



The Development Institute

REPORT ON STAKEHOLDERS CONSULTATIVE MEETINGS



Delta Alliance Ghana Wing Stakeholders Consultative Meeting – February 2-3, 2017

Challenges, Prospects and the Relevance of a Delta Alliance Wing in Ghana

Preface

This report provides the key discussions, highlights, contributions and recommendations from the national and local Stakeholders Consultative Meetings in relation to the establishment of Delta Alliance Ghana Wing for the Volta Delta. The meetings were held from 2nd to 3rd of February, 2017 in Accra, Greater Accra and Sogakope, Volta Regions of Ghana respectively. It was organised and facilitated by The Development Institute (The DI) with funding support from Delta Alliance (DA) Secretariat, Netherlands.

Keywords: Delta, Volta, Governance, Data, Resources, Livelihoods, Challenges, Coordinated, Concerted, integrated, alliance

The meeting could not have been held without the funding support of Delta Alliance, Netherlands. We are grateful for their support in making this initial engagement of Volta Delta stakeholders meeting and the setting up of a Ghana Delta Alliance Wing one of our success stories.

We wish to acknowledge all presenters and contributors – we are most grateful to you for the great and enormous insight you brought to making the meeting a success:

1. *Mr. Nico Beunders, Tourism Consultant, The Development Institute*
2. *Dr. Bob Alfa, Principal Water Resources Engineer, Water Resources Commission*
3. *Professor Kwesi Appeaning Addo, Lecturer, University of Ghana*
4. *Mr. B. A Amisigo, Research Scientist, CSIR-Water Research Institute*
5. *Prof. S. G. K. Adiku, Lecturer, University of Ghana*
6. *Dr. BLM (Bee) Kothuis, Delft University of Technology*
7. *Mr. Dickson Agyeman, Park Manager, Wildlife Division of Forestry Commission of Ghana, Ada Foh*
8. *Dr. Simon Sovoe, Director, Environmental Protection Agency, Adidome*
9. *Gershon K. Tudoabor, Planning Officer, South Tongu District Assembly*
10. *Sheila Nana Akua Ashong, Principal Programme Officer, Environmental Protection Agency*

We also give special thanks to:

1. H.E Fred Smiet, First Secretary Water and Climate, Ghana Netherlands WASH Programme (GNWP) who graced the event to give his moral support and shared his experiences and ideas with us.
2. Peter van Veelen (PhD), Researcher and Coordinator Urban Deltas DIMI in the Delft University of Technology, Delta Alliance Secretariat, Netherlands who brought his expertise together with his team to contribute to the outcomes of the meeting. Your presence indeed gave us great hope that we are travelling in the same boat and heading for one destination – sustainable management of delta regions.
3. Dr. Gyau-Boakye and Togbe Akliku Ahorney II for chairing the event; making sure that we don't derail from our set objective

We are also thankful to all the representatives (meeting attendees) for their willingness and openness to contribute to the discussions, share their experiences and ideas with us. With your contributions and insights, our eyes are more opened to the local realities than we knew them to be.

We hope that the friendship and solidarity and the space for networking created through this engagement will continue to exist and that we will all rally around ensuring that the objectives of the Delta Alliance Ghana Wing are fulfilled.

Executive Summary

The meetings were held to discuss the challenges and the prospects of the Ghana Volta Delta and identify possible solutions for its sustainable management. It was also intended to discuss the relevance of the establishment of Delta Alliance Wing in Ghana, as a coordinating body for the sustainable management of the Volta Delta. One other cardinal objective of the meeting was to confirm with stakeholders' their approval and consent for The DI to continue coordinating the Wing in Ghana. The expectations of the attendees and presenters dovetailed with the meeting objectives as majority of the attendees expected to understand the challenges, have clearly defined boundaries and to clearly understand Delta management in order to device coordinated approaches to build resilient and sustainable delta ecosystems that benefits all.

The discussions revealed that the absence of an integrated and coordinated mechanism, good data resolution and management, ad hoc and unplanned infrastructural development coupled with environmental factors among others inhibit the proper and sustainable management of the Volta delta. The presenters and attendees recognized the challenges of the Volta delta as being complex and dynamic; therefore, collectively defining actions, actors and boundaries of the delta was said to be vital to bringing solutions and impact closer. They also indicated that there is an urgent need for multi-disciplinary and interconnected networks of research and technological innovations and solutions to deal with the challenges faced by Volta delta. They recognized the need for good data management, good governance and effective implementation of policies and laws as pivotal to sustainably managing the Volta delta. Also since the locals depend largely on the resources of the delta (eg. fishing) for their livelihood, it was agreed that it is vital to address the socio-economic, financial issues associated with the Delta and create revenue streams for the communities as an incentive for them to manage the resources. The potentials for tourism and investment opportunities are huge; it is key to harness and to look for a mutually benefit scheme such as Public - Private - Partnership for the Volta Delta Management. There is the need for clear criteria for investment, focusing on employment generation and green or sustainable infrastructural development. They also emphasized that institutional capacity strengthening, networking with international corporations as well as awareness and advocacy should be intensified. The discussions also centred on ensuring inclusiveness; that the communities' voices are heard and gender considerations are addressed. A system-based and adaptive management approach that combines urban landscape designs into, long term planning, governance and policy design was highlighted to be among key issues related to managing the delta sustainably.

As next steps to establish a vibrant DA Wing in Ghana, the following actions were proposed: i) constitute working groups at both national and local levels; ii) Consolidate mandate by individually meeting stakeholders who were not present during meeting to seek their views and support; iii) carry out mapping and scoping exercise to put the issues in perspective; iv) define the terms and scope of reference, objectives/framework and research agenda/ questions; v) Organize stakeholder workshops every biannually to share expertise and ideas; vi) create awareness and visibility for the DA Ghana Wing and vii) Clarify financial blueprint, management and communication structure for organization.

The national level stakeholders meeting offered a national learning opportunity and subsequent meeting held in Sogakope offered the platform for the regional Government Officials, Traditional Authorities, the District Assemblies, Private Sector other CSOs and NGOs to share experiences, best practices, ideas, international network connections, approaches and tools as a starting point but in no means aimed to be final or conclusive. These meetings have only contributed to the start of a new approach to the Volta Delta Management and further understanding of the priorities and contributions of all the relevant stakeholders. It is expected that, the outcomes of this meeting will motivate all stakeholders to collectively work harder in a more consented, integrated and coordinated manner to achieve the collective vision and objectives for the DA Ghana Wing.

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1.0 Background and Purpose of the Meeting

The Development Institute, a Ghanaian based NGO with commitment to sustainable development began the process for establishing the Delta Alliance Ghana Wing, as a country branch to the Global Delta Alliance Wing since 2011 and received a provisional membership status in 2013. As a full member of the Delta Alliance, the Ghana Wing receives some support from the secretariat, benefits from complements of projects and deeper collaborations from other Deltas members across the world.

