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Small-Scale Fishers in Sustainable Fisheries Management: The Bayelsa State Experience

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Abstract: *Small-scale fishers in Bayelsa State, Nigeria play a vital role in the fisheries sub-sector, but they face numerous challenges including resource depletion, climate change, and inadequate support systems. To address these issues, the Fisheries Society of Nigeria (FISON) launched a 'World Fisheries Day 2024' initiative, emphasizing the importance of small-scale fishers in the sustainable fisheries management in the state. The initiative included various activities such as: advocacy and education, classroom teaching in secondary schools to raise awareness about the significance of sustainable fisheries management in food security, nutrition and economy; stakeholders' engagement, a courtesy call to the Ministry of Blue Economy to foster collaboration and support; community outreach, and waterfront cleaning campaigns to engage local communities in sustainable fisheries practices. These efforts aimed to enhance the capacity of small-scale fishers, promote inclusive governance, and foster sustainable use of resources. By supporting small-scale fishers, the initiative seeks to contribute to the sustainability of Bayelsa State's fisheries sub-sector.*

Keywords: Small-scale fishers, sustainable fisheries management, Bayelsa State, Blue economy, community-based management, advocacy.

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INTRODUCTION

Twenty first of November annually has been set aside to celebrate 'World Fisheries Day' across the world to; highlight the importance of sustainable fisheries and fish stock in the world, strengthen human rights for the small-scale fishing communities and improve their livelihoods while trying to eliminate illegal, unreported and unregulated fishing- IUU (WERI, 2024).

The 2024 'World Fisheries Day', with the theme: "Blue Transformation in Action" aligned with global efforts of the United Nations' Sustainable Development Goal (SDG) 14: 'Life below Water', which encompasses the Fisheries sub-sector (FAO, 2024). Efforts are focused on actions aimed at: achieving sustainable aquaculture growth to meet the increasing demands for aquatic foods, effective fisheries management for healthier fishery stocks and equitable livelihoods, and upgrading of aquatic food value chains to guarantee their social, economic and environmental sustainability (FAO, 2024). The 2030 time frame for the achievement of the Sustainable Development Goals (SDGs) and timeline left can be the fulcrum to ascertain the progress made or being made in achieving the clear objectives; of which, fisheries and aquaculture are tied to the SDG Objective 14. According to FAO (2024), in 2022, fisheries and aquaculture production reached an all-time high of 223.2million tonnes, worth USD 472 billion, contributing an estimated 20.7kg of aquatic animal foods per capita. This constituted about fifteen percent (15%) of the animal protein supply for over fifty percent (50%) of countries in Africa and Asia. Capture fisheries production has remained largely unchanged for decades while aquaculture has increased by 6.6% since 2020, contributing over fifty-seven percent (57%) of aquatic animal products used for direct human consumption. The fisheries and aquaculture sector employs an estimated 62million people in primary production alone. Aquatic products continue to be one of the most traded food commodities, involving over two hundred and thirty (230) countries and territories, generating up to USD 195 billion in 2022. Aquaculture is dominated by a small number of countries, with many low-income countries in Africa, Asia and Latin America and the Caribbean not exploiting their full potential. Targeted policies, technology transfer, capacity building and responsible investment are crucial to boost sustainable aquaculture where it is most needed, in particular in Africa (FAO, 2024).

Issues like conflicts, extreme climates, environmental degradation and economic instabilities combined with the high cost of nutritious foods and growing inequalities are the challenges that continue to threaten food security and nutrition. With the proportion of exploited stocks classed as overfished, progress still needs to be made in making all fisheries sustainable. Continuous attention is required to keep currently sustainable fisheries from getting to unsustainable levels by reducing fishing pressure across board to allow the remaining overfished stocks to recover, and for fisheries to have greater resilience to pressures like climate change, ocean pollution and other factors (Rice, 2017).

More than forty percent (40%), that is, over 3.1billion people of the world population cannot afford a healthy diet (FAO, 2024). Fisheries has been recognized as a key tool for increasing productivity, ensuring food security (affordable source of animal protein), livelihoods (Worldfish Center, 2005), and business opportunities. One billion people depend on fish for their supply of macromolecules, which accounts for roughly 60% of the animal macromolecules ingested worldwide and 6.5% of all macromolecules consumed (Jacob and Umoh, 2021). Fish is a significant food source, even in small quantities; fish is useful in addressing food and nutrition security among the world's most vulnerable and impoverished groups. Combating hunger, malnutrition and poverty remains essential for achieving the goals and targets of the

2030 Agenda for Sustainable Development (FAO, 2024). Aquatic ecosystems are increasingly recognized for the multiple solutions they offer in improving food security and nutrition, alleviating poverty and boosting socio-economic development (Jacob and Umoh, 2021), particularly for the many in the coastal and riparian communities around the world. Countries with non-high-income generally rely heavily on proteins from aquatic animal foods when compared with high-income countries; which reflects the affordability, availability and easy access of aquatic foods which makes them 'a staple of choice' in many culinary traditions in these low-income countries (FAO, 2024).

