

**Enhancing Port Reputation through an Improved Environmental
Governance:
A Case study of the Takoradi Port Infrastructure Expansion Project**

**Jemima Nana Anowah SACKEY, David Kow HALM, James Benjamin GAISIE
(GHANA)**

Key words: Environment, Governance, Port, Reputational Risk, Sustainability

Summary

The study reviews the environmental social governance framework of the Takoradi Port Infrastructure Project. Environmental governance is critical for achieving long-term development and environmental protection. Environmental governance refers to the laws, customs, rules, and organizations that regulate how people interact with the environment. In order to help participants (from the public and commercial sectors, NGOs, and local communities) handle conflicts, establish common ground, and make crucial decisions, this process links and harmonizes policies, institutions, processes, tools, and information (Haque & Ntim 2018). The study sought to explore the nature of environmental governance, the implementation gaps and make practical recommendations. Based on the research findings, the study, established the implementation gaps in the environmental governance associated with the Takoradi Port Infrastructure project. Both quantitative and qualitative data approaches was used in the investigation. Some of the findings of the study includes; more than half (57%) of the participants disagreed that people in the New Takoradi community who were affected by the project have been adequately compensated, the promulgation of new laws that affect the legal framework of the Takoradi port Development project, the strengthening of environmental governance through ISO 14001 certification and the disposal of dredged material as well as the effect on artisanal fishing as the major environmental risk associated with the Port Infrastructure development project. The study proposes several practical recommendations to strengthen the environmental governance framework which includes; the setting up of intergovernmental

Enhancing Port Reputation Through an Improved Environmental Governance: a Case Study of the Takoradi Port Infrastructure Expansion Project (12028)
Jemima Sackey, David Kow Saape Halm and James Benjamin Gaisie (Ghana)

FIG Working Week 2023
Protecting Our World, Conquering New Frontiers
Orlando, Florida, USA, 28 May–1 June 2023

committee to address inter agency implementation challenges, Training seminars for project stakeholders to understand complex Port related terminologies, influence positive attitudes, share data and knowledge and skills transfer as well as outsourcing environmental performance indicators monitoring throughout project life cycle. Good governance assists in the holistic identification and prudent management of environmental costs. Therefore, the strengthening of the environmental governance for port infrastructure projects helps add to significant business value through enhanced reputation and provides a clear sustainable vision for the future.

1. Introduction

The multiplicity of laws and policy guidelines have become an important driver of sustainability in Port infrastructure development. (Barnes-Dabban et al., 2018).

In recent times however, Port Authority have experienced greater autonomy from the government control especially in the area of port ownership and management systems. The upsurge of private multinational companies such as A.P.M. Maresk and Bollore Group and in the case of Takoradi Port, Ibestek Group have been encouraged to mitigate the damaging effects of Port infrastructure deficit. Also, the rise of environmental society groups and NGOs such as PENAF across the Western and Central African sub- region as well as the vibrant main stream media, growth of the social media space and numerous sustainability certifications, accreditation and awards have all in no small way considerably influenced environmental governance for Port infrastructure development projects (Barnes-Dabban et al., 2018).

The interrelated nature of economic development, environmental protection, and social acceptance are encompassed by the trendy term "Sustainable Development" describing the long-term, prudent use of the natural environment. Government and corporate organizations have become increasingly aware that the degradation and the liabilities related to the misuse of the environment would end in real losses in the long term and put future economic development at risk. Globalization have greatly influenced environmental politics and the behavioral change by both state and private actors in international trade and industry (Barnes-Dabban et al., 2018).

Bilateral and Multilateral financial institutions are now devoted to funding development projects that promote the most efficient use of their available natural resources and have sustainability incorporated into their Projects (Dixon et al., 2013). Infrastructure development

Enhancing Port Reputation Through an Improved Environmental Governance: a Case Study of the Takoradi Port Infrastructure Expansion Project (12028)

Jemima Sackey, David Kow Saape Halm and James Benjamin Gaisie (Ghana)

FIG Working Week 2023

Protecting Our World, Conquering New Frontiers

Orlando, Florida, USA, 28 May–1 June 2023

funding has by no small way, influenced environmental and social governance practices for Port projects.

Ghana ranks 111th on the Global competitiveness index (GCR,2019) therefore, lot more infrastructure development is needed to add value to its rich resource base. The percentage of raw materials to Gross domestic product ranges from 2.3%- 16.3 % within the period from 1970-2020, (World Bank,2022). Inadequate berths and storage warehouses as well as recent increasing cargo traffic performance has triggered the need for infrastructure expansion as seen in Figure 1 below.

