



Fishing for Fortune: Exploring How Fishing Sector Fuels Economic Development

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Abstract

Globally, countries face serious obstacles like food insecurity, unemployment, and poverty, so economic development is every country's primary goal. However, it is closely linked to optimizing the use of natural and human resources. This paper reviews how the fisheries sector and its management can contribute to economic development. It outlines the importance of fisheries governance and management, demonstrating how fisheries management goals should be balanced. Additionally, it illustrates the importance the fisheries industry plays towards poverty alleviation and how it advances economic development, as well as presents the obstacles that this industry must overcome to become more effective. The study offers helpful suggestions that will aid managers and policy makers in improving the sector and attaining their national goals.

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1. Introduction

The fishing industry is a crucial component of the productive sectors and significantly improves people's economic well-being, development, food security, and health both locally and globally. The increasing human population, poverty, nutritional deficiencies (Misselhorn *et al.*, 2012) ^[65], and hunger (Riches, 1997) ^[77] are the most significant global concern. The situation escalated further following the COVID-19 pandemic (World Bank, 2020) ^[96], Wars and Conflicts (Pawar, 2023a) ^[74], and natural disasters (Pawar, 2023b; and Kulmie and Hussein, 2023) ^[75, 61]. Combating poverty and hunger is a top priority for the international community (Adam & Kulmie, 2024) ^[2]. Policy makers and development experts consider these challenges extremely critical on human wellbeing of many developing countries (Ayoo, 2022) ^[9]. The World Bank (2020) ^[96] reports that there are still persistently high extreme poverty rates in sub-Saharan countries. International community need as experts argued, comprehensive strategies that address societal, economic and developmental challenges, both locally and globally, and, governments must effectively stimulate all their productive sectors to eradicate poverty.

As noted by Walmsley, *et al.* (2006) ^[94], poverty reduction, livelihoods and, fisheries management are linked and must be incorporated in poverty reduction strategies. The global population will depend considerably on marine resources by 2030 (Estes *et al.*, 2021) ^[32]. Moreover, many countries perceive fisheries industry as an avenue to food security (Tshamano, *et al.* 2023; Béné & Heck, 2005) ^[92, 15] and development. The rising population and demand for fish products has resulted in an increase in fishing effort (Merino, *et al.*, 2012; Clausen & York, 2008) ^[64, 24] as well as conflicts in domestic and international settings. The traditional goals of managing fisheries i.e. maximizing yield and employment, lead to severely overfished stocks (Hilborn, 2007) ^[53]. This failure of fisheries management has caused crises in numerous areas (Beddington, *et al.*, 2007) ^[13].

Additionally, Illegal, Unreported and Unregulated (IUU) fishing as a global phenomenon (Temple, *et al.*, 2022) ^[89] have increased as result of failures in management, and exacerbated the need for better governance with consideration of logical, ethical, as well as natural aspects (Sumaila & Bawumia, 2014; Sumaila, & Bawumia, 2000) ^[85, 84].

Governments have implemented a variety of fishery management measures to improve the sustainability of fisheries (Tolentino-Zondervan, & Zondervan, 2022) ^[90], and to address the cases of capacity limitations and overfishing in fisheries. The global concern over the state of world's fisheries has focused attention on the fundamental factors that contribute to non-sustainability of fisheries resources (Swan & Gréboval, 2004) ^[86] and high demand for limited natural resources, complexity and lack of information and knowledge, poverty, linkages between the fishing sector and other sectors and the environment, and lack of good governance, have been identified as primary causes of unsustainability and overexploitation in fisheries (Gréboval, 2004) ^[86]. Several countries including, Kenya, Uganda and Ethiopia (Akullo, 2023) ^[3] and Somalia struggle to eliminate poverty and attain food security although these countries are considered rich in natural resources, (Streifel *et al.*, 2018) ^[82] including fisheries, minerals, and agricultural resources. Despite these endowments, Somalia is one of the poorest countries in the world with nearly 70% of the population living on less than \$2 a day and 43% living in extreme poverty (Nor, 2021) ^[71]. However, Somalia aims to eradicate poverty by 2063 by utilizing its natural resources for resilience, prosperity, and development. This study examines how the fisheries sector and its management contribute to economic development.

2. Methodology

This study examines the role of fisheries sector in economic development using secondary data from various sources. The researchers systematically reviewed related papers and books for benefit of this study. The research provides an overview of fisheries governance and management, as well as fisheries management objectives. The paper also explores how fishing sector contributes to economic development. Finally, it presents conclusions and recommendations based on the literature review and findings.

3. Review of the Literature

3.1. Fisheries Sector Governance

3.1.1. Fisheries Governances

The term 'governance', often misunderstood as management or anything beyond formal management, has become a common catchword in social sciences, sustainable development as well as in various fields of resource and environmental management (Cochrane & Garcia, 2009) ^[26]. In the 1990s, governance theory emerged, emphasizing shared responsibility for problem solving and opportunity creation among state, market, and civil society, enabling non-state actors to participate. Governance is a crucial aspect of fisheries, determining the power and influence of management. Governance refers to a government's capacity to establish and enforce rules, and provide services, regardless of its democratic nature (Fukuyama, 2013; Mohamed & Kulmie, 2023) ^[39, 61].