Nigeria and Its Fisheries Sub-sector

Fisheries and marine trade contribute 3-5% of the country's gross domestic products. The aquaculture industry, sea fishing, and freshwater (inland) fishing provide Nigeria's seafood resources. About fifty (50) families and one hundred and four (104) species of marine fish have been identified in Nigeria (Sikoki, 2013). Fishing activities on artisanal or small-scale basis in coastal areas, creeks and lagoons, inland rivers, and lakes account for more than 70% of Nigeria's total domestic fish supply (Elezuo *et al*., 2024). Capture fisheries in Nigeria is dominated by artisanal fishermen; industrial vessels and trawlers contribute little, since industrial fishing makes up about one percentage (1%) of capture fisheries which are mostly from inland fishing. The massive Niger Delta area which serves as breeding sites and nursery grounds for large populations of finfish and crustaceans makes Nigeria's maritime coastal fisheries very productive and supply nutrients to the consumers. About 10,000 tonnes of Shrimps and 200,000 tonnes of fish are harvested from the coasts annually. Production might be as much as 50% greater, according to a recent survey (Elezuo *et al*., 2024).

There are three types of artisanal (canoe) fishing; coastal, brackish water and estuary which includes Bonga, Mullet, Shad and Sardinella fisheries. The use of motorized boats, and targeted stocks have resulted in some operators of canoes (use of dug-out or modified canoes) fishing further out into the sea, inside the five nautical mile non-trawling zone and in estuaries for demersal species like Croaker, Catfish, Shiny nose and Shrimps (Penaeids). This labour-intensive and low technology fishing of pelagic fishes utilize canoes of 6 to 13meters length that are driven or paddled. In the estuaries, gillnets, cast nets, hooks, beach seines, and other kinds of traps are the gear primarily used for fishing. Fishermen target small pelagic, *Sardinella* spp. and *Ethmalosa* spp., Sciaenids like Croakers and Bonga; Shad, Catfish, Soles, Shiny-nose, etc. Polynemidae (*Polydactylus* spp.), Sphyraenidae, Lutjanidae, Elopidae, Serranidae and Carangidae are among fish families available to marine artisanal fishermen. Small-scale fishers also catch Sail/Saw fish, Sharks, Penaeids, Palaemonids, Carid shrimps, Shellfishes (Molluscs) and demersal finfish (Elezuo *et al*., 2024).

Nigeria has a coastline of 870km and 3,000 km inland waterways with diverse range of natural resources. The Exclusive Economic Zone (EEZ) of Nigeria spans three hundred and fifty (350) nautical miles (648.20 km) and has significant opportunities for sustainable development of the natural resources within. Exploring strategies to make good use of the fisheries sector for sustainable economic development involves a multifaceted approach that includes the integration of innovative technologies, community-based engagements, international collaborations, and diversifications; central of which is sustainable resources management. Premised on the implementation of science-based allotments, use of ecosystem-based management, and promoting responsible fishing practices based on best available technologies, which collectively allow for balancing economic growth with environmental sustainability. Satellite monitoring and data analytics tools can significantly enhance operational efficiency and transparency, reduce by-catches, and combat illegal, unreported, and unregulated (IUU) fishing. Engaging coastal communities is

also crucial because of their heavy reliance on fisheries for their livelihoods, through value addition and diversification (Kingdom and Alfred-Ockiya, 2009; Elezuo *et al*., 2024).

The fisheries sub-sector is valued at around USD 406billion annually, providing over thirty (30) million jobs opportunities, and is a vital source of animal protein for over three billion people (FAO, 2024). The fishing industry is important to Nigeria since it employs about two million people (Federal Ministry of Agriculture and Rural Development, 2019), and is a significant contributor to the nation's economy. It has an estimated worth of USD 1.5billion, making it one of the fastest growing sectors of food production (Federal Ministry of Agriculture and Rural Development, 2019). The fisheries sub-sector of the economy is essential for rural development through its provision of livelihoods, high-quality protein, and socio-economic development for fishing communities in Nigeria (Etim, 2010). According to Abba (2024), the fisheries industry made up 1.16% of the nation's gross domestic products in 2021. The fishing industry is said to employ over 1.48million people. According to Elezuo *et al*. (2024), fisheries sector is an essential foundation of the Blue Economy, making substantial contributions to global food security, livelihoods, and economic development. Notwithstanding, its sustainability is threatened due to unsustainable practices, overfishing and environmental degradation. Ehirim *et al*. (2018), have advocated for the adoption of environmentally sustainable fishing techniques (ESFT) by the artisanal fishers, with proper fisheries management practices in place for fisheries to be sustainable.

Fisheries resources refers to fishing and aquaculture-related products and production (Rabo *et al*., 2014). Aquaculture resources consist of fisheries goods from confined ponds, tanks, dams and reservoirs; whereas, fishing resources are products from open water bodies- Rivers, Lakes, Reservoirs and dams, and Oceans. Nigeria owns a sizable EEZ with a sizable chunk of the Atlantic Ocean, and has a wide range of offshore aquaculture potentials. Different species can be cultivated in its EEZ using a wide range of available technologies, which could close up the gap in fish production from aquaculture (Akinsorotan, 2019). A large amount of the nation's fish production comes from the coastal and marine sectors, one of the largest fishing businesses in West Africa (FAO, 2017). Overfishing, illegal, unreported and unregulated (IUU) fishing, and environmental degradation are impediments to the fisheries sub-sector. Insufficient government regulations have enabled foreigners to fish in Nigeria’s territorial waters, resulting in the reduction of fish stocks and the vulnerability of the local fishermen (Folami, 2017).

