

Indigenous Knowledge and Maritime Fishing in West Africa: The Case of Ghana

Emmanuel Akyeampong

INTRODUCTION

A recent policy report by the Directorate of Fisheries in Ghana (2004) notes how ‘The fisheries sector has been under-represented in past development policy frameworks in Ghana because it has been poorly understood’. It opined that this is changing as more information about the sector is gradually being gathered. This paper contributes to the endeavour to garner relevant information on the fisheries sector in Ghana-in particular artisanal marine fisheries-that would promote official understanding of that industry and assist in policy formulation. This is crucial considering that this industry has developed largely autonomously and has not received extensive documentation by government and scholars.¹ But the industry has great economic importance and the vast majority of 400,000 metric tons of fish landed in Ghana is caught, processed, handled and traded largely by small-scale or artisanal operators, mainly along the coast of Ghana. An estimated 1.8 million Ghanaians in a population close to 20 million depend on the fisheries sector, including many poor and vulnerable.² Fish and fish products represent Ghana’s most important non-traditional export, amounting to US \$96 million in 2002 (MOFA, 2004). The role and potential of the fisheries sector for wealth creation and poverty reduction, and the need to incorporate it more coherently into development plans is evident.

An industry that has largely been artisanal and local in its history, with minimal governmental intervention, is now subjected increasingly to national and international directives and conventions on fisheries management. The present focus on environmental concerns globally, has drawn attention to the global crisis in fisheries and aquaculture and the need to manage these spheres in ways that are environmentally sustainable (Bavinck et al., 2005). The Food and Agriculture Organization has noted a levelling off of the total world fish catch since the 1990s. The implications for Africa, where annual exports of fish and fish products bring in a significant US

\$3 billion and constitute a major source of animal protein, have been serious enough to warrant a recent ‘Fish for All’ summit in Abuja (22-26 August 2005) to discuss sustainable ways of reviving Africa’s declining fish stocks, while protecting employment in the industry.³ The fisheries sector in Ghana is now subject to the FAO’s Code of Conduct for Responsible Fisheries (CCRF), and reflects the objectives and concerns of the Sustainable Livelihoods Approach (SLA) and the Millennium Development Goals (MDGs). In this increasingly specialized developmental context, which is often ‘supply-driven’, it is easy to become impersonal about the needs and concerns of fishing communities, who are indeed seen as a contributing factor in the decline of marine fish stocks. Talk of the ‘conservative’ nature of fishing communities and the ‘tragedy of the commons’ obscures the innovation that has marked the history of artisanal marine fisheries in Ghana, and the significant presence of Ghanaian fishermen all along the West African coast. The bias in the production of scientific knowledge about the environment from colonial times, which privileges land-based versus water-based livelihoods, tends to marginalize the rich indigenous knowledge among the coastal Fante, Ga-Adangme and Ewe on coastal hydrology and marine fisheries. Recent discussions of diversifying coastal communities away from fishing seem to view fishing as just a livelihood and not a culture or way of life. The present paradigm of interactive governance (Bavinck et al., 2005) should be flexible enough to include the specific needs and concerns of fishing communities.

This paper appropriately focuses on the Ghanaian artisanal marine fisheries, considering the pioneering role Ghanaian fisherfolk have played in other West African countries, earning them by the 1960s the epithet of ‘pan-African fishermen’.⁴ Though a local case study, its regional implications are clear, especially as material is included on Ghanaian fishing communities in other West African countries. The paper is divided into an introduction, four main parts and a conclusion. The next part discusses

how political economy shaped environmental policy in colonial Ghana. The focus on land-based livelihoods by default gave agency and autonomy to local communities where maritime technology and fisheries were concerned. This is the subject of the second part and the central roles of Fante, Ga-Adangme and Ewe fishermen in the dissemination of knowledge about marine fishing. The third part reviews state management of fisheries in colonial and post-colonial Ghana, and the fourth and final part examines the implications of international partnerships for development for local fishing communities. The source materials used in this paper are drawn from archival research in Ghana and the Public Records Office (London); recent official reports on fisheries from the Ministry of Food and Agriculture, especially the Directorate of Fisheries; publications from the Centre for Maritime Research (Amsterdam); oral interviews; and secondary literature.

POLITICAL ECONOMY AND ENVIRONMENTAL KNOWLEDGE IN COLONIAL GHANA

Colonial rule in Africa privileged Western Knowledge Systems and discredited Indigenous Knowledge Systems, and provided the context for the fashioning of 'scientific knowledge' about Africa. The production of a body of written knowledge, carefully archived during colonial rule and inherited by post-colonial governments and scholars, have shaped the contemporary production of knowledge and ensured the continuity of economic priorities set during the colonial period. But the construction of knowledge during colonial rule was not culture-neutral and removed from the context of the relations of power. The results of colonial dismissal of folk environmental knowledge have been catalogued by scholars in various areas of inquiry ranging from epidemics of sleeping sickness and malaria (Ford, 1971; Vail, 1977), to huge failures in irrigation and mechanized projects (van Beusekom, 2002), and an entire forestry science based on partly erroneous assumptions (Fairhead and Leach, 1996).

