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AGRIBUSINESS AND TRADE PROMOTION PROJECT

CONSTRUCTION OF A NEW ONION WHOLESALE MARKET AT AMASAMAN, GA WEST MUNICIPALITY, GREATER ACCRA

January 2012

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Submitted to: Danielle Knueppel, COR
Agribusiness and Trade Promotion Project
USAID/WA/ANRO
Accra, Ghana

In fulfillment of the following ATP deliverable: One PPP in logistics infrastructure facilitated per full project year.

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AGRIBUSINESS AND TRADE PROMOTION PROJECT

CONSTRUCTION OF A NEW ONION WHOLESALE MARKET AT AMASAMAN, GA WEST MUNICIPALITY, GREATER ACCRA

January 2012

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ACRONYMS

AMA	Amasaman Municipal Assembly
ASI	Accra Onion Sellers and Importers
ATP	Agribusiness and Trade Promotion Project
AU-NEPAD	African Union's New Partnership for Africa's Development
BOT	Build-operate-transfer
CAADP	Comprehensive Africa Agriculture Development Program
EGSSAA	Environmental Guidelines for Small-Scale Activities in Africa
GNOTA	Ghana National Onion Traders Association
PCOFTS	Progressive Cooperative Onion Farmers and Traders Society
PPP	Public-private partnership
USAID	United States Agency for International Development
USG	United States Government

1. SUMMARY DESCRIPTION OF PUBLIC-PRIVATE PARTNERSHIP

USAID's Agribusiness and Trade Promotion (ATP) Project is supporting the Onion Traders Union in Accra and the Amasaman Municipal Assembly (AMA) in the construction of a modern onion wholesale market.

The union is a group of onion farmers, importers, and traders that includes three associations: the Progressive Cooperative Onion Farmers and Traders Society (PCOFTS), Accra Onion Sellers and Importers (ASI), and Ghana National Onion Traders Association (GNOTA). All are currently using the Agbogbloshie market in Accra as their trade hub. The new market site is located at Adzen Kotoku (35 km from Accra) in the Amasaman area. The municipality is providing the land and additional public work (pavements, connecting roads, a drainage system, parking lot, electricity, and water), while ATP is assisting the traders' associations in market and logistics design, contractual arrangements with the municipality, and accessing the capital to finance the construction. The associations plan to build and manage the new market.

The initiative received support from the Accra Metropolitan Assembly, which has decided to relocate the current onion market on the outskirts of Accra to relieve traffic congestion in town and solve the sanitation problem at the Agbogbloshie market.

The project has two main components: 1) upgrading the new market infrastructure and logistics to reduce inefficiencies and product loss in market operations, and 2) providing logistics to link the new wholesale market to various consumer markets throughout Accra.

The partnership plan approved by the traders' associations (see Attachment 1) outlines the proposed joint activities.

2. IMPLEMENTATION

In FY 2011, ATP provided technical assistance to assess needs and design the new onion wholesale market, which includes a cross-docking station, sheds, temporary storage facilities, and parking for large and light trucks (see Attachment 2). The size of the new market is estimated at 12 acres; it should accommodate three times the volume currently traded at Agbogbloshie market: 56,000 tons per year with an estimated value of $25 million. The Accra onion market receives crops from Niger (80 percent), Burkina Faso (15 percent) and Ghana (5 percent).

ATP is also assisting the traders' associations in obtaining a written notification from the Amasaman Municipal Assembly, particularly for the concession of land.

The investment requirement for the entire market infrastructure development project is estimated at GHC 6.08 million (approximately $3.80 million). Proposed phases for construction and costs allocated to each stakeholder are shown below.

Stakeholder	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total cost (GHC)
Onion Traders Union	• Market sheds	• Market sheds	• Market sheds • Administrative block		• Mosque	2,466,763
Strategic Investor	• Warehouse & sorting bay • Cross-docking station • Ancillary facilities • Sanitary facilities	-	-	• Restaurant • Guesthouse	-	1,146,248
GA West Municipal Assembly	• Refuse disposal point (temporary waste container with fence in concrete) • Water supply • Electricity supply	• Tolling station* • Security post • Drainage system	• Connecting roads	-	• Pavements, parking lot	2,463,094

* The tolling station will be a platform located at the entrance of the market, which will allow the market operator to collect tolls from market users.

The Onion Traders Union will raise funds to build market sheds and other components on a build-operate-transfer (BOT) basis. The union intends to finance its cost component through contributions from its members (GHC 960,000), internally generated funds (GHC 239,921), and debt capital (GHC 1,266,842).

The Municipal Assembly will make land available on a leasehold basis and will also invest in public infrastructure such as refuse disposal points, tolling systems, drainage systems, electricity, and water.

The strategic investor will invest in the warehouse and cross-docking station, including modern ancillary facilities such as pallets, forklifts, mobile cranes, hand trucks, and climbing ramps. This will also include offering logistics services by providing light trucks to move onions from the wholesale market to retail markets in Accra and to other surrounding markets. A private market management firm has been identified and has expressed interest in participating in the project as a strategic investor.

3. ATTACHMENTS

3.1. Partnership Plan Approved by the Trader's Associations

USAID WEST AFRICA

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PARTNERSHIP AGREEMENT BETWEEN USAID ATP and Accra Onion Sellers and Importers Association, Progressive Cooperative Onion Farms and Traders Society, and Ghana National Onion Sellers Association

Purpose

USAID Agribusiness and Trade Promotion project (USAID ATP) and the Onion Traders' Associations in Accra share with other regional onion stakeholders, the vision of a quality onion with a significantly improved performance so as to meet the needs of the domestic and regional markets and increase the share of the Galnni Violet in the highly competitive imported onion markets in costal capitals. They also recognize that the lack of adequate market logistics infrastructure translates into inefficiency and high costs, which impede the overall competitiveness of the regional value chain. Following the Accra mayor recent decision to move the current multi-commodity market located in Agbogbloshie to Ate Kotoku in Amasaman, USAID ATP has agreed to support Ghana Agricultural Producers and Traders Organization (GAPTO) and the Accra Onion Traders' Associations in their effort to establish a modern onion wholesale market at the new site in partnership with the Amasaman Municipal Assembly leading to increasing intra-regional trade volume.

The Agribusiness and Trade Promotion (ATP) project is a four-year regional initiative funded by the United States Agency for International Development (USAID). Launched in 2008, USAID ATP has focused on three agricultural value chains: maize, onion, and ruminant livestock/red meat. USAID ATP aims to increase the value and volume of intra-regional agricultural trade in its value chain development and associated activities along the major commercial corridors linking Senegal, Mali, Burkina Faso, Benin, Togo, Ghana, Cote d'Ivoire, Niger, and Nigeria. USAID ATP is designed to contribute to achieving the 6 percent annual agricultural growth target set under the Comprehensive Africa Agriculture Development Program (CAADP) of the African Union's New Partnership for Africa's Development (AU-NEPAD).

The Accra-based onion traders are organized into three groups: the Accra Onion Sellers and Importers Association, the Progressive Cooperative Onion Farms and Traders Society, and the Ghana National Onion Sellers Association. Altogether, they count more than 1,000 members. These associations are members of GAPTO, a USAID ATP partner. Annual volume of onion traded at the current market site located at Agbogbloshie is estimated at 56,000 tons, the equivalent of USD 25 million. The Accra onion market receives supplies from Niger (80%) and Burkina Faso (15%) and Ghana (5%).

The purpose of this Agreement is to undertake mutually beneficial activities to further the goals and objectives outlined below. The Parties seek to share their respective strengths, experiences,

technologies, methodologies, and resources (human, in-kind, and monetary) in order to achieve these goal and objectives.

Goal and objectives

The Parties share the following goal: establish a modern onion wholesale market in Amasaman in conjunction with the Municipal Assembly with a view to improving efficiency of market operations and ensuring consistent supply of terminal markets in Accra.

The Parties intend to focus on joint activities around the following two objectives:

- Objective 1: Establish modern onion trade facilities at the new market site as well as the transport logistics needed to link the wholesale market to retail distribution points in Accra
- Objective 2: Arrange and implement management contracts with the Amasaman Municipal Assembly to ensure reasonable return on private investments made to improve market operations.

Description of proposed joint activities

- Liaise with the Municipal Assembly to obtain its commitment to promote private investment in the new market infrastructure through the onion associations
- Assess the needs of traders, transporters and distributors to determine the best design of the freight exchange facility: wholesale to retail. In the short term, loading and unloading will be manual. Loading equipment may be introduced in the long run.
- Design the freight exchange system, including the logistics required to link the wholesale market with terminal retail markets in Accra
- Develop the management contract between the Municipal Assembly and the Associations as they related to private investments in the new Amasaman wholesale market
- Work with the onion associations and their members and financial institutions to facilitate access to credit for potential investors in the new market infrastructures: storage facility, shed to display the produce, restroom, convenient store, sanitary, light truck, parking, etc.
- Assess the potential environmental impact of activities and implement mitigation measures

Partner roles and responsibilities

It is anticipated that under this partnership, USAID ATP will:

- Provide technical assistance to develop technical specifications and architectural renderings for the target facilities in Amasaman market as well as its upkeep. The plan should incorporate multiple phases allowing stakeholders to add new modules when needed to increase capacity and/or offer additional services
- Develop a budget quotation for the construction of the identified facilities in a format that is acceptable to potential financial partners
- Assess the logistics required to link the wholesale market with terminal retail markets in Accra and recommend the type of vehicle required to provide cost-effective transportation services
- Provide specific best practices to guide the construction and the upgrade of facilities as outlined in the Construction Environmental Guideline for Small Scale Activities in Africa EGSSAA guideline
- In conjunction with the municipal Assembly, draft the most appropriate market management contract, most likely between private providers and the municipality based on Built — Operate - Transfer (BOT) model. The contract should incorporate an environmental management protocol for facilities constructed.
- Assist the associations and their members to prepare business plans with a view to mobilizing needed capital from financial institutions.

It is anticipated that under this partnership, the Associations and their members will to the extent economically feasible:

- Liaise with both the Accra and Amasaman Municipal Assemblies to advocate for their commitment to promote private investment in market infrastructure development by granting the space needed to host the facilities and the right to generate revenues from these facilities
- Participate to a large extend to the needs assessment and validate the proposed plan as they see fit, taking into account short and long term needs
- Coordinate with members to secure their commitment and interest in investing in specific facilities
- Develop business plans to mobilize capital needed to finance the infrastructures and transport logistics
- Provide oversight over the construction of the facilities and its extension to ensure that they comply with technical specifications and national norms
- Manage the market facilities on a commercially viable manner and according to the terms and conditions of the agreement entered into with the Municipal Assembly.

Implementation

Activities undertaken under this agreement will be jointly planned and implemented. To that effect, the parties will develop for each activity, terms of reference to reflect the its objectives, approach, intended development outcome and resources allocated by the Parties.

Time frame

This plan becomes effective on the date of its approval by the Parties and extends through September 30, 2012. It will be supported by periodic activity schedules and reports, including resources mobilized by the Parties.

Geographic coverage

The geographic coverage of this plan is limited to Ghana.

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FARMERS TRADERS SOCIETY (GH) tTO.
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CHAIRMAN

Ismael Ouedraogo

Date:

Chief of Party, USAID ATP

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Date: 11/6/20

Geographic coverage

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Ismael Ouedraogo

Chief of Party, USAID ATP

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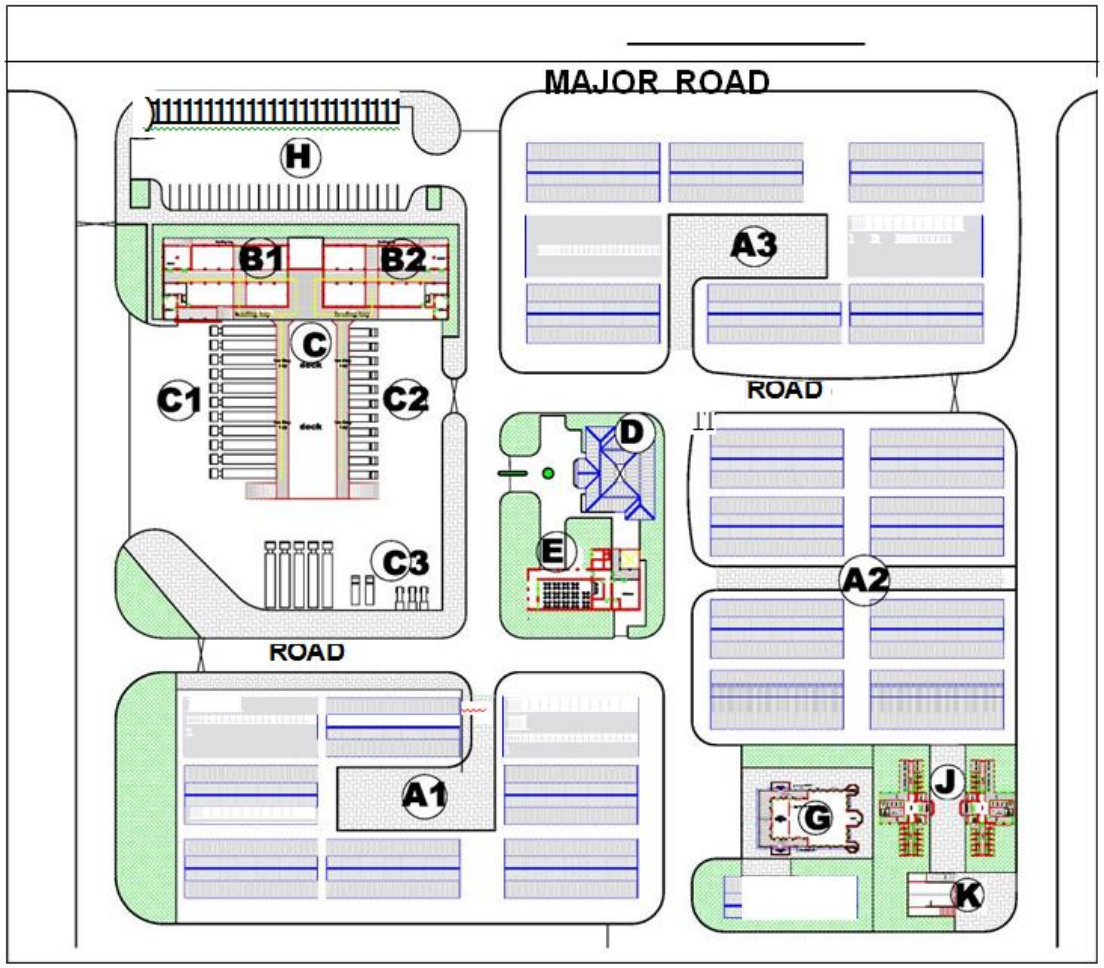
3.2. The Proposed Layout of the New Onion Market