Nigeria; the Blue and Green Economy

The term, "Blue Economy" as an economic ideology was coined by Professor Gunter Pauli in 1994, when the United Nations asked him to consider future business models in advance of the COP3 meeting in Japan, where the Kyoto Protocol was passed (Pauli, 2010). According to Elezuo *et al*. (2024), Blue economy refers to sustainable use, management, and conservation of ocean and marine resources to promote economic growth, improve livelihoods, and preserve the health of marine ecosystems. It encompasses various economic activities and sectors related to oceans, seas, and coasts and has high potential to boost the Niger Delta region, as well as, the nation’s economy. The economic potential was one of the premises for which the Ministry of Marine and Blue Economy was established in Nigeria. The Blue Economy is pivotal for a diverse range of species and ecosystems; and for the food chains, livelihoods and environmental stability of the world population (Abdullahel, 2017). According to Jacob and Umoh (2022), the blue economy-Marine economic system is an ecosystem of economic activities pitched on commerce and activities in and around large water bodies like oceans. Blue economy activities and ideas can thus, be diverse, vibrant, and wide.

Marine economy activities play a critical role in reducing poverty and hunger by providing jobs and other economic opportunities (Jacob and Umoh, 2021) like; fishing, scuba diving, snorkeling, water sports, wastewater treatment, tourism, seaside lodgings and restaurants, power (wind energy and tidal power), and transportation (canoes, boats, ships, barges, rigs, other floating vessels, ports and services; their constructions, operations, maintenances and servicing); harnessing the resources within in a sustainable manner, through proper management practices.

The 2030 UN property development plan acknowledges the potential for a link; Blue economy, environmental development and economic growth are all intertwined. One of the Sustainable Development Goals- SDGs (Target 14.7), intends to strengthen the economic margins of small island developing states (SIDS), water enclosed territories, and least developed countries (LDCs) such as, the Niger Delta (UNCTAD, 2016). The Blue economy provides a more appropriate approach to sustainability for their extraordinary situations, restrictions and difficulties. It incorporates a unique strategy to the commercialization of marine, lakes, rivers, and other bodies of water resources. With the aim to market economic progress, social inclusion, and livelihood enhancement or sustenance. While contributing to sustainable development also in a variety of settings, indicating its use as an income diversification framework for sustainable growth with reliance on marine (UNECA, 2016).

The Blue economy idea strives to market economic processes, social inclusion, the maintenance or improvement of livelihoods while safeguarding the marine and coastal areas. It entails detaching socio-economic activity and development from environmental degradation, and making the most of the benefits received from marine resources (Wairimu and Khainga, 2017). Hence, Blue economy is the appropriate use of coastal resources for productivity expansion, livelihood opportunities, while maintaining the marine system's health (World Bank, 2016). The marine energy, marine biotechnology, coastal business enterprises, transportation, and food production industries; emerging industries like offshore renewable energy, agriculture, ocean bottom extractive activities, and bio-prospecting; ocean ecosystems significant activities such as carbon sequestration, coastal protection, garbage disposal may offer unrivaled growth and investment potentials in the Blue economy. If these are targeted to; protect the coastal areas and oceans while decreasing environmental risks and resource scarcity; address water, energy and food security issues; safeguard the health, well-being and livelihoods of coastal communities; and promote adoption of ecosystem-based climate adaptation measures (Jacob and Umoh, 2021; Elezuo *et al*., 2024). These should be based on well-developed, specified, targeted, enforceable policies and governance frameworks that involves key stakeholders; that can promote healthy, flexible, and productive coastal areas and ocean environments; as well as, the development and conservation of Blue-economy resources. Odhiambo and Metcho (2018), in the 'Policy brief', said that, sustainable fisheries, aquaculture, tourism, transportation, maritime and port development can help with job creation, economic growth, poverty reduction, and improve food and energy security while enhancing ocean health and the sustainable use of the ocean and marine resources. They suggested that, Marine and Blue Economy formulate a policy; cataloguing the full range of blue economy resources, their potentials and evolving strategies, and a well budgeted plan for sustainability in harnessing and utilizing these resources.

The Bayelsa State Experience

Bayelsa State is geographically located in Nigeria within latitude 04^0 45 North, 05^0 23 South and Longitude 05^0 22 West and 06^0 45 East and shares common boundaries with Delta State to the North; Rivers State to the East; and the Atlantic Ocean on the West and South. Bayelsa State has three-quarter (21,1101 km^2) of its area covered by water with thirteen major rivers that drain into the Atlantic Ocean namely; St. Barbara,

St. Nicholas, San Barthelomeo, Brass, Nun, Sangana, Fishtown, Koluama I and II, Middleton, Pennington, Dodo, Digatoro and Ramos. There are one hundred and seventy-four lakes, eleven major creeks, two hundred and fifty-nine burrow pits. The state is blessed with three distinct aqua-ecological zones: freshwater flood plains, brackish water swamps and estuaries (Bayelsa State Ministry of Agriculture and Rural Development, 2004) that flow into the Atlantic Ocean, with great potentials for fish production.