The exigencies of the colonial political economy determined priorities in the creation of scientific knowledge about the African environment; hence reports abounded on mining, forestry and farming. Early West African foresters drew on theories and assumptions prevalent in Euro-

pean and Indian forestry circles in the late nineteenth century, which tied deforestation to climate desiccation. Forests and the specter of deforestation in West Africa have consequently received undue emphasis in forestry and social science analysis. The first forestry department was formed in the Gold Coast in 1909 under H. N. Thompson, a trained forester in the Nigerian Forestry Department. But the forestry department was soon closed down in 1917, partly as a result of the rise of the peasant cocoa industry. In 1911 the Gold Coast emerged as the world's leading exporter of cocoa, and cocoa became the largest source of income revenue for the country. As cocoa thrives in forest regions and the expansion of cocoa entailed the cutting down of forests, the forestry department was shut down in official acknowledgement of the primacy of cocoa in colonial revenues (Grove, 1997: 147-8).

Fishing was a latecomer in colonial economic considerations with the industry attracting attention in colonial West Africa only in the 1930s and receiving its first regulatory law in the Gold Coast in 1946 (Fisheries Ordinance Cap 165). Early studies of coastal hydrology were specific, often directed at finding a suitable site for a harbour. The first detailed study of coastal geology and hydrology was in 1945 (Juner and Bates, 1945). The Gold Coast government commissioned its first study of a local fishing industry in 1936, undertaken by A. P. Brown, a teacher at Achimota College.⁵ And the first comprehensive study of the fishes and fisheries of the Gold Coast – still the authoritative account – came out in 1947 (Irvine, 1947). The dearth of institutional expertise on coastal fisheries privileged local knowledge, encouraging the build up of a virtual 'citizen science' (Irwin, 1995) about marine fisheries and coastal hydrology.

INDIGENOUS KNOWLEDGE AND INNOVATION IN MARITIME TECHNOLOGY AND FISHERIES

The first colonial surveys on fishing from the 1930s and 1940s documented the innovativeness of local communities in maritime technology and marine fisheries. Brown's 1936 survey on Labadi and Teshi near present-day Accra drew heavily on oral traditions and showed, contrary to educated opinion of the conservativeness of fishing folks, that 'fishermen were continually adopting new methods and means' (Brown, 1936: 1).

Brown's work highlighted the pioneering role of the Fanti as marine fishermen in the Gold Coast and along the West African coast. Early European observers along the West African coast often praised the maritime skills of the Mina (people of Elmina on the Gold Coast) and the Kru of Liberia. Along the West African coast with its heavy surf, European ship captains had often recruited Mina and Kru fishermen with their canoes and used them in the loading and offloading of goods. Labadi oral traditions recounted how the Fanti had introduced them to canoes, nets and the cultural knowledge of the marine world in the second half of the eighteenth century. The Anlo-Ewe, the third group of Gold Coasters to distinguish themselves as marine fishermen, lacked a maritime tradition before the mid-nineteenth century (Akyeampong, 2001). They depended on the huge inland Keta lagoon for fishing and water transport. Sails appear to have been a nineteenth century development in the Gold Coast, and those who had worked in surf boats for Europeans brought the long steering sweep in the late nineteenth century.

After a long period of little technological change in the nature of fishing nets, the period from the mid-nineteenth century witnessed what was a veritable technological revolution in sea fishing with the Ga, the Anlo-Ewe and the Fanti at the forefront of introducing new nets. From the old cast nets operated from the shore and from canoes and small wall-nets used in catching big fish and shark, three new nets would alter the nature of fishing in the Gold Coast: the beach-seine net, the drift net, and the purse-seine net. Their first impact was size and the volume of catch was unprecedented. Moreover, these nets required less skill in their operation compared with the cast net, opening up the profession of marine fishing. Secondly, with large nets came the need to increase the labor force required to haul these nets and larger canoes to carry the fishermen and their equipment. The result was the birth of the 'fishing company'.

The introduction in Anlo of the beach-seine net (*yevudor*) between 1850 and 1860 by Afedima, a female entrepreneur from the Anlo town of Woe, enabled the Anlo to overcome their diffidence towards fishing in the heavy surf along their coast. The beach-seine net was a drag net deployed by a few fishermen in canoe, while a larger group of fishermen on the beach dragged the huge net to the beach, capturing all the fish in

the path of the net. Made initially of European-manufactured cotton twine for net, lead sinkers and cork or calabash floats, and with long ropes attached to its side wings, the entire contraption could be 300 yards long (Wyllie, 1969: 396). The Anlo elaborated on the *yevudor*, and the net sizes increased in length.

