



**SPECIAL AGRO-
INDUSTRIAL
PROCESSING ZONE
(SAPZ) PROGRAM,
KADUNA STATE**

Terms of Reference for the
Engagement of Design and
Supervision Consultant for the
development of Master Plan for
Agro-Industrial Hub (AIH) and
Agricultural Transformation
Centre (ATC)

ENGAGEMENT OF DESIGN AND SUPERVISION CONSULTANT FOR THE DEVELOPMENT OF SPECIAL AGRO-INDUSTRIAL PROCESSING ZONE (SAPZ)

1.0 BACKGROUND

The Federal Government of Nigeria (FGN) has secured a facility from the African Development Bank (AfDB) to implement a five-year FGN/AfDB – Assisted Special Agro-Industrial Processing Zone (SAPZ) Program in partnership with the State Governments and Private Investors in four (4) participating states of **Kaduna, Oyo, Cross River and Imo states** in the first phase.

The implementation of SAPZs is a major investment program of the Federal Government of Nigeria, driven by the Federal Ministry of Agriculture and Rural Development (FMARD) in collaboration with relevant Federal Ministries, Departments and Agencies (MDAs) to develop agro-processing clusters in areas of high agricultural production across the country. It is a strategic move to rapidly develop modern agro processing capacity to serve the vast and growing local market, create sustainable market for farmers and reduce postharvest losses of local agricultural produce and thereby create wealth for farmers, promote import substitution and create sustainable agriculture related jobs.

This clustering approach is to help address investment challenges in the development of agro-processing enclaves across Nigeria, including poor access to quality infrastructure, inadequate feedstock supplies and other challenges confronting agro-processing environment. SAPZs, therefore, will be developed with requisite infrastructure for agro processing environment which will help reduce cost absorptions and engender competitiveness in agro-industrial production that is critical to further unlocking the potentials of Nigeria’s Agriculture to create ready markets and wealth for farming communities and reduce rural poverty.

The SAPZ is made up of the Agricultural Transformation Centre (ATC) which is a community-based rural institution within the host community, supported with provision of quality production drivers for the production of feedstock and the Aggregation Centre (AC) for primary storage and the Agro-Industrial Hub (AIH) equipped with desirable infrastructure to create modern agro-processing environment where secondary value addition will take place. The agro-industrial Processing hub (AIH) will draw its processing feedstock from the ATC where activities of the production clusters and Aggregation Centers are being coordinated.

The development objective of the SAPZ Project is to support inclusive and sustainable agro-industrial development in Nigeria and it will be implemented through four complementary and mutually reinforcing components as follows:

Component 1: Support to Infrastructure Development and Agro-Industrial Hub Management:

The activities under this component will therefore entail the construction and/or upgrading of AIH infrastructure including office buildings and training centers, general services layout (fencing, internal and access roads/parking, drainage, power supply, water, sewerage, effluent management, health-and-safety, etc.). It will also provide specialized services (quarantine, quality control labs/certification centers, breeding centers, etc.), business support services

including administrative, knowledge/ICT/procurement/employment centers as well as ESMP implementation activities. The component's activities will therefore entail the construction and/or upgrading of AIHs in the following locations:

- (i) Ijaiye Agro-Industrial Hub in Oyo State for Industrial Cassava, Rice and Soya bean value chains.
- (ii) **GAAIZ Hub in Kaduna State for Tomato, Maize, Soya beans & Ginger value chains.**
- (iv) Ikom Agro-Industrial Hub in Cross River for Cocoa, Cassava and Rice value chains.
- (v) Okigwe Special Livestock Processing Hub in Imo State for the Beef and Dairy value chains.

Component 2: Agricultural Productivity and Production:

This component will support farm-level productivity enhancing infrastructure in agribusiness zones such as the irrigation schemes rehabilitation, feeder road, land development, water supply, etc. and the development of Agricultural Transformation Centers (ATCs). These ATCs will be strategically located within the farming communities around the AIH and would be used for the facilitation of farmers' access to essential inputs such as quality seeds, agro-chemicals, farm mechanization/digitalization, and primary handling facilities.

The component will also support the capacity building activities related to Good Agriculture Practices (GAP) including climate-smart agriculture, quality requirements, testing and conformity standards, and food safety. Farmers would also be provided with access to tailored Agri-inputs and financing through digital applications. Irrigation would be put in place in specific areas. Activities of this component will also include: (i) An Information and Communication Technology (ICT) platform on which all actors are registered; this includes a database of all producers; (ii) Seed system of high yielding and climate-adapted crop and livestock varieties, and mechanization services; (iii) Training, Registration, and Financing of "last-mile" Agro-dealer networks; (iv) An electronic wallet to directly support producers with smart government subsidies to offset some of the costs of inputs, especially fertilizer and seeds; and (v) farm advisory services and R&D.

The SAPZ Program will (under AfDB and IFAD) finance ATCs in the following locations/sites:

- (i) Cross-River State: One (1) ATC in Obanliku for the rice value chains.
- (ii) Imo State: One (1) ATC in Ngor Okpala for the poultry, maize and soya beans.
- (iii) Oyo State: One (1) ATC in Eruwa farm Settlement.
- (iv) **Kaduna State: One (1) ATC in Dutsen-Wai, Kubau LGA for the horticulture and grains value chains.**

Component 3: Policy and Institutional Development:

This component will support the; (i) Improving enabling policy, legislation and regulations for Agro-Industrial Zones in Nigeria; (ii) Enabling business environment (special regulatory regime) and legal systems to support private sector investment, including One-Stop Shops, digital infrastructure, customs offices, immigration support, and land access, contracts and permits in the Agro-Industrial Hubs; (iii) Investment promotion, branding, and marketing of the agro-industrial zones; (iv) Capacity building for staff of relevant public institutions; and (v) Technical assistance for the review and main streaming of IT-based business registration & licensing

system, standard operating procedures for the SAPZ initiative in Nigeria. Specific and targeted support for policies, laws, rules, and regulations to address inefficiencies in agricultural value chains are to be supported under this component. A communications and market branding strategy is to be developed for the SAPZ Project to raise awareness and annual investment promotion events to attract local and international investors to the respective AIHs are to be organized.