The governance process comprises multiple parts, and oceanic governance is particularly complicated with many parties and drivers who have different motivations and objectives (Haas *et al.*, 2021) ^[48]. International and national institutions significantly influence fisheries governance; however, institutions in developing countries face significant human and financial challenges, necessitating capacity development and improved governance. The concept of fisheries governance is crucial as fisheries, both globally and locally;

contribute to human development by providing food, employment, livelihoods, and recreational opportunities. Furthermore, it is needed since the fisheries sector also has negative impacts, such as damaging the ecosystem and reducing the conservation value of ecosystems. Controlling these impacts is crucial towards ensuring the sustainability of these vital resources.

3.2. Fisheries Sector Management

Studying fisheries begins with realizing that fish are just one of the many scarce resources in our world, however, fishing resources may expand, making these a renewable resource (Morey, 1980) ^[68]. These resources require effective management, policies, strategies and frameworks. Although there is no universally accepted definition, the technical guidelines of provide a summary of the tasks of fisheries management, and described as the comprehensive process of gathering data, analyzing it, planning, consulting, making decisions, allocating resources, formulating and enforcing regulations or rules that govern fisheries activities in order to maintain the productivity of the resources and achieve other fisheries goals. This explanation illustrates that fisheries management is a multidisciplinary field with multidimensional processes. In recent years, policymaking and development concerns have centered on using and managing natural resources. Fisheries resources are at the forefront of the agenda of priorities for governments, who view it as the cornerstone of their development initiatives.

This requires effective governance in order to achieve the desired results. Although the main objectives of fisheries management are largely the same across the world, these objectives are influenced by structure, resources, expertise, human resources, technology, and enforcement of rules and procedures. In other words, government policy influences development priorities, which formulates goals, strategies, and evaluation frameworks. Fisheries management is crucial for sustainable fish harvesting, marine ecosystem protection, supporting the fishing industry, providing food security, and creating job opportunities. Therefore, fisheries management primarily considers the biological, ecological, environmental, technological, social, cultural, and economic elements to ensure that these resources are utilized in a sustainable and responsible way (Howell, *et al.*, 2021; Berkes, 2001) ^[54, 17]. Hence, it is undeniable that efficient fisheries management is necessary for the sustainable use of fish resources and the welfare of people who depend on them. Some of the key characteristics of effective fisheries management include: Science-based, flexible, enforceable, and participative fisheries management.

3.3. Fisheries Management Objectives

Common fishery management objectives are categorized into three main objectives as noted. The first is called resource sustainability, and it aims to protect a resource's biological productive capacity. The other two objectives, which are social and economic, are concerned either with optimization of returns from the fishery (efficiency) and the fair distribution of those returns among stakeholders (equity).

3.4. Fisheries Policies and Strategies

The natural resources are key components of national assets and should be considered when developing policies, strategies and targets. Several researchers studied the relationship between fishery industry and poverty reduction

and economic development. Many variables should be taken into consideration while addressing poverty. Numerous studies have shown that women and disadvantaged groups are particularly affected by poverty. However, to evaluate women's contributions to the economy and food security, Harper, *et al.* (2013) ^[50] explored a large portion of the literature and statistics on their involvement in the fishing industry. This study demonstrates how women's important contributions to total catch and economic value are frequently ignored in management and policy choices about fisheries. This study also indicated that acknowledging this contribution might help women feel more empowered, participate more in management, and address challenges with food security and development. The authors highlight the importance of incorporating women's expertise in fisheries management, and in decision-making processes, further, they emphasized the significance of women's contributions to nutrition, poverty alleviation, and health, as well as their underappreciated position in the sector. This study shows that the root cause of ineffectiveness is the absence of proper management vision and, therefore, necessitates the formulation of pragmatic policies that guide fisheries managers in decision-making.

According to Sugi (2023) ^[83], the government needs appropriate methods and plans to help fishermen and women escape the cycle of poverty. As a result, the government requires assistance to develop effective policies, so that the Fisheries Service's strategic plan, which should be the driving force behind initiatives to alleviate poverty among fishermen and women, does not end up being the main impediment to improving the welfare of fishermen and women.

In order for the strategic plan to benefit fishermen and women, the Fisheries Service must examine it as a whole. Pomeroy, *et al.* (2009) ^[76] analyzed changes in policy towards small-scale fisheries industries in Vietnam over the last two decades. The primary issues facing the small-scale fisheries sector in Vietnam involve restructuring the near-shore fisheries and addressing over-capacity. However, a combined strategy of resource management, resource restoration, economic and community development, and new governance structures are among the recommended solutions, along with better fisheries statistics, resources for provincial fisheries employees, and a coordinated and integrated approach.

4. Economic Contributions of Fisheries Sector

Fishing resources and the fishing industry are essential to modern business and economic development. Numerous studies show that this industry contributes positively to the economy, health, nutrition, trade, and development. The following sections present the economic contributions of fisheries sector.