PROPOSED LAYOUT OF ONION MARKET AT AMASAMAN



LEGEND

A1 - SHEDS 1
A2 - SHEDS 2
A3 - SHEDS 3
B1 - WAREHOUSE 1
B2 - WAREHOUSE 2
C - DOCK
C1 - ARTICULATORS OFF-LOADING POINT
C2 - LIGHT TRUCKS LOADING POINT
C3 - TEMPORARY PARKING FOR TRUCKS
D - ADMINSTRATION BLOCK
E - RESTAUTANT
F - GUESTHOUSE
G - MOSQUE
H - PRIVATE CARS PARK
J - SANITARY AREA
K - REFUSE PLATFORM
L - REFUSE PLATFORM

Area = 49,000m^2(approx.12 acres)

3.3. Scope of Work for Onion Wholesale Market Design

Background

ATP is a four-year regional initiative funded by the United States Agency for International Development (USAID). Launched in 2008, ATP has focused on three agricultural value chains: maize, onion, and ruminant livestock/red meat. ATP aims to increase the value and volume of intra-regional agricultural trade along the major commercial corridors linking Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Niger, Nigeria, Senegal, and Togo. ATP is designed to contribute to achieving the 6 percent annual agricultural growth target set under the Comprehensive Africa Agriculture Development Program (CAADP) of the African Union's New Partnership for Africa's Development (AU-NEPAD).

Inefficiencies in West Africa's logistics infrastructure are a recognized constraint to trade within the region. Such inefficiencies increase supply chain costs for traders and impede the overall competitiveness of the regional value chain. In FY 2009 and FY 2010, ATP carried out logistics studies on the onion trade in the Kantchari–Accra corridor and on the maize trade in the Techiman–Ouagadougou corridor and identified priority investments to improve efficiency in transport and market operations. The studies also identified potential business opportunities to facilitate the creation of new public-private partnerships (PPPs) for investment in onion and maize infrastructure and to improve the overall transport and logistics operations along the corridors. Following these studies, the Transport and Logistics Specialist and the PPP Advisor discussed potential joint activities with the onion and maize associations. The two associations requested that ATP assist them in the construction of the new Amasaman onion wholesale market (35 km from Accra) and Tuobodom maize bulk market (5 km from Techiman). The current scope of work covers the assistance related to the construction of the onion wholesale market.

Objectives

Provide technical assistance to the onion associations in Ghana to design onion-specific wholesale market facilities needed to improve operations at the newly designated site at Amasaman.

Tasks

- Conduct a field assessment to determine the best design of the market facilities. This includes visiting the market location, assessing the environmental impact of the market construction, assessing mitigation measures in place, and meeting with market operators and other relevant actors.
- Develop technical specifications and architectural renderings (blueprints) for the target facilities in the Amasaman market (warehouses, shed, cross-docking facilities, meeting and administrative area, etc.) as well as its upkeep. The plan should incorporate multiple phases, allowing stakeholders to add new modules when needed to increase capacities or offer additional services
- Develop a budget quotation for the construction of the Amasaman onion wholesale market in a format that is acceptable for potential financial partners.
- Provide specific best practice examples of small-scale constructions that would improve agricultural market, processing, and storage facilities, and also mitigate any potential negative environmental impacts, as outlined in the construction-related section of the Environmental Guidelines for Small-Scale Activities in Africa (EGSSAA)
- Assess the logistics required to link the wholesale market with terminal retail markets in Accra.
- Develop options for market management contracts between private providers and the municipality, such as concession, BOT, etc. The contract should incorporate an environmental management protocol for facilities constructed.
- Write end-of-phase reports on implementation progress and a comprehensive report at the end of the assignment.

Initial funding for the construction will be provided by private sector investors, while the land will remain the property of the municipality. The selected engineer will draft a contractual arrangement between the municipality and private investors (a trader's association or entrepreneurial members of the association) for the management of the newly built facilities.

Contribution to Outcome/Output/Custom Indicators

Outcome Indicator: Amount of private financing mobilized or leveraged to contribute to the realization of the project's primary objective.

Output indicator: Number of PPPs formed as a result of U.S. Government (USG) assistance.

Contribution to Deliverables

- $10 million mobilized in private financing under PPP, contributing to ATP objectives
- One PPP in logistics infrastructure facilitated per full project year

Environmental Compliance

Market infrastructure constructions may cause both direct and indirect potential adverse environmental impacts. Major environmental impacts of construction include soil compaction and erosion, sedimentation of streams and surface waters, contamination of water supplies, forest conversion, pollution, and loss of habitat and environmental services. However, the facilities under consideration are small-scale: the total surfaces that will be disturbed are less than 10,000 sqare feet. Best practices in small-scale construction (such as the agricultural market, processing, and storage facilities outlined in the Construction EGSSAA guidelines) must be observed. This includes appropriate siting, sourcing of materials, design, and construction/worksite practices.

Approach and Detailed Schedule

The assignment can be divided in four phases:

- Phase 1: Project preparation, including the feasibility of building different types of structures and environmental assessments (1 week)
- Phase 2: Architectural and engineering designs (2 weeks)
- Phase 3: Technical specifications and budget quotations (2 weeks)
- Phase 4: Development of management contracts between the associations and the Municipal Assembly; training (2 weeks)

Detailed schedule: **from July 11st to September 23rd, 2011**

Dates	Task	Location
July 11	Meetings with PPP Advisor and project staff	Accra
July 18th – July 22nd	Stakeholder's needs, field, and environmental assessments	On site: Accra and Amasaman
July 25th	End-of-phase report	
July 26th – August 8th	Architectural and engineering designs	From office in Kumasi
August 11th	End-of-phase report	
August 11th – August 25th	Technical specifications and quantity/budget quotations	From office in Kumasi
August 25th	End-of-phase report	
August 26th – September 9th	Development of management contracts between the associations and the Municipal Assembly; training	From office in Kumasi
September 23rd	Final report	

Products

- Draft reports in electronic format that document the work completed and results achieved for each of the four distinct phases listed above no later than three days after the end of each phase
- A technical report in English in electronic and hard format (four copies) two weeks after the field work,

containing the following
- ✓ Executive summary
- ✓ Introduction (including background and objectives)
- ✓ Participatory assessment of needs and environmental considerations to be achieved by holding regular meetings with users to validate findings
- ✓ Technical specifications and architectural renderings (blueprints) for the target facilities in Amasaman market, including proposed logistics required to link the wholesale market with terminal retail markets in Accra
- ✓ Environmental best practices and guidelines for construction and management of the target facilities
- ✓ Draft contracts for management of the newly built market facilities
- ✓ List of potential investors
- ✓ List of people met
- ✓ Pictures

- Blueprint design of the wholesale market complex
- Detailed market construction cost estimates in a format acceptable to financial service providers and timeline for implementation

Level of effort

35 days, including 15 days of field work in Accra area.

Reporting

The consultant will work in close collaboration with Vincent Akue, ATP's PPP Advisor, and will report to Bechir Rassas, Technical Manager and Deputy Chief of Party.

Experience and qualifications

- Graduate degree in engineering
- At least five years of experience in market construction and management, including onion warehouses and sheds
- Demonstrated experience in community outreach and liaison functions within local government agencies
- Fluency in spoken and written English
- Knowledge of West Africa's formal and informal private sector institutions

3.4. Report Related to the Market Design

DESIGN OF ONION WHOLESALE MARKET IN ACCRA AREA

Moving From Agbogbloshie Market to the New Amasaman Specialty Market

FINAL COMPREHENSIVE REPORT

ON

ONION WHOLESALE MARKET INFRASTRUCTURE DESIGN AND INVESTMENT FINANCING OUTLAY

Primary/Direct Beneficiaries:

Progressive Corporative Onion Farmers and Traders Society (PCOFTS)
Accra Onion Sellers and Importers (ASI) and
Ghana National Onion Traders Association (GNOTA)

Secondary/Indirect Beneficiaries:

Ghana Agricultural Producers and Traders Organization (GAPTO)
Onion Regional Observatory (ORO)

Consultant:

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October 2011

Promoters/Facilitators:

USAID-ATP Accra-Ghana, and

Ga West Municipal Assembly
Amasaman, Accra

Acknowledgements

This work would not have been successful without the support from the Almighty God who gave me the strength. I also I acknowledge the contributions of my colleagues and various professionals who through diverse ways contributed to the process, just to mention a few:

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2. Miss Ida N-Chegwie Baloro, Noble Gold Bibiani Ltd
3. Mr. Yaw Adjei Podieh, Project Manager, DBS Group Ltd, Kumasi
4. Mr. Walter Adjei Ashong, Project Engineer, Top Technocrats (Gh) Ltd, Kumasi
5. Mr. Francis Bondinuba, Project Manager, Top Technocrats (Gh) Ltd, Kumasi
6. Mr. Vincent Akue, PPP Specialist/Advisor, USAID-ATP, Accra
7. Dr. Stephen Tekpetey, Centre for Scientific and Industrial Research, Kumasi
8. Dr. Christopher Antwi, College of Agriculture and Natural Resources, KNUST
9. Dr. Emmanuel Adinyira, College of Architecture and Planning, KNUST
10. Lawyer Dickson Osei-Asibey, College of Architecture and Planning, KNUST

Executive Summary

Agricultural marketing and external trade in agricultural commodities are assuming increasing importance in the wake of ushering in second green revolution, improving the living standards of the families of traders, making Ghana hunger free and turning poverty into history in the shortest possible time. However, due to the apparent population explosion and increased number of market participants (including dwellers, traders and buyers), the current capacities of the market infrastructure and logistics of the traditional market structures within the jurisdiction of Accra Metropolitan Assembly (AMA) has proven to be woefully inadequate resulting in huge losses and inefficiencies. These Inefficiencies coupled with the paucity of market infrastructure and logistics are recognized constraints to trade within Ghana and in fact the entire West Africa sub-region. Such inefficiencies increase supply chain costs for traders and impede the overall competitiveness of the regional value chain.

In line with this, the United States Agency for International Development (USAID) through the Agribusiness and Trade Promotion (ATP) is facilitating the creation and delivery of wholesale market project to improve efficiency in trade market operations within the sub-region. The four-year USAID ATP regional initiative project, which was launched in 2008, is focused on three agricultural value chains: maize, onion, and ruminant livestock/red meat. Incidentally, the USAID-ATP initiative coincided with the Accra Metropolitan Assembly (AMA) development agenda of resettling the Agbogbloshie Market in Amasaman Area. To achieve these aims of USAID and AMA, USAID ATP through Carana Corporations engaged Dr. De-Graft Owusu-Manu for the design consultancy services. The objective of the assignment was to provide technical assistance to the Onion Sellers Associations (OSAs) in Ghana to develop onion specific wholesale market facilities needed to improve operations at the newly designated site at Amasaman. The main focus of this consultancy assignment is to explore critical needs of onion market infrastructure system and propose design recommendations aimed at improving the efficiency of the marketing system and reducing the costs of marketing, particularly the avoidable waste in the marketing chain; (c) to segregate market products (commodities) according to quality and increase quality consciousness both among the traders and actors along the value-chain.

The Terms of Reference (scope of the work) for the assignment was comprehensive with minor implicit components and the assignment had been a challenging task. The assignment was accomplished with the help and support of many stakeholders. The methodology adopted for the assignment involved both desk-study and field study. Based on the comprehensive analysis of existing marketing and external trade system, market infrastructure, current trading policies and experience of implementation of various trading schemes, critical observations have been made. Primary facilities such as market sheds, warehouses (with integrated sorting bay), cross docking station, sanitary facilities; refuse disposal point (incinerator and composite pit); tolling station and security post; restaurant (eating place), worship area (mosque); recreation centre (video centre); drainage systems; car parks; pedestrian walkways; connecting road network; and service facilities such as water distribution system and electricity supply network were identified needs of the onion sellers association groups.

Total investment requirements on creation of new marketing infrastructure as proposed based on the bills of quantities is summarized and presented in the appendix of this report. It is estimated that the full scale project shall require an estimated capital injection (financing) of approximately of GH¢ 6,076,104.97. However, the project design has been phased to spread the financing. The first phase would require capital injection of about GH¢ 1,446,153.38 whilst the second, third, fourth and fifth phases would require GH¢ 997,763.53, GH¢ 992,280.78, GH¢ 414,907.27, and GH¢ 1,825,000.00 respectively. Also, an amount of GH¢ 400,000.00 has been estimated to cater for logistics needed, electricity and water supply (ancillary services).

