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Blending Heritage and Modernity: Artisanal Fishing Crafts, Gears and Techniques in Akwa Ibom State, Nigeria (1960–2020)

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Abstract: *For centuries, artisanal fishing has sustained riverine and coastal communities in Akwa Ibom State, Nigeria. Using locally derived crafts, gears, and techniques, artisanal fishers have historically accounted for over 90 percent of fish landings in the state. This paper provides an ethnographic and historical assessment of artisanal fishing technologies between 1960 and 2020, situating them within the frameworks of geographical and economic determinism. Drawing on archival sources, published literature, and indigenous knowledge, the study documents the evolution, efficiency, and environmental implications of artisanal fishing practices. It further examines the contemporary challenges confronting artisanal fishers, including climate change, regulatory failures, foreign trawler encroachment, and inadequate policy support. The study argues that despite technological limitations, artisanal fisheries remain central to food security, livelihoods, and ecological sustainability in Akwa Ibom State, and should be systematically integrated into modern fisheries management.*

Keywords: artisanal fisheries, indigenous technology, sustainability, crafts, gears.

INTRODUCTION

For centuries, artisanal fishers in the Akwa Ibom area have relied on rudimentary crafts, gears, and techniques fashioned from locally available materials to sustain their livelihoods. These materials; grass, bamboo, tree bark, palm fronds, floating logs, calabashes, gourds, and leaves-were limited in capacity but proved sufficiently adaptive to local ecological conditions. Over generations, such technologies sustained both inland and marine fishing economies and ensured the survival of riverine and coastal communities.

Despite more than six decades of post-colonial development, artisanal fishers continue to dominate the fishing industry in Akwa Ibom State, accounting for over 90 percent of total fish landings (Moses, 1990; Essen, 1990). Earlier studies acknowledged the presence of highly skilled fishing

populations but offered limited documentation of indigenous technologies and their broader socio-economic implications (Abasiattai, 1991). Ekong (1983), Uya (1984), and Etuk (2014), all attest to the role of fish to the state's economy. This study revisits artisanal fishing practices through a multidisciplinary lens, engaging theories of geographical and economic determinism to explain technological adaptation and persistence.

THEORETICAL FRAMEWORK

Geographical Determinism

Geographical determinism posits that human behaviour, economic activities, cultural practices, and technological choices are significantly shaped by the physical environment. In southern Nigeria, climate, vegetation, hydrology, and soil conditions have historically influenced occupational specialization, particularly the dominance of fishing in coastal and riverine zones (White & Gleave, 1971).

Northup (1978) observed that southeastern Nigeria developed two principal occupational specializations: fishing along rivers and coasts, and farming inland. These activities often overlapped, reflecting adaptive strategies rather than rigid economic divisions. In Akwa Ibom, artisanal fishers drew upon indigenous knowledge systems to design fishing tools appropriate to specific aquatic environments (Etuk, 2011).

Economic Determinism

Economic determinism, associated with Karl Marx (1818-1883), emphasizes the primacy of material conditions and productive forces in shaping social life. Artisanal fishing in Akwa Ibom reflects a mode of production characterized by labour-intensive practices, limited capital, and simple tools fashioned from the flora of the area. While such conditions constrain large-scale exploitation, they have historically enabled sustainable resource use (Popov, 1984; Ikpe, 2000). This showcased artisanal fishers' symbiotic relationship with their environment.

Statement of Research Problem

For decades, artisanal fisher folks have dominated the Akwa Ibom fresh and marine water bodies using rudimentary crafts, gears and techniques fashioned from local materials to provide more than 90% of the sea foods consumed in the area. Currently the fishers face an existential threat from foreign commercial trawlers, limitation from their own tools and the absence of a state's fisheries policy.

Objectives of the Study:

This study seeks to achieve the following:
a) examine the gears, crafts and techniques used by artisanal fishers in Akwa Ibom state.
b) analyse the impact of artisanal fishing on the environment.
c) highlight the problems confronting artisanal fishermen in Akwa Ibom state.

