

Addressing Illegal Fishing through Education and Sensitization for Sustainable Fisheries Management in Ghana

Research Report



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List of Acronyms

BUSAC	Business Sector Advocacy Challenge Fund
DANIDA	Danish International Development Agency
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
ECCAS	Economic Community of Central African States
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EJF	Environmental Justice Foundation
EU	European Union
FAO	Food and Agriculture Organization
FEU	Fisheries Enforcement Unit
FoN	Friends of the Nation
GDP	Gross Domestic Product
GEF	Global Environmental Facility
ICCAT	International Commission for the Conservation of Atlantic Tunas
IUU	Illegal, Unregulated and Unreported
IOTC	Indian Ocean Tuna Commission
IMO	International Maritime Organisation
IPOA	International Plan of Action
LI	Legislative Instrument
NEPAD	New Partnership for Africa Development
NGOs	Non-Governmental Organisations
MCS	Monitoring Control and Surveillance
MDG	Millennium Development Goal
MFP	Myroc Food Processing
MOFAD	Ministry of Fisheries and Aquaculture Development
PMSA	Port State Measures Agreement
RFMOs	Regional Fisheries Management Organisations
UN	United Nations
UNCLOS	United Nation Convention on the Law of the Sea
USAID	United State Agency for Development
VMS	Vessel Monitoring System
WARFP	West Africa Regional Fisheries Program
WCPFC	Western and Central Pacific Fisheries Commission
WWF	World Wildlife Fund

Executive Summary

Illegal, Unregulated and Unreported (IUU) or “pirate” fishing is a worldwide phenomenon with significant environmental, economic and social consequences. The global losses due to IUU fishing alone are estimated to be between US\$10 billion and US\$23.5 billion per year with West African waters deemed to have the highest levels of IUU fishing in the world and, representing up to 37 percent of the region’s catch. By depleting fish stocks, IUU fishing severely compromises the food security and livelihoods of coastal communities and is also a threat to marine biodiversity and the marine environment. The lack of accurate data makes it more difficult to track progress in the control and management of IUU fishing and to even determine how much of the fish traded internationally are derived from IUU fishing. Under the United Nations Convention on the Law of the Sea (UNCLOS), nations are required to monitor and control fishing vessels flying their flag. Unfortunately this requirement is far-fetched from reality. Many industrial fishing vessels are out of control: fishing inside exclusion zones, attacking local fishers, refusing to pay fines, covering their identification markings, using banned fishing equipment, transshipping fish illegally at sea, refusing to stop for fisheries patrols, bribing enforcement officers, fleeing to neighbouring countries to avoid sanctions, and committing labour violations are among illegal activities being perpetrated at sea. Indeed, these IUU fishing activities undermine conservation measures directed at conserving stocks and ensuring the long-term sustainability of fisheries. It is extremely difficult to monitor, its effects are also very difficult to predict because reliable estimates of total extractions cannot be used in stock assessment models. Thus, a management authority may not even know that the stock is in danger until it is in a poor state. IUU fishing is, effectively, over-fishing and will ultimately lead to stock collapses, the result being that the resource is of no value to either legitimate or IUU fishermen. In addition to direct macro-economic impacts, there are indirect and induced impacts. These include the impacts resulting from loss of income and employment in other industries and activities in the supply chain upstream and downstream from the fishing operation itself. On the upstream side, IUU fishing depresses the demand for fishing gear, boats and equipment, and other inputs that otherwise might be present. Downstream from fishing there is fish processing and packaging, marketing and transport that may be negatively impacted. Any associated reduction in fishing incomes will also have impacts on the demand for consumption goods by fishing families.

Transshipment of fish at sea, also known as *Saiko* fishing, is widely practiced in Axim, Elmina and Apam. Majority of fishers in Axim and Apam are aware that *Saiko* fishing is illegal under the Fisheries Act, Act 625, 2002. However, fishers in these communities consider their practice to be legitimate. The practice is even more pervasive in Elmina, where *Saiko* practitioners won a court case against regular artisanal fishermen of Elmina at the Cape Coast High Court. *Saiko* fishing operations in Elmina and Apam are being managed by highly recognised executives of the By-catch Collectors association. Their boats are undergoing a registration process with the Ghana Inshore Trawlers Association (GITA) and marked to distinguish them from the other artisanal fishing boats. *Saiko* fishers make relatively higher profit margins with secured returns on investments than regular artisanal fishers.

Key words: Illegal, Unreported, Unregulated (IUU), Transshipment of fish (*Saiko* fishing), Education, Sensitization on pirate fishing, Ghana

1.0 Introduction – Project Overview

Global losses due to Illegal, Unreported, and Unregulated (IUU) or “pirate” fishing are estimated to be between US\$10 billion and US\$23.5 billion per year. West African waters are deemed to have the highest levels of IUU fishing in the world, representing up to 37 percent of the region’s catch. By depleting fish stocks, IUU fishing severely compromises the food security and livelihoods of coastal communities and is also a threat to marine biodiversity and the marine environment. In Ghana, fisheries constitute 7% of GDP and employs 10% of the Ghanaian population. Therefore the importance of fishing as an economic activity in Ghana cannot be underestimated. Ghanaians consume an average 23 kg of fish per person per year; well above the global average of 16 kg per person per year. Fish is a preferred source of protein for most Ghanaians and is therefore critical for food security. In terms of nutritional dependency on fish, Ghana ranks sixth worldwide after Maldives, Cambodia, Vietnam, Thailand and Bangladesh and ranks number one in Africa. The importance of the fisheries sector in Ghana has recently been emphasized by the re-establishment of the Ministry of Fisheries and Aquaculture Development (MOFAD) by the Government of Ghana. However, official national statistics indicate a 30 percent decline from a high of 492,776 metric tonnes (MT) in 1999 to 333,524MT in 2011.

However, the reality is worse than these figures indicate. The shrinking harvest is particularly dramatic for small pelagics – sardine-like *Sardinella* species. Catches have declined nearly 66 percent from a high of 252,112 MT (1996) to about 85,000MT in 2011. Oil and gas development offshore will be a major driver of the economy over the next decade. However, this development raises many concerns: it’s potential to increase conflicts with the fishing industry over the use of the marine space, and its potential direct negative impacts on fisheries sector.

Currently the fisheries subsector in Ghana is experiencing significant decreases in capture fisheries as a result of the following:

- illegal, Unreported and Unregulated (IUU) fishing
- maritime climatic variability with attendant impacts on coastal upwelling
- loss of fish landing sites through coastal erosion
- bad fishing practices through use of dynamites and light for fishing
- low recruitment of juvenile fish into the marine environment through degradation of wetlands as a result of dumping of refuse in wetlands leading to pollution
- pollution of water bodies through illegal small-scale mining and solid waste disposal
- limited or no modern fishing technology or post-harvest technology
- market failures
- little or no credit for fisheries sector
- little/no fisheries/livelihood support (extension staff and farmer/farmer colleagues)
- lack of alternatives for fishers and farmers entrenching poverty
- overcapitalization of the sector

With the end result ably amplified in the diagram below:

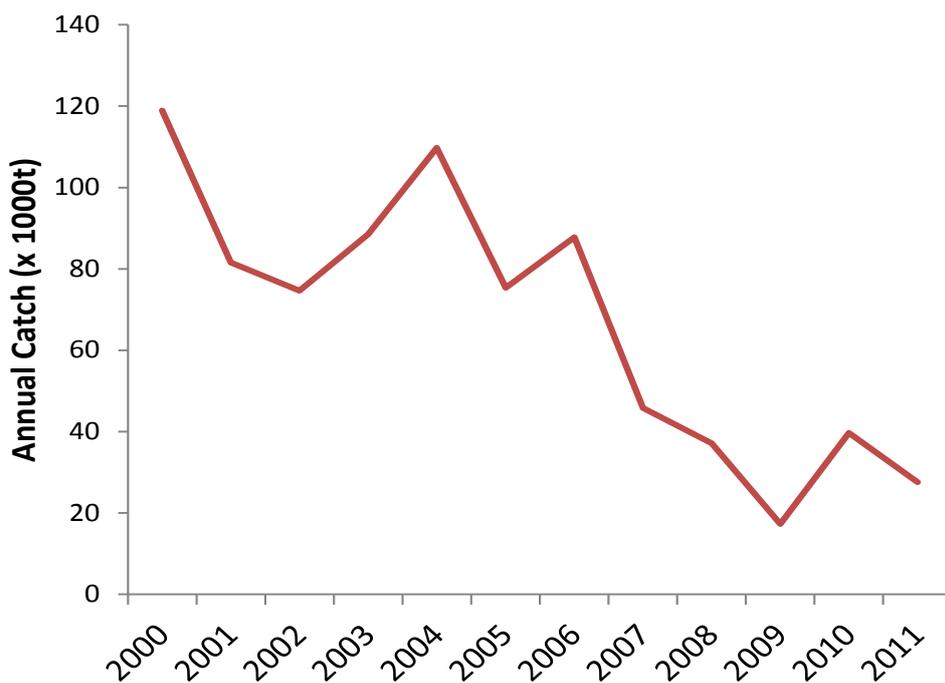


Figure 1: Trend in Sardinella capture fisheries in Ghana (Source: CRC, 2013)

Indeed, local and foreign stakeholders continue to caution government of the implications of a collapsed fishery and the need for active monitoring control, surveillance and enforcement of the Fisheries laws of the country.

