

Harnessing Fisheries to Combat Hunger and Poverty in Least Developed Countries: A Pathway to Sustainable Development

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SUMMARY

Fisheries are crucial for sustainable development in Least Developed Countries (LDCs), significantly contributing to food security, poverty alleviation, and economic stability. Here, we explore the role of fisheries in achieving Sustainable Development Goal 2 (SDG 2), which aims to end hunger and promote sustainable agriculture by 2030. Despite their potential, fisheries in LDCs face challenges such as overfishing, climate change, and inadequate infrastructure. Success stories from Bangladesh, Madagascar, and Senegal highlight the benefits of community-based management and climate-resilient practices. Innovations like mobile technology and solar-powered cold storage enhance efficiency and sustainability. Governments and international organizations play a key role through regulatory frameworks, funding, and capacity-building. Integrating fisheries into national development plans, as seen in Bangladesh and Mozambique, maximizes their potential. Collaboration among countries, NGOs, and the private sector is vital for sustainable fisheries management. By 2030, sustainable fisheries can enhance food security, economic stability, and biodiversity conservation. Long-term strategies include strengthening governance, community-based management, technological innovation, and market access. A collaborative approach involving all stakeholders is essential to realizing this vision.

INTRODUCTION

The United Nations' Sustainable Development Goals (SDGs) aim to eradicate poverty, protect the planet, and ensure prosperity for all by 2030. SDG 2 focuses on ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture. Despite abundant resources, millions suffer from hunger due to uneven access and poor management. Sustainable fisheries can play a crucial role in addressing these issues by providing essential nutrients and generating economic opportunities in Least Developed Countries (LDCs). “End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture” (Goal 2: zero Hunger |UNDP).

Current State of Fisheries in LDCs

Fisheries in LDCs are critical for food security, employment, and income but often face challenges such as overfishing, climate change, and lack of infrastructure. As of the latest update by the United Nations (as of July 2023), the list of Least Developed Countries includes: Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Central African Republic, Chad, Comoros, Democratic Republic of the Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Lao People's Democratic Republic, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Myanmar, Nepal, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, South Sudan, Sudan, Timor-Leste, Togo, Tuvalu, Uganda, United Republic of Tanzania, Vanuatu, Yemen, Zambia. These countries are characterized by challenges such as widespread poverty, poor health care, low educational attainment, and a high dependency on agriculture. Efforts are continuously made by the international community to support development in these countries.

Here is an overview of fisheries in some LDCs: (SOFIA 2024)

Country	Current Aquaculture Production (Million Tons)
Bangladesh	2.731
Uganda	0.101
Nigeria	0.259
Myanmar	1.197

Countries like Bangladesh, Uganda, Nigeria, and Myanmar have notable aquaculture production but need better management to reach their full potential (FAO, 2024).

Success Stories and Best Practices

Bangladesh: Community-Based Fisheries Management (CBFM) has led to sustainable practices, increased fish stocks, and improved food security (WorldFish Centre).

Madagascar: Sustainable octopus' fisheries through locally managed marine areas have boosted incomes and fish stocks (Blue Ventures).

Cambodia: Co-management of inland fisheries has resolved conflicts and promoted sustainable practices (FAO).

Senegal: Climate-resilient fisheries have helped communities adapt to climate change (USAID).

Mozambique: Ecosystem-based management has protected marine habitats and supported sustainable fisheries (WWF).

Solomon Islands: Certification strategies have opened new markets for sustainably caught fish (Marine Stewardship Council).

Comoros: Strengthened governance has improved fisheries management and sustainability (World Bank, 2018).

Fisheries as a Tool for Economic Development

Fisheries generate income and employment, particularly in rural and coastal areas. They drive local economies by creating demand for goods and services, empowering marginalized groups, including women. Successful initiatives in Bangladesh, Madagascar, Senegal, and Cambodia demonstrate significant economic benefits from sustainable fisheries practices (FAO, 2022).

Innovations and Sustainable Practices in Fisheries:

Sustainable fishing practices are essential for maintaining fish populations, protecting marine ecosystems, and ensuring the long-term viability of the fishing industry. These practices include:

Catch Limits and Quotas: Implementing catch limits and quotas helps prevent overfishing by controlling the number of fish that can be harvested. This ensures that fish populations can reproduce and sustain their numbers.

