



TANZANIA PORTS AUTHORITY

TERMS OF REFERENCE (TOR) FOR

TECHNICAL AUDIT FOR THE DAR ES SALAAM MARITIME

GATEWAY PROJECT (DMGP)

1.0 INTRODUCTION

- 1.1 Tanzania Ports Authority (TPA) was established by the Act of Parliament No. 17 of 2004. The roles of TPA as provided in the Act are to develop, manage, promote and operate ports in Tanzania.
- 1.2 During financial year 2020/2021, TPA has set aside funds to carry out an independent technical audit for the Dar es Salaam Maritime Gateway Project.
- 1.3 As part of the implementation support, TPA intends to procure a consultant to conduct an independent technical audit of works and services that have been completed, and those for the coming contracts for the entire program.
- 1.4 Upon appointment of the Consultant, TPA shall sign a contract with the consultant to provide consultancy services to undertake the independent technical audit for the completed works and services for the entire program.

2.0 DESCRIPTION OF THE PROJECT

- 2.1 Dar es Salaam port is the principal port in Tanzania and handles over 90% of all import and export volumes for the domestic and transit markets (Malawi, Zambia, Democratic Republic of Congo, Burundi, Rwanda and Uganda). Port facilities are developed on the western side of the harbour and include 11 berths of which 4 are dedicated to container operations and 7 are for general cargo. Other facilities include the Kurasini Oil Jetties (Koj) and the Single Point Mooring (SPM) for handling liquid bulk cargo and the Malindi/Lighter wharves used for the coastal trade.
- 2.2 The Dar es Salaam port being the principal port in Tanzania faces various challenges including depleted infrastructure and facilities, limited water depth at the quays, entrance channel and turning basin, which hamper efficiency and effectiveness of the port.
- 2.3 To address the challenges mentioned above, the Government of Tanzania has come up with the Dar es Salaam Maritime Gateway Project (DMGP), which is a multi-development partner initiative to improve the efficiency and effectiveness of the Port of Dar es Salaam. The project has two components: (i) Improvement of the Physical Infrastructure and (ii) Institutional Strengthening for TPA.
- 2.4 The main project components to be implemented under this program include the following:
 - 2.4.1 Strengthening and Deepening of Berths 1-7 and construction of a new multi-purpose berth;
 - 2.4.2 Dredging of entrance channel and harbor turning basin;
 - 2.4.3 Strengthening and Deepening of Berths 8-11;
 - 2.4.4 Improvement of Rail Layout in the port;
 - 2.4.5 Consultancy Services for Pre-Contract Services and Supervision for Strengthening and Deepening of Berths 1-7 and Construction of a new multi-purpose berth;
 - 2.4.6 Consultancy Services for Pre-Contract Services and Supervision for Strengthening and Deepening of Berths 8 -11.

2.5 The DMGP became effective on 27th April 2018 after the necessary effectiveness conditions were met by Tanzania Ports Authority as the implementing Agency and Government of Tanzania as the borrower.

3.0 DESCRIPTION OF THE ASSIGNMENT

The technical audit will be comprehensive, and include an analysis and review of activities that have been completed and those in progress. This will include, but not limited to, examination of the quality of designs, quality of works executed and those in progress.

4.0 OBJECTIVE OF THE ASSIGNMENT

4.1 The main objective of the technical audit is to allow an independent team to form a professional opinion on the compliance of works and services where applicable, that have been carried out under the DMGP with the technical specifications and standards.

4.2 The technical audit will also be regarded as part of the due diligence activities for the Government and the external partners: World Bank (WB), UK Department for International Development (DfID) and Trade Mark East Africa (TMEA).

5.0 SCOPE AND TASKS OF THE ASSIGNMENT

5.1 The Consultant will be required to audit the whole program covering all main works components under the DMGP for the entire program period ending 30th June, 2024. The Assignment will be comprehensive and shall include an analysis works and services where applicable and shall be carried out in four (4) different components' phases as follows:

- (i) **Phase I:** Strengthening and Deepening of Berths 1-7 and Construction of a new multi-purpose berth,
- (ii) **Phase II:** Dredging of entrance channel and harbor turning basin;
- (iii) **Phase III:** Strengthening and Deepening of Berths 8-11;
- (iv) **Phase IV:** Improving Rail Layout within the port.

- 5.2 The specific tasks and services to be provided by the Consultant for this assignment shall include, but not necessarily limited to, the following tasks:

5.2.1 Review of Engineering Designs

The Consultant's team shall identify any faults, omissions, inconsistencies, ambiguities in the engineering designs and cost-estimates of the current designs. In particular, the review shall aim for overall cost-effectiveness, best use of the existing works already carried-out, compliance to agreed design standards and environment and social management framework, and to minimize variations and design changes during subsequent construction.