Scope and Methodology

This study is an ethnographic and historical assessment of artisanal fishing crafts, gears, and techniques in Akwa Ibom state between 1960 and 2020. The thematic focus is on indigenous technologies and fishing practices, while the geographical scope is limited to present-day Akwa Ibom state. Data was drawn from archival records, government reports, published literature, and oral traditions documented in earlier ethnographic works. For the purpose of this work, the term Akwa Ibom state and Akwa Ibom area will be used interchangeably.

Artisanal Fishing Crafts and Gears

A general survey of fresh water fishing in West Africa, according to Etcheri and Lebo, (1982) showed that only a limited form of mechanized fishing was introduced in the upper sections of the Cross River during the first Eastern Region Development Plan (1962-68) in Enyong area, under the defunct Eastern Region in 1966.

> About 40 different types of traditional fishing gears were said to be catalogued during a brief survey of only Niger and Benue Rivers. Reports show that in spite of limitations, indigenous fishing techniques still compete with the European models in West Africa.

A 1996 IFAD fishing survey on Cross River, Rivers, and Akwa Ibom states, showed not only the different gears used, but also when and where it was used along the main river channels, its tributaries and its floodplains. NIOMR and FAO (1994), noted that in spite of the nylon and synthetic materials which formed the backbone of the artisanal fishing industry, most fishing communities in Akwa Ibom area depend on nets woven with natural fibres and vines of forest *epiphytic* palms.

Canoe Types

Indigenous canoe technology forms the backbone of artisanal fishing. Common types include the dug-out canoe (*utetippe ubom*), planked canoe (*ukokong ubom*), combined dug-out and planked canoe, and fibre-glass boats. (Intelligence Reports: 1922), on the Economic Assessment of the Ibibio People in Uyo District, stated that Uruan an Oku communities were engaged in canoe-building, as they possessed large number of timber trees of high economic value.

Dug-out canoes, carved from single tree trunks, were widely used in inland waters and measured between 3 and 7 metres in length, (Planked canoes, ranging from 7 to over 12 metres (8-12m LOA), were better suited for marine fishing and surf-beaten coasts such as Ibeno. Fibre-glass boats, introduced in recent decades, are used primarily by affluent fishers and offer greater efficiency and reduced physical strain.

Paddles, Sails, and Propulsion

Traditional paddles (*udeng*) and sails (*afara*) were essential propulsion devices before the introduction of outboard engines. While paddles remain relevant in calm inland waters, sails—once made from palm bark and later cotton cloth—have largely disappeared due to their vulnerability to harsh weather conditions.

Nets, Floats, and Sinkers

Artisanal fishers employed a wide variety of nets, including cast nets, (*ntop mfuk iyire*); drift nets, *(mfiofioro iyire*) beach seines and gill nets (*ntuak-nda iyire*). Floats were traditionally made from bamboo or calabash gourds, locally known as (*akpkrok akpe*), while sinkers (*nket*) were fashioned from stones, shells, or animal bones. Modern materials such as plastic floats and lead sinkers are now common, reflecting gradual technological adaptation.

The purpose of the bamboo floats and sinkers was to force the net to rest vertically at the bottom of the sea, where weight should be about 30 percent greater than buoyancy. (FAO Integrated Rural Fisheries Development Project NIR/87/010, Handouts for the Training Courses of Fishermen). Today floats and sinkers have undergone tremendous change. Today sinkers are still made of stone, lead, porcelain, iron and heavy objects.

Traps and Fences

Basket traps (*ekete nsiim*), bamboo traps, shrimp traps, and underwater fish fences (*nsiim ibibene*) were widely used in freshwater and estuarine environments. These devices exploited fish behaviour and seasonal movements and were often selective, allowing juvenile and fish fries to escape. Although still in use, many traditional traps have been modified with synthetic materials to improve efficiency. The body of the (*ekete nsiim*) trap was about 1,000-1.6 metres in length and it was made of raffia palm ribs, canes and roots of mangrove trees which were paced 2.00-3.50 metres apart. (FAO and NIOMR, 1994)

Poisoned Herbs and Indigenous Injunctions and Regulations

The use of *ichthyotoxic* plants such as *Tephrosia vogelli* (*ato*) was historically known but regulated through strict traditional sanctions. While effective in immobilizing fish, such methods were discouraged due to their ecological and human health risks.