The growing interest of the Government of Ghana in public-private partnership (PPP) arrangement and also, the recent initiatives of the creation of PPP office within the Ministry of Finance and Economic Planning has sparked the interest of modeling the investment financing outlay around PPP framework. The key objective envisaged while structuring the appropriate private sector participation options (PSP Options) to actualize PPP in the present context are: acceleration of the delivery of market infrastructure services to key stakeholders; funding of the additional necessary infrastructure investment; actualization of service efficiencies and economic efficiency and innovation; and transfer of appropriate risk to private sector.

Considering the huge investment requirements, and based on careful analysis of available PPP alternative schemes such as management contract, BOT, lease, service contract, divestiture, concession, etc., ***concession arrangement*** is recommended to finance this market infrastructure delivery. Under this proposed concession arrangement, The private sector is expected to absorb 53% of the total financing requirement whilst the public sector (mainly the government) through the Ga West Municipal Assembly has resolved to absorb the remaining 47%. Full details of the summary of investment capacity and private and public financing capacities are provided in Appendix 3 and 4 respectively of this document.

Among others, important recommendations were made suggesting: institutional innovations aimed at collective action for marketing should be encouraged and promoted. That is alternative institutional arrangements like traders companies and the generation of cooperatives for coordinating the marketing efforts of small traders should be evaluated in different social and cultural settings and encouraged for adoption according to social feasibility of the existing onion marketing system. In view of the predominance of small and marginal traders in the country, and the need for improving their viability in the changing and competitive environment of agribusiness, the networking or clustering of traders for the purpose of marketing of their surpluses can be achieved through such cooperative alliances or cooperative marketing. Also, there is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and fees on raw agricultural commodities should be rationalized, with a minimal ceiling limit. In principle, raw agricultural commodities should attract zero tax.

Considering the large investment requirement, the conclusion is that, the private sector participation is crucial for creating the necessary marketing infrastructure. Given the fact that private sector investment is governed by commercial principles, all components of proposed infrastructure cannot be expected to be created through private sector. Every component need to be seen as to the attractiveness from the point of view of private sector and accordingly encourage their participation. The onion marketing sector is no doubt an attraction especially due to the growing market for the onion and related vegetable produce, enhanced value addition in terms of processing, increased investments in the retail sector which would require backward integration through creation of infrastructure.

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CHAPTER 1: INTRODUCTION

11 Background

1.1.1 The Agriculture sector enormously contributes to Ghana's growing Gross Domestic Product (GDP), recording an average of 34% to the economy of Ghana, dominating all economic sectors for the past five decades. This development holds potential market opportunities for important segments of both large and small scale farming communities. Clearly, vegetable production and marketing value chains are becoming increasingly important to a broad array of consumers in Ghana, and the entire West Africa sub-region; and there is no doubt about the contribution of vegetable production to the economic development agenda of Ghana. However, due to the apparent population explosion and increased number of market participants (including dwellers, traders and buyers), the current capacities of the market infrastructure and logistics of the traditional market structures within the jurisdiction of Accra Metropolitan Assembly (AMA) has proven to be woefully inadequate resulting in huge losses and inefficiencies.

1.1.2 These Inefficiencies coupled with the paucity of market infrastructure and logistics are recognized constraints to trade within Ghana and in fact the entire West Africa sub-region. Such inefficiencies increase supply chain costs for traders and impede the overall competitiveness of the regional value chain. Investments are therefore, needed to upgrade marketing infrastructure and facilitating services for traditional participants within the West Africa sub-region. Anchored on this premise, the Government of Ghana is increasingly developing new partnerships to ensure sustainability within the sub-region.

1.1.3 In line with this, the United States Agency for International Development (USAID) through the Agribusiness and Trade Promotion (ATP) is facilitating the creation and delivery of wholesale market project to improve efficiency in trade market operations within the subregion. The four-year USAID ATP regional initiative project, which was launched in 2008, is focused on three agricultural value chains: maize, onion, and ruminant livestock/red meat. Incidentally, the USAID-ATP initiative coincided with the Accra Metropolitan Assembly (AMA) development agenda of resettling the Agbogbloshie Market in Amasaman Area.

1.1.4 Whilst the USAID ATP project aims at increasing the value and volume of intra-regional agricultural trade in its value chain development and associated activities along the major commercial corridors linking Senegal, Mali, Burkina Faso, Benin, Togo, Ghana, Côte d'Ivoire, and Nigeria, the AMA's market development programme is targeted at easing congestion within the Central Business District of Accra and improve broad base efficiency and exportability of agricultural products. To achieve these aims of USAID and AMA, USAID ATP through Carana Corporations engaged Dr. De-Graft Owusu-Manu for the design consultancy services. The objective of the assignment was to provide technical assistance to the Onion Sellers Associations (OSAs) in Ghana to develop onion specific wholesale market facilities needed to improve operations at the newly designated site at Amasaman.

1.2 Tasks and Overall Scope of the Project

1.2.1 The overall scope of the task includes the achievement of the following objectives:

1) To conduct a field assessment to determine the best design of the market facilities. This includes visiting the market location, meeting with market operators and other actors.
2) To develop technical specifications and architectural renderings for the target facilities in Amasaman market (warehouses, shed, cross docking facilities, meeting and administrative area, etc.) as well as its upkeep. The plan should incorporate multiple phases allowing stakeholders to add new modules when needed to increase capacities or offer additional services.
3) To develop a budget quotation for the construction of the Amasaman onion wholesale market in a format that is acceptable for potential financial partners.
4) To provide specific best practices in small-scale constructions to be followed for the construction and upgrade of agricultural market, processing and storage facilities as outlined in the Construction EGSSAA guideline.
5) To assess the logistics required to link the wholesale market with terminal retail markets in Accra; and to develop market management contract between private providers and the municipality: concession, Built – Operate -Transfer (BOT), etc.
6) To submit end of phase reports on implementation progress and comprehensive report at the end of the assignment.

1.3 Methodology Adopted

1.3.1 The new onion market design should respond to the realities of a typical market structure and should be consistent with the expected evolution of Amasaman and Accra area, and its agricultural marketing system. The multiplicity of issues to deal with suggests tackling the assignment from a more holistic point of view. A mixed methodical approach was adopted to perform the tasks, combining field work and desk-based work. In order to achieve maximum ownership of the process, the Consultant sought early discussions with key stakeholders (USAID and ATP) and the Onion Sellers Association groups to obtain detailed project briefing and also to streamline the scope of the assignment.

1.3.2 After the initial project briefing, desk-based review and analysis (research) was conducted to ascertain the technical, functional, operational and managerial requirements of onion vegetable production, storage and marketing value chains. The review concentrated on a number of topical issues that would help the USAID ATP to effectively implement the project, and included: a review of how onion marketing system presently operates, who is involved, what are the channels for produce and what are the pressure for change to the system; a review of the existing market management and operating procedures, how these activities would be incorporated in a development and what are the institutional arrangements needed to facilitate the project; a review of the general factors in market planning and design; and examine alternative solutions, estimate space requirements and prepare a design brief.

1.3.3 In order to obtain accurate and direct knowledge of the new onion market, as an indispensable basis for the new design, intensive filed work was carried out after the desk-based research. The fieldwork included interviews with key project actors such as USAID, ATP, Accra Metropolitan Authority, Amasaman Municipal Authority, Ministry of Agriculture, Agriculture Development Agencies, Agriculture Research Institutions, Landowners, Famers, Producers, Traders and other market participants; and visit the proposed new wholesale market site. The fieldwork would helped establish specific design requirements and equipment for production facilities, as well as to guide the construction process; and provide the project team with an outline of how the proposed design and operation of the facilities would comply.

1.4 Approach And Strategy To The Assignment

1.4.1 The approach and strategy adapted to the assignment was to develop a central onion wholesale market facility which participants would consider to be a single market, where all supply and demand representatives can easily get a sense of involvement and movement in the market. To make most efficient use of the available land (site), while leaving some free space for future developments as may be needed.

1.4.2 To make the new market infrastructure simple and effective according to the needs of all the participants in the market, so as to meet both current and future demands, and in accordance with the cultural orientation of the local people. To achieve a viable and coordinated market system of internal roads and traffic ways that allow easy access and transit of different types of trucks and cars functioning in the market.

1.5 The Project Deliverables

1.5.1 Management, planning and land-use deliverables: The expected deliverables under this component consisted of: conducting the necessary surveys (including field assessment report); land-use planning (i.e. site layout master planning); drafting of market management contract; preparation of environmental assessment reports (this could not be done because of unavailability of the actual land within the duration of the assignment).

1.5.2 Pre-contract consultancy service deliverables: The expected deliverables under this component consisted of: conceptual architectural designs; detailed architectural designs (working drawings); detailed engineering designs (i.e. sheds and warehouses), technical specifications; best small-scale construction practices (i.e. method statement); and preparation of Bill of Quantities.

CHAPTER 2: NEEDS ASSESSMENT AND ARCHITECTS BRIEF

2.1 Purpose of the Need Assessment

The purpose of the Needs (field) Assessment was in six-folds,

1) First, to ascertain the current market condition (including inefficiencies, infrastructure and logistics) of the existing Agbogbloshie Market;
2) Second, to identify the key practices of market participants (dwellers, traders and sellers);
3) Third, to determine critical needs and key requirements of the market participants;
4) Fourth, to establish architects brief to help in the design and the harmonization of the design requirements between key project stakeholders including (Onion Sellers Association Groups, USAID-ATP, and the Consultant);
5) Fifth, to examine the new market site at the Amasaman Area (35km on the Accra to Kumasi road) to aid in the orientation of the market infrastructure and also to facilitate in the environmental assessment requirements; and
6) Sixth, to make recommendations regarding best market design practices.

2.2 Market Setup in Agbogbloshie Area

A market assessment report compiled by AMA in April 2008 identified five typologies (levels) of markets in the Accra Metropolis and classified them as follows:

1) 1st Level Typology: including the *Central Markets* (i.e. Makola, ***Agbogblshie***, Kaneshie and Mallam Atta;
2) 2nd Level Typology : including the *Neighborhood Markets* (i.e. Adabraka, Osu, Kwashieman, Salaga and Nima, Tuesday Market, London Market, CIBA Market and Nungua Market;
3) 3rd Level Typology including the *Night Markets* (i.e. Bukom, Osu and Kwame Nkrumah Circle;
4) 4th Level Typology: Specialist Markets at the Timber Market, slaughterhouse and the fish markets such as at Jamestown Harbour; and

5) 5th Level Typology: including *Privately Managed Markets* such as Kaneshie Market, AgbogbloshieNo.2, Dansoman Market, Odorkor market, Abeka Market, and Makola Shopping Mall.

2.3 The History of Agbogbloshie Market

2.3.1 The Agbogbloshie consists of approximately 6,000 families or 30,000 people, situated on the left bank of the Odaw River, and in the upper reaches of the Korle Lagoon in Accra. It is reported that four main different social and economic factors stimulated the establishment and growth of Agbogbloshie, including spill-over population associated with the size and growth of the adjacent market; migration from the northern part of Ghana; cheaper settlement area free from bureaucratic constraints and high rentals in formal recognized settlement areas; and social downward movement by those forced out of expensive areas.

2.3.2 The Agbogbloshie market which is located on the old Fadama road to Abossey Okai in the capital city of Accra has been in existence since 1952. The market which initially started as a food stuff market for onions and yam sellers has gradually grown into a large slum-market with many other commodity traders such as tomatoes, garden eggs, plantain, etc. The market has also grown to accommodate all kinds of scrap dealers, and has become a dumping ground for electronic and household waste. The scrap yard has grown steadily into a popular recycling area, where old and discarded scraps could be put to use.

2.4 The Processes of the Need Assessment

2.4.1 The processes and the methodology adopted to undertake the Needs (field) Assessment involved series of meetings and discussions with project stakeholders and consisted of the following:

2.4.2

2.4.3 First, familiarity meeting and tour (FMT): This was done as a first step to establish formal contact with the Onion Sellers Association (OSA) groups operating within the Agbogbloshie Market setup and to familiarize with project stakeholders. Mr. Vincent Akue, the PPP Specialist

and Advisor to USAID-ATP project led the tour. At the meeting, Mr. Akue formally introduced the Consultant (i.e. Dr. De-Graft Owusu-Manu), to the OSA Executive Members present. The

Secretary General of the Ghana Agricultural Producers and Traders Organization (GAPTO), Mr. Haruna Agesheka introduced the Executives of GAPTO and OSA to the meeting, and subsequently briefed the meeting about the Agbogbloshie Market system, touching on administrative setup; various commodity association groups and responsibilities; market culture and practices; major constraints including deteriorating market sheds, inadequate market capacity leading to congestion, poor storage facilities and logistics constraints leading on avalanche of losses; and concluded that the USAID ATP project is timely. The meeting started with a prayer which was said by one of the GAPTO Executives (name withheld) and ended successfully with a prayer by the same person. The meeting was followed by tour within the Agbogbloshie market and a visit to the new Amasaman site.

2.4.4 Second, key stakeholder consultation and discussion (KSCD): This was done a week following the familiarity meeting and tour. The purpose of the KSCD was to garner enough empirical data (that constitutes the client brief) from the project stakeholders mainly the OSA executives, OSA members and market users (i.e. wholesalers, retailers and buyers). Opinions of a large number of key stakeholders were consulted and involved in this process. Table 1 provides the details of the tools adopted, the objectives and key stakeholders involved. Key questions and response (i.e. outcomes) of the KSCD are provided in this report.

2.4.5 Third, interview sessions (IS): Informal and unstructured interviews were held with over 50 market users who were selected randomly. The notion of the IS was to gather additional data to support those obtained from the KSCD and also to confirm the outcomes of the KSCD. The IS was done a day after the KSCD. Table 1 provides the details of the tools adopted, the objectives and key stakeholders involved.