5.2.2 Audit of Works Execution

The Consultant shall provide the following:

- (i) Simplified and quantified description of the audited infrastructure, verify the conformance of the works and their costs with the planned program, indicated in the contracts;
- (ii) Assess the quality of the works, the conformance with the work plan and Project objectives, and whether the Contract terms are respected by parties. The works quality should be determined through visual examination, measurements, non-destructive tests and laboratory tests if necessary;
- (iii) Verify that the Contractor executed the works and took into account the environmental protection issues and in compliance with Environmental Management Plan (EMP) as per the Contract;

5.2.3 Audit of Works Supervision

The Consultant shall confirm that:

- (i) The supervision process implemented by the Project Manager and/or the FIDIC Engineer and TPA ensure works supervision is in conformance with the terms of contracts;
- (ii) Confirm that all invoices, authorizations, justifications and variation orders, payment, reception certificates, etc., are available and properly filed. Confirm that payments are made in conformance with the terms of contracts and within the agreed limits;
- (iii) Confirm that the supervision process covers also environmental protection issues that should be accomplished by the contractors;
- (iv) Confirm that the training program, if required, to be implemented by the Project Manager and/or the FIDIC Engineer is in conformance with the best international standards, covering the principles of safety, and ensure continued use of good practices;
- (v) Verify and evaluate the organization of the work sites and the conduct of work site meetings.

NOTE: For each of the above points under the audit of works Supervision, the Auditor will not only verify and evaluate the existence or non-existence of a problem, but will make recommendations which will permit TPA to improve its procedures and achieve its desired implementation performance for future projects.

6.0 METHODOLOGY AND GENERAL UNDERSTANDINGS

- 6.1 The Consultant is required to clearly indicate the methodology and approach that will be used while carrying out this assignment and how the proposed methodology is deemed to be the best to achieve the objective of the assignment. The methodology should be enabling the Consultant to carry out a detailed analysis of the whole scope in order to properly advise TPA and other stakeholders on all project components that will be audited.
- 6.2 The Consultant's methodology should also indicate how they will closely work with TPA to enhance its capacity particularly in technical

audit of future similar works under the project and any other project that will be implemented by TPA.

- 6.3 In undertaking the audit, the Consultant shall keep in mind that the audit must be authentic and thorough as it will form the basis for making important decisions.
- 6.4 Accordingly, the Consultant shall exercise all reasonable skills, care and diligence in the performance of the audit and shall carry out all responsibilities to recognized professional standards.
- 6.5 The Consultant shall act as a faithful advisor to TPA and shall supply all expertise, knowledge, advice and skills required to carry out and complete the audit expeditiously in accordance with the conditions of engagement.
- 6.6 The Consultant shall further be responsible for undertaking all the fieldwork and verifying that all data were collected and analyzed appropriately .

7.0 EXPERIENCE AND SKILLS REQUIRED

- 7.1 The technical audit firm must have previous successful experience in carrying out technical audits or similar quality assurance services for at least ten (10) years.
- 7.2 In order to fulfill the objective of the services, the proposed team to undertake this assignment shall be required to consist of the following:
 - (a) Project Team Leader
 - (b) Geotechnical Specialist
 - (c) Quantity Surveyor
 - (d) Dredging Specialist
 - (e) Hydrographical Expert
 - (f) Railway Engineer
- 1.1 A minimum time requirement of 16.5 man-months to accomplish the technical audit assignment has to be considered by the Consultant. However, the Consultant may consider man-months beyond the minimum, but should not exceed 25.5 man-months.

Proposed Person- Months for the assignment

S/No.	Key Staff	Minimum Expected Man-Month	Maximum Man-Month
1.	Project Team Leader Port/Coastal Engineer	8.0	10
2.	Geotechnical Specialist	1.0	3.0
3.	Quantity Surveyor	2.0	2.5
4.	Dredging Specialist	2.0	3.5
5.	Hydrographical Expert	2.0	3.5
6.	Railway Engineer	1.5	3.0
	TOTAL MAN-MONTH	16.5	25.5

1.2 Qualification and experience required for the key personnel shall be as follows:

(a) Project Team Leader

The Project Team leader will be responsible for the overall management and supervision of the audit assignment in terms of target achievements and quality performance.

He/She Must be a registered Professional Engineer by relevant board and must have at least a bachelor degree in civil engineering. He/she shall be required to possess not less than 10 years' experience in port/harbour infrastructure development projects or other transport Infrastructure development projects. He/she must have been involved in Technical Audit of at least two (2) infrastructure development projects or in design and supervision of at least two (2) infrastructure Development projects as a Resident Engineer or Project Manager.

