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Popular Article

Inland Fisheries: Balancing Environmental, Economic, and Social Impacts

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Introduction

The Lakes, streams, rivers, reservoirs, canals, and other land-locked waterways are all considered inland waters by the Food & Agricultural Organization (FAO) of the United Nation (UN). Although the term "inland" is typically associated with freshwater, landlocked saltwater bodies like the Caspian Sea are included in the category of inland waterways (FAO, 2014a). Roughly 0.01% of all the water on Earth is contained in inland waterways (Stiassny, 1996). Fish that live in these waters are inland. They include around 20% of all vertebrate species and 40% of all fish species (Helfman et al. 2009). The capture and aquaculture of inland fish species for consumption, profit, or leisure are also considered forms of inland fisheries. Because maritime fisheries record harvests that are around seven times greater than inland catches, marine fisheries sometimes overshadow interior fisheries in assessments of global fishing operations (FAO 2014b). However, a wide range of data points (consumption studies, for example) indicate that inland fisheries harvests are often either completely unreported or wildly underreported, particularly when one takes into account the high level of craft or small-scale fisheries (i.e., existence and native enterprise) in inland waters (Hortle, 2007). Including both capture and aquaculture fisheries, inland fisheries provide more than 40% of the world's total production for both types of finfish fisheries (excluding those involving vegetation wildlife, crustaceans such as snails, and mussels; FAO-FIGIS 2014). Just a third of the inland fishing economies even report catch data, according to (FAO, 2010).

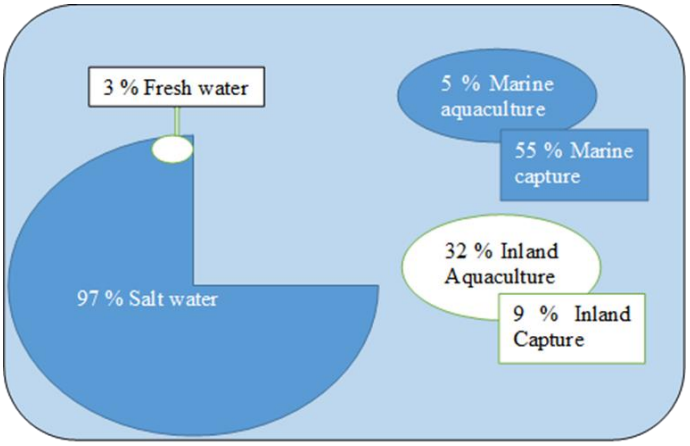

Fig. 1. Contribution of each of the four types of finfish production to global finfish production in 2012 (FAO-FIGIS 2014).

Why Inland Fisheries is Important?

Importance of Inland Fisheries to the Individual

Worldwide, inland fisheries support millions of people while offering food for billions of people (FAO 2014b). The significance of inland fisheries to a country's economic and nutritional security depends on that country's level of economic and social growth, which is frequently greater in developing and rising countries. Inland

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fisheries are important for both nutritional and financial stability since they are the primary source of animal protein, essential nutrients, and revenue (Welcomme et al. 2010). When possibilities in other industries are few, inland aquaculture and capture fisheries can provide individuals with possibilities for empowerment via food and cash.

Importance of Inland Fisheries to the Society

Worldwide, inland fish and fisheries play a significant role in communities. Inland fish have special significance and play a role in defining communal identities in many cultures (Weeratunge et al. 2014). Furthermore, they support worthy entertainment endeavors worldwide as well (Cook and Cowx 2004). Advances in preventing illnesses and medical studies that enhance human health and well-being are made possible by the development of inland fish species, like larvivorous fishes and pharmacological model organisms. Furthermore, inland fishery management offers chances for capacity building and information transfer between democratic jurisdictions (UNU-INWEH 2011).

Importance of Inland Fisheries to the Environment

Nearly every inland environment on the planet is home to inland fish species (Dudgeon et al. 2006). These inland fishes are additionally used as indicators of changes in ecological function (Allan, 2004).Furthermore, many inland aquaculture and capture fisheries operations might be acknowledged as significant to the "green food" movement because to their low environmental effect.