4.1. Job Creation and Employment

The economic performance of the fishing sector can be estimated in terms of employment and income (Almeida, 2004) ^[4]. One of the biggest economic and social issues facing several countries including Somalia (Nor 2021; Kulmie, Hussein, *et al.* 2023) ^[71, 61] right now is the country's high unemployment rate. Governments promote small and medium Enterprises (SMEs) to create jobs for young people. Startups create an average of 3 million new jobs annually (Kane, 2010) ^[60]. Fishing, however, is one of the most critical industries that can be utilized. For instance, Chan *et al.* (2021) ^[21] states that fish and fish-related activities play innumerable

roles in generating income in Africa. The authors indicated that the fisheries industry in Africa is expected to support 20.7 million employments in 2030 and 21.6 million by 2050. For every person that is directly employed throughout the stage of fish production, there will be an additional 2.6 indirect jobs along the value chains of fisheries and aquaculture. There would be 58.0 million jobs overall in the fish food chain in Africa by 2050, or 2.4% of the continent's entire projected population. Employment generated by capture fisheries contributes to over 90% of the total jobs in the African fisheries sector (Chan, *et al.* 2021) ^[21].

The fish industries play a significant role in creating jobs in Africa, but their significance has been underappreciated, leading to a lack of investment to enable sector expansion and a sustainable system transformation to meet the rising demand for fish. Marine fisheries significantly contribute to the global economy, but lack of data and uncertainty about employment levels can lead to underestimation of fishing effort and inaccurate economic projections (Teh & Sumaila, 2013) ^[50].

4.2. Trade and revenue

Trade is the process through which partners exchange products and services for mutually beneficial goals. Trade helps people and nations to better their living conditions. It is critical to boost fish availability, improve intra-regional and global fish trade, and ensure equitable distribution and access to fish in order to alleviate some personal and societal repercussions (O'Meara, *et al.* 2021) ^[72]. Shamsuzzaman, *et al.* (2020) ^[81] investigated the trend of fish production, export and imports and the findings demonstrated that Bangladesh's fish output has grown. The study has emphasized the economic importance of fisheries production and trade, mentioning that economy can grow if the fisheries industry is given greater attention.

When economic activity is well managed, the government is in a position to collect additional taxes and use this added revenue for public purposes (Nor, 2019) ^[17]. Therefore, in order to expand this industry, provide jobs, foster employment, and build trade links; the government should first invest in and support the fishing industry. Anderson, *et al.* (1986) ^[6] argued suggests that higher investments in this sector now will lead to higher taxes later, indicating that the government determines spending levels and seeks revenue sources like taxation. Their study also shows that revenues are positively influenced by the Gross National Product (GNP), and fishing-related services and goods are included as part of the GNP. The sources of revenues include business tax, income tax, licenses and others like fines, and penalties.

4.3. Poverty Reduction

Poverty is a global phenomenon that rests at the heart of most of policy, economic, development and political debates, since it a tough challenge to governments, societies, and developmental agencies (Misturelli & Heffernan, 2008) ^[66]. Nature and the causes of poverty are a major concern in economic and poverty studies (Haaland & Keddeman, 1984) ^[47]. The term "poverty" has been defined in diverse ways due to its nature; some people view it as serious deprivation, while others see it as social exclusion and inequality in resource distribution (Cobbinah, *et al.*, 2013) ^[25]. However, it is multidimensional concept (Shabbir, *et al.*, 2018) ^[80], in which development experts, academics and researchers have

suggested numerous definitions over time (Bellu & Liberati, 2005) ^[14]. Poverty is defined as a condition in which people are deprived of opportunities to develop capabilities required to lead a basic human life, and are excluded from society and development processes (JICA, 2004) ^[59]. The world population has made progress over time and less than 10% of the global population live in extreme poverty compared to the previous percentage of 20% (World Vision, 2018) ^[97]. Therefore, poverty reduction is the most important goal of development (Chambers, 2006) ^[20].

Several studies reveal that fishing sector contributes to poverty reduction. Hassan & Gichinga, (2018) ^[4] stated that fishing is a profitable venture that could potentially reduce poverty by generating income. In this study, respondents agreed that fishing could potentially alleviate poverty, and improve income and food security? Traditional fishermen in countries like Somalia rely on fishing as their primary income source (Hassan & Hossain, 2023) ^[51]. Governments adopt different strategies including local economic development strategy to enhance local economic capacity, investment, and productivity of local business and their employees (Izzudin & Achmad, 2022) ^[58]. As a result, the community will eventually be better able to combat poverty and develop new economic prospects as well as improve quality of their life (Asher & Novosad, 2020) ^[8]. Recent studies such as Sugi (2023) ^[83] indicate that the government needs suitable and effective strategies and designs to free fishermen from poverty. It is clear that this sector alleviates poverty through providing employment opportunities for local communities

4.4. Food Security

Food security refers to having constant physical and financial access to adequate food to satisfy dietary requirements for a successful and healthy existence. Food insecurity can result to poor health, education, or other core skills that support people's wellbeing (Burchi & De Muro, 2016) ^[18]. There may be balanced or imbalance between the relationship of population and food. Food insecurity is implicitly assumed to be a sub-category of poverty (often referred to as "food poverty"), i.e., lack of sufficient income needed to buy the amount of food required for survival at the given conditions. Fishing has enormous development potential to enhance coastal livelihood security, local food security, and economic security while delivering long-term gains and favorable investment returns. It is essential to promote community awareness program for the motivation of the domestic uses of fish and fish products (Hassan & Gichinga, 2018) ^[4].