Component 4: Project Coordination and Management: This component is to support the establishment of a decentralized Project implementation arrangement including the establishment of a National Program Coordination Unit (NPCU) within FMARD and Participating State Implementing Units (PSIUs) at the State-level for the coordination and supervision of program activities; and day to day management based on adequate results measurement framework; ESMP implementation and supervision; program procurement, disbursement, financial management, audit and reporting.

These terms of reference refer to the development of detailed engineering design, and supervision of the construction of Agro-Industrial Hub at Gaaiz and Agricultural Transformation Centre at Dutsen-Wai in Kaduna State of Nigeria. The Services addressed by these TOR can be split into two phases and include:

- Phase 1: Preparation of Detailed Engineering Design planned for four (4) months period.
- Phase 2: Supervision of the construction of the Agro-Industrial Hub (AIH) and Agricultural Transformation Centre (ATC) planned for twenty seven (27) months period including defect liability period of twelve (12) months.

The implementation of Phase 2 is contingent upon satisfactory implementation of Phase 1

2.0 OBJECTIVE(S) OF THE ASSIGNMENT

The overall objective of the assignment is to assist the Kaduna-PIU to produce SAPZ master plans with the preparation of detailed engineering designs, Bill of Engineering Measurement and Evaluation (BEME) for the construction works at AIH and ATC and supervision of construction works at AIH and ATC to ensure that all works are delivered to agreed quality and time and within budget.

3.0 SCOPE OF SERVICES, TASKS (COMPONENTS) AND EXPECTED DELIVERABLES

The scope of the services under this assignment is to prepare a Master Plan with detailed engineering design, BEME and supervise the construction of economic, social and ancillary infrastructure in the AIH and the Infrastructure Development at the ATC. The Consultant is in collaboration with Kaduna-PIU and SAPZ National Program Coordination Unit (NPCU) to be responsible for but not necessarily be limited to the following general activities:

- (a) The consultant will review the existing feasibility studies of Special Agro-Industrial Processing Zone for Kaduna State., the Project Appraisal Report, Technical Annexes and E&S reports.
- (b) The Consultant is required to provide professional inputs, advice and support to the implementation of the project through the provision of appropriate and fit for purpose

detailed engineering survey including; geotechnical investigation (route survey and deep soil investigation for bridge works), hydrological survey, inventory of cross drainage structures, quality control plan, engineering designs, specifications and preparation of standard procurement documents (showing backup calculations to support the rates and quantities used in the Bill of Engineering Measurement and Evaluation) for all types of contracts and in compliance with the policies/guidelines of the Federal Government of Nigeria(FGN) and the African development Bank(AfDB) as well as Environment, Social, Health and Safety (ESHS) measures. Consultants are required to innovatively produce designs that meet the required level of service at least life cycle cost through integrating the use of locally available materials;

- (c) Design proposals will be assessed by the infrastructure team of Kaduna-PIU, SAPZ National Program Coordination Unit (NPCU), AfDB, and Transaction Advisory Firm to ensure that design expectations are met. The Consultant will however take steps to engage, consider and incorporate the inputs from the SAPZ strategic stakeholders and requirements of the relevant regulatory agencies as applicable. This may begin at the general project scope stage as well as after Preliminary approval is received;
- (d) The Consultant will be responsible for submission of design report, detailed design and costing estimate duly prepared and stamped to Kaduna -PIU for approval;
- (e) The Consultant will make available the preliminary designs to the Kaduna-PIU safeguards team to enable timely preparation of safeguards instruments by the Kaduna-PIU;
- (f) The Consultant is required to provide all the necessary support and advice to the Kaduna-PIU in optimizing the use of available material resources to minimize costs, achieving desirable work quality and expediting construction activities;
- (g) The Consultant will assist the Kaduna-PIU in ensuring that works/contracts are constructed and completed within the agreed price and allocated time under the contract or any subsequent agreed amendments;
- (h) The Consultant should agree to hold harmless and indemnify Kaduna-PIU for all claims, damages and causes of action arising out of the negligent design by the Consultant. The Consultant should accept that the Supervision component of the Scope of Works is not automatic and is subject to variables to include inter alia review of the Consultant's performance during the Design or Formulation phase, the successful completion of the Master Plan, the successful award of the works contract for site development;

Kaduna-PIU's expectations of the Consultant for the design phase are outlined in but not limited to **3.1** below. All applicable professional and regulatory standards are to be applied in the completion of this assignment.

PHASE 1: PREPARATION OF DETAILED ENGINEERING DESIGN

3.1 Scope of Work: The details of the scope of work shall include the following but not necessarily be limited to;

3.1.1 Infrastructure Development at the AIH;

The size of the Agro-Industrial Hub is expected to be 250 Ha. The consultant will prepare a master plan with detailed engineering designs for the following structures/facilities;

Ground and site works;

- General Site Clearance - 9ha
- Compound Wall Fencing - 6km
- Gate and Gate house - 1 unit
- Security Outpost - 2 units

Non processing facilities;

- Administration Office - 1-Unit
- R&D Centre and - 1-Unit
- Disaster Management - 1-Unit
- QA & QC Lab - 1-Unit
- Knowledge Centre and ICT - 1-Unit
- Industrial / Employment Hub - 1-Unit
- Community Vocational Centre - 1-Unit
- Health Centre - 1-Unit
- Recreational/Playground - 1-Unit