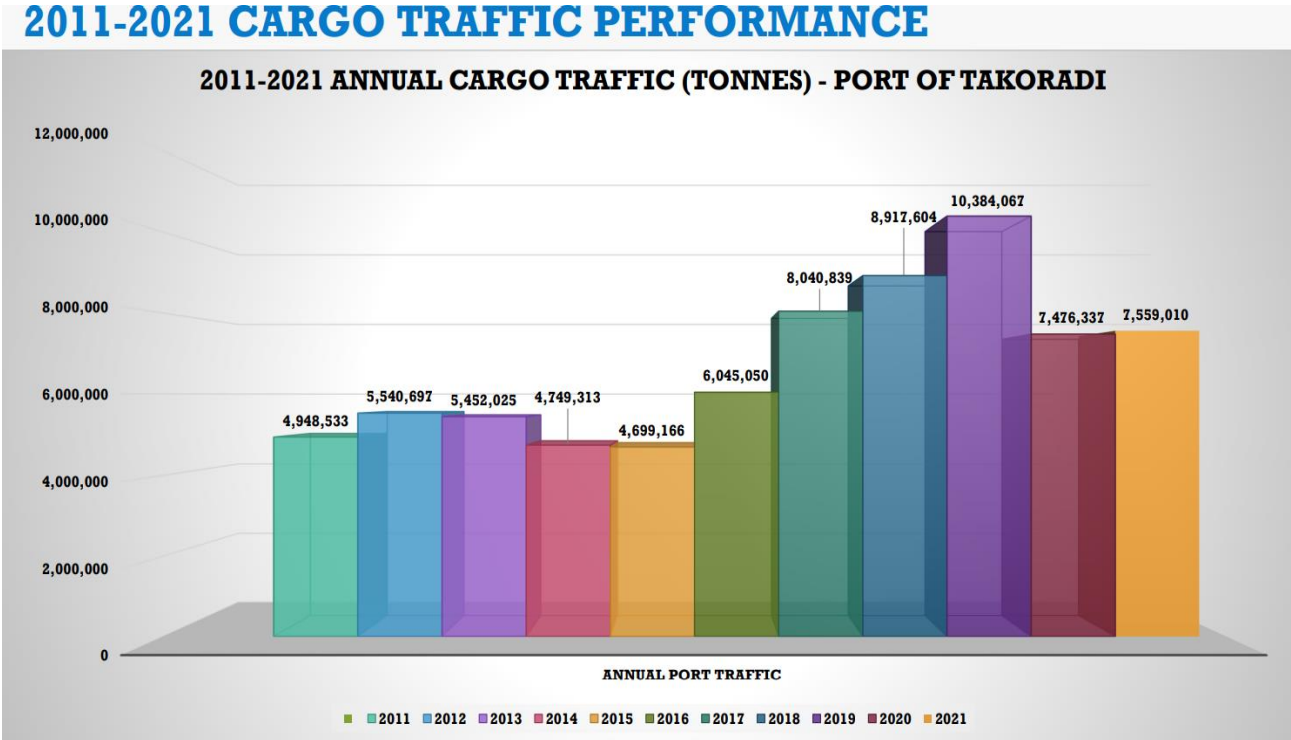


Figure 1: Port of Takoradi Cargo Traffic Performance (2011-2021)

The figure above, shows the cargo traffic performance of the Port of Takoradi for a 10-year period. The Port recorded its highest cargo traffic volumes in 2019 that is about 10,384,067 metric tonnes whereas the year 2015 recorded the lowest cargo traffic volumes of about 4,699,166 metric tonnes. This makes a strong business case for the Infrastructure development project to accommodate the fluctuating cargo volumes.

Additionally, Ghana`s economic growth evidenced by increased Gross Domestic Product of \$77.59 billion (World Bank,2022), has necessitated considerable environmental governance reforms to address its allied degradation. The hiring of Selhorn Consultants more than 10 years ago through the Ministry of Transport to help GPHA with port of Takoradi expansion support the need for infrastructure developments.

2. Problem statement

The dredging, land reclamation and construction works for the purpose of port infrastructure development would obviously impact various environmental aspects such as hydrological processes, air, land, and neighboring communities. From the figure below, the Port of Takoradi intends to expand its physical infrastructure to cover a considerable portion of the coastline of the Sekondi- Takoradi coastline. The proposed project site is considered by LI 1652 (Environmental Assessment Regulations, 1999) as environmentally and socially sensitive.