2.4.6 Fourth, market condition assessment (MCA): A day after the IS, a critical examination of the market condition was conducted by the consultant During the MCA, actual size of the market sheds, movement arrangements (for human and heavy trucks and offloading trucks) and trading ancillaries were measured. This was to serve as a benchmark to aid the architectural design and deposition.

2.4.7 Three Onion Sellers Associations work under the jurisdiction of GAPTO, namely: Progressive Corporative Onion Farmers and Traders Society (PCOFTS), Accra Onion Sellers and Importers (ASI); and Ghana National Onion Traders Association (GNOTA). Onion Regional Observatory (ORO) oversees all the three divisional association groups.

Table 1: Needs Assessment Tools

Needs Assessment Process	Assessment Tool	Objective	Key Stakeholders involved
Key Stakeholder Consultation and Discussion	Focus Group Discussion Community Mapping	• To identify stakeholders' opinions and preferences about specific the new wholesale market development project at Amasaman • To identify how stakeholders believe the new wholesale market should be built • To identify participants needs • To identify how participants use and access the available market facilities • To compare stakeholders perceptions of the importance of various needs	• 8 Executives from GAPTO • 6 Executives from PCOFTS • 6 Executives from ASI • 6 Executives from GNOTA • 4 Executives from ORO
Interview Sessions	Survey Method	• To identify the opinions of the market users, i.e. general OSA members (traders) and buyers about the development of the new wholesale market in Amasaman	• 30 traders • 20 buyers
Market Condition Assessment	Asset Inventory	• To identify the market facilities that the users of market think are important to them • To reveal why users of the market believe these facilities are important.	• unrecorded large number of traders

2.5 Key Observations, Current structure and Constraints

2.5.1 Table 2 provides a summary of the key observations and findings during the FMT, KSCD, IS and the MCA.

Table 2: Key Observations

ITEM	DESCRIPTION
1. Market Systems and Size	• The market operates under the ambit of open market system; • Has multiplicity of participants and diverse commodity traders; • Has both wholesale and retail outlets; and • The exact market size could not be obtained at the time of writing this report but rough figures suggest that the market is covering an approximate land size of 5 acres.
2. Nature and General Environment	• Characterized by congestion of onion traders; • Inadequate parking space leading to vehicular congestion inhibiting human movements; • Poor drainage system due to choked drains; • Poor sanitation due to inappropriate and inadequate waste management system; and • Busy with seeming booming commercial activities.
3. Market Infrastructure and Logistics see 8	• Limited number of sheds that has leading sharing of spaces (resulting in frequent conflicts); • Deteriorating and failing sheds; and • Poor onion storage systems leading to frequent losses (i.e. shrinking and rotting).
4. Membership of the Onion Traders Association Groups	• Progressive Corporative Onion Farmers and Traders Society **-268 members** • Accra Onion Sellers and Importers - **242 members** • Ghana National Onion Traders Association - **108 members**
5. Executive Structure of the OSA Groups	• Each OSA group is made up of six (6) main executives, consisting of: Chairman, Vice Chairman, Treasure, Secretary, Organizer and Patron. • The roles and responsibilities of each OSA group is dictated by their respective constitutions under the governance of GAPTO constitution and bye-laws

6.	Statistics of Onion Trading Activities	• Bags of onions are kept on pallets on rows in the open air. These pallets of onions are usually covered with polythene to avoid water penetration. The practice usually prevents ventilation (aeration) leading to frequent spoilages. The weight of each bag is 110kg; • Between 280-290 bags of onion bags are brought in each day (i.e. per trip or per one articulator truck); • The trips are regulated by the OSA groups in order not to flood the market; • Approximately 45% of the total numbers of traders are Wholesalers and 55% retailers; • Approximately 2000-4000 bags of onion are sold in a day; • Average number of bags of onions brought in daily during lean season- 1800bags (6 - 9 Articulators trucks) • 15 trucks can be off-loaded at a time. Usually loading is done early in the morning to avoid unusual congestion; • Average number of bags of onions brought in daily during peak season - 3800 bags (10-15 Articulators trucks); and • An average of 1,000,000 bags of onions (120,000 metric tons) is brought annually.
7.	Conditions of Existing Facilities	• The numbers of sheds are woefully inadequate and hence most of onions are kept in the open air; • Measured shed area of $9m^2$ shared by 5-6 traders; • The shed are open and well ventilated but low in height, clumsy and dilapidated; • Poor conditions and inadequate sanitary facilities such as urinals, washrooms, WCs, etc. • Available restaurant (eating place) is in dilapidated condition; • 90 percent of the OSA members and traders are Muslims but available worship center was inadequate and was in disquieting condition; • Unavailability of recreational centres for traders and OSA members to rest during off-peak trading periods; • Unavailability of clinics, fire stations and school for

		the traders. • Unavailability of parking areas for heavy and light duty trucks and private cars; • Unavailability of warehouses (storage houses); • Unavailability of appropriate waste disposal system; • Unavailability of cross-docking station; • Unavailability of sorting bay and seasoning (platform); • Road networks within the market setup are in poor conditions; • Unavailability of pedestrian walkways; etc.
8.	The New Amasaman Market Site	• 50 acre land allotment for all commodity traders and designated to be a major wholesale point with the AMA area; • Newly constructed market sheds and warehouses for other commodity traders were observed; • Clinics, fire stations and school (Crèche, Kindergarten and primary school are integrated into the new market layout at Amasaman area; • Road network to the new market site is in excellent condition (tarred); and • Key concern noted on these new facilities was inadequate ventilation system associated with the warehouses.

Note: Photographs of the conditions of the various market facilities are attached in this document as appendix

2.6 Peculiar Needs (Client's Brief)

2.6.1 Table 3 provides summary description and priority of the key critical market infrastructure needs of the OSA Members identified during the KSDC, IS and the MCA. Priority of the facilities are ranked on a scale rating of 1-3, where 1=High Priority, 2= Moderate Priority, and 3= Low Priority.

Table 3: Client Brief

Item	Facility	Description	Priority
1.	Market Sheds	• The OSA groups wanted a total of 1200 shed spaces	1
2.	Warehouses (Storage Facilities)	• Each OSA group wanted one warehouse (i.e. 3 warehouses)	1
3.	Cross Docking Facilities	• The OSA did not have much idea regarding their need	1
4.	Administrative Block (Meeting Place)	• Each OSA group wanted one administration block (i.e. 3 blocks)	1
5.	Sanitary Facilities	• The OSA groups wanted a total of 36 Showers and 40 WCs for Male; and 20 Showers and 20 WCs for female	1
6.	Refuse Disposal Point	• The OSA did not have much idea regarding their need	1
7.	Sorting Bay and Seasoning Platform	• The OSA did not have much idea regarding their need	1
8.	Worship Area (Mosque)	• The OSA groups wanted a total of 2 worship centres (mosques)	2
9.	Restaurant (Eating Place)	• The OSA groups wanted a total of 1 restaurant facility	2
10.	Car Park for Private Cars	• They needed adequate space for private car parking	2
11.	Pedestrian Walkways	• They needed walkway for human maneuvering	2
12.	Tolling Station (Gate House)	• They need one tolling station point for collection of revenue	2
13.	Car Park for Heavy and Light Duty Trucks	• They needed adequate space for heavy and light duty trucks parking	2
14.	Recreational Centre	• They needed a recreational centre	3
15.	Clinic	• They needed a clinic	3
16.	Fire Station	• They needed a fire station	3
17.	School (Crèche, KG)	• They needed a Crèche	3
18.	Security Post	• The requested no security post	3
19.	Guesthouse	• The needed a guesthouse	3

2.7 Architect's Brief

2.7.1 Table 4 provides a summary of Architects brief in response to the key critical needs of the OSA members and remarks.

Table 4: Architects Brief

Item	Facility	Description
1.	Market Sheds	▫ Provisions were made for 1500 number of shed spaces to accommodate for future growth
2.	Warehouses (Storage Facilities)	▫ Provisions were made for two large warehouses, taking into consideration cost and utilization efficiency
3.	Cross Docking Facilities	▫ Provision was made for one large cross-docking station
4.	Administrative Block	▫ Provision was made for one administration block to accommodate all the three OSA groups taking into consideration cost
5.	Sanitary Facilities	▫ Provisions were made for 12 Showers and 36 WCs for Male; and 10 Showers and 10WCs for female, taking into consideration future growth
6.	Refuse Disposal Point	▫ Provision was made for one refuse disposal point. ▫ Construction of incinerator station and/or compost pits is/are also recommended
7.	Sorting Bay and Seasoning Platform	▫ Provisions were made for two sorting bays and seasoning platforms
8.	Worship Area (Mosque)	▫ Provision was made for one worship centre
9.	Restaurant (Eating Place)	▫ Provision was made for one restaurant facility with enclosed traditional canteen
10.	Car Park for Private Cars	▫ Adequate provision has been made
11.	Pedestrian Walkways	▫ Adequate provision has been made
12.	Tolling Station	▫ Provisions were made for two tolling stations
13.	Car Park for Heavy and Light Duty Trucks	▫ Adequate provision has been made
14.	Recreational/Video Centre	▫ Provision has been made within the administrative block
15.	Clinic	▫ No provisions were made for these facilities because a visit to the Amasaman new market site indicated the presence of these facilities for the entire setup
16.	Fire Station	
17.	School (Crèche, Kindergarten)	
18.	Security Post	▫ Provision has been made within the master plan to accommodate future additions
19.	Guesthouse	▫ Provision has been made

Note: Architectural designs and renderings of these facilities are provided in a separate document.

2.8 Validation Workshops

2.8.1 Three series of validation workshops were held with different project stakeholders after the initial conceptual architectural designs and presented as follows:

2.8.2 **1st Validation Workshop (VW) with OSA Executives:** The purpose of this validation workshop was to confirm whether the conceptual designs conform to the client's brief as obtained during the KSCD; to reconcile the client's brief with the architect's brief; to agree on critical design variables such as size and number of sheds, warehouses, worship centre, restaurant, sanitary facilities, cross-docking stations, sorting bay and seasoning platform, etc; and to receive additional input from the OSA members to improve on the final architectural designs (working drawings). The workshop was held at the OSAs main office in Agbogbloshie market.

2.8.3 **2nd Validation Workshop with USAID-ATP Members:** This workshop was held a day after the 1st VW with the OSA members and was between the Consultant (Dr. Owusu-Manu and USAID-ATP PPP Advisor/Specialist (Mr. Vincent Akue at the USAID-ATP's office. The purpose of this meeting was to communicate the client's brief resulting from the KSCD, to discuss the conceptual designs and the master plan layout; to share ideas on how to improve the quality of the design philosophy; to communicate the predicted financial implications of the various designs; and to iron out inconsistencies between project stakeholders needs i.e. client's need, consultant's recommendations (brief) and USAID-ATP's initial scope of work.

2.8.4 **Penultimate Stakeholder Meeting:** The meeting was held three weeks after the 2nd VW and it was between the Consultant (i.e. the Architect), Amasaman Mayor, GAPTO and OSA members, and the USAID-ATP members. This was done after the completion of the final architectural designs. The purpose of this meeting was to present to the Mayor the project designs as a means to get the municipality involved with the project; to also receive feedback (if any); and to formally request for the 12 acre land needed for the project. The 12 acre land was estimated based on the amalgamation of the gross floor areas of the various facilities including pavements, roads, service areas (see master plan layout).

CHAPTER 3: PROJECT IMPLEMENTATION MANUAL

3.1 Introduction

3.1.1 This section presents the **Project Implementation Manual (PIM)**. The PIM describes, explains and presents recommendations on issues relating to 1) project phasing; 2) quantity surveying (i.e. budgeting and financial projections, 3) best small-scale construction practices for sustainable and environmental friendly construction; technical specifications; 4) logistics requirements needed to link the wholesale market in Amasaman to Accra bound retail markets; and 5) monitoring and evaluation arrangements for project implementation.

3.2 Project Phasing

3.2.1 Phasing of the project: Due to the perceived financial constraints to deliver the entire project together at the same time, it was necessary to phase the projects to allow for implementation of the project at different times and to spread the financial commitments and capital injections. The phasing of the project was done in conformity with the priority ranking of the OSA groups' needs assessment, and on a scale rating of 1-3, where 1=High Priority, 2= Moderate Priority, and 3= Low Priority (*c.f.* Needs Assessment Report).

3.2.2 Phase 1 shall consist of primary facilities such as market sheds, warehouses (with integrated sorting bay), cross docking station, sanitary facilities and refuse disposal point (incinerator and composite pit). Due to the large number of market sheds to be constructed and associated huge capital injections, the market sheds have been spread into the first three phases to lessen the initial financial commitments. These facilities (i.e. phase one facilities) are projected to be delivered during the first two years of the project implementation.

3.2.3 Phase two shall consist of secondary facilities such as tolling station and security post together with some portions of the market sheds and the administrative block (i.e. primary facilities) are scheduled within phase 2 of the project delivery, and are expected to be delivered within the third year of project implementation.

3.2.4 Phase 3 shall consist of the remaining portion of the market sheds and drainage systems within the market setup. These facilities are expected to be delivered in the fourth year of project implementation.

3.2.5 Phase 4 shall consist of tertiary facilities such as restaurant (eating place), worship area (mosque) and recreation centre (video centre), and projected to be delivered within the fifth year of the project implementation.

3.2.6 Phase 5 shall consist of the pavement works for the car parks and pedestrian walkways and connecting road network within the market setup. This phase could commence during the fifth year through the seventh year.