In their study, Béné, *et al.* (2016) ^[16] stated that fish contributes undeniably to nutrition and food security. Fisheries have significant potential for growth, enhancing coastal livelihood security, local food and economic security, and offering long-term benefits to these communities (Hassan & Gichinga, 2018) ^[4]. Food-producing livelihoods have the ability to increase food security and nutrition through direct consumption or indirectly through income, according to researchers like Fiorella, *et al.*

4.5. Sustainable Economic Development

Eradicating poverty is not a technical issue but it's a political economic problem, creating challenge to the existing economic and political power (Tomislav, 2018; Cypher & Dietz, 2008) ^[91, 28] and, economic development practices remarkably relate to wealth, income, work and similar issues (Onyemelukwe, 2016; Cypher & Dietz, 2008) ^[73, 28]. The

famous economists from the eighteenth century up to date, ask some fundamental questions: how economic development takes place? What are the roots of economic wealth? What are the reasons for poverty? In addition, how economic and social gains can best be improved? (Onyemelukwe, 2016; Cypher & Dietz, 2008; Acemoglu, 2008; Foley, 1966; Friedmann, 1992; Schumpeter & Backhaus, 1934) ^[73, 28, 1, 37, 38, 74]. Several efforts have been made to address these enquiries theoretically and practically. However, economic growth and development as an essential pillar for poverty reduction, peace and development (Kulmie, 2023) ^[61] requires structural change, particularly trade patterns (i.e. shift from a dependence on traditional methods), increased application of human capital and knowledge to production (i.e., increases in the productivity of labor in all sectors including fishing), undertaking essential institutional change (i.e., change in government role, values and motivations, changes in macroeconomic policy) (Cypher & Dietz, 2008) ^[28].

Great economies including USA, China, Great Britain, Japan, Germany, Sweden and others did not reach that powerful positions overnight? but all economic, social and political advancement took place slowly over long period of time (Cypher & Dietz, 2008) ^[28]. When it comes to the less-developed nations, there are some questions that need to be addressed if the policy makers and societies demand real economic and social development. Measuring the level of development of a nation is quite challenging, nonetheless, economists typically measure it using two broad methodologies, one criterion is the income per person which is a good approximate measure for social progress, on the other hand, the competing view of measurement, argues that development is a complex, multi-faceted concept, that can be measured not only by the income per person but also by considering different standards (Cypher & Dietz, 2008) ^[28]. However, increase in personal income in a given country shows some extant of economic development.

Making wise decisions to deal with scarcity and meet the demands of a particular society is the essence of economics. These choices relate to the two fundamental economic objectives, i.e. economic growth and development (Van den Berg, 2016; Gupta, 2014; Mose, 2014) ^[93, 46, 69]. Economic growth as stated by Gupta (2013) ^[45] refers to an increase over time in one of the main GDP components—consumption, government expenditure, investment, and net exports, while economic development is described as a consistent increase in society's material well-being. Growth in human capital, a decline in inequality, and structural changes that raise people's standards of living are all related to development. However, economic development creates more opportunities for youth, women and all citizens. Governments primarily manage public resources and influence private actions in an effort to create economic prosperity for their citizens. The subject of government involvement in economic growth has been debated ever since Adam Smith's time (Mose, 2014) ^[69]. Some scholars contend that when government involvement and policies are reduced while privatization is encouraged, sustainable development can be achieved while other experts argue different. Nearly all government development policy documents include the goal of ensuring sustainable economic development and lowering pervasive poverty (Mose, 2014) ^[69]. Future growth development prospects are seen in industries with prospective comparative advantages. These include the geographical location

(Warsame, 2021) ^[95] rich mineral resource base; fisheries; animal farming; and, potentially, oil and gas (FAO 2022) ^[35].

5. Challenges

Although fisheries industry performance is significant for national macroeconomic and food and nutrition, security and development, the sector faces numerous economic, institutional, and environmental challenges (Ghose, 2014) ^[42]. The natural resources are fundamental to the poverty reduction, growth, security and development (Cochrane & Garcia, 2009) ^[26]. However, these resources cannot contribute to social and economic advancement unless it has appropriate management (Kulmie, Hilif, *et al.*, 2023) ^[61]. Argued that economic exclusion, social marginalization, class exploitation, and political disempowerment are key mechanisms influencing people's access to resources, rather than the resources themselves. In many countries, there is a lack of recognition of fisheries importance due to several factors such as cultural, social, political factors. These challenges can be solved by improving public awareness, and formulating policies that promote fishing and fish related business. In developing countries, management authorities face constraints due to limited government budgets, which in turn influence the effectiveness of the operations, productions and performances of this sector (Beddington, *et al.* 2007) ^[13]. The success of any project, program, enterprise, or industry depends mainly on good management in order to maximize productivity, quality, and profit. Effective management practices are required in all activities related to the fishing sector whether it is micro or macro levels, including fish production, trade, preservation, etc., furthermore, management analysis is fundamental when assessing associated risks and uncertainties (Yoe, 2019) ^[98] in this sector including. Experts recommend to adopt science based policies and management frameworks (Symes & Hoefnagel, 2010) ^[87] for better biological, social, economic and developmental issues. In broader scope, there are (IUU) fishing, lack of access to international markets, quality issues, wars, conflicts, and technology issues that challenge some countries such as Somalia. According to Beddington, *et al.* (2007) ^[13], the public believes that fisheries are in danger because of poor management practices, such as overfishing, a lack of consideration for the effects on ecosystems, and a refusal to accept the necessary cuts in fishing effort.