The international donor community including the World Bank, European Union (EU) and United States Agency for International Development (USAID) have committed funds to support the fisheries sector through various interventions. The World Bank for instance is supporting the government of Ghana to secure the contribution of Fisheries to GDP, and lay the foundation for increased profitability and growth. The USAID is presently supporting critical interventions in the country primarily aimed at a broader and multi-partner food security, biodiversity conservation, climate change mitigation, and fisheries governance. Also BUSAC with the support of DANIDA, EU and USAID, have supported fishing groups to advocate on specific issues in the fisheries sector for improved fisheries governance and strengthened enforcement within the sector. Recently Friends of the Nation (FoN), a social environmental NGO has received funding from BUSAC to advocate for a participatory development of an enforcement strategy for improved enforcement of the Fisheries laws.

It is worth noting that within the Gulf of Guinea itself, fisheries resources are dwindling. The New Partnership for Africa Development (NEPAD) Declaration at the “Fish for All Summit” of August 2005 highlighted the centrality of sustainable fisheries to human security needs of Africa. Indeed, the 2009 Millennium Development Goals (MDGs) Report notes that unsustainable fisheries will affect the achievement of several MDGs. The FAO (2008) Report indicate that about twenty-one coastal states, the majority of which are from the Gulf of Guinea are still net importers of fish despite having huge areas of EEZ with Ivory Coast, Nigeria and Ghana being among the principal net importers of fish in the world. It is clear therefore that the Gulf of Guinea itself could provide for the fish needs of the West African

people for considerable economic and social benefits for the region if prevailing illegal fishing practices (IUU) are curtailed.

This project aims at sensitizing stakeholders in the fisheries subsector including fishers, fish processors, consumers, district assemblies and law enforcement agencies on a new form of illegal, unreported and unregulated (IUU) fishing commonly called *Saiko*; its potential negative ecological, social and economic impacts on Ghana's marine fisheries and provide avenues for better community-based fisheries management outcomes and poverty reduction in some selected coastal fishing communities in Ghana. Within the framework of this project, emphasis will be made on the ecological, social and economic implications of IUU-*Saiko* fishing with respect to the fisheries laws of Ghana: Fisheries Act, Act 625 of 2002, Act 880 of 2014 and the Fisheries Regulation (LI 1968) of 2010). With a broad stakeholder empowerment through sensitization we will deploy a range of approaches that will help to promote voluntary compliance for enhanced enforcement of the laws and reduce tendency of fishers to break them.

Indeed, the problem of IUU fishing is a global phenomenon and widespread in the fisheries sector in Ghana. IUU depletes fish stocks, destroys marine habitats, distorts competition, puts honest fishers at an unfair disadvantage, and weakens coastal communities, particularly in developing countries. Recent reports in Ghana show IUU is on the ascendancy. For example, in October 2013, the European Union's (EU) warned that henceforth any incident of IUU fishing by a Ghana-flagged vessel will result in a total ban on fish products exported from Ghana to EU markets.

Over the years, the Government of Ghana with support from its development partners and through the appropriate agencies has attempted to reduce IUU through several means. The recent problem with the EU was addressed by strengthening the fisheries legislation by adopting of new regulations and legislative reforms which will, among other things, impose severe sanctions on IUU fishers and punish offenders. It will also include the introduction of new control measures on Ghana-flagged vessels that intend to fish in neighbouring countries. It is worthy to note that on July 23, 2014 for example, Ghana was given an extended grace period of six months to achieve the targets.

The Monitoring, Control and Surveillance (MCS) unit of the Ministry of Fisheries and Aquaculture Development implemented the vessel monitoring systems (VMS) to provide information on real time position of fishing vessels on the sea. This system has faced a lot of challenges. The various fishing boats of Ghana have been registered and placed into the appropriate categories to ensure sustainable fishing in Ghana's Exclusive Economic Zone (EEZ). The Ghana Navy as part of protecting the territorial integrity of Ghana has partnered with the fisheries ministry to fight IUU particularly pair trawling and also help enforce the activities of the MCS.

In recent times, a Marine Police Division has been curled out of the Ghana Police Service to help reduce the incidence of IUU. Significant among the challenges faced by these institutions is the lack of capacity to enforce these laudable ideas. Whilst these efforts targeted large scale fishers (local and foreign), IUU also exists among artisanal fishers. The use of nets of wrong mesh sizes, dynamite, poisons and light for fishing have been the bane of artisanal fisheries in Ghana. Fishermen associations are being sensitized, amidst varying degrees of success, of the effects of these practices on the sustenance of their livelihoods.

The aim of this project is therefore to contribute to sustainability of the artisanal fisheries of Ghana through targeted education and sensitization of stakeholders on some selected illegal, unreported and unregulated fishing practices taking place in the exclusive economic zone of Ghana. Specifically, the project intends to facilitate stakeholder collaboration to counter IUU fishing in general and *Saiko* fishing in particular in Elmina, Apam and Axim in the Western and Central Regions of Ghana. It is envisaged that through the project activities. It is further intended to build community and national level support for compliance and enforcement of fisheries regulations in Elmina, Apam and Axim through education and sensitization of key stakeholders.

2.0 Background – Illegal, Unreported and Unregulated (IUU) Fishing

The contribution of Africa’s fish resources to global fish trade is significant. One factor is that part of the catch is made by foreign fleets operating for example under access agreements or illegally, with the result that the trade is recorded against other countries (or not at all if the distant-water fleet fishes illegally or lands into its home market). In addition, an increasing part of the production is traded internationally. The net value of African exports of fish and fish products exceed the net foreign exchange income for African international trade in cocoa, coffee or any other agricultural commodity, combined.

On the other hand, there are a number of negative elements which cannot be ignored and which constitute serious constraints and obstacles to the enhancement and development of fisheries in Africa. Worse, they can lead to their serious deterioration. In particular IUU fishing activities by national, Sub-Regional and Distant Waters Fishing Nations fishing vessels inhibit the capacity of the fisheries sector to respond to the pressures of a growing population and of an increasing demand for fish

Globally, losses due to IUU or “pirate fishing” are estimated to be between US\$10 billion and US\$23.5 billion per year. West African waters are estimated to have the highest levels of IUU fishing in the world, representing up to 37 percent of the region’s catch. Along with the economic losses, pirate fishing in West Africa severely compromises the food security and livelihoods of coastal communities. IUU vessels compromise the health of fish stocks and the marine environment.



Figure 2: Illustration of bottom trawl (Source: EJF, 2012)

For example, in West Africa alone, the use of bottom trawlers is widely used, which drag heavy trawl equipment along the seabed, resulting in damage to the bottom habitat and high levels of by-catch, including vulnerable marine life such as sharks and turtles. Pirate fishing vessels also benefit from lower costs, thereby severely undermining legitimate fishing operators. By fishing in inshore areas reserved for local fishers, they also displace artisanal

fishers into riverine areas where fish breed, resulting in further damage to the marine environment and the depletion of fish stocks.

Specifically, IUU fishing:

- undermines national and regional efforts to manage fisheries
- inhibits stock rebuilding efforts;
- hastens the downward slide in many fisheries, and potentially affects food and livelihood security for poor communities in developing countries
- generates harmful effects on the economic and social welfare of those involved in legal fishing;
- distorts competition for legal fishermen and reduces incentives to play by the rules;
- threatens the survival of coastal communities in developing countries and jeopardizes the viability of resources

2.1 Specific forms of IUU Fishing

The common types of IUU fishing include:

Illegal/poaching activities: It is usually expressed as fishing without a licence in an EEZ. This can apply to national vessels, to vessels licensed to fish in an adjacent area that have crossed the boundary to fish in an area where they are not licensed; and to vessels fishing on the high seas that cross the boundary for the same purpose.

Illegal fishing which may be undertaken by otherwise legally licensed vessels: Licensed vessels may still fish illegally by contravening the terms and conditions of their licence, for example using illegal gear, catching fish over the allocated quota, fishing in closed areas and/ or seasons, exceeding by catch limits, non- or partial reporting of data, or submission of erroneous data.