Common infrastructure and utilities;

- Fire Station - 1-Unit
- Water Facility - 1-Unit
- Water Treatment Plant - 1-Unit
- Power Facility - 1-Unit
- Sewage and Effluent Treatment Plant - 1-Unit
- Solid Waste Management section - 1-Unit
- Public Toilets WC (46m²) - 2-Unit

Road, Culvert and Drainage;

- Internal Road: 18m Wide /b - 6Km
- Internal Roads: 12m Wide /c - 9Km
- General Street Lights (Solar Power) - unit
- RC Side Drains (1.2m x 1.2m) and Vehicular Crossings - 15Km
- RC Drain Size 2.0m x 1.5m /d - 0.5Km
- Truck Parking - 1Ha
- Access Road: Dual – 7.3m Carriage +1.5m Shoulder /e - 17Km
- Access Road: Single – 7.3m Carriage +1.5m Shoulder /f - Km

Infrastructure & social amenities;

- Health Centers, Schools, Markets, Water and Sanitation - 1 each with appropriate numbers of streetlights
- Residential buildings

3.1.2 Infrastructure Development at the ATC;

The size of the Agricultural Transformation Centre is expected to be 30 Ha. The consultant will prepare a master plan with detailed engineering designs for the following structures;

• Service Centre	-	1-Unit
• Processing Centre	-	1-Unit
• Truck Packing	-	1-Unit
• Water Facility	-	1-Unit
• Power Facility	-	1-Unit
• Storage Warehouse	-	1-Unit
• Cold Storage	-	1-Unit
• Solid Waste Management Plant	-	1-Unit
• Security Outpost	-	1-Unit
• Fire Station	-	1-Unit
• Administrative Block	-	1-Unit
• Health/Veterinary Clinic	-	1-Unit
• Bank and ATM Services	-	1-Unit
• Market	-	1-Unit
• QA & QC Lab	-	1-Unit
• Quarantine Zone	-	1-Unit
• Road Single – 7.3m Carriage + 1.5m Shoulder (Asphalt)	-	1.4Km
• Roadside Drains/a	-	2.8Km

3.2 Specific Tasks: The assignment shall entail the following specific tasks but not necessarily be limited to;

3.2.1 Design of Access and Internal Roads;

The Consultant shall conduct field visits to designated sites of AIH and the ATC to compile detailed inventory of the roads and define the best design approach suitable based on the existing data and condition.

The Consultant shall carry out the following tasks but not necessarily be limited to;

- Identify all candidate access roads to be considered for construction under this project;
- Identify all candidate internal roads to be considered for construction at the AIH and ATC;
- Prepare an inventory of the access roads in terms of length, width, type, surface condition, bridges, fords, culverts, lateral drainage etc.
- Prepare an inventory of the internal roads in terms of length, width, type, surface condition, bridges, fords, culverts, lateral drainage etc.
- Recommend and prepare design standards for the construction of the access and internal roads and estimate their construction costs;

- (f) Prepare a Bill of Engineering Measurement and Evaluation (BEME) to the construction of both access and internal roads and based on these, prepare confidential cost estimates based on unit costs;
- (g) Assist in the preparation of bidding documents for works based on the AfDB Standard Bidding Document for Procurement of Works;

3.2.2 Design of Buildings;

The proposed buildings will include all buildings listed in 3.1.1 and 3.1.2 above.

The Consultant shall conduct field visits to compile detailed inventory of the buildings and identify all elements for construction and define the best design approach suitable based on the existing data and condition.

The Consultant shall carry out the following tasks but not necessarily be limited to;

- (a) Develop preliminary/working drawings of the buildings including site plans/layout.
- (b) Prepare Bill of Engineering Measurement and Evaluation (BEME) for the proposed buildings.
- (c) Develop finishing schedules.
- (d) Develop all other engineering services drawing such as structural, mechanical, electrical, plumbing etc using relevant industry standard.
- (e) Identify responsibilities for statutory obligations arising from the construction works (HT, LT lines, sewage or pipelines).
- (f) Develop the landscape architecture around the buildings for their intended uses.
- (g) Make adequate provisions as required by regulations for parking, safety and site storage.

3.2.3 Processing and Ancillary Infrastructures

3.2.3.1 Design of Water and Sanitation Schemes;

The Consultant shall conduct field visits to compile detailed inventory of water and sanitation facilities and define the best design approach suitable for each facility based on the existing data and condition.

The Consultant shall carry out the following tasks but not necessarily be limited to;

- (a) Geophysical survey/hydrological investigation for ground water development with a view to locating suitable point for drilling productive boreholes at AIH and ATC and proposed modification where necessary.
- (b) Design of efficient sewerage for the drainage of wastewater and runoff at the AIH and ATC to protect the environment and people from disaster.
- (c) Develop working drawings for the designs based on approved standard.
- (d) Ensure that the elements of the design account for an integrated infrastructure development with stand-alone phases for implementation.
- (e) Prepare Bill of Engineering Measurement and Evaluation (BEME) for the proposed construction.

3.3 Tendering and Bid Evaluation for Construction Contracts

After completion of the engineering design and bidding documents and subsequent approval by the Kaduna -PIU, the Consultant may assist the relevant staff of the Kaduna -PIU to prepare the specific procurement notice that will be used for inviting bids for the construction contracts if requested. At the close of the bidding period, the Kaduna -PIU will carry out opening and evaluation of the bids for the selection of the successful bidders. The final outcome shall however be subject to clearance by the AfDB.