6. Conclusion

This review investigated the significance of fisheries, their management and how this industry contributes to economic growth, development, and poverty reduction. Theoretically, a nation with abundant natural resources is expected to have an easier time for development with mainly export-led growth economy (Saleh, *et al.* 2020) ^[78]. For instance, the development of countries is attributed to increased investment from various sectors. Several empirical studies, such as Saleh *et al.* (2020) ^[78], revealed that economic growth and development are closely linked to the efficient utilization of natural and human resources, stating that the level of advancement of a given country is measured by its economic growth. This utilization is essential for income generation, job creation, inclusive growth and development. This sheds light on the importance of regularly considering and evaluating the situations of fishers and the fishery sector as it plays this crucial role.

The review highlights the fundamental importance of

fisheries resources in various ways. It offers job opportunities that empower youth, women and vulnerable groups. Therefore, it contributes to poverty reduction and income generation. Moreover, the sector provides the government with various forms of revenue, such as tax, fines, and fees, which improves the government's ability to invest in fundamental services and development issues. This demonstrates how this sector contributes to economic growth, food security, and long-term sustainable development. The paper identified that poor or ineffective fisheries management appears to be a major obstacle that prevents the effective use and protection of fisheries resources.

7. Recommendation

The paper recommends the following

- Implementing science-based fisheries management strategies to protect fish stocks and maintain aquatic environment wellbeing, as well as encouraging sustainable fishing techniques to minimize environmental impact.
- Strengthening enforcement procedures to combat Illegal, Unreported, and Unregulated (IUU) fishing, which depletes fish supplies and threatens the profitability of fisheries.
- Developing fisheries infrastructure, including ports, landing zones, processing plants, and transportation networks, to ensure efficient and high-value fishing operations.
- Supporting the fisheries sector by offering tax breaks and subsidies, and promoting international market access and exports.
- Improving trade and market accessibility by simplifying the distribution of domestic fish products.
- Providing awareness, training and education to the Fishermen, processors, and exporters to improve their knowledge, skills, and information.
- Enhancing financial access and investment opportunities for the fisheries sector by partnering with financial institutions and microfinance institutions.
- Strengthening Fisheries Value Chains by Improving processing, storage, and marketing practices to ensure sustainable growth and profitability of fisheries and related business.

References

1. Acemoglu D. Introduction to Modern Economic Growth. Princeton: Princeton University Press; c2008.
2. Adam MA, Kulmie DA. The role of financial inclusion in poverty reduction: A review study. The International Journal of Business Management and Technology. 2024;8(4):36-44.
3. Akullo DO. Food safety and free trade area in East Africa [dissertation]. Walden University; c2023.
4. Almeida OT, Lorenzen K, McGrath D. Commercial fishing sector in the regional economy of the Brazilian Amazon. In: Proceedings of the Second International Symposium on the Management of Large Rivers for Fisheries. FAO Regional Office for Asia and the Pacific, Bangkok, Thailand: FAO/RAP Publication; 2004:15-24.
5. Alsop R, editor. Power, Rights and Poverty: Concepts and Connections. Washington DC: World Bank Publications; c2005.
6. Anderson W, Wallace MS, Warner JT. Government