Misreporting, or failing to report, catch and other data may constitute both illegal and unreported fishing: The FAO definition suggests that unreported fishing may not necessarily be illegal, although it is evident that it should also be considered illegal where reporting obligations form part of national laws and regulations or licence conditions.

Unregulated fishing: It includes fishing on the high seas by ‘free riders’, i.e. those who fail to sign up to regional management arrangements and refuse to comply with the conservation and management measures established by those arrangements. It also includes fishing on the high seas where there are no regional management arrangements in place.

2.2 Global trends and actions against IUU

The Food and Agriculture Organisation of the United Nations (FAO) and the European Union (EU) have singled out IUU fishing as one of the main factors contributing to fishery depletion and a key obstacle to achieving sustainability. At a time when fish has a growing importance in feeding the world, against a backdrop of our rapidly increasing human population, the environmental impacts of IUU fishing are a food security time bomb. This is

made worse by the fact that pollution and climate change may also be undermining the ocean's ability to produce food.

Illegal but non-criminal fishing takes place when an administrative norm is breached. This may be minor or serious and may attract a small, medium or hefty fine but will generally not be accompanied by criminal prosecution. When that breach of an administrative law is also accompanied by the breach of a criminal law, then illegal fishing is a crime. A quick look at the 2013 list of IUU fishing vessels of the Indian Ocean Tuna Commission (IOTC) shows why fishing illegally is an easy option for some: The vast majority of vessels in the list are only identified by temporary markers.

There is little evidence of where they are registered or what may be their true identity, since names and call signs can be changed. Only one vessel in the list carries an indelible mark of its true identity: A unique number assigned to it by the International Maritime Organisation (IMO). Until December 2013 traditional fishing vessels – however large – had been exempted by the IMO of the obligation to obtain a number. Now this exemption no longer exists, but it is up to IMO member flag States to change their internal laws to effectively bind their fishing vessels to the obligation of obtaining an IMO number.

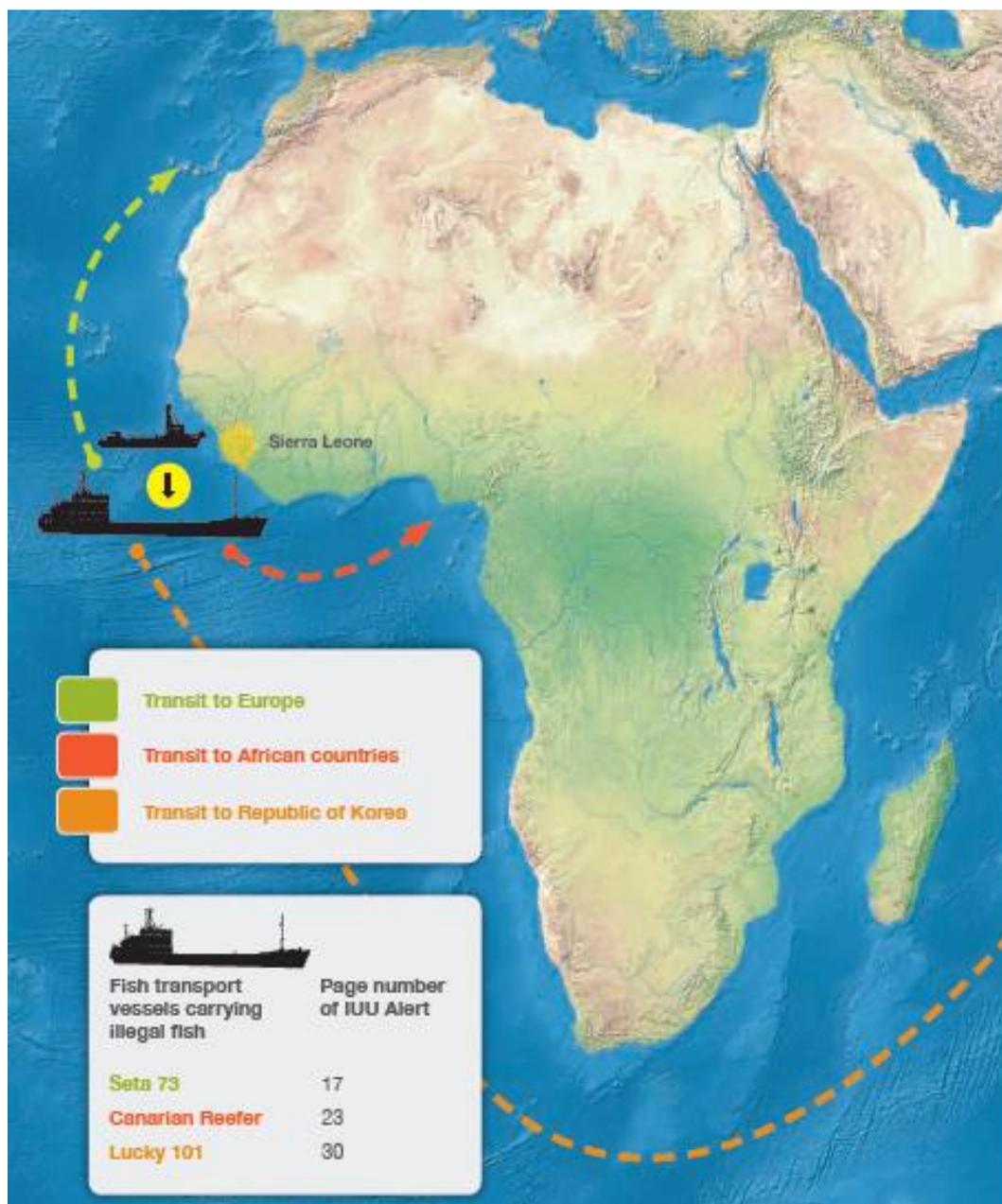


Figure 3: The route of IUU fish to world's fish market (Source: EJF, 2012)

Three Regional Fisheries Management Organisations (RFMOs) have put in place requirements for large fishing vessels registered to fish in their areas to obtain IMO numbers. These are CCAMLR, ICCAT and WCPFC. Despite claims to the contrary, the Indian Ocean Tuna Commission (IOTC) have not put in place an effective obligation for vessels over 24 metres registered to fish in its catchment area to obtain IMO numbers: The wording of resolutions 13/2 and 13/7 reads as simply enabling the notification of the fishing vessel IMO number to the IOTC once obtained. An amendment has been proposed by the European Union to correct this. It requests that all IOTC craft authorised to operate in the area and any foreign vessels fishing in the IOTC for regulated species are obliged to obtain an IMO number by 1st January 2016.

Further, the proposal also concerns an older IOTC resolution (12/05) whereby large long-liners are authorised to carry out transshipment operations in the IOTC area. Resolution 12/05 does not mention IMO numbers, but the proposal intends to introduce a compulsory requirement for the IMO number of vessels receiving catch during transshipment to be communicated to the IOTC.

IUU fishing is a complex problem, symptomatic of underlying factors that can also contribute to insecurity. Examples include a lack of distributive justice in resource access opportunities, inadequate and/or fragile legal and institutional frameworks, an absence of integrated monitoring, control and surveillance mechanisms and poor observance of the rule of law in maritime spaces. For policies against IUU fishing to be successful, difficult problems such as the lack of governance accountability or the success of illegal global markets in wildlife and natural resources must be tackled. In January 2010 the EU started to enforce a comprehensive system of port and market controls.

By way of a pan-European law (Council Regulation 1005/2008 “the IUU Regulation”), the EU has devised a WTO-compatible methodology for detecting IUU fishing trade flows as well as identifying States that do not address the illegal fishing activities of their fleets. The IUU Regulation has enabled the European Commission to identify a number of flag States as countries that are failing international commitments to combat IUU fishing. For example, in November 2013 the Commission designated Belize, Cambodia and Guinea (Conakry) as ‘non-cooperating countries’, following earlier warnings. The move, ratified by the European Council and published, has resulted in a ban on seafood exports from those three countries into the EU.

It was reported in October 2013 that the European Union was investigating allegations by the Environmental Justice Foundation (EJF) that the Korean-flagged Kum Woong 101 has been illegally fishing in Sierra Leone, before transshipping its catch to Holland Klipper, a Dutch-flagged vessel currently headed to Busan, South Korea. Also, in 2014, a vessel flagged to Oman and purporting to be the Naham 4 was granted permission to dock in a South African port. Upon inspection on arrival it was found to have mis-declared the amount of fish it was carrying in its hold. Further investigations by South African authorities uncovered the fact that the vessel had been engaged in IUU fishing activity. Its owners, a Taiwanese-owned (but Oman based) company called Al-Naham, are reportedly being prosecuted for their various breaches of South African law as well as the regional conservation rules of the Indian Ocean Trade Commission (IOTC).