(b) Geotechnical Specialist

The Geotechnical Specialist shall have at minimum a bachelor's degree in geology or geotechnical engineering, with at least 5 years working experience in geotechnical surveys of marine projects. He/she must have been involved in Geotechnical activities of at least two (2) marine infrastructure projects.

(c) Quantity Surveyor

The Quantity Surveyor shall be responsible for analysing technical issues related to quantity surveying. He/she must be

registered Quantity Surveyor, with a valid practicing certificate and at least a bachelor's degree in Quantity Surveying or Building Economics. He/she shall be required to have not less than 5 years of practical experience in quantity surveying assignments. He/she must have been involved in at least one (1) quantity surveying assignment of marine infrastructure project.

(d) Dredging Specialist

The Dredging specialist shall have at minimum a bachelor's degree in geology/geotechnical engineering/coastal engineering/hydrographical surveying with minimum working experience of five (5) years and must have been involved in at least two (2) dredging projects.

(e) Hydrographical Expert

The Hydrographical expert shall have at minimum a bachelor's degree in hydrographical surveying. He/she shall be in possession of Category "A" Level of Competency recognised by IHO/FIG/ICA. He/she must have at least 5 years working experience in hydrographical surveying and must have been involved in at least two (2) dredging project.

(f) Railway Engineer

The Railway Engineer shall be a registered Professional Engineer by relevant board and must have at least a bachelor's degree in civil engineering specializing in railway engineering. He/she shall be required to possess not less than 10 years' working experience in railway projects. He/she must have been involved in Technical Audit or design and supervision of at least two (2) railway projects.

2.0 SERVICES TO BE PROVIDED BY TPA

TPA shall provide the Consultant with the following:

- (i) As built drawings (if available) for the completed works;
- (ii) Approved Designs for all works;
- (iii) Contracts for works and services completed or being implemented;

- (iv) Planned works to be implemented during the DMGP duration;
- (v) Permit to access the project areas; and
- (vi) Introduction to Government Authorities and stakeholders that the consultant may require consultations with, in relation to this assignment.

3.0 DELIVERABLES AND REPORTING REQUIREMENTS

3.1 It is envisaged that the audit will cover the entire program period starting from 2017 to 2024. The consultant shall submit reports and other documents on the basis of Terms of Reference and where necessary will cover other aspects which in their opinion, and after discussion with TPA, will be deemed essential for completing the audit for each Phase separately.

3.2 Deliverables

The Consultant shall be required to deliver the following outputs for each phase, as indicated in sub-section 4.0:

(i) Inception Report

The Inception Report shall be submitted and presented within one (1) month after the commencement of the assignment. This Report shall summarize the Consultant(s) initial findings for all phases and based on the initial findings determine the best methodology to achieve the objective of the Audit. The Inception Report shall contain but not limited to the following:

- (a) Details regarding the methodology to be applied by the Consultant during the execution of the assignment;
- (b) Audit program for the entire DMGP;
- (c) An outline of activities expected to be completed up to the date of the presentation of subsequent reports.

(ii) Interim Activity Reports

The Activity reports for the outlined activities in (i) to (c) above for each Phase shall be submitted as and when the activity is completed.

(iii) Draft Audit Report

The Draft Report shall be submitted within one and half (1.5) months after start of each Phase together with its associated services contracts. This report shall among other things summarise the following:

- (a) Principal results of the Audit (observation and recommendations);
- (b) A list of the works sections covered by the Audit, the number and precise location of the core samples taken where necessary;
- (c) Comments on the quality of construction, including a table showing the detailed results of the lab testing of works core samples where necessary;
- (d) Principal weaknesses observed during the course of the Audit, their roots causes and proposed measures to rectify them. A plan of action for the implementation and monitoring of the proposed remedial measures shall be prepared in tabular format;
- (e) Any other issue judged pertinent by the auditor. The Technical Auditor is especially requested to flag any situation which would indicate the likelihood of fraudulent or corrupt practices being present anywhere in the execution of the project.

(iv) Final Audit Report

The Report shall be submitted within three (3) months after start of each Phase with its associated services contracts. The Report shall incorporate all comments from stakeholders made on the draft Audit report and shall at a minimum have chapters on the following:

- (a) General management of the project;
- (b) Review of the Engineering design;
- (c) Works execution;
- (d) Procurement of Goods and materials (if any);
- (e) Review of works supervision; and
- (f) Observations and recommendations

(v) Final Edition of All Audit Reports

The Final Edition of all Audit Reports shall include all the contents of the Audit Reports of Phase I, II, III, IV etc, including all the comments and considerations from the Client and the involved stakeholders during the process, and shall be submitted within one (1) month after completion of the last Phase.