3.3.1 Site Visit and Pre-Bid Conference;

- (a) The Kaduna-PIU will organize and conduct the site visit and the Pre-Bid Conference as required. The Kaduna-PIU in conjunction with the Consultant will answer questions asked by the Contractors attending the Site visit and Pre-Bid Conference and will record the Minutes of the same. At the pre-Bid Conference, the Kaduna-PIU with technical support from the Consultant will explain to prospective Bidders aspects of the work that will warrant special attention during preparation of bids.
- (b) Immediately after the Site Visit and pre-Bids Conference, the Consultant in consultation Kaduna-PIU will prepare any Addenda to the Bid Document deemed necessary to amend it or provide clarification or answers to questions raised by prospective bidders. The Consultant will prepare the Minutes of the Site Visit and Pre-Bid Conference. Sufficient copies of these documents will be printed and sent to the contractors attending the Pre-Bid Conference.

3.4 PHASE 2: SUPERVISION OF THE CONSTRUCTION OF THE AGRO-INDUSTRIAL HUB (AIH) AND AGRICULTURAL TRANSFORMATION CENTRE (ATC)

To achieve the core objectives of this assignment, the Consultant will develop a work plan and provide qualified and skilled personnel in sufficient numbers to ensure the completion of the tasks listed below in a manner consistent with international best practice and standards.

The Consultant's duties at this stage shall include the following but not necessarily be limited to;

- (a) Handover site to the construction contractor in company of the Kaduna-PIU and any other relevant stakeholder.
- (b) The Consultant shall undertake the supervision of the ongoing works at the AIH and ATC throughout the implementation period of the project on behalf of the Kaduna-PIU ('The Employer'). The consultant will monitor the project and ensure that the contractor adheres to the specifications. The consultants' responsibility will also includes measurement of works, the preparation of progress reports, certification of payment invoices, authorization of completion certificates and preparation of project completion report at the end of the project.

- (c) The implementing authority shall be the Kaduna-PIU under the supervision of NPCU-SAPZ and the focal PIU officer shall for the supervision of works be the Infrastructure Engineer from Kaduna-PIU with the technical support from the National Infrastructure Engineer at the NPCU-SAPZ.
- (d) The implementation services comprise the supervision of construction works, technical and administrative services for the implementation and management of the project.
- (e) The works supervision services consist of providing supervision for all aspects of the works including field office and home office works in strict accordance with the highest standard of the engineering profession and the applicable standards set forth in the final contract document and drawings.
- (f) Except as otherwise specified, the services include all necessary services, materials, equipment, supplies, rentals, travel, transportation etc. Unless otherwise stated the Consultant shall have full responsibility as the Engineer as defined in the General Conditions forming part of the construction contract.
- (g) Notwithstanding the design of the project, the Consultant will assume full professional responsibility for quality control and assurance for construction of the works. The Consultant will therefore be expected to have appropriate Professional Indemnity Insurance.
- (h) The Consultant shall supply at his own expense all personnel required to supervise the project adequately from the time of the "Notice to Proceed" up to the time of the Final Certificate at the end of the Defects Liability Period. The Consultant shall ensure that the works are carried out expeditiously in accordance with good engineering practice. The Consultant shall supply all expert technical advice and skills required for the sound inspection and certification of the works.
- (i) The Consultant shall at all times exercise all reasonable skill and diligence in the discharge of the duties and shall be responsible for the accuracy and completeness of the works. In all professional matters, the Consultant shall act as a faithful adviser to the Kaduna-PIU.

3.4.1 Control of Works

- (a) In instructing the Contractor, the Consultant shall exercise all reasonable care to protect the interests of the Employer, to ensure the timely supervision and control of the Works and to avoid any occurrence of disorder of construction during the Works; and seek the approval of the Employer for actions requiring specific approval of the Employer, stated in the works contract.
- (b) The Consultant will establish reference point's benchmarks and beacons required as datum for setting out the Works. In addition, he will attend to, check and verify the

basic horizontal and vertical controls set out by the Contractor ahead of its construction operations.

- (c) The Consultant will work with the Contractor in locating the work areas, limits of borrow sources, quarries, haul and access roads, plant operation areas, storage yards, etc.
- (d) The Consultant will review and give timely approval for shop drawings and construction details, which the Contractor is required to work out.
- (e) The Consultant will furnish timely assistance and direction to the Contractor in all matters of engineering services, ground survey controls, quality control testing and other relating to interpretation of the Construction Contract, and contract compliance.

3.4.2 Field Inspection

- (a) The Consultant in conjunction with the Kaduna-PIU will provide inspection at the locations where important construction works is being performed to ensure that the work complies with the plans and specifications. The Consultant will notify the Contractor immediately of any defects in the work and, if considered necessary, will stop operations affecting this work until the defects are rectified.
- (b) The Consultant will inspect and evaluate the facilities which the Contractor provides for his local staff including site offices, first aid medical facilities, workshops, warehouses, laboratories and other installations to ensure compliance with the terms and conditions of the Construction Contract and pertinent local regulations.
- (c) The Consultant will maintain a daily record of the operational status of the main items of construction equipment on site.

3.4.3 Quality Control

The Consultant will ensure that the Contractor submits all required material certificates, mill tests etc, before the corresponding materials are incorporated into the Works. The Consultant will review the results and monitor the materials sampling and testing to be performed by the Contractor and will supervise the sampling and testing.

3.4.4 Protection of the Environment and Convenience of the Public

The Consultant in conjunction with the Kaduna-PIU will ensure that appropriate environment mitigating measures, which are specified in the Contract Documents, are actually implemented by the Contractor to protect the environment and ensure the proper disposal of waste; in particular the deposition of debris in the river will be prohibited. The Consultant will ensure that the Contractor takes appropriate measures to minimize inconvenience to the public during construction.

3.4.5 Time and Cost Controls

- (a) The Consultant will ensure that the Contractor submits a working network (CPM) or other appropriate schedule for the Consultants approval. This schedule will be

required to be accompanied by details of plant, labour and materials resource with assumed rates of production.