To date, the Commission has formally warned several countries, namely Panama, Fiji, Sri Lanka, Togo, Vanuatu, Philippines, Papua New Guinea, Korea and Ghana. The European Council, following the Commission’s recommendation, has banned seafood imports from Guinea, Belize and Cambodia on IUU fishing concerns.

The freedom of the high seas is subject to the basic rights and obligations set out in the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and the 1995 UN Fish Stock Agreement. High seas fisheries include a number of discrete stocks located outside EEZs, as well as highly migratory resources and straddling stocks. International law requires that such resources are to be managed through regional fisheries management organizations.

In addition to the UNCLOS, other international instruments related to high seas fisheries include:

- 1993 FAO Compliance Agreement(Compliance Agreement)
- 1995 UN Fish Stock Agreement(Fish Stock Agreement)
- 1995 FAO Code of Conduct for Responsible Fisheries (the Code)
- 2001 FAO International Plan of Action on IUU fishing (IPOA)
- 2005 FAO Model Scheme on Port State Measures to combat IUU Fishing
- 2009 Agreement on Port State Measures to Prevent, Deter and Eliminated Illegal, Unreported and Unregulated Fishing (PMSA).

Among existing instruments, the Compliance Agreement and the UN Fish Stock Agreement are legally binding international instruments which contain a range of requirements relating to flag State responsibilities, compliance and enforcement. The Code and the IPOA, on the other hand, are voluntary and management oriented instruments, formulated to be interpreted and applied in conformity with the relevant rules of international law. These instruments are also essentially complementary in nature to achieve their objective toward sustainable and responsible fisheries. More recently at the UN Conference on Sustainable Development, Rio+20 (June 2012), the parties reiterated their commitment to eliminate IUU fishing, recognizing that it harmed the environment, threatened biodiversity and also directly affected human rights by “undermining labour standards, harming markets for legally harvested fish, destabilising the economy in developing coastal nations and encouraging corruption.

Table 1: Measures taken by governments to eliminate processing and trading in illegally harvested fisheries resources (Figures in %)

on (No. of responses in brackets)	Countries reporting this issue as a problem (93.8%)	No measures taken (11.8%)	Enhanced fisheries inspection and control (55.3%)	Implementing NPOA -IUU (36.8%)	Tougher sanctions (32.9%)	Enhanced customs and border controls (30.3%)	Implementing border traceability systems (25%)
Africa (24)	91.7	9.1	54.5	45.5	36.4	27.3	31.8
Asia (10)	100	10	30	40	10	30	20
Europe (8)	87.5	0	57.1	14.3	42.5	71.4	71.4
Latin America & Caribbean (17)	94.1	6.3	68.8	50	50	18.8	12.5
Near East (11)	90.9	30	40	20	20	50	0
North America (2)	100	0	50	100	50	0	0
South West Pacific (9)	100	22.2	77.8	11.1	22.2	11.1	33.3

Source: FAO, 2014

2.3 Ghana and IUU

Like piracy, IUU fishing tends to occur in areas marred by insecurity challenges, underdevelopment and poor governance. The European Commission has identified IUU fishing as a key risk for its strategic purposes in the Gulf of Guinea. It is therefore hardly

surprising that the EU is seeking to understand and address insecurity issues in the Gulf. What is interesting is that IUU fishing is being given such relevance in the context of European objectives. Perhaps this is a sign of the EU's recognition that illegal fishing has a powerful destabilising potential. It can derail fledgling coastal development and resilience initiatives as well as persistently undermine attempts at sustainability in the fishing industry itself.

Implementation efforts by the Gulf of Guinea Commission, ECCAS and ECOWAS concerning their 'Code of Conduct Concerning the Repression of Piracy, Armed Robbery against Ships and Illicit Activity in West and Central Africa' will no doubt be key to future EU strategy development and outcomes. With the region's economic outlook and value as emerging market raising expectations despite persistent risks, there is unprecedented interest in IUU fishing, its effects on West Africa and, more widely, on Europe's long term interests.

In April 2013, large amounts of processed tuna from Ghana were rejected upon arrival at port by Spain and other European countries. In the UK, the importation of numerous consignments of processed tuna from Ghana was suspended. Containers were kept in port incurring substantial quay rent whilst lengthy investigations into the IUU fishing allegations took place.

The European Commission has warned Ghana that a single additional case of illegal, unreported & unregulated (IUU) fishing could bring about the closure of the entire EU market to Ghanaian fish exports. The Ghanaian economy relies heavily on seafood processing and exportation to the EU and a ban could have deep repercussions in terms of revenue and employment losses. A local export firm, Myroc Food Processing (MFP), announced losses of \$5 Million following the Commission's formal warning (or 'yellow card') to Ghana in November 2013. MFP reportedly has had to reduce its workforce and export volumes substantially despite the fact that no ban is yet in place.

Therefore, Ghana has been in the news following its designation by the European Union as a possible candidate for its "List of Non-Cooperating Third Countries" (the infamous list of countries who fail to tackle illegal fishing carried out by their fleets). Along with South Korea and Curacao, Ghana was firmly shown a yellow card by the European Commission in November last year after it emerged that it had failed to identify and prevent infractions of ICCAT conservation and management measures established carried out by its tuna fleet. For the uninitiated, ICCAT is the International Commission for the Conservation of Atlantic Tunas, and it governs the fishery of tuna and other highly migratory species in an important region of the Atlantic.

The European Commission has already cracked down on countries it believes to be lenient on illegal fishing (Belize, Cambodia and Guinea). The effect of this has been that the three countries, now classed as "Non-Cooperating", have lost their ability to export their fish to the EU until they can demonstrate that they have cleaned up their act. Further, European fleets are no longer working in the three EEZs and the three countries have lost the corresponding licence revenues. The European Commission's decision to issue the yellow card was taken following significant IUU fishing concerns. These included notifications by the International Commission for the Conservation of Atlantic Tuna (ICCAT) regarding undisclosed cargo transfers (transhipments) between vessels flagged to Ghana in breach of ICCAT rules.

A red card from the European Commission could have dire consequences for Ghana. It relies heavily on European markets and European investment for the production and processing of fish and, in a country where 10% of the population relies on fisheries for work the damage could be profound. According to the sector minister, Ghana has adopted a plan of action to control illegal fishing and to better manage its fisheries resources. The country's legislative framework has been reinforced and new fisheries regulations will be promulgated later this year. That is, Ghana has produced a fisheries management plan and has just announced that it will be joining a 5 year programme, funded by GEF, to improve monitoring, control and compliance of its tuna fleets. The programme, endorsed by WWF, involves rolling out technology that will enable to better estimate tuna catches.

Meanwhile, it has also received public support from Japan. The Japanese government has made it clear that it will partner Ghana and will contribute towards its development, possibly hinting at the fact that, should the EU withdraw its commercial partnerships with Ghanaian fisheries, other powerful fishing nations will be prepared to fill the gap.

Some of the main IUU fishing challenges that need to be tackled in Ghana are:

- Conflict between artisanal and industrial fleets
- Disagreement with management measures
- Misreporting of catches
- Fishing in restricted areas i.e. around oil rigs
- Use of harmful fishing practices
- Fishing carried out by non-licensed vessels in Ghana's EEZs –Poaching
- Fishing by non-party vessels: lack of effective flag State control
- “Convenience” or “flags of non-compliance”
- Landing of IUU catches; and
- Transshipment in the high sea

2.5 Transshipment of Fish–“*Saiko*” fishing

Transshipment is the transfer of fish or any other item or human cargo from one vessel to the other. The international movement of fisheries products – both legal and illegal – often depends on ‘transshipments’. In this context, transshipments are the transfer of consignments from a fishing vessel to another vessel, generally a refrigerated cargo ship or “reefers”. This can take place either in port or at sea. Transshipments at sea are sometimes legally authorised, but in many instances they are carried out illegally or without any permission. Whether or not authorised, transshipments at sea frequently facilitate the laundering of IUU fish due to the inability of coastal and flag State authorities to monitor how, by whom and where transferred fish was caught. Transshipments at sea are a key cause of the lack of transparency in global fisheries that enables IUU fishing.

It is also documented that crews on board vessels that tranship at sea are often victims of human rights abuses and labour violations as they often stay at sea for long periods and rarely go to port. Transshipments at sea are common practice. Many fishing operators favour them as a quick way of avoiding bureaucratic port controls and maximising their profits. In West Africa, some coastal countries such as Senegal forbid transshipments at sea in an effort to combat IUU fishing, as does the International Commission for the Conservation of Atlantic Tuna (ICCAT) for some classes of tuna vessels.