The push for the Delta Alliance Ghana Wing was necessitated by the need to address the changing and complex challenges of delta regions particularly the Volta Delta in Ghana. Studies had shown that, delta regions are some of the highly environmentally stressed areas in the world, with great competition for land and water uses and are experiencing impacts from activities carried out in the river basins eg. illegal mining, salt and sand winning, fishing. The Ghana Volta Delta is one of Africa's delta regions experiencing many challenges due to construction of the Volta dam, climate change and poor land use planning among others. These challenges create a gloomy future perspective for the Volta Delta. As a result, there is an urgent need for the improvement of the resilience and sustainable management of the Volta delta for both people and the environment. It is however recognized that these challenges cannot be addressed by one individual entity; a good governance model, multi-disciplinary and coordinated mechanism for collective visioning and actions are key.

In view of this, The DI organized the inception meeting with key stakeholders to collectively plan the project vision and to further understand the priorities of all relevant stakeholders for the management of the Volta Delta. This initial meeting sought to achieve four main objectives. . These objectives were to:

1. Consult and ignite stakeholder support based on their expectations and priorities for the Volta Delta (through the DA Ghana Wing);
2. Create a joint overview of the systemic challenges and needs of the Ghanaian stakeholders by defining adequate structures in the integral delta planning and management of the Volta Delta;
3. Define next steps for the strengthening and consolidation of the Ghana Wing of the Delta Alliance and to explore ways for collaboration in desired areas;
4. Share knowledge, good examples and interact with local stakeholders on ways to bridge the gap to local actions.

1.1 Proceedings and Report Structure

The meeting was facilitated using participatory approaches; statements by invited guests, presentations, discussions, brainstorming and questioning sessions. It provided ample time for attendees to contribute to the discussions and the issues presented. Mr. Fred Smiet, Dutch Embassy representative (special guest) made statement on the importance of delta cooperation. Statements and presentations were also made by representatives of government agencies (Environmental Protection Agency, Water Resources Commission, Wildlife Division and District Assemblies); by representatives of Delta Alliance Secretariat, representatives of research institutions and the academia (WRI, UG, CSIR) as well as by the host (The DI) on the relevance of a Ghana Wing of the Delta Alliance. Interesting and insightful contributions (including expectations) were also shared by the 60 (attendees for both days) at the meeting.

The report summarises statements of the participants and presentations and the general proceedings of the meetings. The agenda/programme can be found in appendix 1. Expectations and a list of attendees can be found in appendixes 2 and 3. Contextual definition of delta and proposed actions by local stakeholders can also be found in appendixes 4 and 5 respectively.

2.0 Welcome, Statements and Presentations

2.1 Introduction, Welcome and Presentations

Both meetings were opened with prayers at 9:00am and participants self-introduced and shared their expectations of the stakeholder meeting. This was followed by introduction of chairman and chairmans response and then welcome address, statements and presentations from some key meeting representatives.

2.1.1 Welcome Address by Mr. Ken Kinney, the Executive Director, The Development Institute; Interim Coordinator for the Ghana Delta Alliance Wing

Mr. Ken Kinney, leading the establishment of the DA wing in Ghana welcomed the meeting attendees at both the national and local stakeholders meeting and gave brief introductory remarks. He stated the objectives for the meeting and recounted memories of how the Delta Alliance Ghana initiative developed. He mentioned the longstanding relationship of The DI and two other institutions; Water Resources Commission and Environmental Protection Agency, had had in a Master Class programme entitled: "Water related Climate Change Adaptation: a South-North Dialogue on Knowledge. This took place at UNESCO-IHE in Delft, Netherlands from 16th-24th of June, 2011 organized by the Dutch Foreign Ministry.



He emphasized the need for urgent actions towards sustainable delta management of the Volta Delta – stressing that deeper understanding is needed for effective long term development planning. The DA Coordinator, urged the participants to reflect on existing research knowledge on the Delta, suggest inputs for policy formulation and appropriate mechanisms for management and identify the gaps for research agenda and draw lessons from other delta knowledge resources available across deltas of the world.

2.1.2 Presentation by Mr. Nico Beunders, Tourism Consultant, The Development Institute

Mr Nico Beunders delivered the presentation on the relevance of a Ghana Wing of the Delta Alliance at both the national and local stakeholders. In this presentation, he provided an overview of the Delta Alliance, rationale for the Ghana Wing, the challenges and the opportunities of the Volta Delta and future prospects. In his speech, he acknowledged that, the Delta Alliance is an international knowledge-driven network organization with the mission of improving the resilience of the world's deltas. The Alliance brings together people whose livelihoods depends on Delta, so that they can benefit from each other's experience and expertise and as such contribute to an increased resilience of their delta region, with the help of network wings by uniting the most emblematic river deltas. The Alliance has formally acknowledged the Volta Delta, thus confirming its global importance and its unique characteristics. He also clarified that a country is represented by a "Wing".



In putting the Volta delta into perspective, he explained that it has unique ecosystems, landscapes of global importance and a rich history which is not valued. It has enormous potential for food production (rice, horticulture, fisheries, cattle breeding, etc.) and provides livelihoods for many of the inhabitants. He also stated that its potential for tourism (not just eco-tourism) cannot be over emphasized. Despite these benefits, there are stresses such as climate change, coastal erosion, over-exploitation of mangroves, and ecosystems degradation limiting the ability of the delta to provide its full bundle of ecosystem services, resulting in vicious cycle of poverty of the locals. There is a need for conservation, restoration and development of a future perspective for the Volta delta to continue to provide its full bundle of ecosystem services. This means that, we must balance current and future needs for both conservation and development.

With the current trend and projected demands for infrastructural development (sea defences, oil exploration, port development, industrial salt winning, shrimp/fish farming, encroachment by urbanization, etc), strategic collaborations is critical to secure the Volta delta. Traditional knowledge and is very much needed to manage the delta. He noted however that, there is competing and conflicting uses of the resources; interventions that benefit the locals must be developed. Good governance and good data are most crucial need for good delta management. An integrated management structure which involves active commitment of all stakeholders to guarantee proper planning of resource use is recommended.

He concluded that "the Volta Delta is a treasure well hidden to the world: we need to get it on the map and we need to network and partner with other deltas management alliances and platforms all over the World!" The Ghana Delta Wing is most relevant and can offer a multi-stakeholder platform to support integrated Delta management, whilst respecting the mandates and interests of all stakeholders.

2.1.3 Statement by His Excellency, Fred Smiet, First Secretary Water and Climate, Ghana Netherlands WASH Programme (GNWP)



H.E Fred Smiet, at the national stakeholders meeting emphasized the importance of international cooperation within the mission of Delta Alliance and Delta Coalitions. In his statement, he mentioned that, Netherlands is noted in good Delta management because half of its land is deltas. The Dutch have developed formulas for delta management which is shared extensively over the world with alliances. He indicated that good governance, effective policy implementation and law enforcement, are lacking in Ghana, which is critical for sustainable management of Ghana's Deltas. He stated his worry about the massive pollution due to illegal mining and deforestation in the

country and hope that the new political administration will put stringent measures in place to ensure enforcement and make budgetary allocations for CSOs to continue their advocacy efforts.