3.2.7 Provisions have been made for **ancillary service facilities** such as handling and transit logistics (i.e. light duty trucks, forklifts, climbing ramp, etc), water and electricity supply. The associated costs of these facilities need to be spread within the first two phases during the project delivery. Cost distribution allocation plan of 50% is recommended.

3.2.8 Due to the prolonged project duration, potential cost escalations due to inflation are envisaged within the 2^{nd}, 3_{rd}, 4^{th} and 5^{th} phases. Average adjusted price indices of 1.20 and 1.40 (based on Price Adjustment Formula developed by Building and Road Research Institute-BRRI) have been utilized to predict possible price increments. These figures may change (downward or upward) with changes in prevailing economic parameters in the country.

3.2.9 Table 5 provides a summary of the various facilities that have been planned to be accommodated within the three phases during the project implementation.

Table 5: Project Phasing

Item	Facility	Priority	Quantity
Phase 1: Two Years (1st and 2nd Years)			
1.	8 No. Market Sheds	1	400 No. spaces(with 300 additional spaces) provided to accommodate for future growth
2.	Warehouses	1	2No. warehouses with integrated sorting bay
3.	Cross Docking Station	1	1No. cross-docking station
4.	Sanitary Facilities	1	12 No. Showers and 36 No. WCs for Male; and 10 No. Showers and 10 No. WCs Females
5.	Refuse Disposal Point	1	1No. Incinerator Facility and 2 number Compost Pits
Phase 2: One Year (3rd Year)			
6.	8 No. Market Sheds	1	400 No. spaces
7.	Administrative Block (integrated recreational centre)	1	1No. administrative block for OSA meetings
8.	Tolling Station	2	2 No. Tolling station
9.	Security Post	2	4 No. Security Post (Security office within the Administration Block
Phase 3: One Year (4th Year)			
10.	8 No. Market Sheds	1	400 No. spaces
11.	Drainage System	3	Adequate provision made
Phase 4: One Year (5th Year)			
12.	Worship Area	2	1No. worship area for worshippers
13.	Restaurant	2	1No. restaurant
14.	Guesthouse	3	1 No. Guesthouse facility provided
Phase 5: Three Years (5th , 6th, and 7th Years)			
15.	Pedestrian Walkways	2	Adequate provision made
16.	Car Park for Private Cars	2	Adequate provision made
Ancillary Services & Logistics			
17.	Handling and Transit Logistics	1	
18.	Water Supply	1	
19.	Electricity Supply	1	
Other Facilities			
20.	Clinic	3	No provisions were made for these facilities because a visit to the Amasaman new market site indicated the presence of these facilities for the entire setup
21.	Fire Station	3	
22.	School (Crèche, Kindergarten)	3	

3.3.1 To aid budgeting and financial planning, an extensive quantity surveying work was carried out to ascertain the cost implications of the various facilities and the overall cost of each phase of the project. Two main cost estimating techniques were employed i.e. from the most accurate and detailed method such as the Bill of Quantities (BoQ) method (accuracy is typically -5% to +5%); and moderate accurate method such as Approximate Estimate (AP) Method (Superficial/Floor Area method), which accuracy is typically -15% to +15%). Detailed estimates have been attached.

3.3.2 These Bills of Quantities (where applicable) have been prepared generally, in accordance with the principles of the Standard Methods of Measurement of Building Works, Fifth Edition Metric issued by the Royal Institution of Chartered Surveyors. Departures from the method in some cases have been made to reduce the number of measured labour and to simplify certain other measured items.

3.3.3 The Bill of Quantities is packaged different and summaries of the financing (budgeting) and logistics outlay are contained in a different document (see attached).

3.4 Technical Specifications and Best Small Scale Construction Practices

3.4.1 Technical Specifications conforming to applicable British Standards enforced in Ghana have been summarized in Appendix 1. All British or other standards mentioned in this report shall be deemed to form part of this specification. All reference to such standards shall be to the latest edition or revision thereof unless otherwise stated.

3.4.2 Best Small-Scale Construction Practices (Method Statement) consistent with the environmental guidelines for small-scale activities in Africa (EGSSAA) have been summarized and presented in Appendix 2.

3.4.3 Where a specific British or other standard is referred to in this specification, another standard will be acceptable provided that it ensures an equal or higher quality of material and workmanship than the standard referred to. If the contractor intends to use such alternative standard, he/she shall notify the Consultant thereof, submitting with the notice two copies of the proposed standard, and shall not order any material or perform any work unless and until he/she obtained the Consultant's approval

3.5 Logistics Requirements

3.5.1 Good logistics have a direct bearing on good performance, both in the production process and in the distribution process. Logistics are generally inadequate and in need of improvement. Generally, the government has a key role in provision of improved transport infrastructure systems (i.e. improved road networks), whilst the private sector can also play a significant role in terms of system improvement, technology adoption and infrastructure access.

3.5.2 Key observed areas within the onion supply and value chain system that require logistics improvement are exhibited in Table 6. Full description, estimates and number of logistics (i.e. handling and transit logistics) needed are also provided in Table 7

Table 6: Logistics Requirement

Logistics Chain	Observation	Recommendations	Key Logistics requirements
Packaging/ Bagging	• The current cotton sacks bagging method inhibits aeration. • Current weight per bag of 120kg makes lifting and handling difficult • Bagging practices cause excessive losses.	• Custom-nested nylon sacks are recommended • Switch to 50kg weight per bag is recommended	• Well nested nylon sacks

Import/ Transportation	• Transport delays associated problems due to bad road network linking Niger and Ghana; • Unavailability of efficient heavy duty trucks; and	• Improve road network systems • Remove all damaged heavy duty trucks and replace with reliable and efficient ones;	• Road infrastructure provision • Acquisition of new heavy duty trucks
Loading and Unloading (offloading)	• Loading and offloading are generally manual.	• Mechanize loading and offloading system • Manual system for supplying sheds from the cross-docking station and temporary storages	• Forklifts • Cross docking station • Mobile Crane • Hand trucks
Storage and Stacking	• Non-existence of storage facilities. • Stacking system inhibits aeration • Wooden pallets used for the stacking are poorly made	• Construct new storage facilities • Improve stacking system to allow aeration • Use four-way entry pallet	• New warehouse constructed • Robust plastic pallets • Forklifts • Seasoning Plant • Refrigeration Plant
Transit Logistics (i.e. transfer between wholesale market and retail markets)	• Inadequate transit logistics • Available ones are in poor conditions	• Provide adequate transit logistics	• Light duty trucks

Table 7: Appendix 3: Handling and Transit Logistics Requirements

Item	Logistics	Description	Quantity	Unit Cost (GH¢) ($1=1.6GH¢)	Total Amount (GH¢) ($1=1.6GH¢)
Transit Logistics					
1	KIA K 2900 Light Duty Truck	Flatbed, Load Capacity of 6 tones, 125 HP (92 kW) Engine Power, Manually operated.	2.0	38,000.0	76,000.0
2	KIA K2500 Light Duty Truck	Flatbed, Load Capacity of 4 tones, 94 HP (69 kW) Engine Power, Manually operated.	2.0	25,000.0	50,000.0
Handling Logistics					
3	Mobile dock loading ramp	6000kg loading capacity, Overall dimensions - 10.5m x 2.35 m x 1 m. Adjustable height from 100cm to 180cm,	2.0	8,000.0	16,000.0
8	LINDE H80D forklift	800kg Load capacity, Net weight of 12540 kg, gross weight of 20540kg, duplex mast, 4.4m pumping head, overall dimensions - 3.3m x 2.3m x 4.4m, fork length - 1800 mm.	4.0	10,000.0	40,000.0
9	Scanclimber allvany mast climbing platform	Load capacity of 1000 kg, Net weight of 1490 kg, Gross Weight of 2490kg, Pumping head of 28m, 1m width, 1 axle, spring/spring suspension	2.0	9,000.0	18,000.0
	TOTAL				**200,000.0**

3.6 Total Investment Capacity and Financing Outlay

3.6.1 Total investment requirements on creation of new marketing infrastructure as proposed based on the bills of quantities is summarized and presented in the appendix of this report. It is estimated that the full scale project shall require an estimated capital injection (financing) of approximately of GH¢ 6,076,104.97.

3.6.2 The initial projected capital (budget) for the entire project is huge which threatens its development. However, the project design has been phased to spread the financing. The first phase would require capital injection of about GH¢ 1,446,153.38 whilst the second, third, fourth and fifth phases would require GH¢ 997,763.53, GH¢ 992,280.78, GH¢ 414,907.27, and GH¢ 1,825,000.00 respectively.

3.6.3 Also, an amount of GH¢ 400,000.00 has been estimated to cater for logistics needed, electricity and water supply (ancillary services).

3.6.4 The private sector is expected to absorb 53% of the total financing requirement whilst the public sector (mainly the government) through the Ga West Municipal Assembly has resolved to absorb the remaining 47%. Full details of the summary of investment capacity and private and public financing capacities are provided in Appendix 3 and 4 respectively.

3.7 Public-Private Partnership (PPP) Framework

3.7.1 The growing interest of the Government of Ghana in PPP arrangement holds a promise for the success of this project. Also, the recent initiatives of the Government of Ghana for public private participation especially in the creation PPP office within the Ministry of Finance and Economic Planning is a step in a right direction to formulate PPP policy for effective implementation for PPP projects across the country.

3.7.2 While PPP denotes the collaboration between a public and a private stakeholder defined by a contract, the key objectives envisaged while structuring the appropriate private sector participation options (PSP Options) to actualize PPP in the present context are:

- acceleration of the delivery of market infrastructure services to key stakeholders;
- Funding of the additional necessary infrastructure investment;
- actualization of service efficiencies and economic efficiency and innovation; and
- transfer of appropriate risk to private sector.

3.7.3 Considering the huge investment requirements, and based on careful analysis of available PPP alternative schemes such as management contract, BOT, lease, service contract, divestiture, concession, etc., concession arrangement is recommended to finance this market infrastructure delivery

3.7.4 For the PPP to be successful on this project, the following prerequisites have to be met to maximize synergistic impact of PPP:

- formulation of clear goals and communication of goals to the project partners;
- partner's contributions should complement each other in a way that enables both to achieve their goals more efficiently;
- public partner does not finance the private partner's core business but provides subsidiary support (i.e. in this case, service facilities such as pavements, drainage system, car parks, electricity, water, cross-docking station, refuse disposal point and the worship centre are typical facilities the public sector can finance);
- PPP should enable the private partner to pursue its economic goals and the public partner to pursue its developmental goal; and
- sustainable use of natural resources should be the main objective.

3.8 Road Infrastructure, Public Utilities and Drainage Systems

3.8.1 Engineering design of road infrastructure networks, electricity supply system, water distribution system, and drainage systems was beyond the scope of work of this assignment. However, provisions are made for road infrastructure network connecting the market area to existing road networks (including pavement walkways for pedestrians, car parks for heavy and light duty trucks and private cars). This was based on previously planned network which ensure adequate provision for mobility of thorough traffic, service and access roads while ensuring safety, capacity and minimal environmental impacts during construction and operational phases.

Road Infrastructure Network and Car Parking

3.8.2 The roads and street network are planned to have a hierarchy of roads for mobility, service and access functions within the market (see master plan layout). The cross section of this shall consist of the 7.3m single carriageway with 1-1.5 m sidewalks. Adequate right of way provision shall be made to enable other utility service lines to be installed.

3.8.3 Service roads are provided for general travel within the market to provide accesses to administration block, warehouses, sheds, car parks, sanitary areas, recreational area, schools etc. these shall provide for travel speeds of 30-40km/hr. Single carriageway roads of width 7-7.3m shall be provided as per the Ghana Highway road design guide.

3.8.4 Intersections along the streets shall be designed to minimize conflicts, improve network efficiency and prevent bottlenecks. Lay-bys and bus stopping areas shall be provided for and adequately signed.

3.8.5 Within the market, walking and cycling (motoring) shall be promoted and catered for through the provision of cycle/motto lanes and pedestrian routes which are safe and continuous to identified locations.

3.8.6 Road surfaces provide for smooth and comfortable movement of vehicular and pedestrian traffic. Available road surfacing options for consideration may include bituminous surface treatment (chip seal) and concrete surfacing. The same material can also be utilized for the car parking areas. The materials required i.e. Chippings and bitumen are readily available and the techniques for constructing and maintaining them are known to a good number of contractors.

3.8.7 Sidewalks shall be built and given segmented concrete pavement block surfacing. Raised curbs shall be paved at the edged to protect the pavement and segregated pedestrian flows.

Drainage network and Structures

3.8.8 The drainage network shall be planned based on the terrain, topography, the climatic factors and the management of rainwater within the development. A drainage system consisting of Primary drains, Secondary and Tertiary Drains shall be provide generally along the road network to carry runoff, waste water.

3.8.9 Concrete U and V drains are contemplated due to self-cleansing and ease of maintenance. As required along main arterials drains will be covered. Whenever drains are covered suitable inspection chambers or manholes shall be provided at intervals to trap debris and allow for periodic dislodging.

3.8.10 Concrete Cross drainage culverts shall be provided. Precast and insitu box culvert types shall be considered depending on the waterway area and other considerations for geometric alignment design. Based on the outcome of hydrological studies (which is recommended to be undertaking), flood protection and management schemes shall be developed.

Public Utilities: Electricity and Water Distribution Systems

3.8.11 Electricity and water distribution systems shall all be planned to conform to the national grid system utilizing most efficient systems.

3.8.12 In Ghana, the Electricity Company of Ghana (ECG) is the mandated distribution system utility provider for the Southern Sector of Ghana. Therefore the distribution system design must meet the minimum standard requirements and criteria of the ECG on supply system reliability, power quality, voltage regulation, operating flexibility and employee and public safety. The proposed designs must ensure that they comply with the preset limits of voltage, current-carrying capacity and fault levels.