However, many West African coastal countries continue to authorise them. Fisheries regulations regarding at-sea transshipment vary from one country to another. In some cases, such as Sierra Leone, it is clearly expressed in the law that transshipments can take place at sea with the approval of government officials. The most common reason cited for at-sea transshipments is that ports in some developing countries cannot accommodate large reefers. However, some coastal countries allow such transshipments to take place more than 100 nautical miles away from the coast, where monitoring by their authorities is practically impossible.

Transshipment of fish is in contravention with the laws of Ghana and such offences are sanctioned by the Fisheries Act, Act 625, 2002. Transshipment, also called “*Saiko*” fishing is an illegal fishing practice that is gradually gaining root into a full time occupation within fishing communities in Ghana. It disempowers the broader majority of local fishermen because of the apparent depletion of their coastal fishery by foreign fishing fleets. *Saiko* is undertaken with the connivance of some few local fishermen to the detriment of the broader fishing groups. Packaged frozen fish is brought ashore for sale to fish processors who wait on standby.

Under the fisheries laws, the transfer of cargo offshore, sale of incidental capture or by catch by industrial fleets offshore is illegal. Transshipment is becoming a common practice and has been in the news. For example, SAIKO, a fishing group at Elmina, in the Central Region, has been warned in recent times to desist from the transshipment of fish without authorisation. Many fishermen have also been arrested in the Western Region for allegedly buying large quantities of fish from foreign vessels on high seas in contravention of the law. Marine Police Unit of the Ghana Police Service has made several arrests in conjunction with this activity.

The Fisheries Enforcement Unit (FEU) of the Fisheries Commission, since December 2013 has accrued a total of GH¢ 295,839 from illegal vessels that committed various offences along the countries maritime domain. Out of this amount, transshipment accounted for about GH¢135,460 from 13 Ghanaian vessels arrested.

“*Saiko*” fishing is a new form of IUU fishing that has been recently introduced in some of the fishing communities of Ghana. The practice has so far been identified in Elmina, Apam and Axim. “*Saiko*” fishing as used in the parlance of the fishermen in these communities is the situation whereby large foreign marine vessels invade the artisanal fisheries zone of the EEZ, deploy their heavy duty gear and catch fish of all species and sizes but mostly small juvenile fishes. Due to the fact that the practice is illegal and largely unreported, catches cannot be landed at any of the authorised harbours or landing beaches. The catch is sold to local artisanal fishers out in the high seas. The local artisanal fishermen facilitating this type of illegal fishing take their boats and pretend to be going out to fish and buy the catch and in most cases, packaged frozen from these foreign vessels.

The effect of this is that artisanal fishing zones are completely depleted of fish stocks, making these zones less productive and ultimately, resulting in low profitability and food insecurity in fishing communities where “*Saiko*” is practiced. In addition, fisheries unemployment is deepened in these communities, the social cohesion and dynamics is being threatened with the potential to induce conflicts. In effect, the livelihoods of genuine and hardworking artisanal fishers are threatened by this practice of “*Saiko*” fishing. This project is therefore compelling because:

- *Saiko* fishing is still at the infancy; it is not yet institutionalised as a fishing practice among stakeholders in the industry; and therefore it will be easier to be nipped in the bud;
- This project is demand driven, bottom up and need based intervention in specific affected communities because the fisher folks themselves have started complaining about the incidence and practice of *Saiko* fishing in their areas;
- The marine police are spread too thin to take any action; the leadership of these fisher folks including the chief fishermen do not know how to manage the menace.

2.5.1 Traceability

Illegal transshipments at sea make it difficult for end users and States with effective port measures in place to evaluate the legality of imports. Catches cannot be traced ‘back to the boat’ and distributors and consumers are thus unable to confidently establish the legality of seafood.

2.5.2 Fisheries Management

The lack of transparency associated with transshipments and IUU fishing is also a threat to effective marine conservation: as coastal countries are unable to effectively monitor the amount of fish taken from their waters and transhipped onto other vessels, it is difficult to establish the extent to which the marine resources are exploited. This means that management plans are not based on accurate data and countries are incorrectly evaluating the overall fishing effort and catch levels, as well as the impacts of fishing on sensitive marine species.

2.5.3 Livelihoods and Local Economies

The FAO estimates that as many as 540 million people depend on fisheries for their livelihoods. In West Africa, IUU fishing has a devastating impact on coastal fishing Communities. By destroying artisanal fishing gears, fishing destructively in inshore areas, and even attacking local fishers, IUU fishing jeopardises the livelihoods of artisanal fishers, who have few alternative sources of income. IUU fishing vessels also benefit from lower costs, thereby severely undermining legitimate international and local fishing operators. Not only are the IUU vessels depleting the resources of coastal countries, by transshipping at sea they are avoiding port taxes and other duties and are less likely to land for local processing and/or consumption.

2.5.4 Food security

Food security is a pressing concern in the world’s poorest areas. 1.5 billion people depend on fish which is more than 20 per cent of animal protein intake. Across West Africa, fish is a vital source of essential micro-nutrients, protein, vitamins and minerals. In Ghana, for example, fish provides 60 percent of animal protein consumed and in remote coastal communities almost all animal proteins come from fish. The depletion of fish stocks and the failure to land fish caught by industrial vessels in West Africa affects the food security and livelihoods of coastal communities already suffering the impacts of IUU fishing.

3.0 Research Methodology

Semi-structured interviews and focus group discussions were conducted with the following key stakeholders: regular artisanal fishers, *saiko* fishers and women fishmongers and processors. The areas covered include respondents' demographic characteristics, background to *saiko* fishing, catch per unit effort, artisanal fish marketing and processing, legalities, conflict and security of *saiko* fishing and opinion of artisanal fishers about *saiko* fishing.

3.1 Description of the study sites

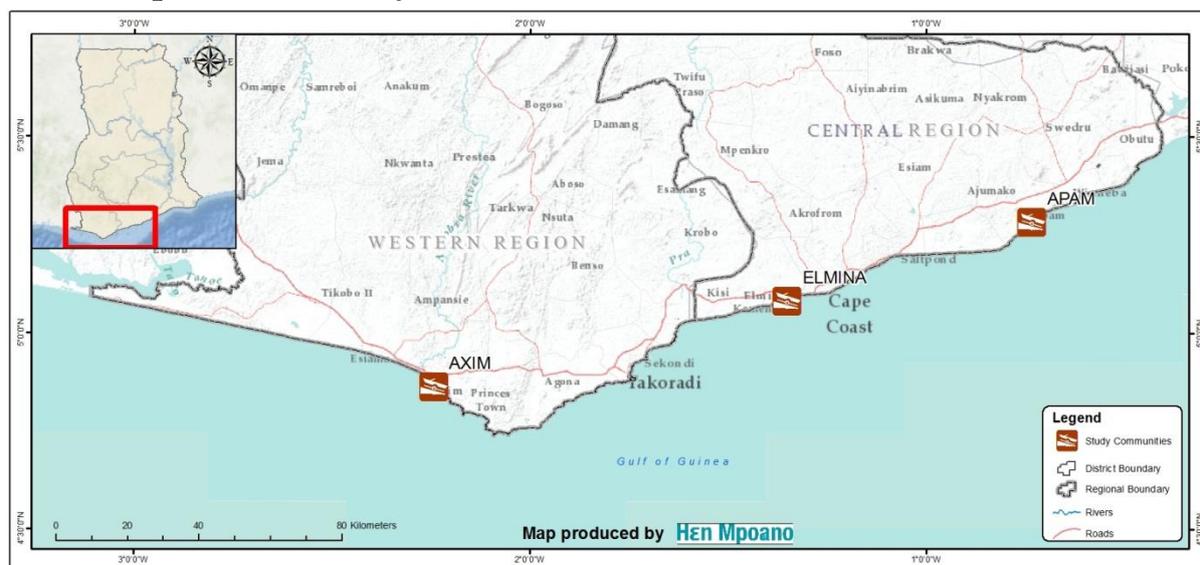


Figure 4: map of study sites

3.1.1 Axim

Axim is the administrative capital of the Nzema East Municipality of the Western Region of Ghana. The Nzema East Municipal covers an area of about 2194 square kilometres (9.8 percent of the total area of the Western Region and shares boundaries with Jomoro to the west, Wassa Amenfi Central to the north, to the east with Ahanta West District and Tarkwa Nsuaem respectively and the Atlantic Ocean is to the south. The major towns are Axim, Nsein, Apatam, Bamiakor and Gwira Banso. The Municipality lies between the wet semi-equatorial climate zone and therefore experiences rainfall throughout the year. The vegetation is made up of the moist semi-deciduous rain forests secondary forest due to human activities like tree felling and farming. Fishing and agriculture are the main economic activities.