There are fishing groups that practice fishing as occupation mostly at subsistence level with local technology best suited to meet their needs. They use canoes and local gear like dragnets, cast nets, harpoons, hooks and trigger traps. Importance is attached to the fishing occupation, hence, most of these people permanently live in fishing settlements; and have the necessary energy to power production (Tokpo, 2024) in this sub-sector. They contribute largely to the livelihoods, fish food and nutritional needs of a large number of people. Artisanal fishing takes place in areas such as, Fish Town, Koluama I and II, Foropa, Ukubie, Brass, Sangana, Agge and other communities around the Pennington River, Santa Barbara, down to the Forcados and Escravos areas of neighbouring Delta State (Tokpo, 2024).

High-quality proteins from aquatic animal foods provide 15% of the animal proteins and 6% of the total proteins consumed worldwide. These foods contain key nutrients like omega-3 fatty acids, minerals and vitamins. Aquatic foods have the potential to contribute to food security, nutrition and poverty reduction across the world (FAO, 2024). Their production is expected to increase by 10% by 2032, through aquaculture expansion and recovery in capture fisheries. Aquatic foods production is expected to reach 205 million tonnes (111 million tonnes from aquaculture and 94 million tonnes from capture fisheries) by 2032. The Blue Transformation Roadmap aims to ensure sustainable fisheries and aquaculture growth while promoting equitable benefits and environmental conservation (FAO, 2024). In these regard, small-scale fishers are vital to food security, livelihoods and cultural heritage in Bayelsa State. However, the fishing communities are often overlooked in fisheries management decision-making processes. The fisheries sub-sector can be improved on by enhancing aquaculture technologies, developing value-added fish products, adoption of eco-friendly best fishing and management practices, and synergizing this with tourism (via fishing festivals and hotspots). Bayelsa State needs to key into these considering the vast expanse of water bodies within and surrounding the State, based on ecosystem approach and best available practices.

According to Egesi (2016), numerous threats to the environment such as pollution, floods, destruction of mangroves, irresponsible infrastructural development, oil exploration, destructive fishing, deforestation, and privatization of fisheries resources affect the lives, working conditions, security, livelihoods and productivity of fishing communities. Brown *et al*. (2017), advocated for sustainable fish production and approaches to be adopted by fish farmers (aquaculture) for enhancing sustainable fish production in Bayelsa State; through enabling environment, training programs, provision of viable inputs, workshops and seminars. The demand for fisheries products is growing, technology must play its vital role to bring some balance to the supplies and demands in sustainable ways. Technologies that improve information dissemination and management of fisheries are needed to broaden and enhance livelihood options while increasing productivity. Since sustainable management helps maintain the balance between human activities and environmental health, ensuring that, fisheries can continue to contribute to the economy in the long term.

The strategies for promoting commercial aquaculture include increasing awareness of aquaculture products, subsidizing aquaculture inputs, manpower development, government support, formation of fish farmers cooperatives, access to loans and credit facilities, enhanced fisheries research activities, effective fisheries

policies, good institutional framework, reducing the levels of corruption and insecurity in the region. These were pointed out as veritable tools for transforming the state of aquaculture in the Niger Delta. Which can be through planned, focused, coordinated and effective management strategies; by individual farmers, government agencies and relevant institutions for sustainable fisheries development in this region and the nation at large (Akinrotimi *et al*., 2011). The issue of biosecurity in aquaculture is also an aspect that should be considered (Lelei *et al*., 2022). The OECD (2016), states that, data is necessary for measuring indices, evaluating performance and developing policies related to the management of ocean resources for researchers and policy-makers. Data management is pivotal for supplying vital information in a variety of marine sectors, particularly related to fisheries stock assessments and marine spatial planning. Data management is essential for improving the understanding of ecosystem products and services, which helps to address pressing issues like food security, poverty, and capacity building, among others. In Bayelsa State, there is dearth of data on most fundamental aspects in the fisheries sub-sector.

The conditions that contribute to unsustainable fisheries have been identified and studied: inappropriate incentives from markets and Governments, high demand for limited resources (particularly those of high value), the complex and incomplete knowledge of marine systems (effects of fisheries on aquatic ecosystems, effects of by-catches and impacts on seabed habitats, etc.), financial deprivation and lack of alternatives which keep excess fishers in fisheries, lack of effective implementation of appropriate measures, climate change and ocean pollution. These factors can be mitigated by policies and measures that promote sustainable fisheries activities. Sustainable fisheries development in Bayelsa State is hinged on:

- Fish stock assessment, inventory of aquatic activities.
- Securing small-scale fisheries in the context of food security and poverty eradication.
- Responsible fishing through best available techniques, management practices and biosecurity.
- Community-ownership of fishery resources.
- Inland fisheries management (through shared knowledge on the effects of fisheries on aquatic ecosystems, effects of by-catches, impacts of gear and fishing methods on seabed habitats, etc.).
- Improvement in value chain approaches to transform aquatic food systems and production.
- Technology and innovations for improved culture and catches to reduce fish food losses and wastes.