The Dutch government is committed to supporting natural resources management in Ghana through capacity building, institutional arrangements, research and advocacy and supporting international corporations such as the Voluntary Partnership Agreement. He concluded his statements that, there is a need to look at Volta river basin management across borders of Ghana because what happens in other neighbouring countries ultimately affects delta management in Ghana. The Volta is trans- boundary therefore its management should be trans-boundary for effectiveness and efficiency. The Dutch government through the Embassy is committed to waste management as core under the WASH programme in Ghana. His Excellency, made a call to NGOs/CSOs to use the resources well for coordinated, concerted and integrated delta management; that aims at connecting research institutions to an appropriate governance model for managing the Volta delta in a sustainable way.

2.1.4 Presentation by Peter van Veelen (PhD), Researcher and Coordinator Urban Deltas DIMI in the Delft University of Technology, Delta Alliance Secretariat, Netherlands



Dr. Van Veelen opened his presentation with a brief background about his work and the Delta Alliance at both the national and local stakeholders meeting. He buttressed earlier statements made by Niek Beunders on the purpose of the existence of the Delta Alliance: a knowledge driven network for the resilience of deltas. It has international secretariat and international governing board represented by a Director and advisory committee. There are 17 active deltas countries, some are more urbanized and decisions made are sometimes irreversible. Using photos, he gave an overview of some of the threats to delta

ecosystems: increasing flood risks, loss of ecosystems & wetlands, intensive farming, infrastructural development, port development, rapid urbanization, land subsidence, ground water extraction among others. The delta wings supports the need for integrated and coordinated approach to addressing these

threats through sharing knowledge, expertise, and best practices; building capacity and strengthens networks; collaborative research, based on identifying knowledge gaps and local needs. It is by this approach that a case of the challenges can be made, define next steps and connect governments to take smart decisions on delta management. He also expressed the Alliance's current commitment to i) thought leadership; ii) professional education; iii) regional workshops; iv) delta monitoring; v) students exchange vi) Pan African workshop spring 2017 and vii) knowledge agenda together with Delta Coalition and other institutions. He further recommended the Ghana Wing to link up with other African Delta wings as there is a plan to hold a meeting in Kenya.

As part of future plans, the Alliance would focus more on strengthening active DA wings; provide budget for scoping workshops / webinars / learning between delta wings / thought leaderships; support full professional education program on Integral Delta Planning and create new DA wings in Delta Coalition countries such as Japan, Korea, and Colombia.

Dr. Van Veelen elaborated on integral adaptive Delta planning and shared some of the challenges of the world deltas and gave an example of the Mekong Delta plan. Studies show that due to increasing urbanization towards deltas, it is projected that by 2050, 75 percent of the world's population will live in cities, more than half of the urban population will live in urbanized coastal regions (UN habitat). As environmental conditions are continuously changing and become unpredictable, adaptive delta planning is crucial to balance the social, economic, and ecological needs under such uncertain conditions. This requires a system-based and adaptive approach that combines urban and landscape design, long term planning and governance & policy design.

Using the Mekong Delta plan or study, he explained the four levels of the adaptive management process: we must define our current reality (scoping); create a vision of what we want (scenario analysis); determine actions and priority steps (strategy development) and then incorporate the pathways and actions into regular planning system and investment program (implementation). He added that the most important elements of the adaptive planning requires understanding the system; jointly finding intervention options; mainstreaming in policy and practice and monitoring and evaluation of the system.

He offered critical recommendation to the Ghana Wing by indicating that: i) there is not "one-size fits all" plan or approach; ii) collaboration among sectors, disciplines and governance across scales is key; iii) seek linkages between multiple transitions and challenges to create multipurpose and "no regret" solutions and iv) research to explore new opportunities within collaborative processes.

2.1.5 Presentation by Mr. Maxwell Boateng-Gyimah, the Executive Secretary, Country Water Partnership, Ghana/Water Resources Commission



Mr. Maxwell Boateng delivered a presentation on policy perspective: Enhancing Water Governance in Ghana. He provided a broad range of definition for water governance and its essence highlighting the multiple/conflicting uses of and increasing demand for water. He further stated that due to poor political, legal, financial, technical, environmental among other factors, water governance is critical. Within the legal framework, he stated that Water Resources Commission, established by an Act of Parliament (Act 522 of 1996) is mandated to regulate and manage the Ghana's water resources as well as co-ordinate government policies

for water resources management. The commission operates within the established legal and policy framework either at national or basin level. He added that Integrated Water Resources Management (IWRM) was established and being implemented by the WRC to promote a coordinated development and management of water resources that meets socio-economic needs of the people and ensure that vital ecosystems are sustained using various strategies and management tools.

IWRM he said is based on basin level planning and there are 16 'large' basins in Ghana which are further divided into sub-basins. Basin level planning begins with an identification of issues and prioritized river

basins, according to level of stress. After which stakeholders are consulted, membership for basin boards is constituted and operational guidelines are developed for the functioning of each River Basin Board. He also stated that there are seven (7) basin offices and boards established but there is none for the Lower Volta. Mr. Boateng-Gyimah again explained that the WRC efforts towards enhancing good water governance include education and awareness, water quality and ecological monitoring, developing basin plans and ensuring enforcement and institutional coordination. There are institutional structures at both international and national levels with support from external institutions such as World Bank to ensure good water resources governance.

He said the challenges hindering good water resources governance are as a result of political manipulation, poor attitudes towards conservation, limited capacity and financial resources, uncoordinated data and poor enforcement. He concluded that sustainable integrated water resources management can only be realized if efforts are made to effectively address the existing challenges; suggesting that good water resources governance is key to securing clean and adequate water resources for all.

2.1.6 Statement by Professor Kwesi Appeaning Addo, Lecturer, University of Ghana

Prof. Addo delivered the presentation on scientific research on Deltas at the national stakeholders meeting and presented possible elements of synergy with Delta Alliance research program. The DECCMA (Deltas, vulnerability and Climate Change: Mitigation and Adaptation) project, identified some key factors creating vulnerability of deltas. He indicated that, studies had shown that deltas are home to over 500 million people, often poor residents. However, deltas are faced with challenges such as sea level rise and other climate effects which make residents who live in delta regions vulnerable. The DECCMA project was a case study in three deltas (Volta, Mahanadi and GBM deltas). The project purpose was to analyze climate change and other environmental drivers and adaptation options and aimed to i) evaluate the effectiveness of the adaptation options; ii) assess migration as an adaptation in deltaic environment under climate change and iii) deliver policy support to create conditions for sustainable gender-sensitive adaptation.