3.1.2 Elmina

Elmina is the administrative Capital of Komenda-Edina-Eguafo-Abirem Municipality. The Municipal is bounded on the south by the Atlantic Ocean, the east by the Cape Coast Metropolitan, the north by the Twifo Hemang - Lower Denkyira District and the west by the Mphor - Wassa East District and shama District respectively. The major towns in the District are Elmina, Komenda, Abrem Agona, Kissi, Bantoma, Bronyibima, Besease, Aborodeano, Domenase, Abrem Berase, Dutch Komenda, Ntranoa, Abreshia (Abrehya), Elmina-Tetteh Kessim, Essaman Junction, Aboransa, Ampenyi, Abeyee, Eguafo, and Amisano.

The vegetation of the area is the coastal scrub and grassland type with scattered trees, mangrove, coconuts and palms. Along the coastal zone is a series of lagoons and wetlands which include the Benya, Brenu, Susu, Abrobi and Ankwanda. Major economic activities are agriculture and fishing.

3.1.3 Apam

Apam is the administrative capital of the Gomoa West District. The District shares boundaries with Gomoa East to the North, to the West with Mfantseman Municipal, to the East with Effutu Municipal and to the South with Gulf of Guinea. The major towns in the district are Apam, Mumford, Gomoa Otum, Immuna, Ankamu, Asebu, Gomoa Tarkwa, Apam, Nyanyano, Buduburam, Dawurampong and Ankamu.

The soils in this area are referred to as rocky soils due to the underlying hard pan and mostly have poor nutrient value. However they support the cultivation of vegetables and crops such as sugar cane, maize and pineapple are grown along the valleys. In view of the nature of the physical and natural environment described above, the people of the district are mainly engaged in farming and fishing for their livelihoods.

3.2 Data Collection

3.2.1 Axim

Data in Axim was collected from thirty-four respondents through in-depth interviews of the following: the Lower Axim Chief Fisherman, 4 *Saiko* fishermen, 10 regular artisanal fishermen, 10 *Saiko* fish processors and 10 regular artisanal fish processors.

3.2.2 Elmina

In Elmina, 10 regular artisanal fishers, 10 *Saiko* fish processors and 10 regular artisanal fishmongers were interviewed individually through questionnaire administration. However, Focus Group Discussion (FGD) was employed to solicit information from the *Saiko* fishermen because the *Saiko* fishery was structurally organized into an association with functional executives, and the fishermen were unwilling to grant an interview without the involvement of their association executives. The FGD therefore engaged 7 fishermen together with 5 of their association leaders.

3.2.3 Apam

Like Elmina, 10 regular artisanal fishers, 10 *Saiko* fish processors and 10 regular artisanal fish processors were interviewed individually through questionnaire administration in Apam. Focus Group Discussion (FGD) was used to solicit information from the *Saiko* fishermen due to the same reason given for Elmina since the *Saiko* fishers in the two communities work closely together under the same association. The FGD engaged 3 *Saiko* fishermen together with 4 of their association leaders, the 2013 National Best Fisherman and the Apam Chief Fisherman.

4.0 Results

4.1 Demographic characteristics of respondents

4.1.1 Axim

The fish processors were women between the ages of 30 and 75. With the exception of the Chief Fisherman who had secondary education, majority of the respondents had basic education (primary) while a few had no formal education. Their family sizes were between 5 and 15, and fishing was their primary occupation although two women and one man were secondarily engaged in petty trading.

4.1.2 Elmina

The ages of the interviewees ranged from 41 to 69 years, with 3 *Saiko* fishermen and the 5 *Saiko* executives having secondary education, 2 artisanal fishermen and 3 regular fish processors having primary education. The others never went to school. Family sizes varied between 4 and 12. Fishing was their primary occupation and 6 of the women were additionally engaged in petty trading. A fisheries officer was also interviewed.

4.1.3 Apam

The ages of the interviewees ranged from 39 to 79 years, with only one of the *Saiko* executives being educated to the secondary level, 1 artisanal fisherman having primary education, and the rest having no formal education. Family sizes varied between 6 and 13, and their primary occupation was fishing although a few of the men additionally engaged in transport business.

4.2 Historical background to *Saiko* fishing in the communities

The history of fish transshipment dates back to the 1970s when artisanal fishers occasionally sighted industrial fishing vessels (mainly operated by Japanese) discarding their by-catch which they considered useless into the sea to make way for storage space. They approached and solicited the by-catch since it is good for consumption. The growing interest in by-catch made the industrial fishers realize its usefulness and was given in exchange for food, fruits, livestock, etc. According to the respondents, the common words used by these Japanese fishermen were “*saite*” which was understood by the Ghanaian fishermen to mean “bad/rubbish”, and “*saiko*” to mean “good”. The by-catch which was previously seen as rubbish (*saite*) later became useful (*saiko*). The word *Saiko* was later adopted by the local fishers to refer to by-catch.

With time, the *saiko* fishery has transformed from the barter trade system into a full scale industry where canoes are registered with fishing companies that operate fishing vessels in Tema. By-catch is now frozen in slabs purposely for sale. The industrial boats adopt the registered canoes as their service canoes (for provision of logistics to the industrial boats) and supply them with fish. The process of fish supply to a canoe depends on the arrangement between the canoe owner and fishing company to which his canoe is registered. Some pay outright cash to purchase while others are credited with waybills.

4.3 *Saiko* fishing in the study communities

Saiko fishing activities in all the communities do not differ remarkably. The slight differences are seen in the number of crew employed, amount of fuel used per fishing trip and the hours spent per trip (see Table 2 for summary fishing activities in the 3 communities). This sub section provides the details of *Saiko* fishing activities in the 3 communities.

4.3.1 Axim

All the fishermen interviewed acknowledged encountering transshipment frequently both on high seas and inshore. However, only 3 of the fishermen in Axim own canoes for fish transshipment (*Saiko*) each of which has crew size between 6 and 10. According to the *Saiko* fishers, the occurrence of the practice could be attributed to the fact that the industrial fishing vessels sometimes need immediate supply of certain logistics such as food and water, or need to get rid of unwanted fish to create storage space. Consequently, the local *Saiko* fishers supply these logistics in exchange for fish, or purchase the unwanted fish which hitherto would be discarded.

There has been no conflict between the regular artisanal fishermen and the local *Saiko* fishers, however a number of cases have been reported of the industrial fishing vessels destroying the fishing nets of the artisanal fishers in the Axim inshore waters. The cases were reported to the Fisheries Commission but no action has been taken so far.

In general, each *Saiko* canoe in Axim transships fish once in a month. Two of the three *Saiko* canoes also double as purse seine canoes in the absence of *saiko* fish. *Saiko* fishermen in Axim do not use any special canoes from the regular artisanal ones, and they do not use any fishing gear. The equipment used are mobile phones, flashlights as well as some floats fitted at the sides of canoes to prevent direct impact with the industrial vessels during transshipment.

When asked why they engage in transshipment, they explained that it is a laudable business to augment their income given the scarcity of fish catch in regular artisanal fishing in face of high cost of investment (canoe, fuel, outboard motor and fishing net). “*Harvest is assured in every Saiko trip*” according to one *saiko* interviewee.

The *saiko* fishermen interviewed confirmed hearing that fish transshipment is illegal. However, they do not know why the activity is illegal and do not also think it is illegal because they are not directly involved in catching the fish. They only transship, and the *saiko* serves as an important source of fish supply during the off-fishing season. The Chief Fisherman and some others indicated there have been arrests of some fishermen engaged in fish transshipment, but they were not prosecuted. There is no mechanism for management of fish transshipment in Axim.

4.3.2 Elmina

The Elmina *Saiko* fishermen interviewed attributed the recent high occurrence of fish transshipment on high seas and inshore waters to the increase in the number of industrial boats over the last decade.

Currently, there are about 30 *Saiko* canoes in Elmina, with sizes ranging from 21 m to 25 m (Plate 1). Each boat is retrofitted to suite the *saiko* operation by lining the interior with fibre glass to prevent seepage, and covered with wooden boards. These modifications coupled with

use of thick blankets and trampolines ensure that the fish remains frozen during the transshipment period. A canoe employs between 20 and 25 crew, and more than 10 service men at the landing site that guard, offload fish and clean the canoe. The canoes have a carrying capacity of between 1000 and 4000 slabs of frozen fish.

4.3.3 Apam

The Apam *Saiko* fishermen sighted the high occurrence of fish transshipment on high seas and inshore waters as being a result of the fact that many industrial boats have been given license to operate in the Ghanaian waters and many artisanal fishermen as well have joined the *Saiko* business.

The conflict in Apam is between the regular artisanal fishers and the industrial fishing vessels that destroy their fishing nets and canoes in inshore waters.

Currently, there are about 15 *Saiko* canoes in Apam with sizes ranging from 18 m to 25 m, and each is retrofitted to suite the *Saiko* operation as described for Elmina. A canoe employs between 15 and 24 crew, with carrying capacity of between 1000 and 4000 slabs.