3.8.13 The objective of water supply system is to provide a reliable water service with respect to water quantity, quality in a sustainable manner. The water quality shall meet Ghana Standards requirement.

3.8.14 The process may involve the following steps: identification of suitable sources of water; design of a suitable water transport and distribution system; and design of suitable appurtenance such as reservoirs and pumping station. Also feasibility of and exploring and exploiting other water distribution sources such as feasibility of rainwater harvesting as a source or to compliment other sources; feasibility of ground water - hydro geological survey and sitting of additional boreholes if required.

3.9 Monitoring and Evaluation

3.9.1 Monitoring and Evaluation (M&E) is an important component of the implementation process of the Onion Wholesale Market Project. It is the means by which progress of implementation will be assessed regularly, relevant lessons are learnt and to ensure that necessary corrective measures are taken in good time to keep the project on course. This will be done at different levels and will involve various stakeholders.

3.9.2 M & E Indicators: A number of key indicators will be used to assess the achievement levels of different aspects of the project. These include the following: supply of inputs including finance, land, building materials, labour, logistics etc; construction of facilities (both quantity and quality); provision of the required services and infrastructure; allocations of sheds; and management of the market facilities.

3.9.3 Timing of M& E: While monitoring will be a continuous exercise, evaluation will be periodical. Monitoring activities will basically consist of regularly monthly site inspections and meetings. On the other hand, it is proposed that there will be two evaluation exercises. The first will be mid-term evaluation and the other will be end of project evaluation after the fifth year.

3.9.4 M & Team: The composition of the Monitoring Team will be contractors, USAID-ATP Team, OSA Groups and the various professionals involved in the project. The Evaluation team may essentially comprise external experts working in partnership with important stakeholders of the project, namely; AMA representatives, Amasaman Local government representatives, the financing institutions, Contractors and Consultant.

3.9.5 One important stakeholder of the evaluation process will be the project beneficiaries (i.e. traders and sellers). Their views on the quality and suitability of the facilities provided will be very critical to the success of the project. A variety of methods will be adopted for the M & E exercise. These will include field observations, interviews and consultations, checking of field and site records, completion of forms and questionnaires etc.

3.9.6 Reporting: Reporting is an essential aspect of M & E. It involves the way captured field information are processed and packaged in the form of reports for delivery to the stakeholders. The reports shall provide the opportunity for stakeholders to be well-informed of the progress and to participate fully in the discussions. It is therefore important that the outcome of monitoring activities (i.e., site meetings) and detailed evaluation exercises are properly documented and kept.

3.9.7 Different channels of reporting or communication are recommended for this project including written, videos, photographs, electronic and others. The reports of the M & E exercises should be discussed at meetings and occasionally at workshops in order to benefit fully from inputs of other relevant experts and interest groups.

3.9.8 Appropriate feedback systems should be instituted to facilitate effective communication of views, suggestions and lessons learnt. Soon after M & E exercises, the Consultant (if any) should ensure that any corrective measures and interventions recommended are quickly communicated to the appropriate officers or staff for immediate implementation.

3.9.9 It must be noted that the level of compliance or implementation of recommended measures should be assessed in the following round of monitoring and evaluation. This will ensure that project officers give serious attention to the outcomes of the appraisal system.

3.10 Key Challenges

3.10.1 According to the OSA Executives, 50 acres plots of land have been allocated to the New Amasaman Wholesale Market that will accommodate different commodities of which onion is part. However, the main challenge is the unavailability of the general block plan for the area and site plan allocated to the OSA groups. This made the general planning of the work difficult, particularly the planning of the master plan layout which adversely slowed the pace of the work. Also certain aspects of the work such as Environmental Assessment Report; and Quantity Surveying works (i.e. budgeting and pricing) of connection road networks, pedestrian walkways, etc could not be completed because of the unavailability of the site plan to work with.

3.10.2 Another key challenge that affected the delivery of the project is the unexpected workplace car accident which occurred after the 2nd Validation Workshop, when the Consultant was returning to Kumasi, of which he was badly injured and hospitalized.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

4.1.1 The USAID-ATP objective of facilitating the creation and delivery of wholesale market project to improve efficiency in trade market operations within the sub-region is timely. Clearly, the creation of onion wholesale market will bring enormous benefits to the OSA groups, Ghana and entire sub-region, potentially manifesting in the increase levels of job creation, hence requiring needed support from all stakeholders.

4.1.2 Despite the apparent contending challenges and associated delays, all project stakeholders are satisfied with the architectural designs. The Project Implementation Manual (PIM) has been completed, and presents issues on project phasing, budgeting (i.e. quantity surveying works), logistics requirements, technical specifications and best construction practices and methods.

4.1.3 Considering the large investment requirement, the private sector participation is crucial for creating the necessary marketing infrastructure. Given the fact that private sector investment is governed by commercial principles, all components of proposed infrastructure cannot be expected to be created through private sector.

4.1.4 Every component need to be seen as to the attractiveness from the point of view of private sector and accordingly encourage their participation. The onion marketing sector is no doubt an attraction especially due to the growing market for the onion and related vegetable produce, enhanced value addition in terms of processing, increased investments in the retail sector which would require backward integration through creation of infrastructure.

4.1.5 The sector though provides opportunities for private investment in creating the infrastructure in number of areas such as cold storage facilities, warehouse infrastructure, controlled atmosphere facilities, transport logistics, etc., the sector being a green field area, public participation/state and support will be crucial for effective private sector participation.

4.2 Recommendations

4.2.1 Contract administration and post-contract services such *as* supervision of construction activities; selection of appropriate PSP partner, planning and coordination; control and management of multidisciplinary team; resource requirements scheduling; schedule requisitions, identify and resolve constraints should be carefully done in an objective manner.

4.2.2 The development of training modules and manuals on effective management of wholesale markets for market participants and relevant project actors (particularly the members of the various onion sellers associations, PSP partners, public partner, and potential financiers) is highly recommended. Key training components included logistics management, stores administration, Market systems, conflict resolution, contract administration, and other relevant topics that may be proposed.

4.2.3 Similarly, the initiative for creation of Terminal Market Projects at selected locations within Accra area is another good example for roping in the PPP investment. The modernization of existing markets and outsourcing the services are the other areas where PPP options can be explored.

4.2.4 Institutional innovations aimed at collective action for marketing should be encouraged and promoted. That is alternative institutional arrangements like traders companies and the generation of cooperatives for coordinating the marketing efforts of small traders should be evaluated in different social and cultural settings and encouraged for adoption according to social feasibility of the existing onion marketing system.

4.2.5 In view of the predominance of small and marginal traders in the country, and the need for improving their viability in the changing and competitive environment of agribusiness, the networking or clustering of traders for the purpose of marketing of their surpluses can be achieved through such cooperative alliances or cooperative marketing.

4.2.6 There is a need for bringing uniformity in the state-level tax structure in agricultural commodities for improving the market efficiencies. Taxes and fees on raw agricultural commodities should be rationalized, with a minimal ceiling limit. In principle, raw agricultural commodities should attract zero tax.

4.2.7 The current trade *(de facto)* restrictions on movement of goods across borders within the West Africa sub-region should be removed by harmonizing state-level taxes and providing for their hassle free collection at convenient points. The sub-region should be conceptualized as a unified integrated national market.

4.2.8 Investments in the entire agri-value chain like creation of new agricultural marketing infrastructure or modernization of existing markets should be eligible for agricultural loans under priority sector lending.

Appendix 1: Technical Specifications

Elements	Item	Specification
Excavation and Earthwork	Site Clearance	• All trees, shrubs, vegetation, rubbish, etc. within the limits of the site and elsewhere as directed by the Consultant shall be cleared down to ground level and removed from the site
	General Excavation	• All excavations shall be carried out to the lines and limits shown on the excavation plan and other drawings, or defined in the specification. • The bottoms of excavations shall be leveled and trimmed to full width to the required lines and levels and where under foundations shall be well watered and rammed before placing of concrete.
	Disposal of Excavated Materials	• Any suitable materials removed in excavation or as such therefore as may be needed, may be used for backfill. • Materials removed from trenches shall be placed alongside the trench at a sufficient distance to prevent it from falling into the trench, or its weight causing the trench sides to cave in
	Backfilling	• All foundation excavation shall be backfill to the original ground surfaces, unless otherwise shown on the Drawings or ordered by the Consultant and in accordance with the requirements of the specification. • Backfill around foundations and where required below floors shall be done in layers not exceeding 150 millimeters in thickness after compaction, bend between layers and with sides of excavation.
Concrete Work	General Concrete Work	• Workmanship for all concrete shall be in accordance with British Standard Code of Practice No. 110 unless stated otherwise in these specifications.
	Cement	• The cement used for cement mortar and concrete work shall be normal, setting ordinary Portland cement and shall comply with B. S. 12.
	Fine Aggregate	• The fine aggregate shall be from an approved source and shall be to B.S. 882, graded within limits. The clay, silt or fine dust content shall not exceed 10% by volume when using the field setting test given in B.S. 812
	Coarse	Coarse aggregate shall consist of gravel or other similar material from an approved source and

	Aggregate	shall be to B.S. 882, graded within limits, clean free from shell, sand, clay, • Quarry refuse, dust and other impurities and the stone shall not be thin or flaky
	All-In-Aggregate	• The all-in aggregate shall comply in all respect except grading, with the requirements for fine and coarse aggregate. The grading of the all-in aggregate shall be within the appropriate limits given in B:S. 882
	Sand	• The sand used for the preparation of grout and cement mortar shall be natural sand, to B.S. 1199 graded within the appropriate limits given, hard, clean and free from other impurities.
	Water	• Only water from mains or source approved by the Consultant shall be used for mixing cement mortar and concrete.
	Reinforcement	• Unless otherwise shown on the Drawing or specified herein all bar reinforcement shall be mild steel round bars obtained from an approved source to B.S. 4449. • Fabric reinforcement shall be to B.S 4483.
	Welding	• Welding reinforcement will not be permitted
	Placing Reinforcement	• The number, size, form and position of all the steel bars, ties, links, stirrups and other members of the reinforcement shall be in exact accordance with the working drawings.
	General Reinforcement	• The Contractor shall execute all necessary cutting to lengths, booking, bending and cranking to B.S. 4466 and shall securely fix the reinforcement in position and secure it at laps and intersections with binding wire or by other approved means
	Concrete Mixing	• The concrete shall be mixed in machine of a design approved by the Consultant.
	Concrete Placing	• Concrete shall be placed in the Works not later than thirty minutes after it leaves the drum of the mixer.
	Concrete Blinding	• Reinforced concrete shall not be placed directly on or against earth surfaces. The bottom land, where shown on the drawings, the sides of excavations for reinforced concrete foundations or other reinforced concrete work shall be blinded with a layer of concrete mix 1:3:6 of a minimum thickness of 30mm
	Concrete Vibration	• Mechanical vibrators shall be employed where practicable for consolidating concrete.
	Curing Concrete	• All surfaces of concrete shall be protected from rain, hot, dry and windy weather and be kept continuously moist for seven days after placing.
	Testing	• Testing shall be to British Standard Code of Practice No. 1881

Masonry	Block Casting	• The whole of the blocks shall be in approved machine to be provided by the Contractor and shall have minimum crushing strength of 2.5 N/mm^2 of gross area at 28 days. • The blocks shall be composed of one part of cement to six parts of sand by volume unless otherwise specified or directed on site turned three times dry until of an even colour and consistency throughout. • Water shall then be added gently from watering can through a hose the quantity of water being just sufficient to secure adhesion. After wetting the mixing should be turned over three times and well rammed into moulds and smoothed off with a steel faced tool. • After removal from the machine on pallets the blocks shall be matured in the shade in separate rows one block high with a space between each block for at least 24 hours.
	Block Laying	• The block work shall be carried up in a uniform and even manner. No of portion shall be raised more than 0.90 metres above another at any time. The work shall be carried up course by course and the height of any four courses when laid shall be 900mm
Roofing and Carpentry	Formwork	• The Contractor shall design, provide and erect all formwork including all necessary spacers, ties, struts, props, cleats, wedges, bolts
	Roof Cover	• Roofing sheets shall be obtained from appropriate source, 0.5mm Long Span Aluzinc Prepainted roofing sheet
	Carpentry	• The whole of the timber for Carpentry and joinery work shall be made thoroughly termite-proof to the satisfaction of the Consultant with an approved preservative used strictly in accordance with the manufacturer's instructions. • After thorough immersion the timber shall be withdrawn and stacked to dry out before being used.
	Nails and Screws	• All nails and screws shall comply with B.S. 1202 and B.S. 1210 respectively. • Oval or round brads or nails shall be used for fixing all face work and heads shall be properly punched in and neatly puttied
	Plywood	• Plywood shall comply with B.S. 1455. For internal quality and type W.B.P. for external quality. That from sources not included in B.S. 1455 shall be of corresponding frades of veneer and type of bonding
	Doors	• 44mm framed panel door, primed coated to appropriate termite proof coating.
Metal Works	Mild Steel	• Mild steel shall be free from all defects and shall comply with the requirement of B.S. 15 • All welding shall be accordance with B.S. 938 neatly ground, filed and cleaned off. The units shall be prefabricated in the shop wherever possible and only the minimum of site welding employed
	Louvre Carriers	• Naco' louver carriers shall be an approved aluminum Naco louvers and shall be fixed in

		accordance with the manufacturer's recommendations.
Plasterwork and Other Floor Wall and Ceiling Finishing	General Workmanship	• All surfaces shall be cleaned down and the surfaces of block work concrete or similar materials shall be well wetted before plastering is commenced. • All plastering shall be executed in a proper and workmanship manner with true and even surfaces and all arises and angles shall be left perfect.
	Cement and Sand Paving (Screeding)	• Cement and sand paving shall be in the proportion of 1:3 by volume and shall be finished with a steel trowel and shall be protected and kept wet until hard.
	Terrazzo Flooring	• The cast in-situ terrazzo flooring shall conform to British Standard Code of Practice 204. • The size of terrazzo panels shall be as directed by the Consultant. • The sub-floor shall be clean from dust, oil or grease and any other foreign matter and shall provide a good mechanical key. • The screeded bed shall be of minimum thickness of 25 millimeters and the mix shall be 1 part cement to 3 part of fine aggregate by volume
Glazing	General Glazing	• Glass for glazing shall comply with B.S. 952 and sheet shall be "Q.Q' quality. • All glazing rebates and backs of glazing beads shall be primed before glazing.
	Louvre Blades	• The glass louver blades shall be carefully cut to the exact lengths, long edges and end corners shall be slightly grounded and edges shall be set in louver clips which shall then be carefully adjusted to hold the glass without rattling
Painting and Decoration	General Painting	• Painting and decorative scheme shall be carried out in colours selected by the Consultant from an approved range or colours. • All paints shall be the best quality obtainable and of approved manufacturer, guaranteed anti-fungus, suitable for use in Tropical Countries and equal to samples to be submitted to the Consultant for approval. • Switches and similar articles which cannot conveniently be removed shall be effectively masked during painting operation. • Different types of brands of paint shall not be mixed together. The priming, undercoats and finishing coats of painted work shall be differing tins as directed by the Consultant.
	Electricity Supply	• Unless otherwise indicated all apparatus and wiring shall be suitable for use with a 3-phase 4-wire 415/240 volts 50Hz earthed neutral system
	Applicable Regulations	• The installations(s) shall comply with all relevant statutory instruments and regulations current at the date of tender (unless otherwise indicated) and in particular with the following:-the I.E.E Regulations for the Electrical Equipment of Buildings; Regulations under the Electricity Acts; and