3.3 Reporting

The Consultant is required to note the following:

- (i) The Report of each audited Phase and Final Edition shall be submitted in 10 hard copies and 5 CD Soft copies;
- (ii) Presentations of Interim Activity Reports shall be done in two (2) rounds. The first round of presentations shall done to TPA PIT Technical Team and the second round of presentations to TPA PIT Management. These presentations shall be done after completion of every outlined activity as stipulated in (i) to (c) above;
- (iii) The consultant will be required to prepare and submit reports in English Language and presented on A4 sized paper. All Reports shall be submitted initially as draft versions, which shall be finalised to accommodate clients' comments;
- (iv) The consultant shall report to the **Director General** of TPA for all contractual and correspondence issues whilst day to day operational matters will be dealt at the Directorate of Engineering Services;
- (v) The consultant shall observe reports presentation requirements as indicated and outlined in Chapter 9;
- (vi) The Final Technical Audit Report shall clearly cover but not limited to the following:
 - (a) General Management of the entire project;
 - (b) Review of engineering design;
 - (c) Works execution;
 - (d) Procurement of materials (if any);

(e) Review of works supervision.

(vii) The Final Edition of All Audit Reports shall also include the revised power-point presentations from each Phase.

Note: The consultant must make sure that all deliverables are not used by anyone other than the client. All the reports should be submitted to the clients.

4.0 TIMEFRAME FOR THE ASSIGNMENT

The assignment shall be conducted for the whole project duration up to the closure of the project. However, the consultant shall be required to under audits of completed sections of each contract, as indicated in the work schedules of each particular contract. The audit report of each completed section shall be presented as an **Interim Audit Report**. The consultant shall be required consolidate all the **Interim Audit Reports** to come up with the Final Audit Report for each Phase

At the end of the project closure, the consultant shall be required to consolidate all the **Final Audit Reports** for each **Contract** and come up with the **Final Project Audit Report**.

The consultant shall be required to distribute the agreed Contract staff-inputs to cover the whole audit assignment for the project.

Timeframe for the assignment

S/NO.	Activity	Number of Months Since Start
1.	Signing of the Contract/Start	$M_{I-IV}=0$ Month
2.	Submission and Presentation of Inception Report	$M_{I-IV}+1.0$
3.	Comments on Inception Report	$M_{I-IV}+1.5$
4.	Submission of Revised Inception Report	$M_{I-IV}+2.0$
5.	Submission of Interim Activity Reports	When activity is completed
Phase I	Strengthening and Deepening of Berths 1-7 and Construction of a new RoRo berth; for both the Works and the Consultancy Services	
6.	Submission and presentation of Draft Audit Report	$M_I+3.5$

S/NO.	Activity	Number of Months Since Start
7.	Comments on the Draft Audit Report	M _I +4.5
8.	Submission of Final Audit Report	M _I +5.0
Phase II	Dredging of entrance channel and harbor turning basin; for both the Works and the Consultancy Services	
9	Submission and presentation of Draft Audit Report	M _{II} +3.5
10.	Comments on the Draft Audit Report	M _{II} +4.5
11.	Submission of Final Audit Report	M _{II} +5.0
Phase III	Strengthening and Deepening of Berths 8-11; for both the Works and the Consultancy Services	
12.	Submission and presentation of Draft Audit Report	M _{III} +3.5
13.	Comments on the Draft Audit Report	M _{III} +4.5
14.	Submission of Final Audit Report	M _{III} +5.0
Phase IV	Improving Rail Layout within the port; for both the Works and the Consultancy Services	
15.	Submission and presentation of Draft Audit Report	M _{IV} +3.5
16.	Comments on the Draft Audit Report	M _{IV} +4.5
17.	Submission of Final Audit Report	M _{IV} +5.0
All Phases	Final Edition of All Audit Reports	
18.	Submission of Final Edition of All Audit Reports	M _{I-IV} +6.0

5.0 PAYMENTS SCHEDULE

The following payment schedule is set for the assignment. Consultants should keep these in mind while preparing their proposals:

- (i) 10% of the total contract sum shall be paid upon submission and approval of the Inception Report;
- (ii) 20% of the total contract sum shall be paid upon submission and approval of the Final Audit Report for Phase I;

- (iii) 20% of the total contract sum shall be paid upon submission and approval of the Final Audit Report for Phase II;
- (iv) 20% of the total contract sum shall be paid upon submission and approval of the Final Audit Report for Phase III;
- (v) 20% of the total contract sum shall be paid upon submission and approval of the Final Audit Report for Phase IV; and
- (vi) 10% of the total contract sum shall be paid upon submission of the Final Edition of all approved Audit Reports.

Reimbursables, which cover all out of pocket payment, will be made against acceptable documentary evidence. No other payments will be made to the Consultant under this contract.