- spending and taxation: What causes what? *Southern Economic Journal*. 1986;52(3):630-9.
7. Angulo-Valdes J, Pina-Amargos F, Figueredo-Martin T, Fujita R, Haukebo S, Miller V, *et al.* Managing marine recreational fisheries in Cuba for sustainability and economic development with emphasis on the tourism sector. *Marine Policy*. 2022;145:105254.
 8. Asher S, Novosad P. Rural roads and local economic development. *American Economic Review*. 2020;110(3):797-823.
 9. Ayoo C. Poverty reduction strategies in developing countries. In: *Rural Development: Education, Sustainability, Multi functionality*. In Tech; c2022.
 10. Banerjee SB, Jackson L. Microfinance and the business of poverty reduction: Critical perspectives from rural Bangladesh. *Human Relations*. 2017;70(1):63-91. <https://doi.org/10.1177/0018726716640865>
 11. World Bank. *World Development Report 2000/2001: Attacking Poverty*. New York: Oxford University Press; 2001.
 12. Barder OM. What is poverty reduction? Center for Global Development Working Paper; 2009:(170).
 13. Beddington JR, Agnew DJ, Clark CW. Current problems in the management of marine fisheries. *Science*. 2007;316(5832):1713-6.
 14. Bellu LG, Liberati P. Impacts of policies on poverty: The definition of poverty. *FAO Agricultural and Development Economics Division*; c2005.
 15. Béné C, Heck S. Fish and food security in Africa. *WorldFish Center*; c2005.
 16. Béné C, Arthur R, Norbury H, Allison EH, Beveridge M, Bush S, *et al.* Contribution of fisheries and aquaculture to food security and poverty reduction: assessing the current evidence. *World Development*. 2016;79:177-96.
 17. Berkes F. *Managing Small-Scale Fisheries: Alternative Directions and Methods*. Ottawa: IDRC; c2001.
 18. Burchi F, De Muro P. From food availability to nutritional capabilities: Advancing food security analysis. *Food Policy*. 2016;60:10-9. <http://dx.doi.org/10.1016/j.foodpol.2015.03.008>
 19. Burton G. An end to poverty in Brazil? An assessment of the Lula and Rousseff governments' poverty reduction and elimination strategies. *Journal of Policy Practice*. 2013;12(3):194-215. <https://doi.org/10.1080/15588742.2013.796203>
 20. Chambers R. What is poverty? Who asks? Who answers? *Development in Practice*. 2006;17(4):460-70.
 21. Chan CY, Tran N, Cheong KC, Sulser TB, Cohen PJ, Wiebe K, *et al.* The future of fish in Africa: Employment and investment opportunities. *PloS One*; 2021;16(12).
 22. Chongela J. Contribution of agriculture sector to the Tanzanian economy. *American Journal of Research Communication*. 2015;3(7):57-70.
 23. Claessens S, Feijen E. *Financial Sector Development and the Millennium Development Goals*. Washington DC: World Bank Publications; c2007.
 24. Clausen R, York R. Economic growth and marine biodiversity: Influence of human social structure on decline of marine trophic levels. *Conservation Biology*. 2008;22(2):458-66. <https://doi.org/10.1111/j.1523-1739.2007.00851.x>
 25. Cobbinah P, Black R, Thwaites R. Dynamics of poverty in developing countries: Review of poverty reduction approaches. *Journal of Sustainable Development*. 2013;6(9):25-35. <https://doi.org/10.5539/jsd.v6n9p25>
 26. Cochrane KL, Garcia SM, editors. *A Fishery Manager's Guidebook*. Chichester: John Wiley & Sons; c2009.
 27. Cooney K, Williams Shanks TR. New approaches to old problems: Market-based strategies for poverty alleviation. *Social Service Review*. 2010;84(1):29-55.
 28. Cypher JM, Dietz JL. *The Process of Economic Development*. 4th ed. Abingdon: Routledge; c2008.
 29. Das SK, Bhowal A. Impact of self-help group on members and its involvement in social issues: Core vs. peripheral issues. *International Journal of Business and Management Invention*. 2013;2(12):48-72.
 30. Efendi A, Syechalad MN, Seftarita C, Jamal A. The effect of fisheries sectors on economic growth in Aceh-Indonesia. *International Journal of Social Science and Economic Research*. 2018;4(3):1979-91.
 31. Elkins M. Embedding the vulnerable into the millennium development goals: social protection in poverty reduction strategy papers. *Journal of International Development*. 2014;26(6):853-74. <https://doi.org/10.1002/jid.2984>.
 32. Estes Jr M, Anderson C, Appeltans W, Bax N, Bednaršek N, Canonico G, *et al.* Enhanced monitoring of life in the sea is a critical component of conservation management and sustainable economic growth. *Marine Policy*. 2021;132:104699.
 33. Eyben R. Linking power and poverty reduction. In: Alsop R, editor. *Power, Rights and Poverty: Concepts and Connections*. Washington DC: World Bank; 2004:15-28.
 34. FAO. *FIGIS Topics and Issues Fact Sheet: Fisheries Governance*. Fishery Policy and Planning Division. Rome: FAO; c2001.
 35. FAO. *The state of world fisheries and aquaculture 2022: Towards Blue Transformation*. Rome: FAO; c2022. <https://doi.org/10.4060/cc0461en>.
 36. Fiorella KJ, Hickey MD, Salmen CR, Nagata JM, Mattah B, Magerenge R, *et al.* Fishing for food? Analyzing links between fishing livelihoods and food security around Lake Victoria, Kenya. *Food Security*. 2014;6:851-60.
 37. Foley DK. *Resource allocation and the public sector [dissertation]*. Yale University; c1966.
 38. Friedmann J. *Empowerment: The Politics of Alternative Development*. Chichester: John Wiley & Sons; c1992.
 39. Fukuyama F. What is governance? *Governance*. 2013;26(3):347-68.
 40. Gammage LC, Jarre A. Scenario-based approaches to change management in fisheries can address challenges with scale and support the implementation of an ecosystem approach to fisheries management. *Frontiers in Marine Science*. 2021;8:600150.
 41. Gerster R. *Alternative approaches to poverty reduction strategies*. SDC Working Paper; 2000:1.
 42. Ghose B. Fisheries and aquaculture in Bangladesh: challenges and opportunities. *Annals of Aquaculture and Research*. 2014;1(1):1-5.
 43. Greboval DE, editor. *Report and documentation of the international workshop on factors contributing to unsustainability and overexploitation in fisheries*. FAO Fisheries Report No. 672. Rome: FAO; c2002.
 44. Grindle MS. Good enough governance: poverty reduction and reform in developing countries. *Governance*. 2004;17(4):525-48. <https://doi.org/10.1111/j.0952-1895.2004.00256.x>