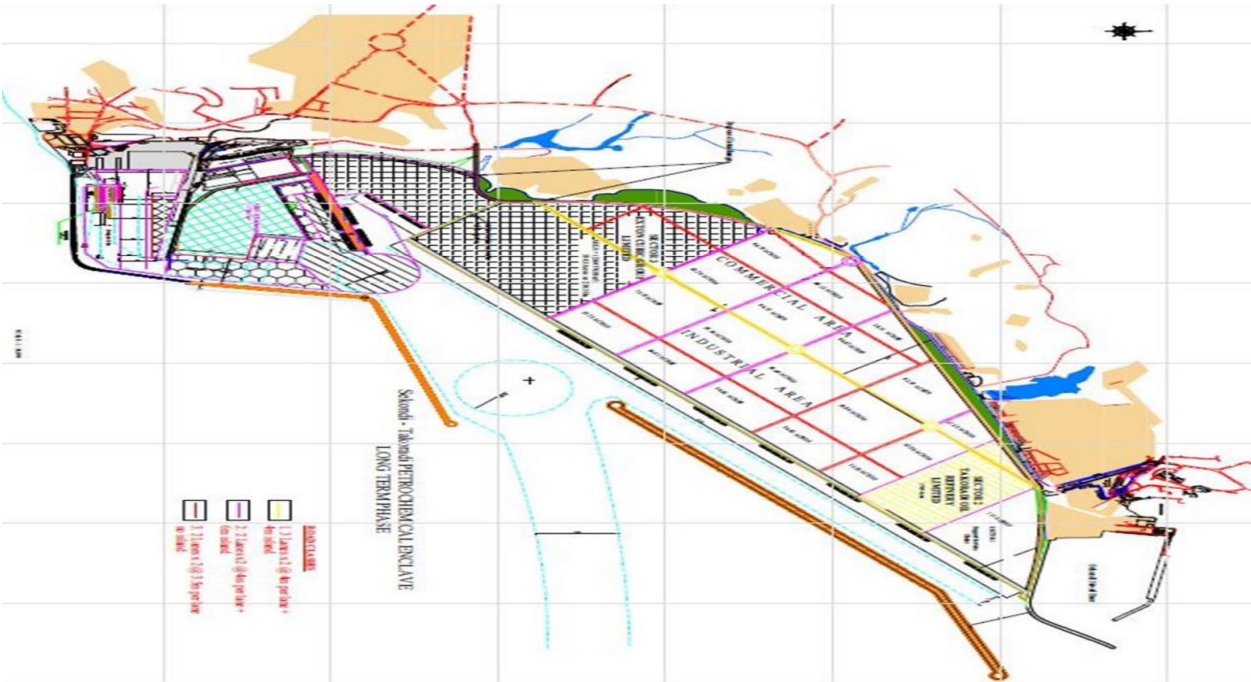


Figure 2: Proposed Future Port developments

E.T Lawer (2019) in this study opined that despite conducting an Environmental Social Impact Assessment and including local stakeholders in the planning process, the Tema Port authority was not able to avert some negative consequences of the Port development on the surrounding

communities. A lack of sincere involvement with local stakeholders in some cases has resulted in litigation, security concerns and project delays.

Frequent complaints by stakeholders about Environmental permit process have exposed of the gaps in the current project environmental governance. The Port of Takoradi has been chastised for its reactionary approach to environmental stewardship in that way, giving the Authority a negative image as well as pose grave reputational risks. In the light of recent funding conditionality by multinational organizations in relation to environmental and social due diligence of activities for projects it is therefore prudent that the Port of Takoradi enhances its environmental governance framework in a way that address the concerns of the various stakeholder groups and institutions. The study's goal is to find the gaps in the current environmental governance approach and make practical recommendations for improving sustainability as part of the Takoradi port infrastructure expansion project. This study seeks to (1) explore nature of the environmental governance framework for the Takoradi Port Infrastructure project (2) ascertain the implementation gaps of the environmental governance approach for the project, and (3) suggest recommendations to strengthen environmental governance for Takoradi port infrastructure project.

3. Literature Review

3.1 Environmental Governance

According to Haque and Ntim (2018), environmental governance is the term used to describe the laws, practices, guidelines, and institutions that control how humans interact with the environment. This process integrates and harmonizes policies, institutions, procedures, tools, and data to assist participants (from the public and private sectors, NGOs, and local communities) in handling conflicts, finding common ground, and making key choices.

The overview of environmental governance, according to GHD Consulting (2013), includes:

- a, Laws, regulations, the port, and inter-jurisdictional bodies' policies;
- b, Arrangements for port governance and management
- c, Stakeholder engagement and awareness initiatives

d, Incentives, penalties, and awards schemes

e, Expert independent auditing and review procedures

Harashima (2000) opined that the development of environmental policy has also been affected by international organizations, and governments in many Asian nations have carried out environmental projects that have received funding from those organizations. Environmental impact assessments (EIAs) are typically used as part of project development in developing Asian nations, and they have also embraced economic tools based on the polluter pays premise. Several of these approaches mimic those that are promoted by international organizations. These processes pay minimal attention to different cultural, economic, environmental, political, and social settings because they are based on techniques already in use in wealthy nations.

This trend was also echoed by Erhun (2015), Nigeria's environmental governance regulations are ineffective, and despite efforts, the country's capacity to manage them is deteriorating. Economic development is valued above environmental sustainability in Nigeria. Also, Erhun (2015) indicated that the idea of sustainability underpins the process of improving environmental governance. The administration of the environment in a way that ensures that natural resources are protected rather than put in danger and that the environment is preserved for both current and future generations is known as sustainable environmental governance.

3.2 Environmental Governance Theories

The theory of multi-level governance (MLG)

Stephenson (2013) gives a summary of MLG, its main applications, and related research. The goal of MLG is to create a theoretical framework. MLG is useful for concerns of how different actors at different levels of social structure are involved in the public administration of environmental policies.

Adaptive Governance theory

The cornerstone of adaptive governance for efficient collaborative environmental management is understanding the relationships between formal institutions, informal networks, and people of different sizes (Gunderson and Holling, 2002). The adaptive part of governance also

emphasizes the importance of the deliberative procedures required to create understanding based on various knowledge systems, generate trust via repeated interactions, and finally facilitate social (or collective) learning procedures and continuing feedback (Folke et al., 2005; Armitage and Plummer, 2010). Although there are several environmental governance theories these two stated above in recent times are quiet popular and relevant to the study.