He indicated that the key questions of the study will clarify current mitigation trend, drivers of mitigation, expected drivers, changes in the future, potential adaptation options and roles of mitigation and impacts of adaptation options on mitigation. The outcomes of the assessment will provide models for sustainable management of deltas including the Volta delta. He concluded therefore that he sees the meeting as an opportunity to build synergy since DECCMA also seeks to connect with other deltas across Africa and Asia for knowledge transfer and usage.

2.1.7 Statement by Sheila Nana Akua Ashong, Principal Programme Officer, Environmental Protection Agency



Mrs. Sheila Ashong gave a brief overview of the role of Environmental Protection Agency (EPA) and their management challenges. She stated that the EPA was established by the Environmental Protection Agency Act, 1994 (Act 490), as the lead agency for environmental protection in Ghana and is mandated to oversee, coordinate and regulate all issues regarding the environment in Ghana. She also explained the EPA's vision and elaborated on some guiding principles of the EPA as including but not limited to ensuring environmental education and management, public participation and inter-sectoral networking, decentralization to enhance outreach and efficiency and most importantly, environmental justice. She said that the EPA is autonomous

but not independent in its operations and highlighted some important focus of the agencies operations stating that the agency:

- Ensures compliance and enforcement (mainly of the Environmental Regulations particularly Environmental Assessment Regulations 1999, LI 1652) to ensure that development occurs sustainably
- Carries out scientific research and provides data including periodic state of the environment report, EIA sector specific guidelines, national environmental policy with the MESTI, National environment policy, and national climate change policy.
- Implements activities under various UN conventions such as the Basel convention, UNCBD, UNFCCC for which the Netherlands climate assistance programme is a key donor for the national communications submitted on climate change. Close partnership with the WRC, and VBA on all activities including the Volta Basin project.

Mrs. Ashong again explained that Ghana has 3 Biosphere reserves where the EPA coordinates the various activities including research and education and undertakes community support projects that build local capacity to contribute to natural resource management and environmental conservation. She said this citing the example of the UNESCO's MAB programme which sought to enhance human ecosystem relationships to attain sustainable development using biosphere reserves - Bia National Park, Songor Ramsar Site and Lake Bosomtwe Biosphere Reserve.

She emphasized that EPA plays a leadership role as the current chair of the African network of biosphere reserves and International Association for impact assessment, (IAIA). The agency has followed with keen interest development activities in the Volta area especially in the delta particularly for agricultural activities and their impacts on water quality as well as aquaculture on the Volta. It also supports interventions such as the management of invasive aquatic weeds, monitoring of water and air quality as well as establishment of a cleaner production centre in the Tema industrial center.

In her final statement, she indicated that there's some level of political interference, and also acknowledged that despite the agency's regular monitoring, there is still more room for improvement or for it to do better when logistical and staffing constraints are addressed.

2.1.8 Statement by Dr. BLM (Bee) Kothuis, Delft University of Technology



Dr. Bee gave a brief statement and shared some examples of destruction and risks of deltas; projecting the different stand points. She noted that universities have collaborated to undertake research and gave examples of student exchanges between 7 US universities and 3 Dutch universities in this regards adding that it is important to meet in person to share new ideas. She advised the Ghana Wing, "don't be afraid of failure; try new things."

2.1.9 Statement by Professor Kwesi Appeaning Addo, Lecturer, University of Ghana

Prof. Addo delivered the presentation on scientific research on Deltas at the national stakeholders meeting and presented possible elements of synergy with Delta Alliance research program. The DECCMA (Deltas, vulnerability and Climate Change: Mitigation and Adaptation) project, identified some key factors creating vulnerability of deltas. He indicated that, studies had shown that deltas are home to over 500 million people, often poor residents. However, deltas are faced with challenges such as sea level rise and other climate effects which make residents who live in delta regions vulnerable. The DECCMA project was a case study in three deltas (Volta, Mahanadi and GBM deltas). The project purpose was to analyze climate change and other environmental drivers and adaptation options and aimed to i) evaluate the effectiveness of the adaptation options; ii) assess migration as an adaptation in deltaic environment under climate change and iii) deliver policy support to create conditions for sustainable gender-sensitive adaptation.



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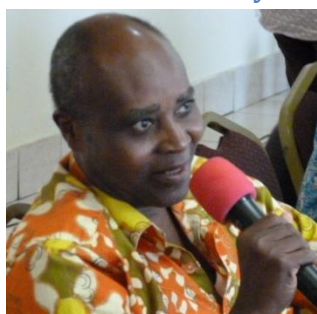
2.1.10 Statement by Mr. B. A Amisigo, Research Scientist, CSIR-Water Research Institute

Mr. B. A Amisigo at the national stakeholders meeting made a brief statement on key findings of a research carried out by Water Research Institute (WRI) to support Re-optimization or re-operationalization of the Akosombo Dam by Volta River Authority (VRA). The advent of the creation of the Akosombo dam, water used to flow freely with huge benefit to communities at the Delta. Flooding and Climate Change impacts pronounced in the lower basin but the water flow is being regulated. Currently, proliferation of aquatic weeds leading to low fishing is a major challenge for communities.



The critical thing was to ensure that the flow did not lead to revenue loss. Economic feasibility carried out showed that VRA could not undertake the socio-economic issues of the communities along the Volta and other emerging issues such as the aquatic weeds. The questions being explored are i) can the weeds be turned into profitable use? ii) How do we help the communities to sustain their livelihoods? He urged the research institutions particularly the University of Ghana research unit to follow up and monitor activities in the basin.

2.1.11 Statement by Prof S. G. K. Adiku, Lecturer, University of Ghana



Prof. Adiku in a brief statement at the national stakeholders meeting expressed his concerns about enormous but disjointed data on both Lower and Upper Volta. He added that it will be useful to assemble, collate and consolidate all the research information currently available to avoid duplications, re-inventing the wheels. And concluded that ecologies are managed with no proper systems and that there is a need for system analysis (as the systems are complex) in order to prudently identify the risks/shocks and find remedies to them.

2.1.12 Statement by Dr. Bob Alfa, Principal Water Resources Engineer, WRC



Dr. Alfa made a brief statement at the national stakeholders meeting about the challenges in the Water sector, and the need for a more improved management system. He stated that the EPA's mandate covers water, forest, minerals, water, sanitation etc but it is operating as a separate agency from other agencies that are responsible for water, minerals, and forest, land, and so on. He emphasized that, "It is difficult to manage water, when issues of agriculture, forest, land, waste management, etc are not under the mandate of the water resources commission." Collaboration with all sector agencies have been the approach. The WRC have set up decentralized basins in some regions

to address the issues on the ground. He however, wished that the water, forest, and other natural resources management agencies operate under one umbrella organization, for EPA in order to have a more coherent and coordinated system.