The By-catch Collectors Association in Elmina is also present in Apam and governs the *Saiko* fishery operations. Each registered canoe pays tax to the District Assembly and also pays a royalty of one slab of fish to the Chief Fisherman upon landing. This royalty has contributed immensely to the construction of the office complex for the Chief Fisherman and his Council of Elders in Apam.

The Apam *Saiko* fishers also face security challenges through their arrest by marine police and the navy.

4.4 Determination of Catch per unit effort

4.4.1 Axim

The time spent per fish transshipment trip may take between 5 to 24 hours depending on the proximity of the industrial fishing vessel to Axim. Fuel used per *Saiko* fishing trip also range from 50 to 90 gallons.

4.4.2 Elmina

The time spent per fish transshipment trip may take between 12 to 72 hours depending on the proximity of the industrial fishing vessel to Elmina. Most of the time, the industrial vessels are found in Axim and Half Assini waters, hence the longer time spent. Fuel used per *Saiko* fishing trip also range from 50 to 140 gallons. They tranship between 1000 and 4000 slabs per trip depending on the carrying capacity of the canoe.

4.4.3 Apam

Similar to Elmina, the time spent per fish transshipment trip may take between 12 to 72 hours depending on the proximity of the industrial fishing vessel to Apam. Fuel used per *Saiko* fishing trip also range from 40 to 140 gallons. They tranship between 1000 and 4000 slabs per trip depending on the carrying capacity of the canoe.

Table 2: Summary of *Saiko* fishing activity in the project site

Activity	Community		
	Axim	Elmina	Apam
Number of <i>Saiko</i> canoes	3	30	15
Crew Size	6 – 10	20 – 25	15 – 24
Number of fishing trip/month	1	12	12
Hours spent/trip	5 – 24	12 – 72	12 – 72
Gallon of fuel used/trip	50 – 90	50 – 140	40 – 140
Number of Servicemen Employed	-	10	10
Number of frozen fish slab bought/trip	50 – 500	1000 – 4000	1000 – 4000

4.5 Income generation

The profit figures provided in this report should be treated with caution as they are only based on fuel, food and other consumables per trip and do not include the start-up capital such as cost of canoe, outboard motor, fishing net and generator (See Table 3 for detailed start-up cost for the various gears).

4.5.1 Axim

The income from *saiko* fishery does not vary with seasons; however, the patronage depends on the unavailability of regular artisanal fish as it is not preferable in abundance of “fresh fish”. They earn between GHC 3,500 to GHC 6,500 for every 500 slabs of fish sold. The cost of 500 slabs from the industrial vessels is about GHC 10,000.

4.5.2 Elmina

The Elmina’s *saiko* fishermen also indicated that income from their fishery does not vary with seasons, however, the patronage depends on the unavailability of regular artisanal fish. They earn between GHC 3,500 to GHC 6,800 for every 500 slabs of fish sold, and one could earn up to GHC 28,000 per trip depending on the carrying capacity of the canoe, the purchasing power and unavailability of regular artisanal landed fish.

4.5.3 Apam

The *Saiko* fishermen earn between GHC 3,500 to GHC 6,500 for every 500 slabs of fish sold. A fisherman’s earnings depend on the carrying capacity of his canoe and other market forces



Plate 1: A retrofitted fish transhipment (*Saiko*) canoe

4.6 Legality, conflicts, and security of the *Saiko* fishery

During the FGD, it was revealed that conflicts ensued between the regular artisanal fishermen and the *Saiko* fishermen where the former advocated for the abolishment of the fish transhipment business. In 2001, the regular fishers instituted a court action at the Cape Coast High Court against the *Saiko* group challenging the legality of their business. The case lasted for about three years after which judgment was pronounced in favour of the *Saiko* fishers. Since then, the *Saiko* has been operated without a thought of infringement of any fisheries law. They are organized into an association called **By-catch Collectors Association** with 10 functioning executive positions headed by a Chairman, Vice Chairman, Secretary and Treasurer. All registered canoes are marked with a circle crossed in the middle with a horizontal line using white paint as shown in Plate 2. The vessel registration is carried out by GITA, but the process has not been completed.

The inherent conflict in the fishing community is between the regular artisanal fishers and the industrial fishing vessels that destroy their fishing nets and canoes in inshore waters. A fisheries officer interviewed in Elmina indicated that such conflicts are normally resolved through arbitration.

The association operates in Sekondi, Elmina and Apam. Each canoe registered with the association pays tax to the Metropolitan, Municipal or District Assembly in which it operates. The association is under the Chief Fisherman and each canoe landed pays a royalty of one slab of fish to the Chief Fisherman.

Saiko fishers face some security challenges, the most prevalent being their arrest by marine police and the navy, especially, at Sekondi Naval Base. The fish purchased by some of the *Saiko* fish processors are also occasionally confiscated during road transport.



Plate 2: Fish transshipment (*Saiko*) canoe showing the registration symbol in white paint

4.7 Opinion of Artisanal Fishers in the study communities

4.7.1 Axim

All the artisanal fishermen interviewed acknowledged encountering transshipment frequently both on high seas and inshore. According to fishermen, the occurrence of the practice could be attributable to the fact that many industrial vessels have been granted the license to operate in recent years.

The artisanal fishermen also confirmed that there has been no conflict between the regular artisanal fishermen and the local *Saiko* fishers, the conflicts have been the industrial fishing vessels destroying the fishing nets of the artisanal fishers in the Axim inshore waters.

The regular artisanal fishermen have also heard that fish transshipment is illegal but do not know why the activity is illegal.

Among the regular artisanal fishers, the time spent is dependent on the type of fishing gear used and availability of fish. Set gill net operators spend about 4 hours, purse seiners (*Watsa*) spend about 12 hours while drift gill net fishers could spend up to 4 days. Fuel used per trip varied between 5 and 100 gallons depending on the fishing method (Table 1)

The average profit margin for a small set net crew (about 4) was estimated at GHC 60 per trip in the lean season and GHC 160 per trip in the bumper season. For the purse seine operators (crew of about 15), their average profit range from GHC 6,500 to GHC 60,000 in the lean and main seasons, respectively.

4.7.2 Elmina

The regular artisanal fishermen in Elmina also acknowledged that they frequently encounter transshipment both on high seas and inshore areas due to the weak monitoring and enforcement of the activities of the industrial vessels. While there has been no conflict between the regular artisanal fishermen and the local *Saiko* fishers, they have had conflicts with the industrial fishing vessels that destroy their fishing nets and canoes.

The artisanal fishermen hold the opinion that the *saiko* business is posing threat to their job security especially as the industrial vessels are depleting the fish stocks including juveniles. They have also heard that fish transshipment is illegal.

The time spent on artisanal fishing in Axim is dependent on the type of fishing gear used and availability of fish as explained earlier. Set gill net operators may spend about 5 hours, purse seiners spend between 12 to 24 hours, drift gill net fishers could spend up to 4 days and hook and line fishers spend up to one week. Fuel used per trip varied between 10 and 180 gallons depending on the fishing method (See Table 1).

Incomes vary with season and fishing method. Purse seine operators earn averagely from GHC 6,000 to GHC 70,000 in the lean and main seasons, respectively. The average profit margin for a small set net crew of about 5 was estimated at GHC 50 per trip in the lean season and GHC 150 per trip in the bumper season while hook and line operators earn between GHC 2,000 to 20,000 during the same period.

4.7.3 Apam

In Apam, the regular artisanal fishermen have also encountered *saiko* fishers on the high seas and inshore. Their conflicts have also been with the industrial vessels.

Similar to the views in Elmina, the Apam artisanal fishermen hold the opinion that the *Saiko* business is posing threat to their job security especially as the industrial vessels are depleting the fish stocks including juveniles. They know that that fish transshipment is illegal but they complained that there is poor enforcement of the law.

Like the other artisanal communities, the time spent is dependent on the type of fishing gear used and availability of fish. Set gill net operators may spend about 5 hours, purse seiners spend between 12 to 24 hours, drift gill net fishers could spend up to 4 days and hook and line fishers spend up to one week. Fuel used per trip varied between 5 and 180 gallons depending on the fishing method; hook and line fishermen consume the highest fuel.

As also reported for Elmina and Axim, incomes vary with season and fishing method. Purse seine operators in Apam earn averagely from GHC 6,400 to GHC 58,000 in the lean and main seasons, respectively. The estimates of average profit margin for a small set net crew of about 5 was GHC 50 per trip in the lean season and GHC 1160 per trip in the bumper season while hook and line operators earn between GHC 4,000 to 18,000 during the same seasons.

4.8 *Saiko* Fish Marketing and Processing

Women play a key role in the *Saiko* fishing industry like any other form of artisanal fishing. They are seen distributed along the *Saiko* fish value chain. They are the buyers of the fish, smokers of the fish and in some cases they are said to be the financiers of some of the *Saiko* fishing expeditions.