Fisheries management for sustainability in the State requires community-based resource ownership and management besides monitoring and surveillance (Kingdom and Alfred-Ockiya, 2009) of the waterways. For accountability, community-ownership can be fostered by community-based management techniques, which can result in more successful conservation initiatives. Sustainable fisheries is eco-friendly based on best available fisheries management practices and fishing technologies/methods in the utilization of fisheries resources with adequate conservation considerations for posterity. The issue with the Fisheries Bill still in the 'consideration state' is also a 'stalemate' for the policy thrust for sustainable fisheries in the State. When the Bill will come onboard is still subject to discussion; policy interpretation and implementation will be another issue to tackle. There are issues with the management of existing fishing terminals at strategic seaports like Brass, Akassa, Koluama and Agge besides the fish farms facilities for aquaculture development at Angalabiri, Igbogene, Ogbogoro and other such scattered around the state that need to be brought back on stream with proper management, regular monitoring, surveillance and control, as well as, consideration for water pollution and wastes management.

Sustainable fisheries is crucial for the State's food security, economic development, and biodiversity conservation. According to Food and Agricultural Organization (FAO, 2024), small-scale fishers contribute over 50% of the global fish catch for direct human consumption. Despite this, they often lack institutional support for sustainable fisheries management practices. Through responsible, sustainable fishing and management practices that are community-based, to give sense of ownership and accountability for these resources- fishes, fisheries and their habitats- with posterity in view; small-scale fishers can be developed to maximize the fisheries potential of the State.

'World fisheries Day 2024', highlighted the critical role of small-scale fishers in achieving sustainability in the fisheries sub-sector; Fisheries Society of Nigeria (FISON), Bayelsa State Chapter in collaboration with its counterparts in the academia show cased initiatives that can foster collaboration, education, and community-driven actions to support these fishers, so as to propel the sustainability drive. The Bayelsa State Chapter of the Society celebrated the 2024 World Fisheries Day with different activities; cleaning of the waterfronts of some rivers in the State capital to create awareness on the importance of a clean environment to the fisheries in the State, visitation to some schools in the State capital to sensitize the young ones on the importance of fisheries to food security and nutrition. A documentary was aired in the news media to create awareness on the importance of the day. The Chapter also used the opportunity to familiarize itself with the Commissioner of Marine and Blue Economy in the State. The visit was an avenue to intimate the Commissioner on the activities of the Society in the State and the willingness to partner with the State Government in the development of fisheries in Bayelsa State, because 'the wealth of Bayelsa State is not in crude oil, which is a finite resource, but, in the waters'.

WORLD FISHERIES DAY 2024: DOCUMENTARY AIRED IN THE NEWS MEDIA

World Fisheries day is celebrated every year on November 21 throughout the world by the fisher folk communities. Fishing communities worldwide celebrate this day through rallies, workshops, public meetings, cultural programs, dramas, exhibition, music shows, and demonstrations to highlight the importance of maintaining the world's fisheries.

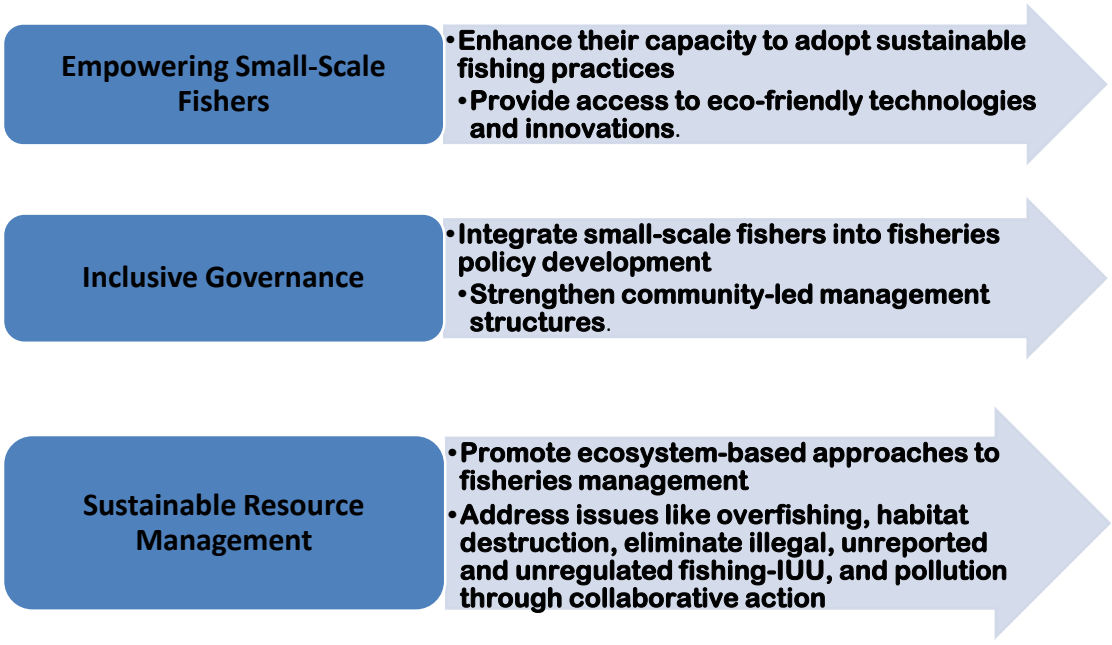
A recent United Nations study reported that more than two-thirds of the world's fisheries have been overfished or are fully harvested and more than one third are in a state of decline because of factors such as, the loss of essential fish habitats, pollution, and global warming. The 'World Fisheries Day' helps in highlighting the critical importance to human lives, of water and the lives it sustains, both in and out of water. Water forms a continuum, whether contained in rivers, lakes, and ocean.