The major present challenges are waste management, farming along river bodies and galamsay (which has become a canker) causing water pollution and degradation. The Galamsay issues are deeply rooted and quite politicized – a more collaborative, coordinated, political will and good governance efforts is appropriate to address this menace. Part of WRC's management efforts includes the development of buffer zone policy. The commission is developing a legislative instrument to provide a legal backing for the policy. The commission has also reclaimed degraded areas that affect water systems and embarking on public education at the districts level on conservation of water resources.

2.1.13 Presentation by Mr. Dickson Agyemang, Park Manager, Wildlife Division of the Forestry Commission of Ghana, Ada Foh

Mr. Agyeman delivered a presentation at the local stakeholders meeting on the threats, management and challenges of deltas. He explained what a delta is a fan of braided streams and sediment formed from the deposition of sediments carried by a river as the flow leaves its mouth and discharges into a larger body of water slower-moving or standing water. He further elaborated on the importance of deltas: for ecosystem, ecological and economic services, tourism, education and research and supply of raw materials for construction as well as for settlement adding that deltas cover 1% of the earth but are home to more than 500 million people.



He enumerated several threats among which are habitat loss, increase in salinity, sea level rise, pollution, unsustainable resources exploitation and infrastructural development, natural disasters including climate change. These threats called for collaborative management practices that focused on i) participatory awareness creation and education (formation of school clubs and training of peer leaders, radio program, information signs, community interactions) ii) capacity development of key stakeholders (eg. judiciary, police, immigration) iii) promoting bird watching (ecotourism as an incentive for conservation); iv) restoration of degraded areas; v) enforcement through regular patrols and creation of safe corridors as well as monitoring and data collection. He therefore pledged his support to the Delta Alliance wing as a good platform to create joint visions that supports ideal ecosystem for all

2.1.14 Presentation by Dr. Simon Sovoe, Director, Environmental Protection Agency, Adidome

Dr. Sovoe gave an overview of the environmental and socio-economic challenges in the Volta delta communities at the local stakeholders meeting. In this presentation, he explained why systems are hard to manage, social and economic benefits of deltas, ecological benefits of mangroves, challenges and how to address them. He set the tone by stating that systems are collection of parts, which interact with each other to generate predictable behaviours; managing the system sustainably is dependent on understanding these behaviours. The Volta delta has both social and environmental systems. The social system for example, includes the people (made up of different class and identity), their tools, and their customs which defines their interconnectedness. Any change (positive or negative) in one part of the system ultimately affects how other parts of the system react based on their relationships.

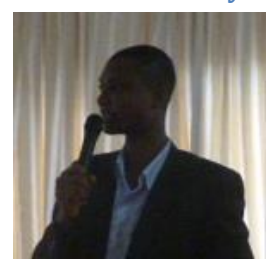


He also explored the ecological functions of mangroves stating that they are well known for their high biological productivity, carbon sequestration, nutrient retention, flood control, ground water recharge properties, among others. The benefits derived from the delta have both direct (fish species, medicinal herbs, raw materials for construction/crafts, etc.) and indirect (habitat for animals, breeding grounds for fish, etc) use values. Activities within the delta: fishing, sand and salt winning, agriculture, etc have created adverse environmental and social, consequences such as mangrove degradation, flooding and coastal erosion, salinity, pollution, ocean acidification, unemployment, poor living standards, etc.

He explained that to address these challenges and reduce their resultant effects awareness should be increased, alternative livelihoods should be provided, there should be commitment to skills development and family planning (to reduce population pressures). Another critical area is identification of the loopholes and to develop measures to address the gaps focusing on the use of system dynamic models to better understand the interconnectivity of the various components in order to help develop sustainable development approaches.

2.1.15 Presentation by Gershon K. Tудоabor, Planning Officer, South Tongu District Assembly

Mr. Tудоabor, at the local stakeholders meeting, provided a general perspective of Municipal and District Assemblies' development and governance challenges in



the Volta delta area. He gave an overview of the climate, vegetation, the socio-cultural set up, demographic characteristics, socio-economic activities including agriculture, and the local governance and administrative set up of the area. He stated that the municipal and district assemblies have an overall goal to "improve the living conditions of its citizenry through effective and efficient mobilization and utilization of physical, financial and human resources in partnership with the private sector and other stakeholders." District Assembly are the highest decision making body with sub-district structures (zonal, town, area council) & unit committees which administer the various towns/communities in their jurisdiction on behalf of the MDAs. It has elected and appointed assembly members who perform the legislative functions of the various MDAs.

He indicated that despite these institutional arrangements in place, there are issues that affect the good governance of the resources. These include limited consultation & institutional co-ordination, poor land use planning, among others. He further stated that the environmental conditions are favourable for animal husbandry, vegetable/rice production, fishing as well as opportunities for water transport, sports and tourism which in fact should improve livelihoods. However, the locals' livelihoods are threatened by: aquatic weeds invasion and siltation of the rivers and lagoons; coastal erosion, flooding of farmlands and lack of Medium and Small-scale Enterprise promotion.

2.2 Contributions/Suggestions and Emerging Issues (from meeting presentations and discussions)

1. The EIAs are usually technical and voluminous and not simplified; local stakeholders do not benefit from the assessment. The EPA should connect with international EIA commission; they have systems that provide simplified versions to make their EIA reports more interactive and practical.
2. The scoping processes for the EIAs do not provide accurate information to communities; the economic impact is over elaborated to communities with little information on the social and environmental impacts. The scoping report should be published so that everyone has access to it
3. , the absence of coordinated approach to consolidate data. However, the platform can be used to make such improvements.
4. Akoben was an effective advocacy tool for CSOs – it should be reintroduced to name and shame recalcitrant private investors that are not adhering to environmental standards.
5. Ghana has an IWRM implementation strategy and 6 basin plans. Scenario approach was not appropriate due to limited financial and human resources. Districts are expected to play key roles in delivering the strategy.
6. Policy formulation must be informed by research; that our planning is not based on gut feelings or perceptions.
7. There are institutional capacity gaps and weak linkages; we should focus on capacity strengthening especially for the district assemblies to enable them to operate more effectively and efficiently.
8. There is the need to harmonize the governance structure drawn from the National stakeholder meeting to form Volta Development Commission/Authority so that a coordinated and holistic approach could be developed to address all threats and benefit within the zone.
9. The issues of the Volta Delta are a crosscutting one affecting a number of districts. The districts should be clustered and inter- district technical committee formed. The technical committee must meet regularly to discuss issues affecting the Volta Delta.
10. The political boundaries of the entire Delta area are not clearly defined. Most importantly the ambiguity of the scope, dimension or coverage of the entire Volta Delta should be clearly defined and demarcated using base maps.
11. Sea defence is one dimension of solution to coastal erosion but it only addresses an immediate need neglecting other factors such as livelihoods and tourism. Research institutions should be brought on board to fulfil this research agenda. The Ghana Wing should investigate more on best practices for dealing with coastal erosion.

