Exploring the Issue of Maritime Domain Awareness in Ghana

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**Abstract**

The analysis in hand is discussing how certain relevant agencies collaborate in the issue of Maritime Domain Awareness (MDA) in order to enhance safety and security in the (maritime) space of Ghana in particular and the Gulf of Guinea in general. The purpose was to investigate Ghana’s MDA capabilities, ascertain the current technical and operational capacity and to bring to the fore major challenges that prevent effective collaboration between those agencies, while identifying workable solutions. This research effort further identified the actions/initiatives required to improve the conduct of maritime safety and/or security operations by the law enforcement agencies in the country under discussion. Conclusively worth highlighting is that it is necessary to increase Ghana’s maritime security capacity by appropriately taking advantage of the current MDA available tools within Ghana’s maritime related agencies and optimize performance by establishing a framework of special cooperation and standard operating procedures applicable to all relevant stakeholders.

**Introduction**

The Gulf of Guinea (GoG) is a rather busy shipping area; it connects an extended number of countries and also provides a major source of revenue for oil producing countries along its coastline. It is located partly in the North and partly in the South Atlantic Ocean, along the Western and Central African coasts with 17 coastal and 2 island states, as illustrated in Figure 1. The heavy maritime traffic within the GoG region is associated with safety, security and environmental challenges to the coastal and island nations. With an increasing number of vessels operating in the GoG, regulatory and law enforcement agencies are under pressure to mitigate pressing problems such as Illegal, Unreported, Unregulated (IUU) fishing, piracy and armed robbery as well as the trafficking of drugs and people, and transport of illegal goods by sea (Hoyle, 2015). The Republic of Ghana, being the gateway to West Africa and a new entrant in the production of oil in commercial quantities, has a vested interest in the developments within the region. As a result, there is an important role to play in addressing maritime safety and security issues in the GoG.

Ghana is a littoral State located in West Africa. The country shares a border with Togo to the East, Cote d’Ivoire to the West, Burkina Faso to the North and the GoG to the South. Its coastline of 300 nautical miles (nm) is stretching from Aflao on the East to New Town on the West. Because of its diverse maritime interests, Ghana has established 12nm of Territorial Waters, followed by 12nm of Contiguous...
Zone, resulting in a 200nm Exclusive Economic Zone (EEZ) (CIA, 2018) and 350nm Continental Shelf (Daily Graphic, 2018), in full accordance with provision of UNCLOS, as depicted in Figure 2. Shipping and sea-borne trade are vital to the economic development of the country with nearly 90% of both imports and exports carried through the sea lines of communication (Shou, 2017). The territorial waters of Ghana abound in enormous natural resources, including fisheries, minerals, and hydrocarbon deposits. Moreover, Ghana has become a major maritime trading hub for West Africa in recent years (GPHA, 2015). It is indicative that since 2010, there has been the issue of oil production in commercial quantities, with several explorations still on-going in the western part of the EEZ. The protection of the oil installations and vessels engaged in the vibrant fishing industry as well as tourism and other commercial activities have created the need for constant monitoring of the maritime area. This research effort, among other things, sought answers to what Ghana’s policies and priorities on MDA are, what Ghana’s current MDA capabilities and assessments are, what challenges the various maritime stakeholders face in collaboration and information sharing, whether adequate training has been given to operators of the various MDA tools, and how the situation could be improved.

3. Ghana’s Maritime Safety and Security Threats

Ghana’s maritime domain has changed significantly in the last decade. The discovery of hydrocarbon deposits has created a different economic environment and has become the engine of national progress. Ghana like any other GoG country, is faced with increasing maritime safety and security threats, evident among them being piracy (Dalaklis, 2012). The major threats mostly identified in the maritime domain of Ghana include the following:

Environmental. The effect on the environment of the activities associated with oil production (oil pollution), illegal discharges from ships as well as illegal dumping is enormous and the necessary attention must be given. Pollution of the environment by the exploration/drilling of oil is mainly in the form of oil spillage into the sea, accidental discharges at sea and the accidental spill process of the oil. Finally, the dumping of toxic waste must be included in the complete environmental protection equation.