Electrical Installation		special regulations issued by the local Electricity Authority.
	Lightning Protection System	• Installation of lightning protection system shall comply with CP 326. It shall incorporate air-terminal mounted on suitable brackets; a run of hard drawn copper tape fixed with suitable metal saddles at 4' intervals. • At a position 3 feet (0.9) above ground level, a test connector shall be fitted to connect each down conductor to its earth electrode.
	Earthing	• All electrical equipment such as metal clad switchgear, busbar chamber distribution fuse boards, conduits and cable sheaths form a continuous bended earthing system
	Conduits	• Wiring shall be carried out in PVC insulated cables drawn into conduit and/or laid in Trunking
	Fuses	• Semi-enclosed fuses or cartridge fuse links shall be provided as indicated or as directed by the Engineer.
	Switchgear	• Air-break switches and isolators for rated currents not exceeding 200 Amps. Shall comply with BS 861 Part 1 and for rated current in excess of 200 Amps but not exceeding 800 Amps shall comply with BS 861 Part 2 Class 1 switches
	Distribution Board	• Distribution Boards shall be metal clad surfaces or flush mounted with hinged door, and with gaskets fitted to the doors to prevent the ingress of moisture, dust and vermin.
	Consumer Electricity Supply Units	• Consumer Electricity Supply Units shall comply with BS. 1454. The number of outgoing circuits and their respective current rating(s) together with the current rating of the main switch and form of protective device(s) required and the form of enclosure shall be as indicated. Where miniature circuit breakers are incorporated, units with a current rating of 5 Amps shall have a category of duty according to Class M1 of BS. 3871 Part 1.
	Transformers	• Transformers shall comply with BS 3535 section "E". The rated output voltage shall be 4 volts and the rated output current shall be 1 or unless otherwise indicated
	Lightning Protection	• Installation of lightning protection system shall comply with CP 326. It shall incorporate air-terminal mounted on suitable brackets; a run of hard drawn copper tape fixed with suitable metal saddles at 4' intervals. At a position 3 feet (0.9) above ground level, a test connector shall be fitted to connect each down conductor to its earth electrode.

Table 3: Best Small-Scale Construction Practices

ITEM	OPERATION	METHOD	SEQUENCE	PLANT/LABOUR
1	**a). Mobilization to site**	Building site accommodations, using prefabricated timber panels	1. Secure necessary insurances, bonds and securities 2. Prepare site layout 3. Build site offices and storage areas for works to begin 4. Move to site	Tucks, carpenters, masons, labourers
2	**Substructure** a). Setting Out	Use the Builders square methods or 3:4:5 method or the theodolite	1. Fix the Pegs 2. Fix the profile boards 3. Demarcate the trench and wall position.	Pegs, rope, builders square, General foreman, Mason, Carpenter, Labourers
	b). Clearing of site and Excavation of top soils	Use bulldozer to clear entire site	Remove the first 100mm and apply leveling whiles removing the remaining 50mm so as to have leveled strip surface	bulldozer, operator labourers, Dumpy level and staff, surveyor and earthwork foreman
	c). Excavation of foundation trenches and pits	Manual digging	1. Dig out trenches 2. Dig out pits. Start at half way of trench excavations	Pick axes, shovels labourers, earthwork Foreman
3	**Concrete works** a). Reinforcement	Cut, bend, and fix manually	start after casting blinding	Steel fixer and labourer
	b). Formwork	Manual erection of formwork	Erect formwork, plumb with plumb bob and brace it. Commence when reinforcement erection is 60% completed	carpenters, labourers, plumb bob carpenters, labourers, plumb bob

	c). Concrete	Machine mix, transport by wheelbarrow, placement by manual, vibrate by poker vibrator	Start with foundation trenches after 60% excavation, follow by bases, column and beds	Concrete Mixer, wheelbarrows, poker vibrator, masons, labourers , general foreman and operators
4	**Block work** a). Wall	Mortar is mix with concrete mixer and laid manually	start after foundation concrete is cast and column concrete is 60% completed	Concrete Mixer, operator masons, and labourers
	b).Hardcore filling	Fill manually and compacted with compactor in layers of 100mm	starts after block work is 80% completed	labourers, shovels compactor and operator
	c). Backfilling	Manual filling	The filling must be done in 100mm layers and compacted. Start after block wall and mid way of column erection	Shovels, compactor labourers, operator and earthwork foreman
	d). Disposal of excavated materials	Truck but will be loaded manually	starts after Hardcore filing	Truck, spade, Driver and Labourers Truck, spades, Driver and Labourers
5	**Superstructure Concrete works** a. Reinforcement	Cut, bend, and fix manually	start after casting of bed	Steel fixers and labourers
	b. Formwork	Manual erection of formwork	Erect formwork, plumb with plumb bob and brace it. Commence when reinforcement erection is 60% completed	carpenters, labourers and plumb bobs

	c. Concrete	Machine mix, transport by wheelbarrow, placement by manual, vibrate by poker vibrator	Start with columns follow by beam and lintel after completing 60% of formwork is complete	Concrete Mixer, wheelbarrows, poker vibrator, masons, labourers General foreman and operators
	d) Block work	Mortar is mix with concrete mixer and laid manually	start after concrete columns and beams is 60% completed.	concrete mixer, operator, masons and labourers
6	a. Carpentry	treat and fix roof members manually	It is preceded by block work	carpenters and labourers
	b. Fascia board	treat and fix roof members manually	start after 60% of roof member erection is completed	carpenters and labourers
7	**Roofing**	fix manually	commences after 80% of roof carcasing members is completed	carpenters and labourer
8	**Joinery** **a.** Door and Window frames	Prime back of frames and Fix manually	it is preceded by roofing. Frame is plumbed with plumb bob before bracing and casting mortar around the frames	carpenters, masons labourers and plumb bobs
	b. Fixing of panel door including all ironmongery	Fix manually	it follows frame fixing	carpenters and labourers
	c. Fixing of battens and glazing beads	Fixing manually	planted door stop is preceded by door fix, ceiling batten fix follows plywood ceiling fix cover batten after metal burglar proof, fix glazing bead after louver carrier	carpenters and labourers

9	**Metalwork** a. fixing of mosquito net	fix manually	commences after 80% completion of fixing of frames	carpenters and labourers
	b. fixing of metal burglar proof mesh	fix manually	commences after 30% completion of fixing of mosquito net	carpenters and labourers
	c.Fixing of louvre of carriers	fix manually	commences after 80% completion of painting on frames	Carpenters
10	**Plumbing Installation** a. laying of PVC pipe including fittings	Fix manually	it is preceded by roofing	plumbers and labourers
	Plumbing Installation a. Installation of W.C complete	fix manually per manufacturer's specification	it precedes screeding	plumbers and labourers
	b.installation of wash hand basin complete	fix manually per manufacturer's specification	it precedes rendering	plumbers and labourers
	c. installation of shower rose complete	fix manually per manufacturer's specification	concurrent with wash hand basin fixing	plumbers and labourers
	d. fixing of holder and towel rail	fix manually per manufacturer's specification	it precedes wall tiles laying	plumbers and labourers

11	**Electrical installation** a. Laying of PVC pipe	fix manually	it is preceded by roofing	electricians and labourers
	passing of Electrical cables	fix manually	commences after 80% completion of PVC pipe laying	electricians and labourers
	Electrical installation a. installation of SPN, MCB Consumer unit	fix manually per manufacturer's specification	concurrent with passing of electrical cable	electricians and labourers
	b.installation of meter	fix manually per manufacturer's specification	it is preceded by passing of cables	electricians and labourers
	c. Fixing of fluorescent complete, ceiling fan complete, switch socket and switches	fix manually per manufacturer's specification	concurrent with meter installation	electricians and labourers
	d. installation of earthing system including excavation of trench to buried the earthing system	fix manually per manufacturer's specification and dig manually	it is preceded by consumer unit and meter installation.	electricians and labourers pick axes and shovels
12	**Finishings** a .Rendering	Mortar is mix with concrete	it is preceded by the	Mason and labourers

	of walls, columns, beams and soffit of concrete slabs	mixer and laid manually	fixing of the frames	
	b. Fixing of plywood ceiling	manually fixing	commences when 80% of plastering is completed	carpenters and labourers
	c. Screeded bed	Mortar is mix with concrete mixer and laid manually	commences when 60% plywood ceiling is completed	Mason and labourers
	d. Floor Tiling	Laid manually	It commences when the screeded work is 60% completed	Tilers, Tile cutters, and labourers
	e. Wall Tiling	Laid manually	concurrent with floor tiling	Tilers, Tile cutters, and labourers
13	**Glazing** a. Fixing of Louvre blade	manually fixing	it is preceded by Louvre carriers	Carpenters and glasscutter with diamond teeth
	b. fixing of mirror	manually fixing	preceded by wall tiles	Carpenters
	c. Fixing of plain glass	manually fixing	concurrent with Louvre blade	Carpenters and glasscutter with diamond teeth
14	a. Painting	Manual by using rollers and brushes	It is preceded by plasterwork	Painters and labourers
	a. Painting	Manual by using brushes	concurrent with painting on rendering surface	Painters

Appendix 3: Project Cost Summary (Budgeting)

Item	Facilities	Current Estimated Cost (GH¢) ($1=1.6GH¢)	Av. Price fluct. Index (Yr 2 &3)	Projected Cost (GH¢) (Yr 2&3)	Av. Price fluct. Index (Yr 4&5)	Projected Cost (GH¢) (Yr 4&5)	Method of Meas.	Potential Financiers
	Phase 1							
1	Market Sheds (Phase 1)	742,280.78	1.2	890,736.94	1.4	1,039,193.10	BOQ	Private Finance
2	Warehouses + Sorting Bay	359,647.28	1.2	431,576.74	1.4	503,506.19	BOQ	Private Finance
3	Cross Docking Facilities	209,859.69	1.2	251,831.62	1.4	293,803.56	BOQ	Public Finance
4	Sanitary Facilities	96,271.79	1.2	115,526.15	1.4	134,780.51	BOQ	Private Finance
5	Refuse Disposal Point	38,093.84	1.2	45,712.61	1.4	53,331.38	BOQ	Public Finance
	Total	**1,446,153.38**	1.2	**1,735,384.06**	1.4	**2,024,614.74**	BOQ	
	Phase 2:		1.2		1.4		BOQ	
6	Market Sheds (Phase 2)	105,482.75	1.2	126,579.30	1.4	147,675.85	BOQ	Private Finance
7	Administration Block		1.2		1.4		BOQ	Public Finance

8	Tolling Station (2No.)	50,000.00	1.2	60,000.00	1.4	70,000.00	AP/FAM	Private Finance
9	Security Post (4 No.)	100,000.00	1.2	120,000.00	1.4	140,000.00	AP/FAM	Public Finance
	Total	**997,763.53**		**1,197,316.24**		**1,396,868.94**		
	Phase 3							
10	Market Sheds (Phase 3)	742,280.78	1.2	890,736.94	1.4	1,039,193.10	BOQ	Private Finance
11	Drainage System	250,000.00	1.2	300,000.00	1.4	350,000.00	AP/FAM	Public Finance
	Total	**992,280.78**		**1,190,736.94**		**1,389,193.10**		
	Phase 4							
12	Worship Area	134,438.21	1.2	161,325.85	1.4	225,856.19	BOQ	Public Finance
13	Restaurant	107,438.77	1.2	128,926.53	1.4	180,497.14	BOQ	Private Finance
14	Guesthouse	173,030.29	1.2	207,636.35	1.4	290,690.88	BOQ	Private Finance
	Total	**414,907.27**		**497,888.72**		**697,044.21**		