Traditions in Teshi and Labadi mention Male Akro as the pioneering fisherman who introduced several new nets to the Ga. His first innovation was a bottom net called *tengiraf*, 'because it stretched along the coast in the sea as the telegraph wires on the land' (Brown, 1936: 5). It was alleged that he borrowed knowledge of this net from the Fanti. Male Akro and his half brother, Habel Nmai, also worked as bricklayers. It was in this later capacity that they went as wage labourers to Nigeria in the 1890s, and there saw the operation of a herring drift net. On their return to the Gold Coast, they made a similar net, but the people of Labadi refused to allow them to deploy it for fear that it would kill all the fish because of the small mesh of the net. The brothers tried the net at the neighbouring town of Nungua, where its huge catches quickly attracted patrons. This became the *ali* net, and a successful law suit around 1898 earned the brothers the right to deploy the net in Teshi waters. Astounded by its capacity to catch fish, the people of Teshi were soon lining up to pay £3 to learn its use. This was the largest net to be used in Labadi and Teshi, stretching between 700 and 1000 feet long.

A series of other bottom and surface drift-nets were introduced into the Gold Coast in the early twentieth century, but perhaps the next influential net was the purse-seine net or a kind of cast net popularly known as *watsa*. Male Akro and his associates are again credited with this innovation.

In 1917 Male Akro at Teshi evolved Kokole Ali, a net like Ali but with a larger mesh for catching Kokole (shad) and taking the place of the cast-net Dzane; the next year his half brother Habel Nmai answered him with a *Watsa*, a version of Kokole Ali made with stouter twine, and which has become one of the most used nets during Harmattan. Kokole Ali was brought to Labadi from Teshi by Amatsu and Malefio in 1920, *Watsa* by Kokowe in 1924. Accra got them from Teshi in 1927-8 and 1929 respectively (Brown, 1936: 7).

The *watsa* would be elaborated upon over time, and the coastal erosion of Anlo's beaches and the introduction of the outboard motor would

promote the adoption of *watsa* fishing along the Anlo coast from the 1960s.

By the 1920s and the 1930s Gold Coast fishermen were already present in the waters of neighbouring African countries. Anlo-Ewe fishermen were present in Nigeria and Côte d'Ivoire by the 1920s and 1930s, and the onset of severe coastal erosion along the Anlo coast from the early twentieth century seemed to have intensified migration (Jorion, 1988: 134). In Côte d'Ivoire, the Ewe fishermen domiciled in Gonzacville and Port Bouet continued to use the beach-seine net or *yevudor*. Indeed, that has been their specialization. Fanti fishermen in Côte d'Ivoire, who resided in Vridi III and Grand Bassam and used motorized canoes, utilized the gill net (*ali*) for *sardinella* fishing, the bottom gill net (*tonga* or *tenga*), and the purse-seine net (*watsa*). By the 1970s and 1980s, Ghanaian fishermen would control more than 90 percent of artisanal marine fishing in Côte d'Ivoire, displacing the Senegalese who had previously dominated marine fisheries in that country. Ga fishermen in Côte d'Ivoire would adopt the Senegalese fishing technique called *la glace* (the ice) or long-distance hook-and-line fishing using a motorized canoe equipped with an ice box. *La glace* became corrupted among the Ga as *la gas* (also known as 'Awam Sea', for imitating trawling), and the crews specialized in catching large fish and could stay at sea for three to five days, storing their catch in the ice box (Odotei, 2002a: 5-6, 34-5). The migrant Ga fishermen in Côte d'Ivoire introduced *la gas* to Ghana in 1977.

Gold Coast marine fishermen also dominated the coast of Nigeria in the colonial period. In a 1942 report on the fisheries of southern Nigeria, W. B. Dowson observed how sea fishing among Nigerians was undeveloped, as the Nigerians prefer to limit their operations to their numerous river estuaries and countless miles of sheltered creeks and lagoons. Migrant Gold Coast fishermen were the main exploiters of marine fisheries in Nigeria with a few local Yoruba sea fishermen. Indeed, Dowson recommended that the government of Nigeria recruit Gold Coast fishermen to train Nigerians in sea fishing.

As the manipulation of the large Beach Seine Nets and large Gill Nets in the sea is at present understood only by the migrant Keta and Fantee fishermen from the Gold Coast, who have settled on the most easterly 150 miles of the Nigerian coast, it is necessary to use their expert know-

ledge for the tuition of the sea-fishermen from the remaining 370 miles of Nigerian coast, who should come to the easterly section for instruction (Dowson, 1942).