Fisheries. The fishing industry in Ghana is threatened with extinction as a result of over-fishing and IUU. Industrial fishing vessels are not allowed to fish in the Inshore Exclusive Zone, which corresponds to areas from the coastline to 6nm seaward or below 30m depth, while artisanal fishing canoes are permitted to fish within those areas. However, many industrial fishing vessels simply defy this provision, resulting in the depletion of the fish resources. Often, IUU fishing fleets illegally scoop-up hundreds of millions of dollars’ worth of fish from Ghanaian waters, a basic reason why import restrictions were imposed on Ghana’s fisheries products in 2012 and 2013 by the European Union (EU) (MOFAD, 2014).

Illegal Bunkering/Crude Oil Theft. Illegal bunkering includes the purchase of illegally acquired or refined oil products mostly at cheaper rates. It is typically acquired from stolen oil and the destruction of oil pipelines with criminal intent for mischief or for...
monetary gains. It also involves the diversion of crude and refined products by unauthorized persons at sea. When companies continue to patronise these cheap products, illegal bunkering has the tendency to increase criminal activities like piracy and armed robbery at sea (Akah and Dalaklis, 2017). It is against this backdrop that MT Mammy Mary and MT Metrix 1 were both arrested by the Ghanaian Navy when they illegally traded oil consignment about 5nm from Tema Harbour on 14 April 2018 (Ocloo, 2018).

Piracy/Robbery at Sea. Piracy and robbery at sea are set to be on the rise in the GoG region at an alarming rate (IMB, 2018), surpassing that in the Horn of Africa. These pirates and robbers usually target ships’ crews, cargo and other valuables. The first quarter of 2018 saw a string of 22 piratical attacks in the GoG region, in the maritime domains of Ghana (1 hijacked), Benin (2 hijacked) and Nigeria (1 hijacked), with very high success rates (IMB, 2018). The number of incidences surpassed those from all other regions in the first quarter of 2018.

Trafficking. Ghana in 2016 was identified among the major cocaine transit points, with about 61% being transported out of the country by sea (UNODC, 2016). Drug trafficking, a transnational crime, has an impact on national security and is also directly related to other types of organised crime such as money laundering and terrorism. Moreover, it has the potential to corrupt state institutions and to affect the stability of state systems and society. Also, humans and weapons may be trafficked through Ghanaian waters if criminals find that these waters are not properly secured.

2. The Yaoundé Code of Conduct

The Code of Conduct concerning the repression of piracy, armed robbery against ships and illicit maritime activity in West and Central Africa, also widely known as the Yaoundé Code of Conduct, was adopted at the Yaoundé summit in Cameroon on 25 June 2013. This regional framework is an initiative of Economic Community of West African States (ECOWAS), Economic Community of Central African States (ECCAS), the Gulf of Guinea Commission (GGC) and the Maritime Organisation of West and Central Africa (MOWCA), and contains a comprehensive strategy that seeks to counter maritime threats within the GoG region (IMO, 2013).

This Code of Conduct brings signatory states together to take appropriate measures to combat maritime threats, in accordance with international standards, and also commit to maritime information sharing among states. It is of interest to note that the leading pillar of the strategy is interoperability between stakeholders to gather timely intelligence and share it among themselves at national or international levels. Through that, the various countries have developed and operationalized Maritime Operation Centre (MOC) for their navies and/or coast guards, to facilitate information sharing.

For effective monitoring and enforcement capabilities, the Inter-Regional Coordination Centre (ICC) was established at the strategic level to implement the regional integrated strategy for maritime safety and security, contained in the Yaoundé Code of Conduct. At the sub-regional level, there is the establishment of the Regional Maritime Security Centre for Central Africa (CRESMAC), located in Pointe-Noire, Republic of the Congo for the ECCAS region. In addition, the Regional Maritime Security Centre for West Africa (CRESMAO), located in Abidjan, Cote d’Ivoire serves the ECOWAS region. The multinational level has a zonal approach system, established to coordinate activities within the zones known as Multi-National Maritime Coordination Centres (MMCC). These centres group states together, to pursue common maritime security interests. The national level, represented by MOCs of the various representing countries, will be required to contribute immensely and work towards the realisation of the overall aim of the integrated maritime strategy.