12. The working groups for the Delta Alliance should be recognized by political leaders. Bringing political heads together is critical for buy-in. LI 22(22) supports the setting up of a joint committee for actions; political heads should be informed or sensitized about the alliance's objectives.
13. Planting of trees is cosmetic and not a holistic approach to addressing the challenges of the delta
14. There is no ownership – local planners, traditional authorities, should be willing to take up ownership and use their mandate to support the developing management approaches that secures the resources and livelihoods of the catchments communities. All the District Assemblies Planning officers within the boundaries of the Volta Delta should be meeting to discuss possible ways of working together and incorporate issues in the MTDPs.
15. There is absence of holistic Governance Structure; Integrated Delta/River Basin Management or a coordinated approach is needed to manage the Delta
 - a. What governance model will be appropriate for such an alliance is a critical question to address?
 - b. There should be cooperation with other adjoining Volta basin countries.
 - c. Regular Monitoring and evaluation is needed to make informed decision about Delta to report on progress for the for informed decision making.
16. Flooding and Climate Change impacts pronounced in the lower basin and absence of concerted research data or information about the Volta Delta
 - a. Existing data should be collated or consolidated
 - b. Identify drivers or issues that need to be addressed on the ground
 - c. Research priorities or agenda should be defined
17. Political will and buy-in (need to establish the political economy of the delta) and awareness should be intensified.
18. Investment opportunities should be identified and there's a need to scrutinize such investment deals
19. Inclusiveness, not only focus on locals but gender and relevant stakeholders (research, academia, government, businesses, etc)
20. Challenges with aquatic weeds; crucial to identify means to address or make it profit rural livelihoods

2.3 Questions and Responses

Day 1: Critical Stakeholders meeting

Q1. How big must a delta be to be accepted as a wing?

Response: There is no defined size. There could also be more than one wing in a country as in the case of Vietnam which has two wings. Having a wing also depends on whether there is a need to organize it.

Q2. Is there the possibility of having several deltas under one wing?

Response: Often the challenges in deltas are alike so building a network of research institutions is more important for knowledge sharing and capacity strengthening rather than composition of a wing.

Q3. Is there a water allocation framework for mining? Does the EPA's mandate extend to management of underground water? Is there any quantitative data like water quality?

Q4. How does the EPA harmonize all the interest groups that it has to work with in an effective way and how are decisions made especially when it has to interact with multiple agencies?

Response: The EPA has a participatory and inclusive process to ensure that there is adequate sensitization and that everyone's aspiration is considered.

Q5. How easy is it to get information from the EPA and is it free?

Response: Write to the agency and within a reasonable time it can be given. Being free or not depends on the information that is needed. If it is public information it can be accessed freely

Q6. Incentives are needed to get people to want to contribute to management; how do we intend to address the issues on incentives

Q7. The Keta port that is being proposed, what kind of port is it and what is its purpose?

Responses:

- This discussion is still on-going and feasibility studies have been done but not sure what purpose it would serve. However, as the area is largely for fishing, landing sites are definitely needed. Infrastructural developments have often times become political issues or promise and so are not planned in relation to environmental health and community rights
- It is difficult to make a case when the impact on ecosystem is not known and if leadership does not support long-term development planning based on ecosystems services.
- For proper management, guidance and knowledge is needed for sustainability

Q8. What is the EPA doing about the massive destruction of mangroves in the keta area for shrimp farming when the people causing this harm have no permit?

Response: They are fined or given penalty to pay. They are also withheld from operating until a permit is produced.

Q9. How can we integrate multi benefit of ecosystems?

Responses

- Start with collaborative visioning: challenges, opportunities and collective visioning of what is more appropriate
- Important to develop adaptive solutions to address challenges in the delta. There are several examples of adaptive delta management that Ghana can learn from
- It is also important to do monitoring and evaluation for learning

Q10. How does transition of energy systems affect the Volta delta?

Q11. What is making galamsay thrive and survive and how are the findings of the various institutions complementing each other.

Response: The politicization of the issues is a major challenge. Much effort is being made to regulate illegal mining. There has been an assessment of cost of mining activities; it has been presented to former minister with no real solutions. With the new administration, it is hoped that the illegal mining issues would be dealt with.

Q12. Considering that politicians are involved, how do we interact with them to develop a model that will completely limit destructions in the delta?

Response: Genuine institutional collaboration and coordination is needed to synthesize the problems or information available to each institution.

Q13. What will be the best governance approach to arrive at the concerted, integrated and coordinated approach that is needed?

Response: There should be genuine institutional collaboration and coordination to synthesize the problems or information by each institution. What is critical is data availability.

Q14. How does academic process influence the governance processes of delta management?

Response: It is very much intertwined, very effective in a sense that it creates different or new platform to create new solutions

Q15. How do we interface research and policy?

Response: Academic and knowledge platform is needed. The meeting is a good opportunity to start such a process.

Q16. What is the link between Volta delta and DECCMA?

Response: The DECCMA study report or data being prepared would be used to support the in achieving the goals of the Volta Delta

Day 2: Local stakeholders meeting

Q17. Evasive water weeds are taking over our rivers. How do we stop the weeds from growing?

Response: Several attempts have been made by VRA but it seems that the weeds have become a plague. I don't have adequate knowledge on how to deal with it but this is something to explore together to find solutions.

Q18. How would the district assemblies be supported in this?

Q19. What are some of the ways to protect the coastal communities apart from sea defense wall?

Q20. How can collaboration be enhanced among players in the Volta delta

Response: Through engagements such as this to share knowledge and ideas and to synergize efforts.

Q21. What are the strategies through which enforcement mechanisms can be made more potent in deterring people from excessive exploitation of the delta resources?

3.0 Proposed Actions at National & Local Stakeholders Meeting for DA Ghana Wing

1. Form Working Group (WG) coordinated by the host of DA Ghana wing (WG include UG, IGED-Africa, EPA, WD, OW, IESS, WRI/WRC). The DI will host, and work with international partners, national and local working groups.
2. Consolidate mandate by individually meeting stakeholders who were not present in National and local stakeholder workshop to seek their views and support; Write letters to institutions by February 15, 2017
3. Mapping and scoping: context analysis; literature review to consolidate existing research findings; stakeholder mapping; policy, institutional and legal framework; design/define framework and objectives for the Ghana Wing; Define Volta Delta boundary; comparative assessment DA; Scoping to include: hydrology, vegetation/biodiversity, land use dynamics, population, ecosystem services, ecology, transition zon, socio-economic, socio-cultural, health, historical, political economy, gender, trends, drivers of change to be addressed on the ground. (NB; integrate with 6. Research).
4. The DI to formulate ToR for the mapping and scoping exercise by March 30, 2017 and share with other stakeholder (WG) for input.
5. Organize stakeholder workshops every quarterly or biannually with funding support from DA Secretariat. Next meeting with stakeholders between April 6-18, 2017
6. Awareness raising on Volta Delta: Documentary/media involvement? Getting Ghana Wing website on-line
7. Financial blueprint, management and communication structure for organization, and operations to be clearly defined or clarified.
8. Define research agenda (low hanging fruits) with universities in NL and elsewhere and start it in September. Our suggested priority areas are:
 - a. Ecosystem services including hydrology; reproduction of fish
 - b. Sustainable infrastructure including coastal defence
 - c. Dynamics of the delta: modelling/ projections
 - d. Agriculture and food security
 - e. Tourism (e.g. design tourism facilities)
 - f. Linking existing traditional governance structures with national and regional governance structures.