3.3 Environmental governance and SDG goals

The SDGs were created in 2015 and include 17 basic goals, 169 targets, and predetermined indicators to measure their performance by 2030. In order to accomplish these goals, both non-governmental activities and national and sub-national government policies are taken into consideration. The SDGs underscore the interdependence of the environmental, social, and economic aspects of sustainable development by putting sustainability at their core. SDGs 10, 11, 13, 15, 16, and 17 form the basis for good governance (Unctad, Module 4, 2021).

Therefore, it is apparent that, ports must construct strong alliances with port city authorities and other transport sector stakeholders that would support efficient environmental and social governance systems that encourage sustainability.



Figure 3: The 17 United Nations Sustainable Development goals (Source: UNCTAD Module 4,2021)

4. Methodology

Enhancing Port Reputation Through an Improved Environmental Governance: a Case Study of the Takoradi Port Infrastructure Expansion Project (12028)
 Jemima Sackey, David Kow Saape Halm and James Benjamin Gaisie (Ghana)

FIG Working Week 2023
 Protecting Our World, Conquering New Frontiers
 Orlando, Florida, USA, 28 May–1 June 2023

The assessment was conducted at two GPHA departments namely Estate/Environment and the Civil Engineering Departments. The study targeted these departments because of their various roles and relevance to the environmental governance of port infrastructure projects. The study sampled external project stakeholders such as the project-affected community of New Takoradi, EPA, GMA and STMA. Accordingly, the respondents would throw more light on the objectives of this research.

The exploratory research approach of the study would look at the implementation gaps related to the Takoradi Port Infrastructure project's environmental governance system. Both quantitative and qualitative data approaches were used in the investigation. Primary data was sourced from a questionnaire survey administered to New Takoradi residents where 60 respondents were conveniently sampled due to time constraints. Also, an online survey administered to Functional Quality Managers with a targeted population of 60 respondents, however, only 40 respondents participated. The structured interviews were purposively sampled with key personnel from GPHA (Estate/Civil), EPA, GMA and STMA. Secondary data was also sourced from Project Environmental Social Impact Assessment, Project Masterplan, EPA permit, Project environmental monitoring reports, and Estate department training file.

The multi-methodology approach was used in data collection for the assessment. It included field observations, structured interviews, and the administration of questionnaires to purposely sampled respondents.

The data collected from the observations, administration of questionnaires and structured interviews were presented with pictures, themes, tables, and pie charts in the results and then analyzed in the discussion.

5. Results

5.1 Questionnaire Results (New Takoradi and GPHA ISO Functional Quality Managers)

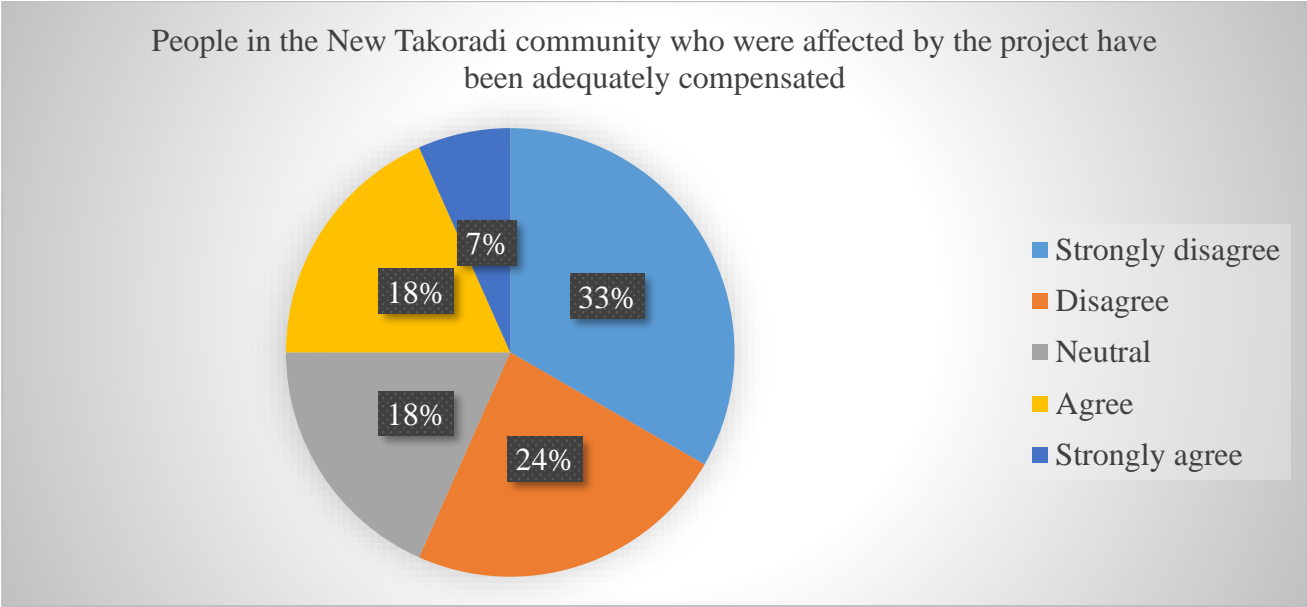


Figure 2

Figure 2 shows that more than half (57%) of the participants disagreed that people in the New Takoradi community who were affected by the project have been adequately compensated, 25% agreed that adequate compensation has been given to the people in the New Takoradi community who were affected by the project while 18% were not sure of that assertion. The management of the port project should make sure that the affected people are not given insufficient compensation, even though no monetary compensations have been paid to those in the New Takoradi community who were impacted by the project. GPHA has only provided some resettlement for demolished structures. The port is yet to have a definite compensation regime for project affected persons as required by multilateral financial agencies. This will help to prevent future conflicts between the community and the port.