The common species encountered from the *saiko* landings were the chub mackerel *Scomber japonicus*, the horse mackerel *Trachurus trachurus*, the Atlantic bigeye *Priacanthus arenatus*, sardines *Sardinella* species and the large hair-tail cutlass fish *Trichiurus lepturus* (see Appendix 1). Others were soles, flounders, puffer fish, flying gurnard, rays, etc. The fish is sold in Axim and sometimes transported to the nearby villages and fish markets. Most traders in Axim send their fish to Takoradi and Elubo whilst *saiko* fish from Elmina and Apam are transported to Cape Coast, Mankessim and many other the nearby areas as well as to Accra, Kumasi and other regions in Ghana. These traders do not encounter fish spoilage as the ice could keep the frozen fish for more than one week when wrapped in blanket. However, the women occasionally lose some of the fish through theft.

A slab of fish (averagely, 11 kg) is sold at GHC 26 – 30 to the fishmongers depending on the commercial value of fish species constituting the slab. Those who sell unprocessed *saiko* fish make roughly profit of GHC 2 – 10 on each slab sold while those who smoke make between GHC 10 and 20 on each slab.



Plate 3: *Saiko* fish being loaded into a taxi cab for transport from Apam

4.9 Artisanal Fish Marketing and Processing

The commonest fish processed are the sardines (*Sardinella*), and sometimes bigeye grunt (*Brachydeuterus auritus*) and the chub mackerel (*Scomber japonicas*). The fish are transported to Takoradi, Elubo and other areas in Western Region. They smoke the fish and store in smokers or oven after smoking. They occasionally encounter unprocessed fish spoilage as they have no means of preserving the unprocessed fish.

4.9.1 Income generation

In Axim, the artisanal fish mongers make between GHC 30 and 60 on each big pan (about 50 kg) of fish smoked and sold depending on the commercial value of the species.

In Elmina and Apam, the fish mongers who process landings from artisanal fisheries make between GHC 35 and 70 on each big pan (about 50 kg) of fish smoked and sold depending on the commercial value of the species (sparids or red fish are the most expensive fish). The snappers, croakers and other big fish are sold fresh and the women could make between GHC 10 and GHC 80 on a single piece sold depending on the size. These are also transported and sold in same markets as the *Saiko* fish.

Table 1: Estimated investment cost and incomes for the various fishing methods surveyed from Axim, Elmina and Apam

Fishing method	Start-up investment (GHC)					Regular investment (GHC)				Average gross income per trip (GHC)
	Canoe	Gear (Net or hook)	Outboard motor	Generator	Retrofitting	Time spent per trip (hr)	Fuel used per trip (gallons)	Cost of fuel per trip	Others	
<i>Saiko</i>	15,000-35,000	-	10,000-16,000	-	3,000	6-72	40-140	350-1600	50-400	3,500-28,000
Purse Seine (<i>Watsa</i>)	15,000-35,000	25,000-50,000	10,000-16,000	1,000-2,000	-	8-24	15-50	100-375	40-100	6,000-70,000
Set gill net (<i>Ahyekon</i>)	2,000-8,000	400-1800	7,000-11,500	-	-	4-8	5-18	40-130	20-30	200-2,000
Drift Gill Net (<i>Pataku</i>)	15,000-35,000	25,000-50,000	10,000-16,000	-	-	Up to 1 week	100	960	300	-
Hook and Line (<i>Asosor</i>)	12,000-15,000	120 per trip	10,000-16,000	1,000-2,000	-	Up to 1 week	180	1,600	1,000	2,000-20,000

5.0 Conclusions

Transshipment of fish in the study communities dates back to the 1970s. Japanese industrial vessels discarded their by-catch which they considered useless into the sea to make way for storage space in exchange for food, fruits, livestock, etc. The Japanese words “*saite*” and “*saiko*” were used to distinguish between “bad/rubbish” and “good” fish respectively. Saiko fishing, as is now widely called, is widely practiced in Axim, Elmina and Apam. Whilst fishermen in Axim and Apam have heard saiko fishing is illegal, they do not know why it is considered so. On the other hand, *Saiko* fishing in Elmina is considered legal because these *Saiko* practitioners won a case against the artisanal fishermen of Elmina at the Cape Coast High Court. *Saiko* fishing operations in Elmina and Apam are being managed by fully recognised executives. Their boats are also registered with GITA and marked to distinguish them from the other artisanal fishing boats.

Saiko fishers make relatively higher profit margins with secured returns on investments than regular artisanal fishers.

Addressing IUU fishing requires the effort of governments, civil society and the seafood industry. The political will to guide and sustain such effort is urgently needed. Without it, some of the most vulnerable human communities and marine environments will continue to suffer the impacts of IUU fishing. A multi-stakeholder approach including the community, fishermen councils and fish landing beach committees, district assemblies, civil society organisations and the responsible governmental agencies to address the IUU-*Saiko* fishing is critical.

6.0 Recommendations

Given the huge, and often hidden, complexity behind IUU activity it will take a wide range of actors to successfully implement programmes geared towards its eradication. From fisheries managers to resource users, from law enforcement officials to fisheries associations, from District/ Metropolitan Assemblies to media campaigners – *Saiko* prevention has to form many alliances and take various forms. Most important of all, tackling *Saiko* prevention requires political and financial commitment. The engagement of governments and other stakeholders at all levels of decision-making – community, regional and national is also crucial to the success of any programme to prevent *Saiko*. Recognising *Saiko* and its effects on the fisheries sector may require a great deal of courage and fortitude as the many faces of IUU go deep into the roots of families, societies and cultures. The message of the research report on IUU status in the 3 fishing communities is that this political commitment must be made and that change is possible. The following recommendations for preventing *Saiko* fishing reflect the need for multi-sectoral and collaborative approaches.

6.1 Recommendations for advocacy

1. Create, implement and monitor a national action plan for IUU prevention

National planning to prevent IUU should be based on a consensus developed by a wide range of governmental and nongovernmental actors. It should include a timetable and evaluation mechanism, and enable collaboration between sectors that might contribute to preventing IUU, such as the Attorney General's Department, FEU Fisheries Associations, and NGOs. Formulating and implementing a coherent and multi-disciplinary national plan is the first critical step towards IUU prevention.

2. Strengthen, incentive and equip fisheries enforcement

To effectively patrol the over 300 landing sites dotted along the coast of Ghana, the number of FEU and Marine Police officers should be strengthened. Incentives in the form of risk allowance and comprehensive insurance packages should be provided for the officers. Under the WARFP, the FEU is being supported with equipment to effectively monitor activities of vessels on our territorial waters. This should go beyond the life span of the project and should be available whenever they are needed to ensure effective monitoring. E.g. fuel for patrols.

3. Empower traditional fishing authorities

Traditional authorities in fishing communities, i.e. Chief Fisherman, wield certain degree of power over fishing activities in their jurisdiction. For this power to be effective in fisheries management and in combating *Saiko* fishing, it should be recognised by law under a co-management option instituted in the fisheries laws and regulation.

4. Non-selective enforcement

Fishing and the type of gears used in fishing are associated with particular ethnic groups in the country, e.g. beach seine is associated with *Ewes*, Hook and Line is associated with *Gas* and DGN with *Fantes*. Hence any enforcement activity should be carried out in a way that does not project any ethnic preference.

5. Close season, total allowable catch and ban on all year industrial fishing

Open access fisheries with heavy government subsidy pose great challenge to fisheries management the world over. Stakeholder consensus should be reached on how the options of close season and total allowable catch can be instituted in the fisheries. The number of industrial fishing vessels operating in Ghana's territorial water should be capped and be licenced to fish for specific number of months as opposed to all year round fishing licence.

6. Incentive for information

Enforcement relies heavily on accurate information to be effective but such information will not forth come if informants feel threatened. Informant reward and protection scheme can be incorporated into fisheries enforcement activity to enhance the work of the FEU.

7. Increase collaboration and exchange of information on IUU prevention

Better working relations between national agencies, governments, researchers, networks and NGOs engaged in IUU prevention are needed to achieve better sharing of knowledge, agreement on prevention goals and coordination of action. The contributions of advocacy groups – such as those concerned with sustainability of world oceans – should also be recognized and encouraged through practical measures such as inclusion in national fisheries policy formulation and including them in official working groups.

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Appendix

Appendix 1: Various species transhipped in the Saiko fishery



Trichiuruslepturus (Large hair-tail cutlass fish)



Priacanthusarenatus(Atlantic bigeye)



Sardinella spp. (Sardines)



Scomberjaponicas (Chub mackerel)



Trachurustrachurus (Horse mackerel)