4.0 Field Visit – Introductory and Familiarization Field Trip by Delta

Alliance team

After the two day meetings, The DI led the DA secretariat team for a site tour. The team first visited the Songhor Ramsar site, Azizanya community at Ada Foh guided by and the Park Manager, Mr. Dickson Agyeman. After a brief introductory remark about issues affecting the inhabitants and management challenges of the Songhor Ramsar site, the team took a walk along the beach to an area close to the Volta Estuary. On Saturday the team visited made another trip to the Keta Lagoon Complex Ramsar site guided by the Park Manager, Mr. Abdul Fuseini-Kareem). They were taken to the Anyanui information centre, mangrove market and on a boat cruise to the shrimp production site at Agorkedzi and to the Volta Estuary where they made some personal observation.

5.0 Conclusion

The challenges as indicated by all stakeholders were cross-cutting and there is no clarity on the definition of the boundary of the delta. The absence of a coordinated approach and policy harmonization coupled with the fact that there is no feedback and reporting mechanisms on research findings as between stakeholders makes implementation and enforcement difficult. The discussions also revealed that funding and limited capacity of actors are major constraints to good delta management. There are also limited investment opportunities as well as organised community based initiatives that enhance local livelihoods. It is critical that all stakeholders (communities, traditional authorities and government agencies) work together as a strong united force to ensure that policy and research deliver results that meets their needs.

The 2 day meetings and the field trips therefore offered the platform to share experiences, best practices, ideas, international network connections, approaches and tools as a starting point but in no means aimed to be final or conclusive. These meetings have only contributed to the start of a new approach to the Volta Delta and further understanding of the priorities and contributions of all the relevant stakeholders present. It is expected that the outcomes of this meeting will motivate all stakeholders to collectively work harder in a more consented, integrated and coordinated manner to achieve collective vision and goals for the DA Ghana Wing.

6.0 References for further information

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Appendix 1: Agenda or Programme Outline

A. Volta Delta Critical Stakeholders' Meeting; Coconut Groove Hotel Accra-February 2, 2017

PROGRAMME OUTLINE-Day 1[Thursday 02/02/17]

TIME	ACTIVITY	BY
09:00 am- 09:30 am	Arrival & Registration	All
09:30 am- 09:35am	Opening prayer	All
09:35 am- 09:45am	Introduction of Chairman & his opening remarks	Ken Kinney
09:45 am-10:15 am	Introduction: The Volta Delta: The relevance of a Ghana Wing of the Delta Alliance: past, present, future(including 5 minutes for interaction)	Nico Beunders
10:15 am-10:30 am	Statement from NL Embassy	Mr. Fred Smiet, First Secretary Water and Climate, GNWP EKN
10:30 am-11:20 am	Introduction and presentation from Delta Alliance Secretariat, Netherlands (including 5 minutes for interaction)	Delta Alliance Secretariat, Netherlands
11:20 am-11:40 am	Coffee Break	All
11:40 am-12:00 am	Presentation : A policy perspective: IWRM and Delta governance (including 5 minutes for interaction)	Water Resources Commission
12:00 am-12.20 am	Presentation: The role of Volta River Authority: past ,present, future (including 5 minutes for interaction)	Volta River Authority Rep
12:20 am-12:40	The Delta management from a Bird's eye perspective (including 5 minutes for interaction)	Volta Basin Authority -
12:40-13:00	Presentation: Scientific research on the Volta Delta; overview, challenges and ambitions. Synergy with Delta Alliance research program (including 5 minutes for interaction)	UG/WRI
1:00 pm - 2:00 pm	Lunch Break	All
2:00 pm - 2:30 pm	Way forward in respect of integral delta planning and management of the Volta Delta. How to organize a Wing? (including 5 minutes for interaction)	Rep- Delta Alliance Secretariat, Netherlands
2:30 pm - 3:10 pm	Working group sessions: Strategic priorities and an action plan for the Ghana Wing. A governance model for the Delta Wing	Moderators?

3:10 pm - 3:50 pm	Presentations of working group results, plenary session on conclusions. The mandate for the Delta Wing.	Chairman
3:50 pm - 4:00 pm	Closing remarks Closing prayer	Chairman

B. Volta Delta Local Stakeholders' Meeting at Villa Cisneros & SPA Sogakope February 3/17

PROGRAMME OUTLINE-Day 2[Friday 03/02/17]

TIME	ACTIVITY	BY
	PART I-MORNING SESSION	
09:00 am- 09:30 am	Arrival & Registration	All
09:30 am- 09:35am	Opening prayer	Participant
09:35 am- 09:50 am	Introduction of Chairman & His Opening remarks Presentations of working group results, plenary session on conclusions. The mandate for the Delta Wing.	
09:50 am-10:10 am	Introduction: The Volta Delta: The relevance of a Ghana Wing of the Delta Alliance: past, present, future	Ken Kinney, ED of the DI
10:10 am-11:00.am	Introduction and presentation from Delta Alliance Secretariat, Netherlands (including 5 minutes for interaction)	Rep- Delta Alliance Secretariat, Netherlands
11.00-11:05	Summary of conclusions national stakeholder meeting on Feb. 2 nd	Rep- Delta Alliance Secretariat, Netherlands
11:05 am -11:20 am	Coffee Break	All
11:20 am -11:40 am	Presentation: Development challenges in the Volta Delta Area: the perspective of traditional leaders (including 5 minutes for interaction)	Traditional leader
11:40 am-12:00 am	Presentation -Development and governance challenges the Volta Delta Area: the perspective of Municipal and District Assemblies (including 5 minutes for interaction)	District planning officer?
12:00 pm-12:20 pm	Challenges for the Delta Ecosystems	Wildlife Division
12:20 pm - 01:00 pm	Lunch Break	All