Fish forms an important part of the diets of people around the world, particularly those that live near rivers, coasts and other water bodies. A number of traditional societies and communities, like those in Ijaw land and Bayelsa in particular, are rallied around the occupation of fishing and its accompanying activities. This is why a majority of human settlements, whether small villages or mega cities, are situated in close proximity to water bodies. Besides the importance of water for survival and as a means of transportation, it is also an important source of fish and aquatic protein. This proximity has also led to severe ocean and coastal pollution from run-offs and from domestic and industrial activities carried out near-by. This has resulted in the depletion of fish stocks in the immediate vicinity, requiring fishers to go farther and farther away from their traditional fishing grounds for fishing. Besides, overfishing and mechanization has also

resulted in crisis - fish stocks are being depleted through 'factory' vessels, bottom trawling, and other methods of unsustainable fishing practices. Unless we address these issues collectively, the crisis will deepen. The 'World Fisheries Day' helps to highlight these problems, and make moves towards finding solutions to the increasingly inter-connected problems we are facing, and in the longer term, to sustainable means of maintaining fish stocks.

This year, the Bayelsa State Chapter of Fisheries Society of Nigeria (FISON), ably led by Mr. Augustus Eli, will be celebrating the World Fisheries Day with a list of activities. It will be cleaning the waterfronts of some rivers and creeks in the State capital, to create awareness of the importance of a clean environment to the fisheries of Bayelsa State. It will also be visiting some schools in the State capital to sensitize the young ones on the importance of fisheries to food security and nutrition. The Chapter will also use the opportunity to familiarize itself with the Commissioner of Marine and Blue Economy in the State. The visit will be an avenue to intimate the Commissioner on the activities of the Society in the State and the willingness to partner with the State Government in the development of the fisheries sub-sector in Bayelsa State, because 'the wealth of Bayelsa State is not in oil, which is a finite resource, but, is found in our waters'.

In pursuit of the sustainable fisheries goal, FISON set out some objectives:

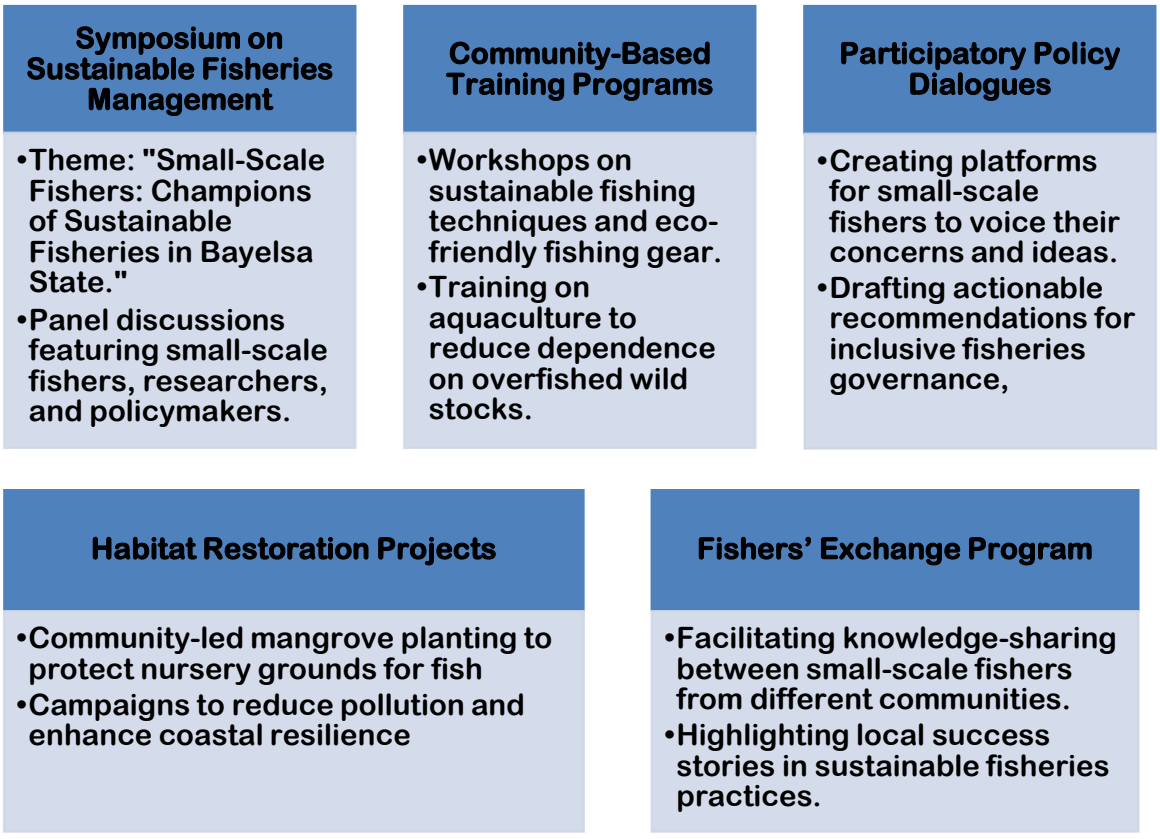


Collaborative Framework was also developed

This initiative leverages the expertise and resources of various institutions around to empower small-scale fishers in Bayelsa State:

1. **Federal University Otuoke**
   - Conducting research on sustainable fisheries technologies tailored to small-scale fishers.
   - Engaging students in capacity-building programs.
2. **Niger Delta University**
   - Providing training on ecosystem-based management approaches.
   - Facilitating participatory governance workshops.
3. **Federal Polytechnic Ekowe**
   - Developing vocational training programs for fishers.
   - Promoting innovative fish processing and value addition techniques.
4. **University of Africa Toru-Orua**
   - Conducting socio-economic assessments of small-scale fisheries.
   - Analyzing policy impacts on small-scale fishing communities.
5. **Ministry of Marine and Blue Economy**
   - Ensuring policy alignment with small-scale fisheries needs.
   - Funding sustainable fisheries projects.
6. **FISON (Fisheries Society of Nigeria)**
   - Leading in national advocacy for small-scale fisheries.
   - Disseminating information on best practices in community-based fisheries management

Key Activities for World Fisheries Day 2024



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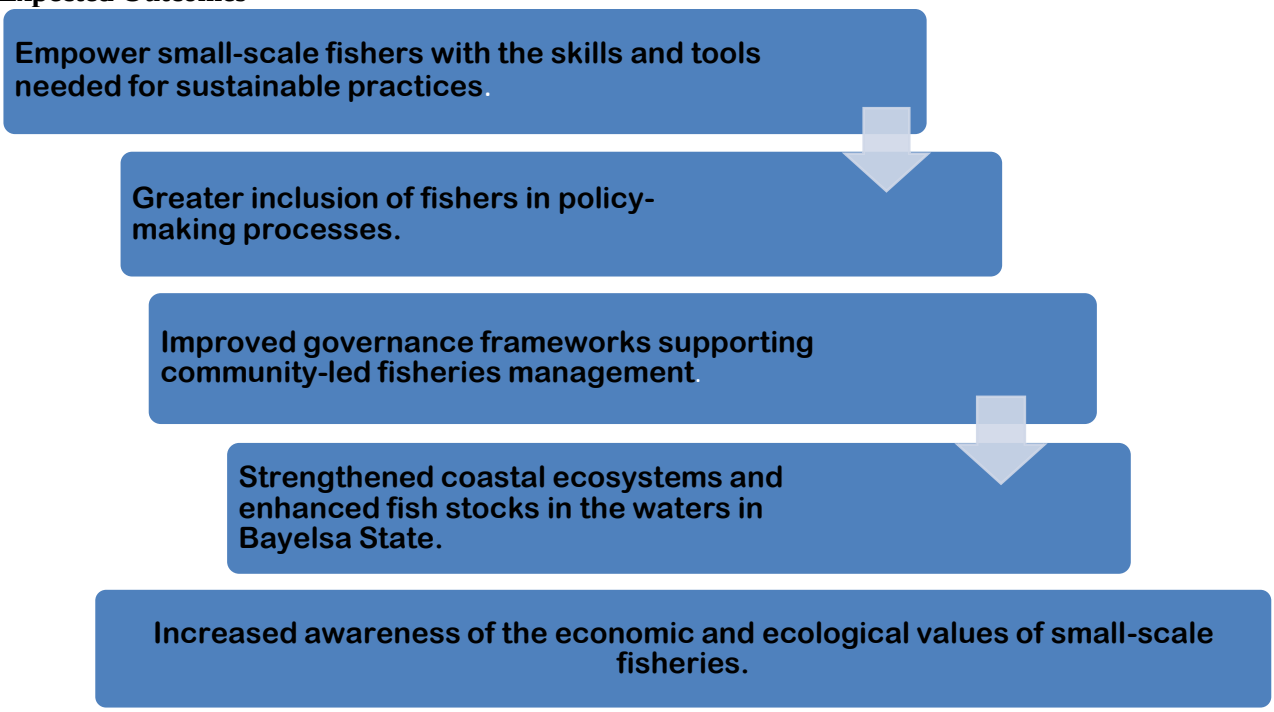
Expected Outcomes



Methods and Activities

Four key activities were implemented to celebrate 'World Fisheries Day 2024' and address critical aspects of sustainable fisheries management:

Advocacy through Classroom demonstrations in Secondary Schools

To raise awareness among young learners, advocacy sessions were held in secondary schools (Plate 1). These sessions introduced students to sustainable fishing practices, the ecological importance of fisheries, and the socio-economic roles of small-scale fishers. Interactive discussions emphasized the need to balance economic needs with resource conservation and environmental preservation.