Site visit by the researcher as well as secondary data available to the researcher suggest that GPHA Takoradi primarily focuses on legal compensation to the project affected persons. CSR activities have not focused on economic empowerment of the New Takoradi community in other words they have indicated some level of dissatisfaction with project related compensation schemes.

The Port has made investments like ISO 14001 certification and the procurement of operational equipment that have less impact on the environment. This result is affirmed by the GPHA interviewees.

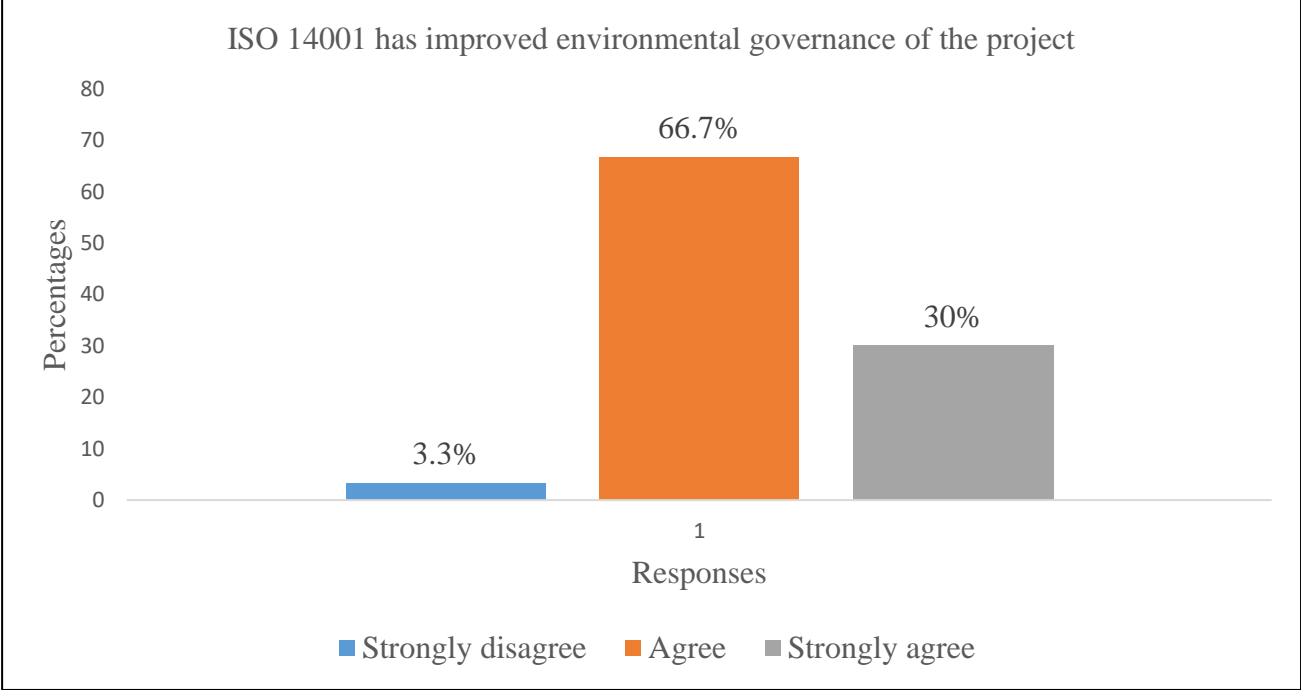


Figure 3

The majority of the respondents (ISO FQMs) (96.7%) agreed that ISO 14001 had enhanced project environmental governance, showing that the port had complied with ISO environmental protection criteria. The environmental management system requirements are outlined in ISO 14001, which can be certified. It outlines a process that a business or organization may use to establish a successful environmental management system. Environmental system-related requirements are provided by ISO 14001 along with usage instructions. Other similar standards concentrate on certain strategies like audits, messaging, labelling, and life cycle analysis, as well as environmental problems like climate change.

Even though the Takoradi Port Infrastructure development project began before the establishment of the Environmental Management system like ISO14001, the certification has

improved the GPHA Takoradi commitment to issues affecting the environment. Through awareness creation and training seminars for staff, it has helped transform environmental consciousness and processes of the Port as well as expectations of project stakeholders. See Qualitative Data Analysis in Appendices.

5.2 Interview Results

Key staff of Estate/Environment Staff, Sekondi-Takoradi Metropolitan Assembly, Ghana Maritime Authority, and Environmental Protection Agency. They provided insightful responses to the objectives of the study.