Eight years later, when Dr. Hickling, fisheries advisor for the Colonial Office in London, toured West Africa between October and December 1950, he noted that the Nigerian Fisheries Department had engaged Gold Coast fishermen as instructors to teach sea canoe fishing on the eastern coast of Nigeria. The department had introduced the Gold Coast gill net for *bonga* (a valuable shad) and *sardinella*.⁶

Migrant fishing was a response to a seasonal occupation that limited marine fishing to particular seasons in the Gold Coast, as the movement of fishes on the coast was in response to climatic changes. To pursue marine fishing all year round meant migrating with the fishes. But even in the 1930s there was also a perception among fishermen in the Gold Coast that fish stocks were declining and fishermen had to be mobile. Brown in his 1936 survey in Labadi commented on the 'widespread feeling among the fishermen that there are fewer fish to be caught today than there were formerly and that what fish there are are further out to sea and are becoming more cunning' (Brown, 1936: 40). He gives specific evidence on the decline in shad catches.

But there is one fish that has undoubtedly decreased in numbers during recent years. From March to April and again June to July, Kokole, that unlucky shad, was caught in such great numbers as to earn itself a special net, kokole ali. It is a fish that moves in shoals and breeds in rivers as is the same as the Bonga of Sierra Leone. For the last seven or eight years it has only been caught in small numbers, and from answers to a circular sent to teachers in fishing communities this appears to be the case all along the coast from Takoradi to Keta (Brown, 1936: 40-1).

The tragedy of the commons has been a common image in explaining the decline in fish stocks in the last couple of decades, suggesting that 'users will not conserve a common resource pool unless they can be sure that others will do so too' (Bavinck et al., 2005: 35). Fishing in the sea or other communally owned water bodies thus represented a zero-sum-game in this perspective, and fishermen sought to maximize their gains in the shortest possible time. This image has a longer history in West Africa, where colonial officials often viewed Africans as inefficient

and reckless custodians of their natural resources. Already in 1942, Dowson in southern Nigeria commented on widespread hearsay about declining fish stocks over the years, and opined that: 'unrestricted use of countless nets of undersized mesh and the widespread use of non-selective traps, barriers and weirs in lagoons, and particularly in estuaries will be found the root cause of the trouble' (Dowson, 1942).

But the evidence from the maritime traditions of coastal peoples along the Gold Coast such as the Anlo-Ewe and the Ga indicate a deep respect and reverence for the sea and its bounty. Akyeampong (2001: 104-5) has argued how moral ecology emphasize four tenets in relations between human, natural and supernatural worlds. First is the idea of symbiosis between humans and nature. The second delineated the space of nature and culture. Third is the belief that humans should receive their share of produce according to what they have invested. This belief in a 'just return on human investment' is an important aspect of moral ecology and an appeal to the natural and supernatural realms to cooperate with human endeavours for subsistence. Social cooperation or the co-dependence of humans is the fourth tenet in moral ecology. Cooperation in the use of resources, labour effort and domestic organization is crucial to community survival. Extreme individualism, rampant greed, witchcraft and the neglect of indigenous religion or ritual are all deprecated as undermining environment and community.

Among all the coastal peoples of southern Ghana the sea is regarded as a deity. For the Anlo-Ewe the sea is sacred space and rituals and sacrifices were made to ensure that fishing seasons were successful. The sea was further seen as a custodian of morality, and its sacred power was specifically invoked, for example, in the ritual ablutions that separated an Anlo widow from a deceased spouse. In Anlo religion water symbolized peace, fertility and growth (Akyeampong, 2001: 111-2). Each fishing community had its day of rest, when fishing was forbidden ostensibly for religious reasons, as well as for conservation reasons. Both people and nature needed rest. So the Ga could not fish in the sea on Tuesdays, and lagoon fishing was banned on Fridays. De Surgy (1969: 130-1) dates Anlo-Ewe migrant fishing on the coast of Togo to as early as the 1880s. In interviews with Hill (1986: 11), Anlo fishermen confirmed their awareness of the fact that over-

fishing could imperil the economic viability of their occupation, hence the early tendency for temporary migration so as not to exhaust fish stocks. Unlike farming, where one reaped what one had sown, fishing in its dependence on nature's bounty and the sea as an unpredictable realm in terms of accidents, elicited the proper reverence from coastal fishing communities. Among Ga fishing communities, the chief fisherman could forbid a stranger from using a new type of net if he considered the net prejudicial to fishing (Brown, 1936: 11). All along the West African coast Ghanaian fishermen carried their superstitions and rituals along with their fishing skills, and local fishermen who learned fishing skills from Ghanaian fishermen also adopted these beliefs and ritual practices (Dowson 1942; Odotei, 2002a: 68).