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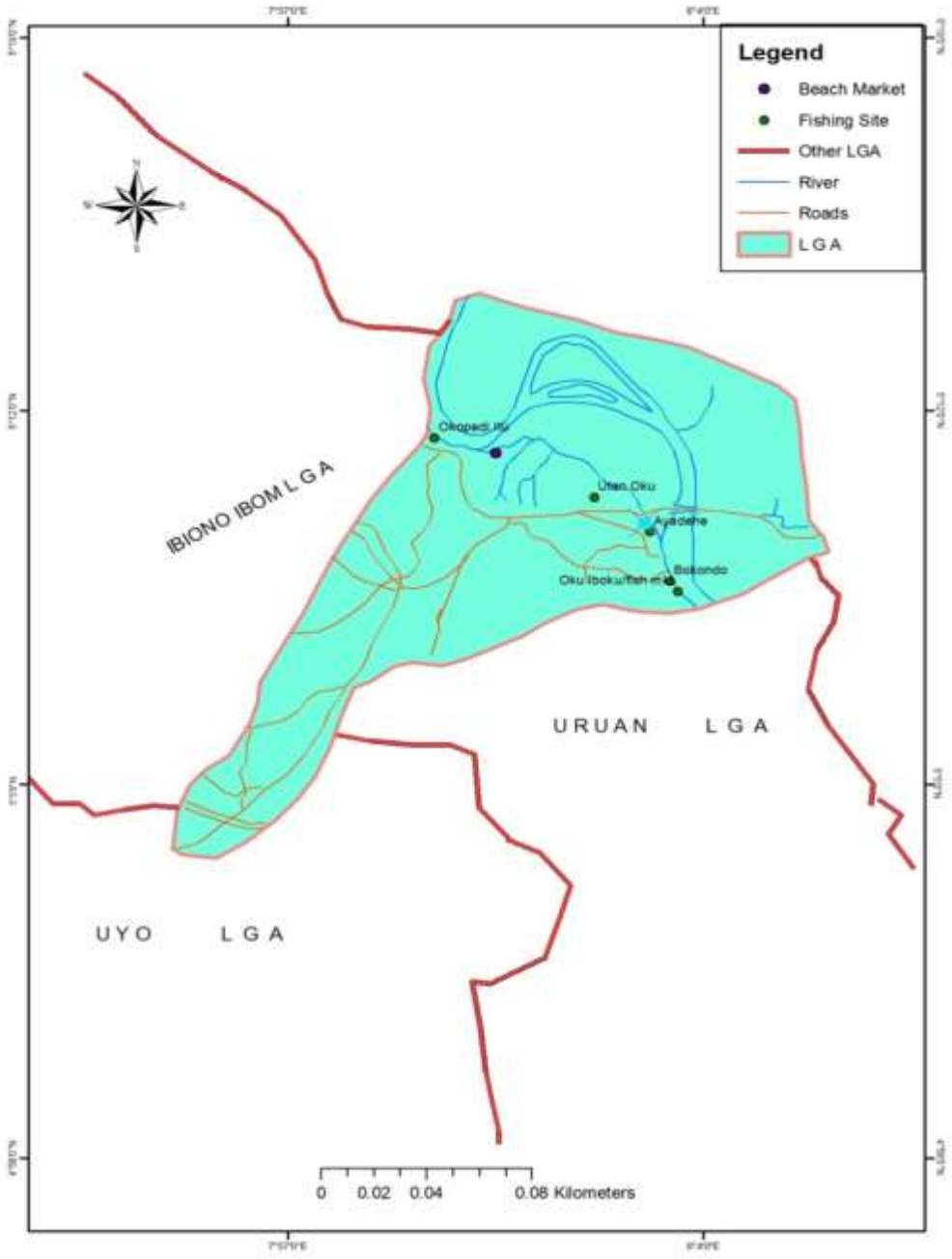

Figure 1: Itu fresh water fishing ports and beach markets.
Itu is noted for freshwater catfish (*inagha*)
Source: Akwa Ibom State Ministry of Lands and Town Planning, State Secretariat, Uyo.