3. Agencies Concerned with Issues of MDA in Ghana

MDA involves the interaction between several maritime agencies confronted with the challenge of ensuring safety and security as well as clean and environmentally friendly seas (Bueger, 2015). It is interesting to note that each one of these agencies has its specific mandate, internal bureaucracy and organisational culture. The problems encountered with internal red-tape are often translated into the national level. The maritime stakeholders are cross-sectoral in nature. The agencies include the Ghana Maritime Authority (GMA), the law enforcement agencies (Navy, Police) and other regulatory agencies (Environmental Protection Agency (EPA), Monitoring, Control and Surveillance (MCS) unit of the Ministry of Food and Agriculture (MOFAD), Ghana Ports and Harbours Authority (GPHA), National Security
Coordinating Council (NSCC), National Disaster Management Organisation (NADMO) and Narcotics Control Board (NACOB)).

4. Initiatives Contributing to MDA in Ghana

Piratical attacks (including armed robbery at sea) have been increasing in the GoG region at an alarming rate since 2007, with incidences exceeding a quarter of worldwide reported attacks. Maritime insecurity in the region affects the transport of about 5 million tons of oil per day, which is more than half of Africa’s total production per day and about 30% of the United States of America’s oil imports (Vircoulon and Tournier, 2014). To address the situation, there have been a series of political level initiatives by member states of the region to implement a regional strategy for the safety and security of the maritime domain of both West and Central Africa. For Ghana, of particular interest was the operationalisation of a Vessel Traffic Monitoring Information System (VTMIS). The main components of the VTMIS in Ghana are Eight (8) Remote Sensor Sites (RSS) located along the coast of Ghana from East near Togo to West near Cote d’Ivoire (GMA, 2014), with all associated infrastructures explained below:

Eight (8) Remote Sensor Sites (RSS) located along the coast of Ghana from East near Togo to West near Cote d’Ivoire. The RSS are equipped with radio communication towers, radars, Automatic Identification System (AIS) receivers, as well as Closed Circuit Television (CCTV) for detecting and identifying ships and fast moving boats. The sites are equipped with marine radio communication equipment i.e. MF/HF and VHF, which complies with the International Maritime Organisation (IMO) standard provisions for Global Maritime Safety and Distress Systems (GMDSS) and Long Range Identification and Tracking (LRIT) to enable regular receipt of ship reports.

Three (3) Remote Base Stations for inland waterways located along the River Volta.

Three (3) Area Control Centres for the West, Central and East sectors, and one (1) National Control Centre sited in Accra.

There are provisions to further equip the RSS with meteorological and hydrological sensors. When that equipment are integrated in the system, it will provide local weather data from the respective sites to the Control Centres for broadcasting. The data gathered from the Remote Sites is transmitted to the Control Centres. The VTMIS operators are then able to display that vessel traffic information on screens.

The Ghanaian Navy has established its VTMIS control station at the headquarters in Accra, with two (2) other monitoring stations in Tema and Takoradi respectively. The Tema port which is operated by GPHA, NSCC, MCS and NACOB also have monitoring stations to monitor vessel traffic. In addition, there are provisions for Monitoring Station facilities to be implemented in the Takoradi port. The system is yet to be reconfigured for Customs, Immigration and the Marine Police; this will be performed after they have all relocated to their new offices in various locations. It is of interest to note that a control centre can utilize all the functionalities of the VTMIS equipment, while monitoring centres have limited use of functionalities like flagging a vessel of interest.

5. Ghana’s Maritime Operations Centres

For the Ghanaian Navy to perform its functions well, surveillance and intelligence gathering is pivotal. For that reason, the US Navy in various forms assisted the Ghanaian Navy to set up three (3) Maritime Operation Centres (MOCs). There is a main national MOC located in Accra. There are also the East MOC in Tema and West MOC in Takoradi. Plans are in place for two (2) additional MOCs to be established in locations near the borders to the East and West. With the VTMIS framework, the national MOC has a “control centre” status, while the others are only monitoring centres. The MOCs are further equipped with the “SeaVision” and “Time Zero” Coastal Monitoring Systems, provided by the US Navy. “SeaVision” is a surveillance system that was specifically developed for the US Navy and allied partner nations to coordinate and track vessels of interest around the world. “Time Zero” coastal monitoring system is a maritime surveillance solution that is optimally configured for the coastal surveillance of Ghana.