STATE MANAGEMENT OF FISHERIES IN COLONIAL AND POST-COLONIAL GHANA

It has been mentioned that colonial interest in promoting fisheries in West Africa date to the 1930s. This interest was sparked by the large imports of canned and imported fish, a quest for self-sufficiency in fish and food supplies, and inquiries from British business interests about the viability of investing in fisheries in West Africa. In 1932 the Gold Coast imported canned and preserved fish to the tune of £123,853, and this was seen as a reflection of inadequate local supplies of fish.⁷ In southern Nigeria increasing imports of stork fish from Norway and dry unsalted fish in the twenty years before World War II were seen also as an indication of inadequate local supplies of fish. Before 1939 imports had reached the rate of 850 tons per month (Dowson, 1942). German occupation of Norway during the war and the cessation of stork exports from Norway emphasized for the government of Nigeria the importance of developing the local fisheries industry. To exploit this great demand for fish in West Africa, a number of expatriate companies experimented with mechanized commercial fishing in separate British West African companies. A trawling experiment in Sierra Leone in 1929 was a failure, and West Africa's first attempt at mechanized industrial commercial fisheries, the Freetown Cold Storage Company, folded. The trawler acquired was found unsuitable for the waters in Sierra Leone and failed to catch

sufficient fish. A subsequent expensive experiment with trawling in Nigeria was also unsuccessful as inadequate preservation methods led to an inability to deal with huge catches.⁸ Preservation of fish was still by the traditional methods of smoking, frying, and drying after salting. In the Gold Coast in 1933 inquiries came from Messrs John Netherwood and Company in London about prospects for investing in commercial exploitation of fisheries, but nothing materialized from this inquiry.⁹

Eventually, it was the Colonial Office in London in partnership with the British West African colonial governments that took firm steps to establish marine fisheries on a broad, commercial basis with support from the Colonial Development and Welfare Funds. This followed the appointment of a standing committee on colonial fisheries by the Prime Minister of Britain in 1939 to undertake a survey of fisheries - both freshwater and seawater-and submit recommendations for development and to advice on fisheries problems in the colonial empire as they arose.¹⁰ Dowson's survey of fisheries in southern Nigeria in 1942 was an outcome of this endeavour. Part of this endeavor was a trawling experiment in Lagos in 1941, but the croaker, the main fish caught, was not of high quality. The Gold Coast made its first full-time appointment in fisheries, Mr. F. R. Johnson, in 1945 for a term period of two year. A 31-foot motor boat, 'Kanfla', and other fishing and canning equipment were acquired by Johnson for fisheries research in the Gold Coast.¹¹ By 1950 two boats of the Gold Coast Fisheries Department were undertaking a programme of trawling, lining, shark fishing, drift netting and using the Gold Coast *ali* net; and the Nigerian Fisheries Department had recruited Gold Coast fishermen to instruct Nigerian fishermen in sea fishing.¹²

The onset of decolonization in Britain's West African colonies after World War II and independence in the late 1950s and the 1960s meant that these early attempts at mechanizing fishing and establishing it on a strong financial basis would have to be continued by independent African governments. In the Gold Coast the transition from government experiments to African-led mechanized fishing begun in 1953 with the introduction of planked vessels with inboard motors (Odotei, 2002b: 2) and was continued after independence in 1957. It has been mentioned that the Gold Coast Fisheries Department had two

motor boats by 1950, the first one acquired in 1946 and the second one in 1948. The Fisheries Department worked in conjunction with the Prisons Department Fisheries Scheme, as the prisons authorities were keenly interested in fish supplies for their inmates and had initiated experiments in fish curing and preservation. The two motorized vessels proved highly successful but they were too expensive for Ghanaian fishermen. To reduce cost and make these motorized vessels accessible to local fishermen, the Fisheries Department opened a boatyard at Sekondi and a prototype of the imported vessel was built with local wooden planks. The colonial government made the first batch of four 27-foot motorized vessels available to Ghanaians in 1953, but its price of £1,550 was beyond most Ghanaian fishermen. The government later introduced an instalment payment plan based on a down deposit of £390. The establishment of a boat-building yard at the new Tema Harbor in 1960 would be a further boost to the construction and maintenance of local craft, and the establishment of a maritime academy in Nungua ensured high quality training in maritime skills. By 1963, 163 charters of motorized vessels had been given out to Ghanaians (Odotei, 2002b: 59-60).

The introduction of the outboard motor to the artisanal canoe sector in 1959 transformed this sector. In this second development the dug-out canoe remained the same and the fishing gear remained unchanged; the major difference was the addition of the outboard motor, which increased the geographical reach of canoe fishermen. The area of propulsion had been untouched in the string of innovations in the late nineteenth and early twentieth centuries, and the advent of the outboard motor had a revolutionary effect on artisanal sea fishing. The impact is aptly described by Odotei:

Physical energy and the wind were still the means of propulsion. This put undue limitation on the productivity of fishermen. They could only go a short distance from land, usually ten to fifteen miles, through the heavy surf when they were carrying heavy gear, such as was done in *ali* and *watsa* fishing. Only the hook and line fishermen without the cumbersome net could go fishing twenty miles from the shore. There were several occasions when *ali* (herring drift net) fishermen came back empty-handed because they could not go further out to sea where the herring had been sighted by the hook and line fishermen. The

seriousness of this problem can only be appreciated when the seasonality of the marine fisheries is taken into consideration (Odotei, 2002b: 47).