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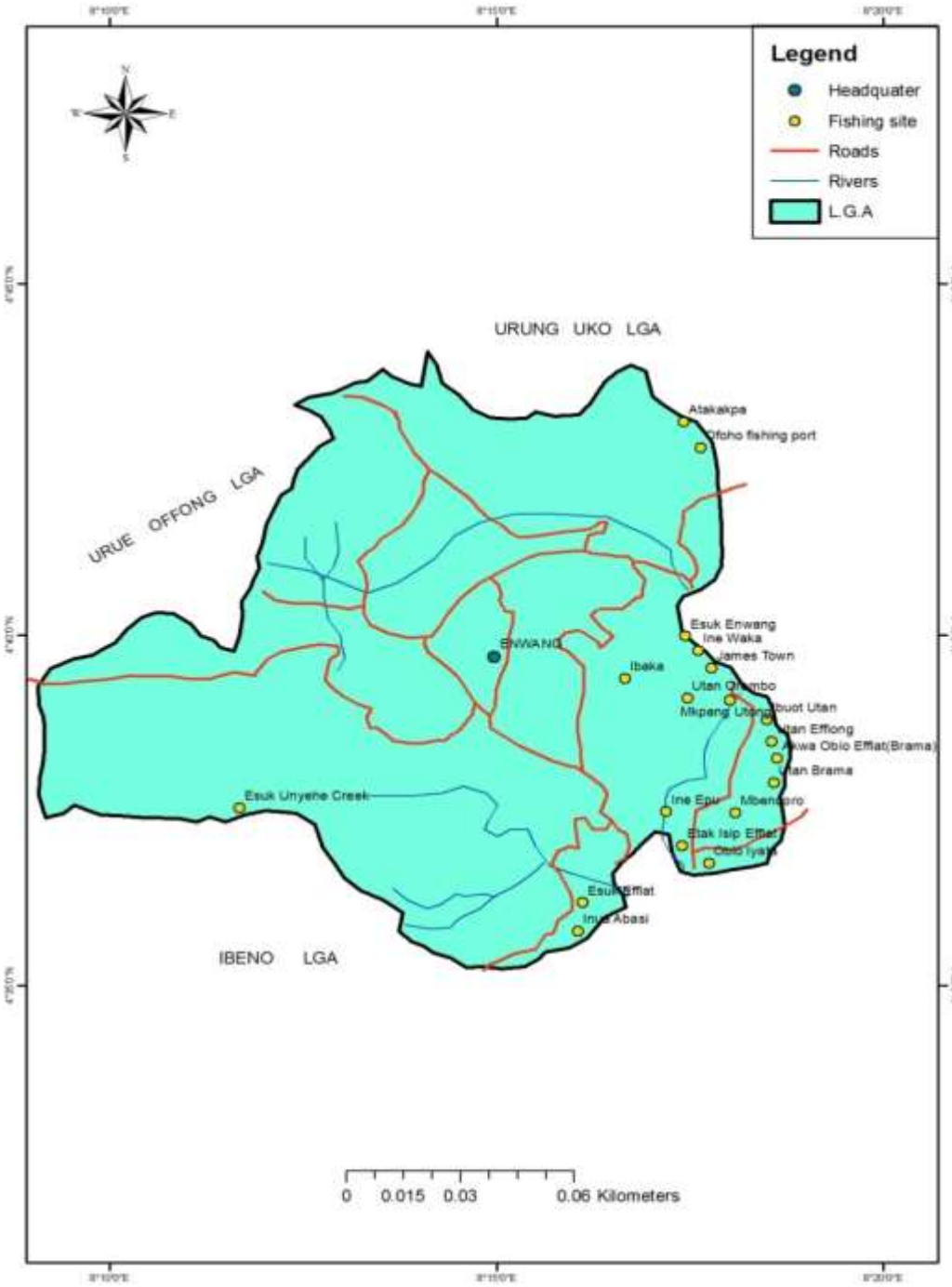

