, vitamin D, vitamin B12 and iodine. There are many ways that people can benefit from its consumption thereof such as better heart health, brain development and aches' relief. The sector helps around 60 million population worldwide obtain their minimum necessary income and plays the leading role for the economic progress of many nations with a low human development index.

Keywords: Food security, Fisheries, Nutrition, Sustainability

Introduction

Food security is one of the most vital aspects of security in the contemporary world since fisheries supply a major proportion of livestock and nutritional needs globally. Fish is a good source of high-quality protein, omega 3 fatty acid and other micronutrients hence a dietary staple food particularly in the developing world [1, 2]. Fish contributes about one-seventeenth of the total animal protein that is consumed globally for many LIFDCs as well as several Asian and African nations, the proportion is over one-half [1]. Some 3 billion people rely on fisheries as a major source of animal protein and therefore the sector is at the centre of the world's food supply chain [3]. According to Gibson-Damm and Mather about 60 million people globally are small-scale fishermen or engaged in the harvesting of fish and its valuable products [4]. Small-scale fisheries play a big role in the low-income countries mainly due to the contribution to economic income of the country and food security [4, 5]. Furthermore, culturally, fish play a role among many peoples starting with the peoples of the sea and ending with the people of the big megapolises where fish are an essential part of diet or other necessary organisms which are considered as the signs of some traditions and cultures [6].

Nutritional Value

The objective of this study is to examine the role of fisheries in providing food and nutrition security these nutrients which are core fundamental for a healthy living are vital for human especially children and pregnant women [7]. Overall, 100 g of fish contains roughly 20 g of protein, the equivalent of 34% of an adult person's wanted daily portion. It also has a high content of omega 3 fatty acids (up to 1.5g/100g) which are vital in the working of the cardiovascular system and brain and that decreases inflammation. A serving of fish provides 50% of daily vitamin D. After eating fish, you get on a fifth of vitamin B12 and 10% of iodine [8].

Positive Impacts on Human Health

Taking fish is healthy for so many people. Omega-3 fatty acids enhance consumption of fish in decreasing blood pressure, triglyceride level and prevention of heart abnormality. They are also beneficial when it comes to the development and the proper functioning of the human brain. A previous cross-sectional study has established that high fish diets were in some way pertinent to the lowering of probabilities of retaining decline and depression [9]. Fish is rich in protein and micronutrients needed in the body for enhanced functioning of the immune system, growth and maintenance of muscles in addition to the metabolic activities [9].

Economic Impact

Contributions from Aquaculture and other industries is informative in contributing to the national wealth most especially those countries who have embraced fisheries as a major factor in the improvement of their economy [10]. For instance, Bangladesh, Cambodia and Senegal these countries have the income from fisheries which is a major component of the GDP and the foreign exchange revenues [11].

Cultural Importance

Small scale fisheries also have socio-economic implication of supporting the human population of the various coastal areas in terms of employment and food [12]. It is traditional to eat it and cannot be replaced by any other food item. They assist in sustaining the intake of food and are frequently one of the greatest sources of animal protein [13]. Apart from food, fishing practice is also essential in social and cultural well-being as well as support. Asian and Pacific Island fisheries are still socially, culturally and practically viable and

therefore, cultural sensibility is useful in answering and coping with change diet [14].

Fish Consumption in Pakistan

In 2008, a report from a governmental organization revealed that an average individual consumed less than 2 kilograms of fish yearly contrasting with the global average of 20 kilograms in developed nations and 9 kilograms in developing ones [15]. Fish plays a role in the diets of Pakistanis, particularly those residing in coastal regions like Sindh and Balochistan where fishing is a significant trade. Presently initiatives are underway in Pakistan to enhance food security and nutrition by offering information services and fostering small scale agriculture [15].

Methods

The study conducted for this research encompassed a review of literature incorporating peer reviewed articles reports from entities and case studies from diverse areas. Sources were chosen based on their pertinence, influence and timeliness to guarantee an understanding of the subject matter. Various databases such as PubMed, Scopus and Google Scholar were explored.

Challenges

Several key obstacles have been identified include overfishing, habitat degradation and climate change. Overfishing has resulted in the depletion of fish species populations jeopardizing both fisheries sustainability and the livelihoods reliant on them. Developments, pollution and the use of destructive fishing methods also among others influence the aggravation of habitat destruction. Further climate change brings in new issues by affecting water temperatures and making waters acidic and also changing the distribution of fish [16]. These are what require collective effort and the enlistment of management strategies, in order to be solved.

Opportunities for Sustainability and Food Security

There are many opportunities to improve sustainability and food security regarding fish and aquaculture. New methods in aquaculture or fish farming might be able to meet increasing consumption of fishes and decrease pressure on the natural population. Proper techniques of aquaculture also assist in reducing the effects that they have on the environment that may include IMTA or the recirculation technology that also may increase levels of production. Management of the fisheries resource inventory has been positive. This includes the use of quota systems under the science, establishing MPA's and education involving people in a sustainable use of resources. These strategies enhance ecosystem stability in the same process that fish stock is restocked. There is also the case of Illegal and overfishing are some of the cross-border issues that can only be fought with the help of international cooperation too. Thus, it can be stated that cooperation between counties can lead to the emergence of improved protection measures [17].

Policy Recommendations

This involves reinforcing laws working on fishing, increasing funding in conservation technologies and calling on countries to come at regional matters. One of the ways of combating IUU fishing is to enhance the principles of regulation because it assists in sustaining the status of stock fish [18]. Measures such as selective fishing equipment and devices to minimize bycatch can prevent the majority of the effects on the environment [19]. Almost all sources indicate that international cooperation is critical given the global interactions in fisheries and the quest for an equitable share of the stocks [20].

Conclusion

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Fisheries are considered crucial sources of food and nutrition carrying out important functions for societies and economies. This might be very important in the realization of sustainable exploitation of the neighboring fisheries for future generations. Subsequent investigations, proper management and co-combination are needed to address present issues and to attain the various assurances of fishery for food security.

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