Table. 1. The value of inland fisheries to the individual, society, and the environment by the numbers.

The significant role of inland fisheries	**Relevant data**
Value to the Individual	
Food Safety	• Low-income countries with food shortages account for 80% of the total estimated harvest through inland capture fisheries (Kapetsky, 2003). • For instance, 50% of Bangladesh's animal protein intake comes from fish (Thilsted et al 1997).
	• Protein, omega-3 fatty acids, calcium, vitamin A, B, & D, zinc, iron, and lysine are all found in inland fish (Roos et al. 2007; Youn et al. 2014).
Financial Stability	• Inland capture fisheries employ a minimum of twenty-one million fishermen (or 36 percent of all fishermen worldwide), while more than 36 million more depend on post-harvest activities for a living (FAO 2014b).
Development	• More than 60 million individuals in low-income countries depend on inland fisheries for their livelihoods, with women making up over fifty percent of those participating in inland fisheries transportation networks (FAO 2014b).
Value to the Society	
Ethnic activities	• Some kinds of fish may develop symbolic meaning beyond their nutritional value, such as the lake sturgeon (*Acipenser fulvescens*) in the Laurentian Great Lakes or the koi (*Cyprinus carpio*) in eastern Asian culture (Harris et al. 1989).
Services for Pleasure	• According to Poe et al. (2013), fishing for pleasure in the Laurentian Great Lakes has a yearly net worth of up to US$1.47 billion.
Human welfare and health	• Long-lived fish, such as the Arabian killifish (*Aphanius dispar*) and the western species of mosquitofish (*Gambusia affinis*), are frequently used to treat illnesses like malaria, dengue fever, and yellow fever. • After rats, zebrafish are perhaps the second most popular model in medicine and pharmacology (Lieschke and Currie 2007).
Information sharing and capability development	• Most among the worldwide 662 000 km2 of rivers and 5 000 000 km2 of inland lakes, as well as reservoirs, are home to inland fisheries (Verpoorter et al. 2014).
Value to the environment	
The purpose of ecosystems and	• About 20% of all species of vertebrates and 40% of all fish

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biodiversity	species are inland fishes, which inhabit all major inland aquatic environments (Helfman et al. 2009).
"Canaries" in the water	• According to Vörösmarty et al. (2010), inland fish serve as indicators of the consequences that climate change could have on individuals both currently and in the future, as human-made stressors account for 65% of the loss of habitat of these species.
"Green food"	• If inland fish are properly harvested or farmed, they can be considered as part of the "green agricultural" movement, which advocates for more environmentally friendly food supplies (Brown, 2002).

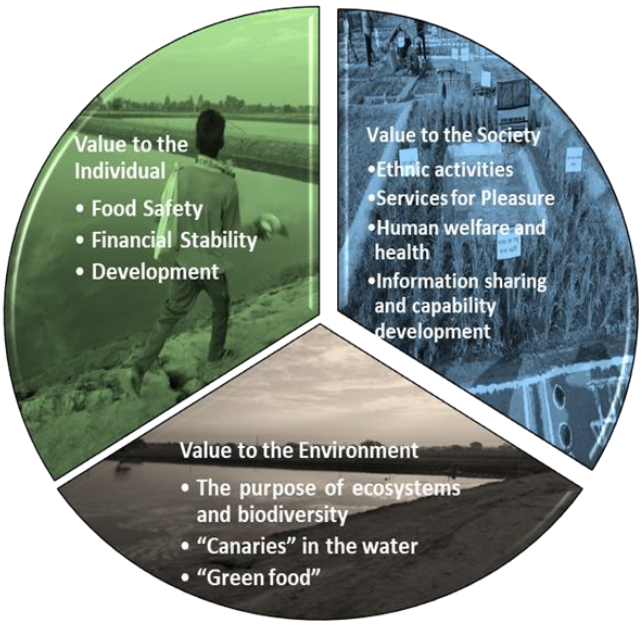

Fig. 1. Schematic visual showing the value of inland fisheries to people, the environment, and society.

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