01.00-01.40	Working Group sessions: 1. a strategic agenda for the Ghana Wing 2. a governance model: how will local voices be heard?	All
01.40-02:20	Presentations of working group results, plenary session on conclusions. The mandate for the Delta Wing.	
02.20-02:30	Chairman's closing remarks Closing Prayer	
	PART I-AFTERNOON SESSION	
01:00 pm - 01:45 pm	On road through Salt Mining Site to selected communities (e.g. one coast; one inland?)	Selected Participants including DIMI Team
01:45 pm - 02:30 pm	Short meetings with two communities and their key persons (chief fisherman etc)	Selected Participants including DIMI Team/KMA
02:30 pm -03:15 pm	On road to Anyanui (Volta Estuary)	Selected Participants including DIMI Team
03:15 pm - 04:15 pm	Boat crossing on the Volta Estuary & Back	Selected Participants including DIMI Team
04:15 pm - 05:30	On road back to Sogakope	Selected Participants including DIMI Team
5:30 pm - 06:30 pm	Resting	Selected Participants including DIMI Team
06:30 pm - 08:00 pm	Dinner	Selected Participants including DIMI Team
08:00 pm - 08:30 pm	Feedback on the field Visit	Selected Participants including DIMI Team

**C. Volta Delta-Field Visit Continuation for Ada Area -Villa Cisneros & SPA Sogakope
February 4, 2017**

PROGRAMME OUTLINE-Day 3[Saturday 04/02/17]

TIME	ACTIVITY	BY
07:30 am- 09:30 am	Breakfast & Preparation for departure to the field	All
09:30 am- 10:30 am	Field Visit-On road to Ada Site (Volta Estuary)	Selected Participants including

		DIMI Team
10:30 am- 11:30 am	Short Discussion with Community	Selected Participants including DIMI Team
11:30 am- 12:00 pm	From Estuary to Acqua Safari Hotel, Ada	Selected Participants including DIMI Team
12:00 pm - 02:00 pm	Lunch @ Acqua Safari Hotel, Ada	Selected Participants including DIMI Team
02:00 pm - 03:00 pm	Back to Accra	Selected Participants including DIMI Team

Appendix 2: Participants' Expectations (merged where they are cross-cutting)

1. Design pathways to ensure that multiple conflicts and competing interests within the volta delta basin are properly managed
2. Share experiences, learn from others and contribute to how to sustainably manage our deltas
3. To know more about the volta basin and how the challenges in relation to issues such as climate change are being and can be addressed
4. More interested in resilience of ecosystems and expects to compare processes in Ghana and Netherlands; how are the processes different?
5. Know more about the Delta Alliance team, what they do and how to connect with them
6. Know more about deltas in Ghana, impact on women and how we could manage the impacts in relation to the needs of women
7. Expects that all stakeholders become clear on delta management and work in an integrated and coordinated ways in sustainably managing the delta
8. Observe the meeting process and learn more about the importance of deltas
9. Learn more about the challenges, prospects and how to plan in sustainably managing our deltas
10. More interested in water supply in the basin and also how we can manage the water resources sustainably to benefit communities
11. Positive understanding of what the significance of the Delta is and what the challenges are
12. Expect to know more about the challenges and how we can think together in addressing it
13. Know more about the Ghana Delta and to know what the Ghanaian wing wishes to achieve with it and bring experiences to support its management
14. Know about multiple interest: business, political and how balance these interests

Appendix 3: List of Meeting Attendees/Participants

No	Name	Organization/ institution	Tel. number	Email address
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Appendix 4: Individual Stakeholders Action Lists - Sogakope

During the local stakeholders meeting, representatives were requested to write down one action that they would take as an individual after the meeting. The following are the individual action lists (not edited):

1. Since planning is an integrated process, I will include Delta issues into my plan, for this reason I will like Delta Alliance Secretariat through Development International to help my District to prepare the District Medium Term Development Plan to have a far-reaching effect on the people of the catchment area.
2. Initiate the preparation of an integrated development plan for the Delta Area. Both short and long term plan.
3. Collaborate with stakeholders in ensuring that the Volta Delta project really achieve its aims and objectives
4. Streamline Volta Delta issues into the MTDP 2015-2021 with support from Delta Alliance Ghana wing.
5. Involvement of the District Assembly Structure local Governance Structure especially the planning Unit to come up with an all inclusive plan preparation with Delta Alliance
6. Use system dynamic approach to understand better the interconnectivity of the components of the Volta Delta System
7. By approaching the system with good and positive action in order to stop pollution and try to put in place good measures that will sustain the good environmental growth
8. We have to maintain the environmental laws and make sure they are well adhered to. Those who will default must be punished or jailed to serve as deterrent to others.
9. Develop the small scale agricultural potentials of the delta zones such as vegetable production through the provision of small scale irrigation facilities.
10. The development and production of fingerlings of selected fishes which are not easy to multiply to increase the fish stock of the lower Volta basin
11. Develop a sustainable government structure- traditional conservation measures
12. Facilitate restoration of degraded mangrove sites
13. Facilitate clearing of blocked creeks to enhance fisheries and farming
14. Sensitize and create awareness in schools and communities
15. Preserving of the mangrove by creating awareness on how it is relevant to us and how it will affect us and how is beneficiary to us.
16. I will engage in advocating about delta. Explaining to the people of my community about what Delta means, their plans, and what they are trying to do to help the people of Voltarian and the world at large.
17. I would want to do something within my power and that is to intensify awareness creation. Make people particularly the local people who depend on the delta for their livelihood and the importance to conserve and to practice sustainable exploitation of the Delta.
18. I would raise a workshop for the communities within the delta on the benefits they would get from effective and efficient management of the resources available from the Delta in order to improve upon their livelihood.
19. I will want to be part of a team to assess biodiversity and ecosystem in the whole delta area
20. Need for data base to be created for all researchers already undertaken in the delta area
21. Embark on awareness creation and education campaign on what Delta is and so that people can understand the importance of its conservation and protection.
22. Promotion of economic activities to reduce poverty
23. Protection of the Volta Delta from coastal erosion
24. I shall prevail on my District Assembly to collaborate with the other Assemblies of the Delta Area to work together to improve the economic condition of the people

25. I will support tree planting including planting of mangroves
26. Ensure adherence to development control plans
27. Educate the Business Advisory Center to prioritized skills training for alternative livelihood in communities located in the delta
28. The Delta is a very vital asset to humans and the species in them and needs to be managed and protected. As an institution we will always consider the delta in our operations. We will also welcome any invitation from relevant bodies to make sure it is managed effectively
29. I will educate other people to know the value of our Delta in the area of its socio-economic importance (i.e. oil, fish farming, animal husbandry, transportation, rice production)
30. Setting up regular meeting at least 2 times in a year with all stakeholders to discuss challenges, prioritize actions and share knowledge
31. Scoping/mapping – ecology, coastal ocean dynamics, socio economic map, potential assessment and mobilize stakeholders for commitment
32. We need to develop and project delta alliance
33. I have the confidence and ability to make sure that I factor all this delta development issues in our MTDP so that sources to improve the life of the people in the area.

Appendix 5: Participants contextual definition of a delta

During the local stakeholders meeting, attendees were requested to provide a definition of the delta based on their own understanding of what it is. Below is what the stakeholder defined the Volta delta to mean. Find attached pdf file

Appendix 6: Meeting in Pictures (Photos)