6. Vessel Monitoring Systems (VMS)

To ensure food security and sustain the socio-economic development of the country, the MCS department of MOFAD operates a Vessel Monitoring System (VMS) to control fishing vessel activities for the protection of Ghana’s fishing stock. The use of this VMS is intended to curb the problem of overfishing, so that Ghana’s fishing stock will not be woefully depleted. A VMS is usually employed by fisheries regulatory authorities for the monitoring of position, course and speed, including time at position, of registered fishing vessels (Interpol, 2014). Unlike AIS, VMS data is limited to the government agency that installed it. All industrial fishing trawlers in Ghana are mandated by law to install VMS transmitters onboard. With that provision, the MCS is able to monitor the activities of the fishing fleet and query any suspicious activity the vessels may engage in. The vessels’ details are transmitted even 72 hours after the transmitter is tampered or destroyed by criminals at sea so that authorities will be able to
track the vessel in all circumstances.

7. Challenges of Collaboration for MDA in Ghana

Ghana acknowledges the importance of MDA in its activities; in response, there is equipment operated by various maritime agencies to enhance MDA capabilities in its waters. However, there is no formally documented Policy on this issue. It was identified that the lack of a comprehensive and clear Maritime Strategy seems to prevent agencies from effectively cooperating. Without a maritime strategy, which should outline the roles and responsibilities of GMA and other maritime agencies, there is no guidance for these agencies, so cooperating with other parties/stakeholders is not mandatory to them. It is of interest to note that during the current research effort, it was identified that the various systems supporting information collection and handling are not interoperable because they were purchased from different manufacturers and for purposes independent of each other.

It was also identified that the coastal communities and Non-Governmental Organisations (NGOs) concerned with maritime activities have very little or even no knowledge about MDA. However, every activity that happens at sea spans from land. If the coastal communities and local fisher associations are effectively involved in sharing vital information, intelligence can be gained about illicit maritime activities, like armed robbery and piracy; this is essential in order to intervene even before these criminals proceed toward the sea.

Unfortunately, Ghana does not prioritize the maritime environment as key to economic prosperity. On the positive side, the government of Ghana acknowledges the importance of transportation in supporting the productive sector of the economy. Because of that, an Integrated Transport Plan for Ghana was developed in 2011. The plan, which was hoped to inform the budgetary allocation of government for the entire transport sector, effectively outlines policies for air, rail, road, urban, motorised and intermediate forms of transport. Strangely enough, however, the plan barely touched on maritime transport even though it is recognized that plans are not legally binding on agencies. However, the significance of maritime transport for the development and prosperity of Ghana was emphatically recognised. GMA admits shortages in its regulatory capacity as well as insufficient financial resources. There is also a shortage of local skills and capacity in the administration and management of the maritime sector that suggests the tendency to depend on foreign technical and financial support. The Ghanaian government admits that the new oil and gas discovery poses several challenges for the maritime transport sub-sector. It has, therefore, directed the GMA to develop regulations and enforcement mechanisms and procedures in good time. However, whilst GMA is already mandated to coordinate these activities, it faces additional challenges caused by the multi-agency environment in which maritime regulation is developed and enforced.

It was further identified that apart from diverse national interests spearheading collaboration through exercises and combined training during multinational initiatives, Ghana maritime stakeholders on their own do not organise any form of activity that enhances cooperation. To say the least, it is upsetting for these agencies, to allow any external actor to bring them together instead of initiating collaborative efforts themselves. It is only Exercise Obangame, intended for cooperation among countries in the GoG, which brings maritime stakeholders in Ghana together for a combined exercise. The GMA should institute an “internal programme” that helps in exercising the various surveillance systems for enhanced interoperability. Also, the current contractual clauses are not favourable to the continuity of operations of the surveillance systems. Most of the contractual agreements require the systems to be remotely configured after minor breakdowns, and an expert to be flown in from abroad to fix major problems. Constant monitoring of activities at sea will be adversely affected when there is any type of breakdown that takes days or extended number of hours to be rectified. If there is a delay in travel arrangements or internet connection problems, the case will even be worsened.

Conclusion

Shipping activities within the GoG, and especially the maritime space of Ghana have increased significantly since 2007, when Ghana started to produce oil and gas in commercial quantities. Other reasons include expanded fishing activities, as well as the fact that Ghanaian ports of Tema and Takoradi serve as important transit hubs for neighbouring land-locked countries, especially Burkina Faso.