Plate 1: Showing talks in a Secondary School in the State

Eco-Friendly Technology for Sustainable Fisheries Management: Selective Fishing Gear
Selective fishing gear such as, by-catch reduction devices (BRDs) and circle hooks are vital eco-friendly technologies for promoting sustainable fisheries management (Figure 1). These tools are designed to reduce the unintentional capture of non-target species (by-catches), which is a significant issue in small-scale and industrial fisheries.

1. **By-Catch Reduction Devices (BRDs):**
   - Installed in trawl nets to allow non-target species such as, juvenile fish and turtles to escape while retaining target species.
   - Helps protect biodiversity and ensures that young fish can grow to reproductive age, supporting long-term stock replenishment.

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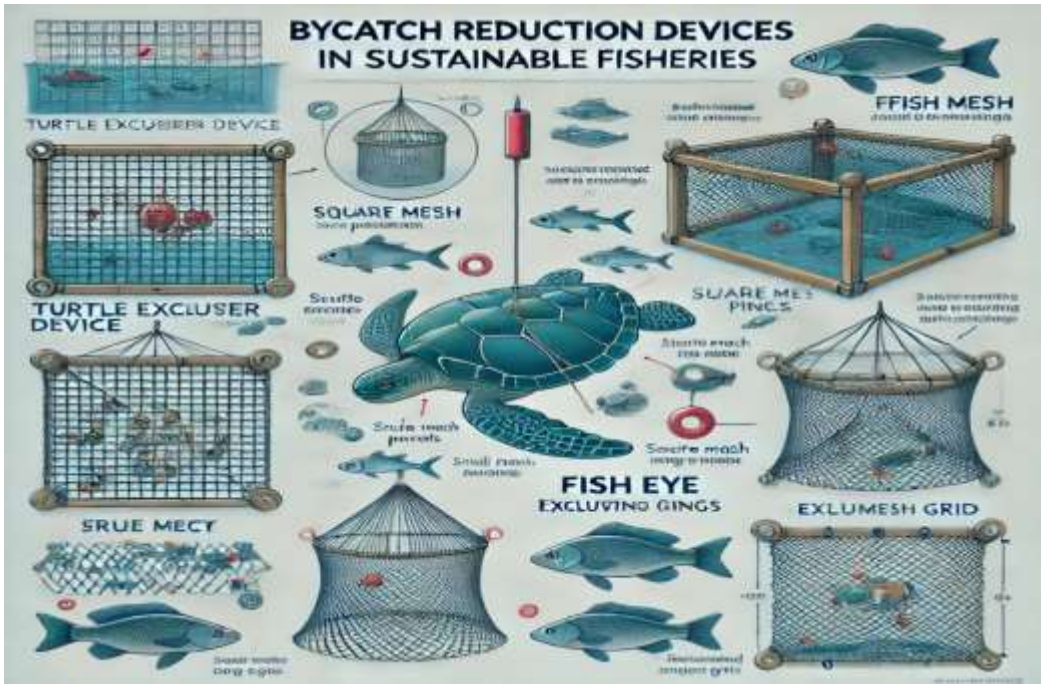

Figure 1: Showing by-catch reduction devices- BRDs (Adapted after: NOAA, 2022)

2. **Circle Hooks:**
   - Specially designed hooks that reduce injury and mortality to non-target species like sea turtles and sharks.
   - Improves post-catch survival rates when unintended species are caught.

Benefits:

- Environmental Sustainability: Protection of marine ecosystems by reducing the impacts of fishing on non-target species.
- Economic Resilience: Ensures healthy fish populations for future harvests, benefiting small-scale fishers in the long term.
- Ease of Adoption: These devices are affordable and can be integrated into existing fishing practices with minimal training.
- By adopting selective fishing gear, small-scale fishers in Bayelsa State can contribute to sustainable fisheries management while safeguarding marine biodiversity and securing their livelihoods.

Sustainable Fisheries Management

Introduction to Sustainable Fisheries Management
Objective: To promote the ecological, economic, and social sustainability of global fisheries; ensuring a balance between human needs and marine ecosystem health.

2. The Core Principles of Sustainable Fisheries Management

a). Conservation and Biodiversity
Protection of marine habitats and maintaining fish population diversity.
b). Economic Viability
Ensuring livelihoods for fishing communities.
c). Governance and Regulations
Implementation of fishing quotas, designate marine protected areas, and enforcement mechanisms.

CONCLUSION

'World Fisheries Day 2024' served as a catalyst to amplify the voices, contributions and state of the small-scale fishers in Bayelsa State. By emphasizing on sustainable fisheries management, this initiative fosters long-term benefits for the fishers, the environment, and the broader economy. Through collaborative efforts, the Fisheries Society of Nigeria, (FISON), academic institutions, and the Ministry of Marine and Blue Economy will empower small-scale fishers to take center stage through community-ownership and best available management practices in shaping a resilient and sustainable future for Bayelsa State's fisheries sector, the water resources and the 'health status' of the water bodies in the state.

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