- (b) The Consultant will closely monitor the work schedule to determine at an early stage any delays and advise the Kaduna-PIU accordingly. He may also order the Contractor to take appropriate steps to catch up with the approved program if such delays were his fault and such measures would therefore be implemented at the cost of the Contractor.
- (c) The Consultant will maintain current information on the quantities of each of work accomplished by the Contractor and the corresponding amounts earned, together with worth projections, updated at monthly intervals, of the work remaining to be done and the cost thereof, and the Kaduna-PIU will be informed immediately if it becomes apparent that a cost overrun will occur.
- (d) The cost information, including the latest project cost of completion, will be provided to the Kaduna-PIU in each Monthly Progress Report, and the NPCU-SAPZ and AfDB's representatives will have continuous access to and will be provided on request with current cost projections.
- (e) The Consultant will also institute a positive problem prevention approach to contract administration and will:
 - carefully schedule its own activities and closely coordinate with the Kaduna-PIU and other concerned Government Departments, utility companies, other contractor, etc. to ensure to the extent possible that the Contract is not delayed;
 - respond in a timely fashion to all requests from the contractor for approvals, substitute materials, change orders, time extensions, clarifications, instructions and information;
 - investigate at the earliest opportunity any site conditions which appear to present problems to the Contractor;
 - ensure that the Contractor complies with local or contractual requirements concerning the employment of labour to avoid delays due to labour disputes; and
 - Advise the Contractor as soon as possible verbally and in writing if it appears that any of his operations may result in an unacceptable end product.
 - Review weekly work schedule referenced with the project baseline schedule prepared in a CPM format by the contractor.

3.4.6 Measurement and Payment

- (a) The Consultant in conjunction with the Kaduna-PIU and in the company of the contractor, will measure the quantities of materials incorporated in the Works and the quantities of work performed by the contractor, so that quantities can be agreed upon at the time they are measured, and will maintain up-to-date records to quantities remaining to be incorporated in the Works.

- (b) The Consultant in collaboration with the Kaduna-PIU will check and certify for payment the Contractors Interim and Final Payment Applications, as specified in the Construction Contract.

3.4.7 Certificate of Substantial Completion

The Consultant will carry out inspections of completed sections of the project component prior to recommending to the Kaduna-PIU for the issuance of Certificates of Substantial Completion to the Contractor. Prior to these inspections, the Consultants will prepare lists of defects to be corrected by the Contractor before Completion Certificates are issued.

3.4.8 Contractor’s Claims and Disputes

The Consultant’s Resident Engineer will review claims, which the Contractor may present for additional compensation and/or extensions of time and will make recommendations to the Kaduna-PIU regarding the actions and/or decisions to be taken.

3.4.9 Engineer’s Decisions

- (a) If requested, the Consultant will assist in the preparation of Engineer’s Decisions to which the Contractor may be entitled in accordance with the Construction Contract, if such Decisions are requested for the settlement of disputes. The Engineer for the Construction Contract will be the Kaduna-PIU’s Project Coordinator (SPC) or his representative – the Infrastructure Engineer, and this fact will be specified in the Construction Contract.

- (b) All draft Engineer’s report or recommendation to the Kaduna-PIU in connection with such Decisions will be reviewed at the Consultant’s Headquarters prior to issuance.

3.4.10 Assistance during Arbitration or Litigation

If the need arises, and if authorized by the Government, the Consultant will provide the necessary experts to assist with arbitration or litigation matters, either during the period of construction or after the issuance of the Completion or Defects Liability Certificate, as an additional service.

3.5 Reporting Requirements and Time Schedule for Deliverables

3.5.1 Schedule of Reports for Pre-Contract (Phase 1: Preparation of Detailed Engineering Design) with Bid documents Preparation

S/No.	Documents	Time of Submission
1	Inception Report	1 week after signing of agreement
2	Monthly Progress Report	6 weeks after signing of agreement
3	Draft Final Design Report (including condition survey, geophysical, geotechnical, the hydraulics survey, Land Development Layout, bidding documents and Confidential Cost Estimate).	10 weeks after signing of agreement

4	Final Design Report (including condition survey, geophysical, geotechnical, the hydraulics survey, Land Development Layout, bidding documents and Confidential Cost Estimate)	13 weeks after signing of agreement
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3.5.1.1 The design reports should include the design procedures with calculations and assumptions in MS Word format, drawings in AutoCAD format, site coordinates on Arc GIS maps and the bill of engineering measurement and evaluation/BEME in Excel Spreadsheet format.

3.5.2 *Schedule of Reports for Post-Contract (Phase 2: Supervision of the Construction works)*

S. No.	Document	Time of Submission
1	Inception report	Within 14 days after commencement of services
2	Monthly Progress Report including the Environmental and Social Management Plan compliance reports.	By the 5 th day of a new month
3	Quarterly Progress Report, including the Environmental and Social Management Plan compliance reports.	By the 5 th day of new quarter
4	Construction Supervision manual	14 days after commencement of services
5	Substantial Completion Report	One (1) month after substantial completion
6	Final Completion Report/Final Account	One (1) month after issuance of Defects Liability Certificate.

Please note that:

- (a) Progress Reports will be prepared monthly (with 2 page summaries) and will include a description of the activities carried out by the Contractor and the Consultant's supervisory team and of the construction activities which have fallen behind schedule. In general, the reports will contain the following sections.
- Description of the Consultant's and Contractor activities;
 - Construction progress Bar Chart (i.e. Summary of network schedule showing planned and actual progress;
 - Summaries of expenditures incurred for construction and supervision services;
 - An update estimate of final construction and engineering costs compared to funds still available;
 - List of important Letters of Instructions and Variation Orders issued to date;
 - Contractor's and Consultant's staffing during the period;
 - Permanent materials delivered during the period;
 - Pending questions and problems;
 - Any unusual or special circumstances occurring during the report period;

- Weather conditions and their effect on progress;
- Project progress photographs
- The minutes of all meetings that took place with the Contractor during the report period.