Marine Protected Areas (MPAs): Establishing MPAs where fishing is restricted or prohibited allows ecosystems to recover and thrive, leading to increased biodiversity and healthier fish stocks.

Selective Fishing Gear: Using gear that targets specific species and sizes of fish reduces bycatch (the capture of non-target species) and minimizes environmental impact.

Seasonal Closures: Temporarily closing fisheries during breeding seasons protects fish populations during critical reproductive periods, promoting population recovery and growth.

These sustainable practices lead to numerous benefits, including healthier marine ecosystems, more stable fish populations, increased long-term profitability for fishers, and improved food security for communities that rely on fish as a primary source of protein.

Technological Advancements:

Technological innovations are transforming small-scale fisheries by improving efficiency, reducing waste, and enhancing sustainability. Key advancements include:

Mobile Technology and Apps: Mobile applications help fishers access market information, weather forecasts, and navigation tools, improving their safety and efficiency. Apps like TroTro Tractor in Ghana connect fishers directly with buyers, ensuring fair prices and reducing post-harvest losses.

Fish Aggregating Devices (FADs): FADs attract fish to specific locations, making it easier for small-scale fishers to catch them while reducing the time and fuel needed to locate fish. When used responsibly, FADs can increase catches and incomes for small-scale fishers.

Solar-Powered Cold Storage: Solar-powered cold storage units enable fishers to preserve their catch for longer periods, reducing spoilage and increasing the value of their products. This technology is particularly beneficial in remote areas without reliable access to electricity.

Sustainable Aquaculture Practices: Innovations in aquaculture, such as integrated multi-trophic aquaculture (IMTA), where multiple species are farmed together in a way that mimics natural ecosystems, reduce environmental impact and increase productivity.

Role of Government and International Organizations in Promoting Sustainable Fisheries

Governments and international organizations play a crucial role in promoting sustainable fisheries through policy-making, funding, and capacity-building efforts. Their contributions include: (FAO, 2024).

Regulatory Frameworks: Governments establish and enforce regulations that set catch limits, protect critical habitats, and ensure sustainable fishing practices. Effective management and enforcement are essential for preventing overfishing and conserving marine resources.

Funding and Technical Assistance: International organizations, such as the Food and Agriculture Organization (FAO), the World Bank, and regional fisheries management organizations, provide funding and technical assistance to support sustainable fisheries projects. This includes infrastructure development, research, and training programs.

Capacity Building and Education: Governments and international bodies offer training and education programs to fishers, teaching them sustainable practices and providing the skills needed to manage fisheries resources effectively. These programs often focus on community-based management, conservation techniques, and the use of new technologies.

Global Initiatives and Agreements: International agreements, such as the United Nations Convention on the Law of the Sea (UNCLOS) and the FAO Code of Conduct for Responsible Fisheries, set global standards for sustainable fishing and encourage countries to collaborate in managing shared fish stocks and protecting marine ecosystems.

Integrating Fisheries into National and Regional Development Plans

Policy Frameworks:

Regulations: Set catch limits and protect habitats.

Economic Incentives: Support sustainable practices.

Research and Monitoring: Ensure compliance and inform policies.

Community Involvement: Engage locals in decision-making.

Examples:

Bangladesh: National Fisheries Policy integrates fisheries into broader development plans.

Mozambique: National Plan for Small-Scale Fisheries aligns with national goals.

Cambodia: Strategic Planning Framework integrates fisheries with rural development.

Collaboration:

Regional Fisheries Management Organizations (RFMOs): Manage shared stocks.

Public-Private Partnerships (PPPs): Drive innovation and investment.

NGO Initiatives: Promote sustainable practices and support communities.

The Future of Fisheries in LDCs: A Vision for 2030

Sustainable fisheries can significantly contribute to SDG 2 by enhancing food security, economic stability, and biodiversity conservation. Long-term strategies include strengthening governance, community-based management, adopting technology, investing in research, promoting sustainable aquaculture, and improving market access. Achieving these goals requires coordinated efforts from governments, international organizations, NGOs, the private sector, and local communities (FAO, 2022).

CONCLUSION

Fisheries play a crucial role in achieving SDG 2, particularly in LDCs. Sustainable practices, innovative technologies, and strong governance can transform fisheries into a powerful tool for economic development, food security, and poverty alleviation. Collaborative efforts are essential to harness the full potential of fisheries by 2030.

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