5.2.1 The nature of Environmental Governance of the Port infrastructure development project

The interview with the Project Engineer and the Port Estate/Environment Manager confirmed the various legislations, policies, plans, and monitoring reports regulating the Takoradi Port Infrastructure project. For the project an Environmental Social Impact Assessment document as developed and an EPA permit as prescribed by the Environmental Regulations LI 1652. It is the responsibility of Project Contractors and consultants to submit Project Environmental Monitoring Reports to the EPA for their review. The project engineer added that health, safety and environment guidelines have been incorporated into Project Contract documents and supervised by the Project managers. This was corroborated by the staff of EPA and all processes were duly adhered to by the Project Implementers. In line with legal requirements, a Project Environmental Management Plan was developed with a periodic monitoring regime. They added that the Port of Takoradi is ISO 14001(Environmental Management System) certified and hence have significantly improved since the commencement of the project. From the ESIA document, project activities of environmental concern have been categorized in Preparatory, Construction, Operation, Maintenance and Decommissioning activities. It also advocates the creation of Unit Safety/Environment committees. According to the ESIA document for the Takoradi Port Expansion project, the legal framework for the project includes; IFC Performance Standards, Equator Principles, relevant national legislations such as EPA Act 490, Environment Assessment regulations LI 1652, PNDC law 160, Ghana Maritime Act 824, relevant internal

conventions such as UNCLOS, Basel Convention, ISPS Code. International law principles such as Polluter pay principle, Intergenerational equity, sustainability and Best Available Technology at least cost. The document incorporated GPHA`s Occupational Health, Safety and Environment Policy, preliminary Environmental Management Plan, Dredging plan and Resettlement / Compensation framework. It can be observed however from the above that, the 1992 Ghanaian Constitution, local government, land use planning acts, regional laws or guidelines were absent in the legal framework of the project. Environmental Impact Assessment Report for M2 project considers EU, national, regional and local land use and transport planning and development policy guiding and regulating the development of Dublin Port.

The interview with the STMA Works engineer highlighted the involvement of Concessionaires such as ATS Terminal Services and Marshall Oil and Services in the development of Port Infrastructure. It is therefore critical that the Port of Takoradi needs to have shared environmental risk and responsibilities with its concessionaires and Port development project implementers to appreciate their contribution to enhance its reputation.

5.2.2 The implementation gaps of environmental governance of the Port infrastructure development project

Even though the ESIA advocated the creation of Unit Safety Environment committee and budget allocation to cover the environmental governance issues, there was no evidence of its operationalization for the project. The STMA Works Engineer added that, STMA is yet to effectively collaborate with GPHA for the Takoradi Port Expansion project like we do with other Development Authorities and State-Owned Enterprises requiring Environmental Permits, Fire Permits, Planning Permits, Development Permits, and Business Operating Permits. There can be further engagements at the technical sub-committee and spatial planning committees to review development proposals and ensure the overall medium term development plan of the Metropolis. He added that a key stakeholder like STMA who is the City Authority, feel neglected and ignored in the co-management of the environment as part of the Takoradi Port Infrastructure project. This was avoidable and has dire consequence if action is brought against the Project Implementing partners for neglect of an important statutory requirement (STMA staff). On the contrary, the Port of Dublin as a consequence of the 2017 consultation process a

number of specific issues and observations emerged from the submissions and responses received which fed into the Masterplan Review Process in the following ways: Dublin Port Company decided to initiate a Strategic Environmental Assessment (SEA) and an Appropriate Assessment (AA) of the proposals to revise the Masterplan.

The Ghana Maritime Authority Takoradi indicated that they have limited involvement in the Takoradi port infrastructure project except reporting to the international community on vessel safety. The limited stakeholder engagement suggests collaboration and incorporation of emerging IMO requirements such as Green House Emission Strategy, Energy Efficiency Design Index and the Ship Energy Management Plan into the Port infrastructure development project. This was confirmed by the ESIA document for the project.

The residents of New Takoradi were of the view that they have not been adequately compensated. This finding is confirmed by Brown (2015) which indicates that, over the previous ten years, there hasn't been any tangible proof of GPHA's support, particularly for New Takoradi Community. This is presumably due to the way they approached the topic of Corporate Social Responsibility. It suggests that, GPHA engages in "cause-related marketing," which is mostly providing donations to fulfill requests for needs). Also, the study found out the update of baseline data to measure the overall impact of the project is yet to be conducted. Other implementation gaps include the limited environmental budget allocations, inadequate human and technological capacities to address environmental social risk related to the project.

5.2.3 Recommendations to strengthen environmental governance for the Project

The Staff of EPA suggested that

“Institute intergovernmental (stakeholder) meetings in evaluating performance and providing guidance toward environmental sustainability (EPA staff).

Another respondent (STMA) stated that:

GPHA and its project implementing partner to engage and collaborate with the City Authority and other statutory agencies like the Environmental Protection Agency (EPA) to review project designs and mitigation plans to protect and safeguard the overall global public goods (especially its biodiversity), to improve

Enhancing Port Reputation Through an Improved Environmental Governance: a Case Study of the Takoradi Port Infrastructure Expansion Project (12028)

Jemima Sackey, David Kow Saape Halm and James Benjamin Gaisie (Ghana)

FIG Working Week 2023

Protecting Our World, Conquering New Frontiers

Orlando, Florida, USA, 28 May–1 June 2023

the environmental governance framework for the Takoradi Port Expansion project (STMA staff).