(b) Three (3) hard copies of the above reports and an electronic copy which should be in English language shall be submitted to the Kaduna-PIU.

3.5.3 Records

(a) The Consultant will maintain up-to-date records of all work performed by the Contractor and a master set of the contract incorporating all changes ordered.

(b) The Consultant will certify receipt of and maintain records and a summary log of all warranties, certifications and test results required under the terms of the Construction Contract for materials accepted and incorporated in the permanent Works.

(c) The Consultant will also maintain the following records:

- **Project Diary:** The Consultant will maintain a Daily Diary (Resident Engineer's Diary) which will include a thorough coverage of the Contractor's operations and activities. Comments covering specific problems, equipment, and or materials involved and the work schedules maintained by the Contractor will be included in this Diary.
- **Special Reports:** The Consultant will promptly advise the Government in writing of any factors that may significantly affect the estimated budgets, schedule of work or quality of work.
- **Minutes of Meetings:** The Consultant will prepare the minutes of all meetings that take place with the Contractor.

3.5.4 Completion Report and As-Built Drawings

After the Project is accepted, the Consultant will submit to the Kaduna-PIU the As-Built Drawings and the Construction Completion Report. The Completion Report will contain a summary of the work performed by the Contractor, a historical description of any significant factors that may have occurred during the Construction period and which had a bearing on the manner in which the Construction Contract was carried out, an itemized summary of the payments made to the Contractor and to the Consultant during the course of their respective contracts, and analysis of the quantities of work items, and project photographs.

Ten (10) hard copies of the above reports and an electronic copy which should be in English language shall be submitted to the Kaduna-PIU.

3.5.5 Services during Defects Liability Period

(a) The Consultant will conduct an inspection of the Project a little before 12 months after the issuance of the Certificate of Substantial Completion on the entire Project. The Consultant will prepare reports concerning any defects discovered during this inspection and will instruct the Contractor to remedy defects, which are his fault.

- Should the need arise; the Consultant will also assist the Kaduna-PIU in arranging for the rectification of defects which are not deemed to be the Contractor's fault.
- (b) The Consultant will advise the Kaduna-PIU on final acceptance and will prepare the Defects liability certificate and review and modify as necessary for the contractor's final statement Account for the project and his final payment certificate.
 - (c) The consultant shall also make his recommendations to the Kaduna-PIU for the return of any outstanding Bonds, Guarantees, etc. provided earlier by the contractor under the terms of the contract such as Advance Payment Guarantee, Performance Bond etc. After the completion of the project in accordance with the contract, the consultant shall prepare a Project Completion Report (PCR) for the construction component in accordance with the format of the Bank. Eight (8) hard copies of the above reports and an electronic copy shall be submitted to the Kaduna-PIU in English language.

4.0 OBLIGATIONS OF THE CONSULTANT

- (a) Documents: The consultant shall take stock of all documents made available to him by the PIU for the purpose of this assignment. These documents in his custody shall be returned at the end of the project. The consultant shall be entirely responsible for the analysis and interpretation of data obtained from these documents or from other sources. These documents shall be considered confidential and treated as such.
- (b) Personnel: The consultants shall provide all personnel and labour necessary for the expeditious execution of his duties.
- (c) Offices: During the execution of this assignment, an office shall be as provided for as stipulated in the construction contract for phase 2 (Supervision of Construction Works) – the consultant shall provide and charge for an office space during phase 1 assignment (Detailed Engineering Design) and Preparation of bid documents.
- (d) Vehicles: For the proper execution of his duties, provision of vehicle hire is made in the Supervision of construction contract (phase 2). The consultant shall provide and charge for his transport requirements in his financial proposal for phase 1(Design) of the assignment.
- (e) Equipment and sub-contracting: The consultant shall provide all equipment that are not specified to be provided by the contractor but necessary for the execution of his duties. The consultant shall submit for approval of the Kaduna-PIU the choice of any specialized subcontractor for any part of the services.
- (f) The Kaduna-PIU may attach key staff to the consultant to familiarize themselves with the engineering services during the execution of the assignment. The consultant will provide on the job training for the counterpart staff assigned by the Kaduna-PIU to the project.

5.0 SERVICES AND FACILITIES TO BE PROVIDED BY KADUNA-PIU

- (a) The Kaduna-PIU shall assist the consultant in obtaining immigration authorization for staff and custom clearance for instruments and other equipment imported for the project.
- (b) The Kaduna-PIU shall ensure the best cooperation of all ministries and government agencies concerned with the project.

5.1 The Government will grant the consultant and their expatriate staff the following Facilities and exemption:

- Immunity from any legal action which might be instituted from any non-criminal acts accomplished by them in the discharge of project related facilities;
- Inviolability of secrecy and immunity from seizure of documents relating to the project.

5.2 The Government will ensure that correspondence exchanged in connection with the Execution of the project is dealt with promptly by its agencies, so as not to cause any delay.

5.3 The consultant shall liaise closely with the Kaduna-PIU during the course of the works.

5.4 Client's Input and Counterpart Personnel

- Relevant project documents
- Feasibility Reports/ Previous studies.
- Project Management Counterpart Staff

6.0 KEY PROFESSIONALS TO BE PROVIDED BY THE CONSULTANT FOR THE ASSIGNMENT

The Consulting firm shall engage the following key personnel whose CV and experience shall be evaluated.