45. Gupta H. Public expenditure and economic growth: Econometric models from developing countries [dissertation]. Dayalbagh Educational Institute, Deemed University; c2013.
46. Gupta H. Public Expenditure and Economic Growth. New Delhi: SAGE Publications; c2014.
47. Haaland G, Keddeman W. Poverty analysis: the case of rural Somalia. *Economic Development and Cultural Change*. 1984;32(4):843-60.
48. Haas B, Mackay M, Novaglio C, Fullbrook L, Murunga M, Sbrocchi C, *et al.* The future of ocean governance. *Reviews in Fish Biology and Fisheries*; 2021:1-18.
49. Haggblade S, Theriault V, Staatz J, Dembele N, Diallo B. A conceptual framework for promoting inclusive agricultural value chains. International Fund for Agricultural Development (IFAD), Mimeo; c2012.
50. Harper S, Zeller D, Hauzer M, Pauly D, Sumaila UR. Women and fisheries: contribution to food security and local economies. *Marine Policy*. 2013;39:56-63. <http://dx.doi.org/10.1016/j.marpol.2012.10.018>.
51. Hassan AH, Hossain MI. Assessment of the socioeconomic status of fishermen communities: a case study from Mogadishu Fisheries, Somalia. *International Journal of Scientific and Research Publications*. 2023;13(1):154-8. <http://dx.doi.org/10.29322/IJSRP.13.01.2023.p13318>.
52. Hassan MH, Gichinga DL. Influence of fisheries management on economic development of Mogadishu, Somalia. *International Journal of Novel Research in Interdisciplinary Studies*. 2018;5:11-24.
53. Hilborn R. Defining success in fisheries and conflicts in objectives. *Marine Policy*. 2007;31(2):153-8. <https://doi.org/10.1016/j.marpol.2006.05.014>.
54. Howell D, Schueller AM, Bentley JW, Buchheister A, Chagaris D, Cieri M, *et al.* Combining ecosystem and single-species modeling to provide ecosystem-based fisheries management advice within current management systems. *Frontiers in Marine Science*. 2021;7:607831.
55. Hughes BB, Irfan MT. Assessing strategies for reducing poverty. *International Studies Review*. 2007;9(4):690-710.
56. IMF (International Monetary Fund). Liberia: Poverty reduction strategy paper. IMF Country Report No. 08/219. Washington DC: IMF; c2008. Available from: <https://www.imf.org/external/pubs/ft/scr/2012/cr1245.pdf>.
57. Independent Evaluation Group. Poverty Reduction Support Credits: An Evaluation of World Bank Support. Washington DC: World Bank; c2010.
58. Izzudin M, Achmad R. Advancing economic potential and stakeholder engagement on Aceh Singkil Regency. *Media Komunikasi Geografi*. 2022;23(2):158-77.
59. JICA (Japan International Cooperation Agency). Approaches for Systematic Planning of Development Projects/Poverty Reduction. Tokyo: JICA; c2004.
60. Kane TJ. The importance of startups in job creation and job destruction. *SSRN Journal*; c2010. Available from: <https://ssrn.com/abstract=1646934>.
61. Kulmie DA. Financial crimes in Somali public sector: causes and consequences. *International Journal of Economics and Finance*. 2023;15(4):1-18. <https://doi.org/10.5539/ijef.v15n4p18>.
62. Kulmie DA, Hilif MD, Hussein MS. Socioeconomic consequences of corruption and financial crimes. *International Journal of Economics and Financial Issues*. 2023;13(5):88-95. <https://doi.org/10.32479/ijefi.14714>.
63. Kulmie DA, Hussein MS, Abdi BM, Abdulle MA, Adam MA. Entrepreneurship training, job creation and youth empowerment. *Asian Social Science*. 2023;19(6):111-11. <https://doi.org/10.5539/ass.v19n6p111>.
64. Merino G, Barange M, Blanchard JL, Harle J, Holmes R, Allen I, *et al.* Can marine fisheries and aquaculture meet fish demand from a growing human population in a changing climate? *Global Environmental Change*. 2012;22(4):795-806. <https://doi.org/10.1016/j.gloenvcha.2012.03.003>.
65. Misselhorn A, Aggarwal P, Ericksen P, Gregory P, Horn-Phathanothai L, Ingram J, *et al.* A vision for attaining food security. *Current Opinion in Environmental Sustainability*. 2012;4(1):7-17. <https://doi.org/10.1016/j.cosust.2012.01.008>.
66. Misturelli F, Heffernan C. What is poverty? A diachronic exploration of the discourse on poverty from the 1970s to the 2000s. *The European Journal of Development Research*. 2008;20:666-684.
67. Mohamed NA, Kulmie DA. Role of Effective Monitoring and Evaluation in Promoting Good Governance in Public Institutions. *Public Administration Research*. 2023;12(2):48-58. <http://dx.doi.org/10.5539/par.v12n2p48>.
68. Morey ER. Fishery economics: an introduction and review. *Natural Resources Journal*. 1980;20:827.
69. Mose NG. Effect of government expenditure on economic growth in East Africa: A disaggregated mode [doctoral dissertation]. Egerton University; c2014.
70. Nor AI. Increasing government revenue through integrated financial management system: Case of federal government of Somalia. *European Journal of Economic and Financial Research*; c2019. <http://dx.doi.org/10.5281/zenodo.3497692>.
71. Nor AI. Alleviating poverty through youth and women entrepreneurship developments. *European Journal of Business and Management*. 2021;13(11):37-46. <https://doi.org/10.7176/ejbm/13-11-05>.
72. O'Meara L, Cohen PJ, Simmance F, Marinda P, Nagoli J, Teoh SJ, *et al.* Inland fisheries critical for the diet quality of young children in sub-Saharan Africa. *Global Food Security*. 2021;28:100483.
73. Onyemelukwe CC. The science of economic development and growth: The theory of factor proportions. Routledge; c2016.
74. Pawar M. Poverty, policy and the poor. *The International Journal of Community and Social Development*. 2023a;5(2):137-145.
75. Pawar M. Culminating crises: Reflections and learnings for sustainable development. *The International Journal of Community and Social Development*. 2023b;5(1):10-29. <https://doi.org/10.1177/25166026231151619>.
76. Pomeroy R, Nguyen KAT, Thong HX. Small-scale marine fisheries policy in Vietnam. *Marine Policy*. 2009;33(2):419-428.
77. Riches G. Hunger, food security and welfare policies: Issues and debates in First World societies. *Proceedings of the Nutrition Society*. 1997;56(1A):63-74.
78. Saleh H, Surya B, Annisa Ahmad DN, Manda D. The role of natural and human resources on economic growth and regional development: With discussion of open