Priced at £151, which included installation brackets and insurance, the outboard motor was more affordable to Ghanaian fishermen than the planked motorized vessel. By 1969 more than 75 per cent (6732 out of a total of 8728) of dugout canoes utilized the outboard motor (Odotei, 2002b: 63-64). The establishment of the State Fisheries Corporation in 1962 and the entry of other private entrepreneurs added the third component of industrial fishing. The first fisheries, Mankoadzie Fisheries, had been built by a Ghanaian ex-serviceman, Robert Ocran.

The important sphere of preservation remained traditional and much of the fish caught in Ghanaian waters was sold fresh immediately or refrigerated and sold later, or was preserved through smoking, salting and drying, and frying. Canning required a greater investment in funding that was beyond most Ghanaian entrepreneurs. Canning also adds considerable value to the raw product. The two tuna processing companies present in Ghana today were initiated by foreign companies or interests: Pioneer Food Company in Tema (Starkist) established in 1994 and the Ghana Agro Foods Company (GHAFCO) also based in Tema. Both companies have tuna vessels that operate in Ghanaian waters, and the Fisheries Act 625 of 2002 requires that all tuna vessels be operated on a fifty-fifty joint partnership basis with Ghanaians (MOFA, 2004). Foreign trawlers also operate in Ghanaian waters and fishermen often complain how these trawlers are partly responsible for declining fish stocks. They cite instances where the crew in trawlers has removed the deployed nets of artisanal canoe fishermen and the enclosed catch. Ghanaian fishermen have frequently appealed to the state to monitor the activities of foreign trawlers in Ghanaian waters.

DEVELOPMENT PARTNERS: INTERNATIONAL, NATIONAL AND COMMUNITY LEVELS

The Ghanaian economy has gone through dramatic phases in its post-independence period, from the strong economy of the 1950s to one of decline in the 1960s, then a state of virtual economic collapse in the 1970s and early 1980s, to a period of structural adjustment and economic growth from 1983. These various phases have

had different effects on the fisheries sector, and phases of economic stagnation and decline were also periods where inputs for fisheries were unavailable or expensive. As jobs became scarce in the economy and wealth creation elusive, markets shrunk and general purchasing power fell. The period from the 1980s has witnessed the ascendancy of the World Bank and the IMF in Africa, and the introduction of structural adjustment programs in many African countries. The collapse of the Soviet Union and the end of the Cold War in 1989 enabled these Bretton Woods institutions to harmonize lending practices across the West and impose 'conditionalities' on African borrowing countries. Structural adjustment programmes aim at market liberalization, currency devaluation or allowing the market to determine the value of currencies, the trimming of state bureaucracy and the removal of state subsidies in general, and the encouragement of areas of relative economic advantage where African economies are concerned. The upshot of this is that World Bank and IMF policies often encourage investment along the patterns established during the colonial era, and old areas such as cocoa and mining continue to receive considerable attention. Thus farmers in Ghana interested in food cultivation do not receive the same consideration from the World Bank as cocoa farmers who grow for export (Amanor, 1994). It is very recently that the Ghanaian government has sought to incorporate the fisheries sector coherently into national development plans and has initiated the process of gathering information on this vital industry.

This emphasis of the World Bank on African countries focusing on areas of relative economic strength dovetails with the increasing specialization of development to create a context where it is easy for the needs and concerns of fishing communities to disappear in national and international deliberations over fisheries. Today there are more than 80 multilateral and bilateral agencies offering development assistance to African countries. Non-Governmental Organizations have proliferated all over sub-Saharan Africa, intimately involved in the daily lives of Africans. In the past decade or two development has become such a specialized agenda that it is done *for* Africans, not *with* Africans. 'Development' has become something that the government does with its international partners. The emergence of an entire 'development language' replete with acronyms

serves to mystify the process of development even further. Scholars such as Ong (1999) point to a 'post-developmental state', where the governments of developing countries seem to have delegated development issues to international partners. And the Ghanaian government has become a signatory to several international conventions and agreements on fisheries and the environment as part of the process of good governance that opens doors to international funding.

Today there is talk internationally of diversifying fishing communities away from fresh water and marine fishing in the light of declining global fish stocks. Fish farming is posited as the solution to fish demand, and it is hoped that the often poor fishing communities would turn to other forms of livelihood (Bavinck et al., 2005). But fishing is not just a livelihood in fishing communities, as this paper has sought to demonstrate; it is a culture, a way of life. The detailed study of Keta (Akyeampong, 2001), in which this Anlo-Ewe fishing community refused to relocate inland in the face of severe coastal erosion because of the implications for their way of life is instructive. Nukunya has addressed the centrality of the sea in Anlo life:

Sometimes even the financial aspects become secondary or irrelevant. Their occupations have become part and parcel of their lives. One has to remember that many of those who become fishermen along the Anlo coast virtually grew up with the sea. By about age ten, they have already mastered the art of swimming and acquired the skills to join the fishing expeditions (Nukunya, 1989: 158-9).