6.1 List of key Personnel for Phase I & II (Design Phase & Supervision Phase)

- Team Leader/Civil Engineer
- Food processing/Technology Engineer
- Civil Engineer (Structures)
- Civil Engineer (Geotechnics)
- Contract/Measurement Engineer
- Architect or Building Engineer
- Electrical/Mechanical Engineer
- Civil Engineer (Roads)
- Civil Engineer (Water and Sewerage)
- Land Surveyor/GIS Expert
- Environmental/ Social Safeguards

6.2.0 Qualification of key Personnel for the Assignment

The consultant shall provide competent Registered Engineers (COREN) and other registered professionals (ARCON, QSRBN, CORBON) for the day-to-day construction management and supervision of the various sub-projects of the contract. All the key professionals are to be at least holders of B.Sc. or equivalent in their respective fields of specialization with more than 10 years of experience in the design and supervision of irrigation network and appurtenant facilities (for the irrigation engineer), buildings (architect/building engineer), roads (the roads engineer) and water facilities (water engineer) where applicable. Individuals should have been involved in at least 3 assignments in similar project within the last 10 years for the position for which he is nominated and the Team Leader should have at least 15 years of experience and must have led a team of similar nature at least on two occasions and have experience in Africa and be able to write effectively in English language.

6.2.1 Staff Qualifications

Team Member	Minimum Requirements
6.2.1.1 Team Leader/Civil Engineer	The team leader must have minimum of M.Sc. degree in Civil or Agriculture/Water Resources engineering with at least 15 years of experience on infrastructure development projects and four years in similar role registered with Professional Engineering Body/Regulators in the country of origin and also belong to the membership of Engineering professional body. The candidate should have a proven record of managerial capability in managing of major civil engineering including projects of a similar magnitude financed by a major multilateral international lending agency (WB, IsDB, AfDB, IFAD, Government, Private Enterprises etc). Sound knowledge of contract management of civil works is mandatory. The candidate shall also be computer literate and fluent in written and spoken English.
6.2.1.2 Food processing/Technology Engineer	The Engineer Food Processing/Technology must have a minimum of M.Sc. degree in Food Processing engineering with at least 10 years post graduate' experience in the construction supervision of medium to large food processing infrastructure development projects financed by major multilateral international lending agency (e.g WB, IsDB, AfDB, IFAD, Government, Private Enterprises etc),the Food Processing/Technology Engineer must be registered with a Professional body and with at least four (4) years specific experience in the design of food processing structures of similar nature. Hands-on experience on the use of Microsoft Office tools (Word, Excel, project and PowerPoint) will be an added advantage.

<p>6.2.1.3 Civil Engineer (Structures)</p>	<p>The Civil Engineer (Structures) must have a minimum of an M.Sc. degree in Civil or Structural engineering with at least 10 years of experience on infrastructure development projects and with at least five (5) years’ experience in projects financed by major multilateral international lending agency (e.g WB, IsDB, AfDB, IFAD, Government, Private Enterprises etc), Must be registered with relevant Professional body, experienced in the Design of Bridges, Buildings, Water retaining structures, Steel Structures, Post-harvest processing facilities, Silos, Cold chain storage facilities, warehouses, residential and industrial / commercial buildings, and Containment Structures. Hands-on Experience on the use of Civil Engineering/ Structural Engineering software is an added advantage. The candidate shall also be computer literate and fluent in written and spoken English.</p>
<p>6.2.1.4 Civil Engineer (Geotechnics)</p>	<p>The Civil Engineer (Geotechnics) most have at least 10 years of professional engineering experience in the field of geotechnical engineering, including 6 years supervising the testing and evaluation of construction materials used in highway construction projects and foundations of heavy civil engineering structures. The engineer must be thoroughly familiar with earthworks, concrete, timber, steel and general construction materials testing procedures in line with best industry practices. The candidate shall also be computer literate and fluent in written and spoken English.</p>
<p>6.2.1.5 Contract Measurement Engineer</p>	<p>The Contract measurement Engineer shall have a minimum of MSc. in Civil Engineering, Quantity Surveying or Construction Management with at least 10 years post graduate experience in the development and execution of major civil engineering projects financed by Multilateral Development Banks and also must be very conversant with FIDIC conditions of contract. The incumbent must also be familiar with valuation and measurement of works on site for a project of such nature and be experience in standard measurement for civil works for the issuance of valuation certificates to Contractors. Sound knowledge of contract management is mandatory. The candidate shall also be computer literate and fluent in written and spoken English.</p>
<p>6.2.1.6 Architect</p>	<p>The Architect most have at least M.Sc. in Architecture and registered with a Professional body with at least 10 years of experience on project development, including development bank funded projects. Must be experience in the design of Buildings, Warehouses, offices, Cold chain storage facilities, Post-harvest structures, Silos, Industrial layout zoning, Offices, residential and commercial buildings in both concrete and steel. Conversant</p>