As a matter of fact, there have been commensurate safety and security issues within the maritime domain of Ghana. To help in the surveillance of the maritime space and enforce maritime laws, various maritime agencies in Ghana operate different and unfortunately not integrated maritime surveillance systems. This research effort was conducted in order to investigate the Ghanaian MDA capabilities and to identify the challenges in collaboration between these maritime agencies, policies and priorities on MDA, current MDA capabilities, also to pinpoint surveillance operator training requirements and finally, to suggest ways of improvement. However, this study was limited to maritime surface surveillance alone; a thorough study is further recommended encompassing aviation, as well as under-water activities in order to holistically mitigate
safety and security problems in the maritime space of Ghana. The Yaoundé Code of Conduct is a regional initiative from ECOWAS and ECCAS to help curb piracy and armed robbery against ships plying the route within the GoG region. The Code entreats interoperability between maritime stakeholders and effective sharing of maritime information. This regional aim cannot be realised if similar collaboration is not effective at the national level. The surveillance systems employed in Ghana have all the needed tools, including coastal radars, cameras, AIS receivers and LRIT embedded for effective monitoring of the maritime environment. However, the major maritime agencies like GMA, the Ghanaian Navy and MCS unit of MOFAD operate independent surveillance systems to monitor their various areas of interest. Therefore, the issue of “interoperability” and promoting cooperation, even via a “top-down” approach enforced by a national policy/guideline document are clearly standing out as priorities. There is the perception that collaboration between these maritime agencies is effective. However, case studies reviewed indicate lack of effective cooperation between the agencies due to the absence of a national maritime policy. Even combined maritime exercises that bring the agencies together, like Exercise Obangame Express, are spearheaded by external actors/interests. An all-encompassing maritime policy will document clear-cut roles for the maritime agencies, with the idea of achieving the national objective. During the overall Master Thesis effort, questionnaires were administered to various maritime agencies and the responses were duly analysed. The observations and findings have been presented in line with the research objectives. The findings were summarized and necessary conclusions drawn. It was deduced that Ghana has a satisfying level of MDA capabilities that can help to deal with safety and security threats in its maritime domain. That notwithstanding, there is certain room for improvement.

In any case, technology is just a tool to enhance maritime safety and security, but a good level of performance will not be achieved until authorities take the necessary action to show commitment and willingness to document policies and procedures that can help harness the potential of technology. If the suggested remedial actions provided are implemented, most importantly when a national maritime policy is documented and sanctioned by the legislature, all the maritime stakeholders will be bound by law to adhere to the provisions of that document. They will be obliged to swiftly collaborate and ensure a collective effort to enhance maritime safety and security.

**Recommendations**

Ghana, as a littoral country, needs an all-encompassing Maritime Strategy, with an MDA policy clearly described in that document. This can be done when risk assessment is carried out to ascertain the best plan of action for each anticipated threat, with the corresponding roles of various maritime agencies in each plan of action clearly stipulated. It is recommended that authorities expedite action in developing and documenting strategies for effective MDA. Once this strategy is approved and adopted, agencies will need to follow the associated strategic directives and work together to formulate implementation plans through harmonized procedures, policies, and Standard Operating Procedures (SOPs) that would be in line with the strategy. When that is accomplished, Interagency Working Groups could be assembled to devise Interagency MOCs, joint task forces and other groups to work in a harmonized manner to tackle maritime challenges. No single agency can achieve success in the domains of maritime safety and security alone.

One way to achieve inter-agency cooperation is to establish political or legislative top-down inter-agency directional approach to maritime issues. However, it becomes cumbersome if every issue is handled this way, and is subject to whim or politics in terms of which main issue is most important. A better way is to get all agencies together and outline a comprehensive list of national concerns, then work together to agree on how to address them, with required resources clearly allocated. Subject-matter expert exchanges and joint training are helpful in understanding the structure and workings of other agencies. In this case, the maritime agencies could agree to a framework outlining the biggest threats, key shortfalls in addressing those threats and available resources to address them. Prioritizing maritime issues within government policies is also recommended. One of the most effective measures maritime agencies can take is to make sure that policy decision makers understand the importance of maritime safety and security to the greater economy of Ghana and the impact on the average Ghanaian. In that stead, “maritime oriented” seminars specifically designed for the attendance of politicians and government officials are of high urgency and importance. It is typical to focus more on land-based priorities because those tend to be more pressing and affect the day-to-day lives of citizens. Piracy, oil spills, illegal fishing and other maritime issues have huge negative impacts, but may not have direct impact on the average citizen. It is, however, the responsibility of the maritime agencies to communicate to government oversers and citizens the role that MDA and the maritime environment play in their economic well-being. Without this, the agencies will be acting in isolation and will never get the necessary resources to address
The problems. It is further recommended that surveillance operators are trained on information technology and cyber security. There is the need to ensure that people with criminal intent do not tamper with the information exchange within the surveillance systems. It is a fact that system manufacturers have certain security features in place. Nonetheless, operators should be trained to identify spurious activities or any tampering with the systems, and be able to effect repairs in order to ensure system integrity for effective surveillance.