And Akyeampong (2001) shows how the transition to a maritime culture in Anlo involved the concomitant adoption of marine deities and cults from their eastern neighbours.

Can the fishing skills of fishing communities be utilized in the move to aquaculture or fish farming? This should be explored and governments and their international partners should not just assume that a complete change of livelihood is possible for fishing communities. The model of interactive governance, which provides scope for all stakeholders in fisheries, should proactively seek to incorporate fishing communities in deliberations to ensure that their voice is represented in reforms. As this paper has shown, fisherfolk have revealed a spirit of innovation over much of the twentieth century. Assumptions

about their poverty and ignorance should not disempower them in important discussions about the place of the fisheries sector in development and proposed changes in fisheries that are bound to affect their lives.

CONCLUSION: THE WAY FORWARD

This paper has sought to shed light on the vibrant history and tradition of artisanal marine fisheries in Ghana. In the present context of global decline in fish stocks and an international emphasis on aquaculture and diversifying fishing communities from fishing, the paper reminds us that marine fishing is more than a livelihood; it is a way of life. It encourages governments and their international partners to include fishing communities in deliberations over the future of the sector through the model of interactive governance and not sideline them in the current supply-driven approach to development. Interactive governance requires that all the actors be informed of and involved in the development or choice of fisheries management plan, and this model is seen as having great prospects for the fisheries industry (Bavinck et al., 2005).

ACKNOWLEDGEMENT

The author acknowledges his gratitude to professor Irene K. Odotei for sharing her extensive research on artisanal fisheries in Ghana and Côte d'Ivoire.

NOTES

- 1 Scholarly works on fisheries in Ghana include Irvine (1947); Lawson (1958); Wyllie (1969); Hill (1970, 1986); Christensen (1977); Vercruysse (1984); Jorion (1988); Nukunya (1989); Overa (1998); Akyeampong (2001); and Odotei (2002a, 2002b).
- 2 The artisan canoe fishing industry is a gendered one with men in charge of fishing and women in charge of the distribution and preservation of fish. Once the fish leaves the canoe at the beach, it enters into the female realm (Overa, 1998; Odotei, 2002a). As this paper focuses on the technology of fishing and the production of indigenous knowledge about marine fishing, it emphasizes the male part of this gendered industry.
- 3 *The Ghanaian Times*, 23 Aug. 2005.
- 4 *West Africa*, 28 Dec. 1963 and 4 Jan. 1964.
- 5 Public Records Office (PRO), London, CO 96/729/12. A. P. Brown, 'Survey of the Fishing Industry at Labadi' (1936).
- 6 PRO, London, CO 554/220. Report by Dr. Hickling (Fisheries Advisor) on his tour of West Africa during October-December 1950.

- 7 Public Records and Archives Administration Department (PRAAD), Accra, CSO 8/21/2.
- 8 PRAAD, Accra, CSO 8/21/14. Question of Development of Fishing Resources of the Colonial Empire; and PRO, London, CO 554/84/11.
- 9 PRAAD, Accra, CSO 8/21/2.
- 10 PRAAD, Accra, CSO 8/21/14.
- 11 PRAAD, Accra, CSO 8/21/32 and CSO 8/21/31a.
- 12 PRO, London, CO 554/220.