	with the use of architectural design suites for infrastructural development works is an asset.
6.2.1.7 Electrical/Mechanical Engineer	The Electrical/Mechanical Engineer must have a minimum of M.Sc. degree in Electrical or Mechanical Engineering with 10 years of experience on infrastructure development projects and at least five (5) years' experience in major engineering work financed by major multilateral international lending agency (e.g WB, IsDB, AfDB, IFAD, Government, Private Enterprises etc), must be registered with relevant Professional body, experienced in the design and construction supervision of electro-mechanical system in residential/industrials/commercial agro-processing plants, Post-harvest processing facilities, Cold chain storage facilities, warehouses and Water distribution networks and Containment Structures. Hands-on Experience on the use of electrical/ mechanical Engineering software is an added advantage.
6.2.1.8 Civil Engineer (Roads)	The Civil Engineer (Road) must have a minimum of M.Sc. degree in Civil or Structural engineering with at least 10 years of experience on infrastructure development projects and at least five (5) years' experience in projects financed by major multilateral international lending agency (e.g WB, IsDB, AfDB, IFAD, Government, Private Enterprises etc), must be registered with relevant Professional body. Must have sound knowledge of engineering soil mechanics and conversant with the design and construction supervision of culverts/ river crossings, flexible/rigid pavement, drainages and other ancillary structures. Hands-on experience on the use of Civil Engineering/ Structural Engineering software will be an added advantage.
6.2.1.9 Civil Engineer(Water and Sewerage)	MSc. In Civil/Environmental/Water and Sanitation Engineering or its equivalent with at least 10 years of professional engineering experience with 5 (five) years of relevant work experience in the water sector or in design and/or construction of a variety of water resources, water supply and/or sewerage/sanitation investment projects development financed by major multilateral international lending agency (e.g WB, IsDB, AfDB, IFAD, Government, Private Enterprises etc), Must belong to a Professional body and experience in the project management /construction contract administration. Hands-on experience on the use of relevant Engineering software (AUTOCAD, EPANET, WATERCAD, SEWERCAD etc) will be an added advantage.
6.2.1.10 Land Surveyor/ GIS Expert	The Land Surveyor/ GIS Expert must have M.Sc. in land surveying, GIS or Geo-informatics with 10 years of professional experience and at least six years' experience in civil engineering development projects. Must have experience in cadastral and engineering surveys. Experience with the use of surveying/ GIS

	software equipments is an added advantage. The candidate shall also be computer literate and fluent in written and spoken English.
6.2.1.11 Environmental & Social Safeguard Officer	Minimum of M.Sc. degree in Environmental Science, Agricultural & Bio Resources Engineering or related discipline with 10 years professional experience and with at least three (3) years specific experience in a donor funded project of similar nature and must be conversant with preparation of ESMP, EIA and monitoring of mitigation measures in the construction supervision of buildings, roads, agro-processing facilities and irrigation development projects. Familiarity with the preparation of RAP for project of this nature is an added advantage.

7.0 STAFFING SCHEDULE

7.1 The implementation period for the entire assignment is expected to consist of a Design period of four (4) months, Supervision construction period of fifteen (15) months and a defect liability period of 12 months. The Consultant would be expected to mobilize approximately one month in advance of the commencement of works, to assist the Kaduna-PIU with activities leading up to mobilization of the Contractors.

7.2 The supervision team would be mobilized on the date of actual commencement of works by the Contractor. During the defect liability period, the Consultant will continue on a part-time basis while the supervision team members would be mobilized as required intermittently as shown in the table below.

Key Personnel	Duration (months)		Defect Liability Period(months)	Total No. of Man- Months
	Design	Supervision		
1. Team Leader/Civil Engineer	4	15	12	31
2. Food processing/Technology Engineer	3	15	2	20
3. Civil Engineer (Structures)	3	10	0	13
4. Civil Engineer (Geotechnics)	3	6	0	9
5. Contract/Measurement Engineer	3	12	0	15
6. Architect or Building Engineer	3	12	0	15
7. Electrical/Mechanical Engineer	3	10	0	13
8. Civil Engineer (Roads)	3	12	3	18
9. Civil Engineer(water&sewerage)	3	12	2	17
10. Land Surveyor/GIS Expert	3	10	1	14
11. Environmental/Social Safeguard	1	8	1	10
Total No. of Man-Months	35	132	19	188

7.2.1 The Consultant is to make provision in his proposals for other non-key and supporting staff.

8.0 TERMS OF PAYMENT FOR THE ASSIGNMENT

The payment for the Consultancy assignment shall be a combination of lump sum for phase 1 (Preparation of Detailed Engineering Design) and time-based for phase 2 (Supervision of Construction works). Lump sum will be a certain percentage of contract sum as mobilization while time based payments will be made based on the stages of work on site as stipulated in the RFP. Invoices shall be raised monthly which comprises of remuneration of staff input based on time-sheet showing the number of staff inputs in hours. Reimbursable payment invoices for the monthly supervision shall also be paid.

8.1 *The form of Payments for these Services will be as follows:*

- (i) The Phase 1(Lump sum); Preparation of Detailed Engineering Design will be paid as follows:
 - 25% - After submission and acceptance of inception/preliminary report.
 - 50% - After submission and acceptance of Draft Design Report and Draft Bill of Engineering Measurement and Evaluation(BEME)
 - 25% - After submission and acceptance of Final Design Report and Final Bill of Engineering Measurement and Evaluation(BEME)
- (ii) The Phase 2(Time-based contract); Supervision Services for Construction of the Works, will be paid as follows;
 - Payments will be made based on the stages of work on site as stipulated in the RFP. Invoices shall be raised monthly which comprises of remuneration of staff input based on time-sheet showing the number of staff inputs in hours. Reimbursable payment invoices for the monthly supervision shall also be paid

9.0 BID EVALUATION

- (I) Firms will be evaluated by the Kaduna-PIU based on a cumulative analysis taking into consideration the combination of the applicants' technical and financial proposals.
- (ii) Technical Evaluation will be done as follows: Desk review of firm's background, experience and other skills will be evaluated. Firms who have 75% of total score in the Technical evaluation, will be considered RESPONSIVE and will continue for the financial evaluation of proposals.
- (iii) Financial Evaluation: The financial criteria weight is 20% of total score.

The contract will be awarded to the Offeror with the highest combined score.

Interested firms or team of consultants must submit their **technical** and **financial** proposals separately and marked “consultancy for Design and Supervision Consultant” and addressed to:

The Kaduna Program Coordinator, SAPZ

Project Implementation Unit (PIU),

Kaduna

Kaduna State