- innovation dynamics. *Journal of Open Innovation: Technology, Market, and Complexity*. 2020;6(4):103.
79. Schumpeter J, Backhaus U. The theory of economic development. In: Joseph Alois Schumpeter: Entrepreneurship, style and vision. Boston, MA: Springer US; 1934:61-116.
 80. Shabbir MS, Kassim NM, Faisal M, Abbas M, Sabti YM. Poverty reduction through Islamic modes of finance; The way forward. *The Journal of Social Sciences Research*; 2018:58-65. <https://doi.org/10.32861/jssr.spi4.58.65>
 81. Shamsuzzaman MM, Mozumder MMH, Mitu SJ, Ahamad AF, Bhyuian MS. The economic contribution of fish and fish trade in Bangladesh. *Aquaculture and Fisheries*. 2020;5(4):174-181.
 82. Streifel C, Allinder SM, Hamel R. Improving nutrition in East Africa's bread basket; c2018.
 83. Sugi L. Poverty in golden fishing: A regulatory impact assessment of fishermen poverty in Indonesia. *Policy & Governance Review*. 2023;7(1):54-71.
 84. Sumaila UR, Bawumia M. Ecosystem justice and the marketplace. In: Just fish: Ethics and Canadian marine fisheries. St. John's: ISER Books; 2000:140-153.
 85. Sumaila UR, Bawumia M. Fisheries, ecosystem justice and piracy: A case study of Somalia. *Fisheries Research*. 2014;157:154-163. <https://doi.org/10.1016/j.fishres.2014.04.009>
 86. Swan J, Gréboval DF, editors. Report of the international workshop on the implementation of international fisheries instruments and factors of unsustainability and overexploitation in fisheries: Mauritius, 3-7 February 2003. Food & Agriculture Organization; 2004:700.
 87. ymes D, Hoefnagel E. Fisheries policy, research and the social sciences in Europe: Challenges for the 21st century. *Marine Policy*. 2010;34(2):268-275. <https://doi.org/10.1016/j.marpol.2009.07.006>
 88. Teh LC, Sumaila UR. Contribution of marine fisheries to worldwide employment. *Fish and Fisheries*. 2013;14(1):77-88. <https://doi.org/10.1111/j.1467-2979.2011.00450.x>
 89. Temple AJ, Skerrett DJ, Howarth PE, Pearce J, Mangi SC. Illegal, unregulated and unreported fishing impacts: A systematic review of evidence and proposed future agenda. *Marine Policy*. 2022;139:105033. <https://doi.org/10.1016/j.marpol.2022.105033>
 90. Tolentino-Zondervan F, Zondervan NA. Sustainable fishery management trends in Philippine fisheries. *Ocean & Coastal Management*. 2022;223:106149. <https://doi.org/10.1016/j.ocecoaman.2022.106149>
 91. Tomislav K. The concept of sustainable development: From its beginning to the contemporary issues. *Zagreb International Review of Economics & Business*. 2018;21(1):67-94.
 92. Tshamano NW, Joshua M, Terry MN, Lee KS. Unlocking African food sovereignty: The path to food security in South Africa; c2013.
 93. Van den Berg H. Economic growth and development. World Scientific Publishing Company; c2016.
 94. Walmsley S, Purvis J, Ninnes C. The role of small-scale fisheries management in the poverty reduction strategies in the Western Indian Ocean region. *Ocean & Coastal Management*. 2006;49(11):812-833. <https://doi.org/10.1016/j.ocecoaman.2006.08.006>
 95. Warsame AS. The location choice of foreign direct investment and economic development in Africa. *International Journal of Economics and Finance*. 2021;13:1-69. <https://doi.org/10.5539/ijef.v13n10p69>
 96. World Bank. Monitoring global poverty; c2020. https://doi.org/10.1596/978-1-4648-1602-4_ch1
 97. World Vision. Global poverty: Facts, FAQs, and how to help; c2018. Accessed on 12th July 2023 from <https://www.worldvision.org/sponsorship-news-stories/global-poverty-facts#facts>
 98. Yoe C. Principles of risk analysis: Decision making under uncertainty. CRC Press; c2019.