The Project Engineer proposed that

The building of institutional capacity of the Port project to understand port project issues for improved governance and creation of direct policies to ensure compliance.

7. Recommendations

‘It takes 20 years to build a reputation and five minutes to ruin it. If you think about that, you will do things differently.’ Warren Buffet.

Short-Term

The study recommends the setting up of intergovernmental committee to address inter sectoral/agency implementation challenges. This would ensure seamless integration of future plans and project monitoring and monitoring as well as address misconception about Port infrastructure development projects. Improved collaboration and participation constitutes an environmental risk mitigation strategy. Aligns with SDG goals 16 and 17.

Also, Training seminars for project stakeholders to understand complex Port related terminologies and build stakeholder understanding and improve environmental social monitoring capacity. To build project institutional capacity to help develop the understanding of port infrastructure development projects and influence positive attitudes, share data and knowledge and skills transfer. Furthermore, outsourcing environmental performance indicators monitoring throughout project life cycle. The GPHA environment department is currently handicapped with the skill set and modern technology to perform the role. To provide credible and reliable data set to the Port Authority to improve its environmental governance mechanisms. To demonstrate the effectiveness of already existing interventions and provide a sound basis for continual improvement as expected by ISO 14001 certification. This would cater the Human resource and technological gaps of the Estate & Environment department as against the recruitment of Environmental Scientists and Engineers.

Long Term

The conduct of Impact Assessment Surveys and improved Environmental data analytics. This would provide sound data and feedback on environmental performance and interventions for future project decisions. Effective CSR that would boost the economic life of New Takoradi community. Refocus on social development project that would empower the project affected persons economically. For example, GPHA can assist in livelihood empowerment projects that can be beneficial to the Port that is a Cleaning Detergents production unit at New Takoradi. Proceeds from such ventures can sponsor other developmental activities at the Project affected community. This would in no small way, boost GPHA Takoradi` reputation and ensure robust community support for port infrastructure

expansion projects and ultimately aligns sustainable development goals,

Enhancing Port Reputation Through an Improved Environmental Governance: a Case Study of the Takoradi Port Infrastructure Expansion Project (12028)

Jemima Sackey, David Kow Saape Halm and James Benjamin Gaisie (Ghana)

8. Conclusion

Particularly from the standpoint of the surveying profession, the study can assist built environment experts, governments, and decision-makers to further integrate resilience into governance. To solve the environmental costs concerns of the port infrastructure development project, it is essential to adopt best practices in environmental governance and resilient pathways.

The findings of the study showed that GPHA Takoradi merely strives to ensure legal compliance to environmental regulations and policies. GPHA carries out stakeholder engagement but needs to do more to address their concerns and improve stakeholder collaboration to strengthen project environmental governance. The disposal of dredged material as well as the effect on artisanal fishing as the major environmental risk associated with the Port Infrastructure development project. The study overwhelmingly acknowledged the importance of ISO 14001 to the environmental performance and how it has motivated GPHA to align its activities to contribute to sustainable development goals. The lack of human and technological resources and the late update of project environmental documentation are some of the implementation gaps affecting environmental governance. The study also identified the promulgation of new laws that hugely influence Port infrastructure development and the need to update and collaborate with other governmental and non-governmental agencies. This is to help appreciate the mandate of GPHA in relation to Port infrastructure projects. The study recommends an adaptive governance approach that recognizes the multi-level stakeholder nature of environmental governance. This would ensure more transparent and integrated policies supported by all project stakeholders. The study concluded that, budgetary constraints, inefficient communication techniques, conflicting legal obligations, bureaucracy, and divergent interests among project stakeholders are some of the implementation short comings in the project's existing environmental governance. The Port of Takoradi must therefore, be consistent in order to establish an excellent reputation, which takes years to develop.

The recommendations elaborated in the previous chapter would in no small way, enhance the reputation of the Port of Takoradi as a sustainable port that aligns its port infrastructure expansion project to sustainability best practice while stimulating Ghana's economic development as well as that of the sub-region.