Figure 2: Mbo fishing settlements and beach markets
Source: Akwa Ibom State Ministry of Lands and Town Planning, State Secretariat, Uyo

Challenges Facing Artisanal Fishers

Overfishing and Resource Depletion

The open-access nature of artisanal fisheries has encouraged overexploitation, compounded by the use of banned gears and weak enforcement of regulations. Declining fish landings are increasingly evident. It is pertinent to state here that this situation is an existential threat to the artisanal fishing industry. Artisanal fishing has sustained riverine and coastal communities for generations, knowledge handed down from father to son, through countless fishing families.

Climate Change

Rising sea levels and changing weather patterns have disrupted traditional fishing seasons and practices and altered fish migration patterns. Alterations in ocean temperature have affected breeding circles and increased frequencies of extreme weather events have disrupted traditional fishing calendars and indigenous ecological knowledge (Moses, 2005; Lekwot, 2024).

Regulatory and Policy Gaps

Traditional fishing injunctions and regulations (*ibet*) are no longer respected, while state enforcement remains inadequate. Encroachment by foreign trawlers within the legally protected inshore zone further threatens artisanal livelihoods. Traditional injunctions usually include a cessation of fishing activities for specific periods of the year to allow the fish stock recover from the fishing season and replenish their stock.

Inadequate Funding and Governance

Budgetary allocations to the fisheries sub-sector in Akwa Ibom State from its creation in 1987, was based on the assumption that funding reflects government priority. Early allocations between 1988 and 1990 showed modest planned funding, but significantly lower actual expenditure on capital projects. Despite Akwa Ibom's strong fish production performance in 1989—ranked second, nationally with nearly 14 percent of total output—actual investments remained limited and inconsistent. Even when allocations increased under federal initiatives such as DIFFRI in 1990, only a small fraction of planned funds was released, coinciding with a sharp decline in fish production.

From 1991 to the mid-1990s, funding patterns became increasingly erratic. While Rolling Plans continued to propose substantial allocations, approved and actual expenditures fluctuated widely, and in several years no funds were formally budgeted for fisheries at all. Instead, the sector relied heavily on extra-budgetary spending, which varied annually and lacked transparency. Between 1996 and 2000, no direct budgetary allocations were made, although sporadic extra-budgetary provisions were reportedly spent on capital projects. Overall, the flow of funds to the fisheries sub-sector showed a high level of inconsistency and weak alignment with development planning.

Despite claims of significant financial contribution to fisheries, these expenditures had little or no positive impact on artisanal fishermen or their livelihoods. Government spending did not translate into improved tools, working conditions, or productivity for fishing communities, it showed a disconnect between policy and beneficiaries. Fish production fluctuated sharply during the period, with a dramatic decline in the early 1990s followed by gradual recovery from 1994 onward. While production improved significantly by 1995, the overall evidence suggests that inconsistent funding and poor implementation undermined the effectiveness of government investment in the fisheries sub-sector.

Environmental Degradation

Improper waste disposal by riverine and coastal residents has contributed to pollution, habitat degradation and declining fish stocks. Debris thrown into the river channels now pose a threat to transporters who use flying boats and ferries, and that is besides the systematic poison of aquatic life which eventually end up on diner tables.

CONCLUSION

Artisanal fishing remains central to food security, employment, and cultural continuity in Akwa Ibom State. Despite technological limitations, indigenous fishing practices have historically ensured ecological sustainability. Integrating improved local technologies with effective policy frameworks and environmental governance can enhance productivity without undermining sustainability. Preserving artisanal fisheries is therefore essential not only for economic development but also for safeguarding indigenous knowledge and environmental integrity.

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