It is strongly recommended to conduct regular multi-agency exercises and drills in order to enhance multi-agency cooperation. Effective decision making is based on accurate information, transmitted in good time. Exercises together will go a long way to improve timely information sharing, and reduce agencies’ response time to incidents. This could mitigate the negative effects of safety or security issues in the maritime space of Ghana. It will help avoid misunderstandings between agencies and possibly reduce response time of Maritime Interdiction Operations (MIO) when the need be. A joint national maritime operations centre, that mimics the Maritime Multinational Coordinating Centre of the GoG information sharing architecture, should also be established. This centre can be staffed with representatives from all maritime agencies, and through these representatives, information sharing among the agencies could be enhanced. Staff who work at this centre can be posted to the MMCC and CRESMAO in rotation. The experience of the staff in the national centre will be beneficial when such persons are employed at the sub-regional and regional maritime centres.

Furthermore, it is recommended that certain contractual clauses are reviewed to favour continuity of operations of the surveillance systems. This stems from the fact that most of the agreements require the systems to be remotely configured after minor breakdowns, and an expert flown in from abroad to fix major problems. Instead, this arrangement could be changed for locals to be trained, and equipped with the proficiency to work effectively on those systems to fix any problem that develops on them. Finally, another important issue for consideration is that, there could also be a network with fisher associations, fishing communities and association of fishing canoe owners created, so that they can report any illegal activity they sight at sea (Human Intelligence – HUMINT). Arrangements could be made with telecom companies to provide a dialling short code for easy reporting. This network could also be complemented by certain incentives: for example, the maritime agencies could provide life jackets or marine radios as reward for those who swiftly report incidents with malicious intents. With this arrangement, any illicit activity that goes unnoticed by the surveillance systems could be identified once sighted by the fishing canoe operators.

References


Further Reading


BIOGRAPHY

NAVAL LIEUTENANT MICHAEL AGYARE ASIAMAH


I was enlisted into the Ghana Military Academy as a Naval Cadet on 16 October 2008. I commissioned into the Executive Branch of the Ghana Navy on 3 September 2010. I have since attended a number of military courses. Notable among these are Pre-Sea Deck course at the Regional Maritime University, Combat Officers Qualifying Course in SAS Simonsberg, South Africa. Others include Intelligence Train the Trainer Course in Ghana, Vessel Traffic Service Course in Finland and Legal Aspects of Maritime Border Security as well as Maritime Operations Law in Ghana.

The following are the key appointments I have held in the Ghana Armed Forces:

• Watch keeping Officer on board Ghana Navy Ship GARINGA from May 2012 to April 2013.
• Executive Officer onboard Ghana Navy Ship BLIKA from January 2014 to June 2014.
• Officer in Charge of the Maritime Operations Center at the Ghana Navy Headquarters from July 2014 to December 2015.
• Executive Officer onboard Ghana Navy Ship GARINGA from January 2016 to September 2016.
• Officer in Charge of Naval Intelligence at the Western Naval Command from October 2016 to May 2017.
• Assistant Director of Strategic Intelligence at the Defense Intelligence Department of the Ghana Armed Forces from June 2017 to September 2017.
• Assistant Command Operations Officer with additional responsibility as the Officer in Charge of the Maritime Operations Center at the Eastern Naval Command.

Currently, I am studying at the Ghana Armed Forces Command and Staff College for my Junior Staff Course.

I hold a Master of Science Degree in Maritime Affairs, specializing in Maritime Safety and Environmental Administration from the World Maritime University (WMU), Malmo, Sweden. I am a Fellow of the Friends of Sasakawa, WMU.

I am happily married to Celestine Agyare Asiamah and we are blessed with 3 children. My hobbies include swimming, listening to music and playing badminton.