References

- Ansah, R. K., Obiri-Yeboah, K., & Akipelu, G. (2020). Improving the freight transport of a developing economy: A case of Boankra inland port. *Journal of Shipping and Trade*, 5(1), 1-22.
- Armitage, D., & Plummer, R. (2010). *Adaptive capacity and environmental governance*. Springer-Verlag, Berlin, Germany
- Barnes-Dabban, H. (2018). *Greening African ports: environmental governance transformations in a network society* (Doctoral dissertation, Wageningen University and Research).
- Bftonline.com, (2022) Banks making ESG compliance. Retrieved from <https://www.ghanaweb.com/GhanaHomePage/business> assessed on the 10th of November, 2022.
- Brown (2015), An Investigation into the Impact of the Takoradi Port Expansion Project On the Port Community (A case study of New Takoradi) UNCTAD Dissertation, Takoradi
- Dixon, J. A., Carpenter, R. A., Fallon, L. A., Sherman, P. B., & Manipomoke, S. (2013). Economic analysis of the environmental impacts of development projects. Routledge.
- Dublin Port Company, Environmental Impact Assessment Report MP2 Project 2012, Dublin.
- Einwiller, S. (2001). The Significance of Reputation and Brand for Creating Trust in the Different Stages of a Relationship between an Online Vendor and its Customers. Eighth Research Symposium on Emerging Electronic Markets.
- Environmental Assessment Regulations, 1999 (LI 1652) <https://bcp.gov.gh/acc/registry> accessed 04/10/22
- EPA Act (1999) <https://bcp.gov.gh/acc/registry> accessed 04/10/22
- EPA, (2019), Permit No. WREE.0020500115 Environmental Protection Agency Permit, Accra Ghana
- Erhun, M. O. (2015). A Legal Framework of Sustainable Environmental Governance in Nigeria. *Frontiers of Legal Research*, 3(4), 24-39.
- Eric T. L. (2019). Examining stakeholder participation and conflicts associated with large scale infrastructure projects: the case of Tema port expansion project, Ghana, *Maritime Policy & Management*, 46:6, 735-756, DOI: [10.1080/03088839.2019.1627013](https://doi.org/10.1080/03088839.2019.1627013)

- Folke, C., T. Hahn, Olsson, P. & Norberg, J. (2005). Adaptive governance of social-ecological systems. *Annual Review of Environment and Resources* 30(1): 441-473.
- Fombrun, C., van Riel, C. The Reputational Landscape. *Corp Reputation Rev* 1, 5–13 (1997).
- Ghana Ports and Harbours Authority (2015). Our History and Future, Takoradi Port. Retrieved from <http://www.ghanaports.gov.gh/page/27/Takoradi-PortOur-History-And-Futu>
- GHD, (2013) Environmental Best Practice Port Development: An Analysis of International Approaches report prepared for the Department of Sustainability, Environment, water, Population and Communities, Canberra, Australia
- GPHA Takoradi Marketing Department (2022), APEC Presentation assessed on the 5th of December, 2022, Takoradi
- Gunderson, L. H., & Holling, C. S. (Eds.). (2002). *Panarchy: understanding transformations in human and natural systems*. Island press.
- Kagan, Robert A., Gunningham, Neil and Thornton, Dorothy (2003), ‘Regulatory Regimes and Variations in Corporate Environmental Performance: Evidence from the Pulp and Paper Industry’, *Law & Society Review*, 37, pp. 51–89.
- Haque, F., & Ntim, C. G. (2018). Environmental policy, sustainable development, governance mechanisms, and environmental performance. *Business Strategy and the Environment*, 27(3), 415-435.
- Klaus Schub, (2019) Global Competiveness Report, World Economic Forum, Geneva Switzerland
- Mensah, J. (2019). Sustainable development: Meaning, history, principles, pillars, and implications for human action: Literature review. *Cogent social sciences*, 5(1), 1653531.
- Newig, Jens; Fritsch, Oliver (2008): Environmental governance: Participatory, multi-level - and effective? UFZ Discussion Paper, No. 15/2008, HelmholtzZentrum für Umweltforschung (UFZ), Leipzig
- Rindova, V.P. & Fombrun, C.J. (2018). The eye of the beholder: the role of corporate reputation in defining organizational identity. In Whetten, D.A. and Godfrey, P.C. (eds), *Identity in Organizations: Building Theory Through Conversations*. Thousand Oaks, CA: Sage, pp. 62 – 66.

- Paul Stephenson (2013) Twenty years of multi-level governance: ‘Where Does It Come from? What Is It? Where Is It Going?’ *Journal of European Public Policy*, 20:6, 817-837
- Pearce, D.W. & Warford J. J (1993) *the Concept of Sustainable Development: World Without End: Economics Environment and Sustainable Development*. Oxford University Press
- PNDCL Law 160 <https://bcp.gov.gh/acc/registry> accessed 04/10/22
- Pronk, J and Haq. (1992) *Sustainable Development: Concept to Action* New York, UNDP
- SAL Consult (2015) *Revised Environmental and Social Impact Assessment on Port Infrastructure Development including Dredging at Takoradi Port, Western Region*
- Selhorn/HPC, (2015) *Masterplan for the Port of Takoradi*, Selhorn Ingenieuresellschaft mbH and HPV Hamburg Port Consulting GmbH Germany
- Shrestha, Reeya. (2021). *Managing corporate brand reputation*, University of Northampton, UK
- UNCTAD, (2016). *Train for trade, Port Training Programme, Module 2, Organization of a Port System*, UNCTAD, Geneva, Switzerland
- UNCTAD, (2021). *Train for trade, Port Training Programme, Module 4, Challenges of Sustainable Ports*, UNCTAD, Geneva, Switzerland
- Weigelt, K. & Camerer, C. (2018). *Reputation and corporate strategy: a review of recent theory and applications*. *Strategic Management Journal*, 9, 443–454.
- Yohei Harashima, *Environmental Governance in Selected Asian Developing Countries International Review for Environmental Strategies Vol No. 1 pp 193-207 2000*, Institute for Global Strategies