REFERENCES

- Akyeampong, E. 2001. *Between the Sea and the Lagoon: An Eco-Social History of the Anlo of Southeastern Ghana, c.1850 to Recent Times*. Oxford: James Currey.
- Akyeampong, E. 2003. "Folk Environmental Wisdom versus Scientific Knowledge: Producing and Contesting Knowledge in Anlo, Southeastern Ghana", (pp. 211-224) in Toyin Falola (ed.), *Ghana in Africa and the World: Essays in Honor of Adu Boahen*. Trenton: Africa World Press.
- Amanor, K. S. 1994. *The New Frontier; Farmers' Response to Environmental Degradation: A West African Study*. London: Zed Books.
- Bavinck, M., et al. 2005. *Interactive Fisheries Governance: A Guide to Better Practice*. Amsterdam: Center for Maritime Research.
- Christensen, J. B. 1977. "Motor Power and Woman Power: Technological and Economic Change among Fanti Fishermen in Ghana", (pp. 71-89) in M. E. Smith (ed.), *Those who Live from the Sea: A Study in Maritime Anthropology*. St. Paul, NY: West Publishing.
- De Surgy, A. 1969. *La Pêche maritime traditionnelle a l'ancienne 'Côte de Guinée': origines et développement*. Kara: Centre d'Études de Recherches de Kara.
- Directorate of Fisheries. 2004. *Fisheries Development Policy Framework*. Accra: Post-Harvest Fisheries Research Program.
- Fairhead, J. and M. Leach. 1996. *Misreading the African Landscape: Society and Ecology in a Forest-Savanna Mosaic*. Cambridge: Cambridge University Press.
- Ford, J. 1971. *The Role of Trypanosomiasis in African Ecology: A Study of the Tsetse Fly Problem*. Oxford: Clarendon Press.
- Grove, R. H. 1997. *Ecology, Climate and Empire: Colonialism and Global Environmental History, 1400-1940*. Cambridge: White Horse Press.
- Hill, P. 1970. *Studies in Rural Capitalism in West Africa*. Cambridge, Cambridge University Press.
- Hill, P. 1986. *Talking with Ewe Seine Fishermen and Shallot Farmers*. Cambridge: African Studies Center.
- Irvine, F. R. 1947. *Fishes and Fisheries of the Gold Coast*. London: Crown Agents.
- Irwin, A. 1995. *Citizen Science: A Study of People, Expertise and Sustainable Development*. London and New York: Routledge.
- Jorion, P. 1988. "Going out or staying home: Migration Strategies among Xwla and Anlo-Ewe Fishermen." *Maritime Anthropological Studies*, 1(2): 129-155.
- Juner, N. R. and D.A. Bates. 1945. *Report on the Geology and Hydrology of the Coastal Area East of the Akwapim Range*. Accra: Government Printing Department.
- Lawson, R. 1958. "The Structure, Migration and Resettlement of Ewe Fishing Units." *African Studies*, 17(1): 21-27.
- Ministry of Food and Agriculture. 2004. *Information of Fisheries in Ghana*. Accra: Ministry of Food and Agriculture.
- Nukunya, G. K. 1989. "The Anlo-Ewe and Full-Time Maritime Fishing: Another View." *Maritime Anthropological Studies*, 2(2): 154-173.
- Odotei, I. 2002a. *There is Money in the Sea: Ghanaian Migrant Fishermen and Women in the Ivory Coast*. Accra: Institute of African Studies.
- Odotei, I. 2002b. *The Artisanal Marine Fishing Industry in Ghana: A Historical Overview*. Accra: Institute of African Studies.
- Ong, A. 1999. *Flexible Citizenship: The Cultural Logics of Transnationality*. Durham: Duke University Press.
- Overa, R. 1998. *Partners and Competitors: Gendered Entrepreneurship in Ghanaian Canoe Fisheries*. Ph.D. Thesis (Unpublished), University of Bergen.
- Vail, L. 1977. "Ecology and History: the Example of Eastern Zambia." *Journal of Southern African Studies*, 3(2): 129-155.
- Van Beusekom, M. M. 2002. *Negotiating Development: African Farmers and Colonial Experts at the Office du Niger, 1920-1960*. Portsmouth: Heinemann.
- Vercruysse, E. 1984. *The Penetration of Capitalism: A West African Study*. London: Zed Books.
- Wyllie, R. 1969. "Migrant Anlo Fishing Companies and Socio-Political Change: A Comparative Study." *Africa*, 39(4): 396-410.

KEYWORDS Indigenous knowledge; fisheries; technology; West Africa; Ghana

ABSTRACT Colonial rule in Africa privileged Western Knowledge Systems (WKS), discredited Indigenous Knowledge Systems (IKS) and provided the context for the fashioning of 'scientific knowledge' about Africa. The exigencies of the colonial political economy determined priorities in the creation of scientific knowledge about the African environment; hence reports abounded on mining, forestry, and farming. Fishing was a latecomer in colonial economic considerations, and this neglect was inherited by post-colonial African governments. This paper examines the vibrant maritime fishing industry that developed along the West African coast, in spite of the absence of initial colonial support, and the production of a veritable 'citizen science', where fishing was concerned. The fishing industry has come under close international and national regulation in the last decade or two with recommendations to diversify from the fisheries sector and to promote fish farming as an alternative to freshwater and marine fisheries. This paper explores the transferability of indigenous knowledge to this new sphere and highlights the need to privilege the concerns and needs of fishing communities, as fishing is more a way of life than just a livelihood. It advocates aligning community, national and international interests and concerns in developmental agendas.

Author's Address: Emmanuel Akyeampong, Department of History, Harvard University, 12 Quincy Street, Cambridge, MA 02138, USA

Telephone: 617.496.3684, **Fax:** 617.496.0621, **E-mail:** akyeamp@fas.harvard.edu

© Kamla-Raj Enterprises 2007

Tribes and Tribals, Special Volume No. 1: 173-182 (2007)

*Indigenous Knowledge Systems and
Sustainable Development: Relevance for Africa*
Emmanuel K. Boon and Luc Hens, Editors