	Phase 5							
15	Pavements + Car Parks	1,425,000.00	1.2	1,710,000.00	1.4	1,995,000.00	AP/FAM	Public Finance
16	Connecting Roads	400,000.00	1.2	480,000.00	1.4	560,000.00	AP/FAM	Public Finance
	Total	**1,825,000.00**		**2,190,000.00**		**2,555,000.00**		
	Ancillary Services							
17	Handling & Transit Logistics	200,000.00	1.2	240,000.00	1.4	280,000.00	PV Sum	Private Finance
18	Water Supply (Boreholes, etc)	100,000.00	1.2	120,000.00	1.4	140,000.00	PV Sum	Public Finance
19	Electricity Supply	100,000.00	1.2	120,000.00	1.4	140,000.00	PV Sum	Public Finance
	Total	**400,000.00**		**480,000.00**		**560,000.00**		
	GRAND TOTAL	**6,076,104.97**		**7,291,325.96**		**8,622,720.99**		

1. BOQ: Itemized Bill of Quantities Method, Level of accuracy is -5% to +5%
2. APE/FAM: Approximate Estimates Using Floor Area Method, Level of Accuracy is -15% to +15%
3. The APE/FAM was adopted due to unavailability of actual land to estimated required areas
4. PV: Provision Sum
5. The average price fluctuation index was projected based on BRRI current index

Appendix 4: Financing Distributions (Capacity)

Item	Facilities	Current Estimated Cost (GH¢) ($1=1.6GH¢)	Cost Contribution of Total Cost (%)	Private Finance Contribution (%)	Public Finance Contribution (%)	Potential Financiers (Sources of Finance)
	Phase 1					
1	Market Sheds (Phase 1)	742,280.78	12.2	100.0	0.0	Private Finance
2	Warehouses + Sorting Bay	359,647.28	5.9	100.0	0.0	Private Finance
3	Cross Docking Facilities	209,859.69	3.5	0.0	100.0	Public Finance
4	Sanitary Facilities	96,271.79	1.6	100.0	0.0	Private Finance
5	Refuse Disposal Point	38,093.84	0.6	0.0	100.0	Public Finance
	Total	**1,446,153.38**	**23.8**			

	Phase 2:					
6	Market Sheds (Phase 2)	742,280.78	12.2	100.0	0.0	Private Finance
7	Administration Block	105,482.75	1.7	0.0	100.0	Public Finance
8	Tolling Station (2No.)	50,000.00	0.8	100.0	0.0	Private Finance
9	Security Post (4 No.)	100,000.00	1.6	0.0	100.0	Public Finance
	Total	**997,763.53**	**16.4**			
	Phase 3					
10	Market Sheds (Phase 3)	742,280.78	12.2	100.0	0.0	Private Finance
11	Drainage System	250,000.00	4.1	0.0	100.0	Public Finance
	Total	**992,280.78**	**16.3**			

	Phase 4					
12	Worship Area	134,438.21	2.2	0.0	100.0	Public Finance
13	Restaurant	107,438.77	1.8	100.0	0.0	Private Finance
14	Guesthouse	173,030.29	2.8	100.0	0.0	Private Finance
	Total	**414,907.27**	**6.8**			
	Phase 5					
15	Pedestrian Walkways (Pavement) +Car Parks	1,425,000.00	23.5	0.0	100.0	Public Finance
16	Connecting Roads	400,000.00	6.6	0.0	100.0	Public Finance
	Total	**1,825,000.00**	**30.0**			

	Ancillary Services					
17	Handling & Transit Logistics	200,000.00	3.3	100.0	0.0	Private Finance
18	Water Supply (Boreholes)	100,000.00	1.6	0.0	100.0	Public Finance
19	Electricity Supply	100,000.00	1.6	0.0	100.0	Public Finance
	Total	**400,000.00**	**6.6**			
	GRAND TOTAL	**6,076,104.97**	**100.0**			

Note:				**Key Cost Centres**	**% Contribution**
1. Total Private Finance Capacity	3,213,230.48	52.9		Market Sheds	36.6
2. Total Public Finance Capacity	2,862,874.49	47.1		Pavements	23.5
Total	**6,076,104.97**	**100.0**		**Total**	**60.1**

Appendix 6: Photographs of Market Conditions and Member of the KSCD

A group photograph of some OSA Executives and the Consultants

Recreational centre for traders during lean trading periods

Baskets of onions ready for retailing

A cross–section of the KSCD Members

From Left: Dr. De-Graft Owusu-Manu, Ida Baloro and JonesMensah

A heavy duty truck loaded with onion bags ready to be offloaded

Dr. De-Graft Owusu-Manu examining the quality of onions on stockpiled on wooden pallets

A cross-section of storage facilities for personal belongings (such as money, clothing, etc) of the traders

Open air storage of onions; onions are exposed to harsh weather conditions

Front view of the ADMINISTRATION BLOCK of one of the OTA groups where the KSCD was held

Front View of the existing EATING PLACE. Conditions are generally unhygienic

Front view of the existing WORSHIP PLACE (mosque)

Consultant inspecting the existing sanitary facilities. Conditions are generally unhygienic

Open air storage of onions; onions are exposed to harsh weather conditions

Cross-section of familiarity meeting including USAID-ATP team, consultant team and GAPTO and OTA executives

Cross-examination of initial master plan layout submitted to USAID ATP by OTA Groups at the Amasaman new market site. Included are Mr. Vincent Akue, Dr. De-Graft Owusu-Manu, Mr. Jones Mensah, Mr. Issa Mumuni and some members of the OTA.

From Left: Views of newly constructed warehouse and market sheds at the Amasaman new market site for different commodity traders.

Bird’s eye view showing the arrangement of the market shed and the warehouses. Market shed is straight ahead and warehouses and the wings.

Appendix 7: Bird's eye view of the geographical map of Agbogbloshie area showing the onion sellers demarcations

3.5. Best Small-Scale Construction Practices

METHOD STATEMENT				
CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA				
ITEM	**OPERATION**	**METHOD**	**SEQUENCE**	**PLANT/LABOUR**
1	**a. Mobilization to site**	Building site accommod-ations, using prefab. timber panels	1. Secure necessary insur-ances,bonds and securities 2. Prepare site layout 3. Build site offices and storage areas for works to begin 4. Move to site	Trucks, carpenters, masons, labourers
2	**Substructure** a. Setting Out	Use the Builders square methods or 3:4:5 method or the theodlite	1. Fix the Pegs 2. Fix the profile boards 3. Demarcate the trench and wall position.	Pegs, rope, builders square, General foreman, Mason carpenter, labourers
	b.Clearing of site and Excavation of top soils	Use bulldozer to clear entire site	Remove the first 100mm and apply leveling whiles removing the remaining 50mm so as to have leveled strip surface	bulldozer, operator labourers, Dumpy level and staff, surveyor and earthwork foreman
	c. Excavation of fdn trenches & pits	Manual digging	1. Dig out trenches 2. Dig out pits. Start @ half way of trench excavations	Pick axes, shovels, labourers, earthwork foreman

METHOD STATEMENT				
CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA				
5	**Superstructure** **Concrete works** a. Reinforcement	Cut, bend, & fix manually	start after casting of bed	Steel fixers and labourers
	b.Formwork	Manual erection of formwork	Erect formwork, plumb with plumb bob and brace it. Commence when reinforcement erection is 60% completed	carpenters, labourers and plumb bobs
	c. Concrete	Machine mix, transport by wheelbarrow, placement by manual, vibrate by poker vibrator	Start with columns follow by beam and lintel after comple-ting 60% of formwork is complete	Concrete Mixer, wheel barrows, poker vibrator masons, labourers 1 general foreman & operators
	Blockwork	Motar is mix with concrete mixer and laid manually	start after concrete columns & Beams are 60% completed.	concrete mixer, operator, masons & labourers
6	a. **Carpentary**	treat and fix roof members manually	It is preceded by block work	carpenters and labourers
	b.Fascia board	treat and fix roof members manually	start after 60% of roof member erection is completed	carpenters and labourers
7	**Roofing**	fix manually	commences after 80% of roof carcassing members is completed	carpenters and labourers

METHOD STATEMENT				
CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA				
8	**Joinery** a. Door & Window frames	Prime back of frames & Fix manually	it is preceded by roofing. frame is plumbed with plumb bob before bracing and casting mortar around the frames	carpenters, masons labourers and plumb bobs
	b.fixing of panel door including all ironmongery	Fix manually	it follows frame fixing	carpenters and labourers
	c. Fixing of battens & glazing beads	Fixing manually	planted door stop is preceded by door fix, ceiling battens fix follows plywood ceiling fix cover batt after metal burglar proof, fix glazing bead after Louvre carrier	carpenters and labourers
9	**Metalwork** a. Fixing of mosquito net	fix manually	commences after 80% completion of fixing of frames	carpenters and labourers

METHOD STATEMENT				
CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA				
ITEM	**OPERATION**	**METHOD**	**SEQUENCE**	**PLANT/LABOUR**
	b.fixing of metal burglar proof mesh	fix manually	commences after 30% completion of fixing of mosquito net	carpenters and labourers
	c.Fixing of Louvre carriers	fix manually	commences after 80% completion of painting on frames	carpenters
10	**Plumbing installation** a.laying of pvc pipe including fittings	fix manually	it is preceded by roofing	plumbers and labourers
	Plumbing installation a.installation of w.c complete	fix manually per manufacturer's specification	it precedes screeding	plumbers and labourers
	b.installation of wash hand basin complete	fix manually per manufacturer's specification	it precedes rendering	plumbers and labourers
	c. installation of shower rose complete	fix manually per manufacturer's specification	concurrent with wash hand basin fixing	plumbers and labourers

METHOD STATEMENT				
CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA				
ITEM	**OPERATION**	**METHOD**	**SEQUENCE**	**PLANT/LABOUR**
	d.fixing of toilet roll holder and towel rail	fix manually per manufacturer's specification	it precedes wall tiles laying	plumbers and labourers
11	**Electrical installation** a. Laying of pvc pipe	fix manually	it is preceded by roofing	electricians and labourers
	passing of Electrical cables	fix manually	commences after 80% completion of pvc pipe laying	electricians and labourers
	Electrical installation a.installation of SPN, MCB Consumer unit	fix manually per manufacturer's specification	concurrent with passing of electrical cable	electricians and labourers
	b.installation of meter	fix manually per manufacturer's specification	it is preceded by pass ing of cables	electricians and labourers
	c. Fixing of flourescent complete, ceiling fan complete, switch socket and switchs	fix manually per manufacturer's specification	concurrent with meter installation	electricians and labourers

METHOD STATEMENT				
CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA				
ITEM	**OPERATION**	**METHOD**	**SEQUENCE**	**PLANT/LABOUR**
	d.installation of earthing system including excavation of trench to burried the earthing system	fix manually per manufacturer's specification and dig manually	it is preceded by consumer unit and meter installation.	electricians and labourers pick axes and shovels
12	**Finishings** a .Rendering of walls,columns,beams and soffit of concrete slabs	Motar is mix with concrete mixer and laid manually	it is preceded by the fixing of the frames	Mason & labourers
	b. Fixing of plywood ceiling	manually fixing	commences when 80% of plastering is completed	carpenters and labourers
	c. Screeded bed	Motar is mix with concrete mixer and laid manually	commences when 60% plywood ceiling is completed	Mason & labourers
	d. Floor Tiling	Laid manually	It commences when the screeded work is 60% completed	Tilers,Tile cutters, & labourers
	e. Wall Tiling	Laid manually	concurrent with floor tiling	Tilers,Tile cutters, & labourers

METHOD STATEMENT

CONTRACT: CONSTRUCTION OF NEW ONION MARKET AT AMASAMAN,GREATER ACCRA

ITEM	OPERATION	METHOD	SEQUENCE	PLANT/LABOUR
13	Glazing a. Fixing of louvre blade	manually fixing	it is preceded by Louvre carriers	Carpenters & glasscutter with diamond teeth
	b. fixing of mirror	manually fixing	preceded by wall tiles	Carpenters
	c. Fixing of plain glass	manually fixing	concurrent with Louvre blade	Carpenters & glasscutter with diamond teeth
14	**a. Painting**	Manual by using rollers and brushes	It is preceded by plasterwork	Painters and labourers
	b. Painting	Manual by using brushes	concurrent with painting on rendering surface carrier	Painters

3.6. SOW for Development of Business Plan for Onion Market, in Support of the Ghana Onion Traders Associations

Background

ATP is a four-year regional initiative funded by the USAID. Launched in 2008, ATP has focused on three agricultural value chains: maize, onion, and ruminant livestock/red meat. ATP aims to increase the value and volume of intra-regional agricultural trade through its value chain development and associated activities along the major commercial corridors linking Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Nigeria, Senegal, and Togo. ATP is designed to contribute to achieving the 6 percent annual agricultural growth target set under CAADP (a program of AU-NEPAD).

Inefficiencies in West Africa's logistics infrastructure are a recognized constraint to trade within the region. Such inefficiencies increase supply chain costs for traders and impede the overall competitiveness of the regional value chain. In FY 2010, ATP carried out logistics studies on the Madaoua–Accra onion corridor and identified priority investments to improve efficiency in transport and market operations. The study also identified potential business opportunities to facilitate the creation of new PPPs for investment in onion infrastructure and to improve overall transport and logistics operations along the corridor. Following this study, ATP has provided technical assistance for the design of a modern bulk breaking market in Amasaman, in partnership with the Amasaman Municipal Assembly. The design identified and organized the delivery of facilities in multiple phases, in order to enable capital injections at different times. Total investment is estimated at $5 million. Initial funding for the construction will be provided by private sector investors while the land and other public work will be contributed by the Municipal Assembly.

Objectives

Provide technical assistance to the onion associations in Ghana to help them develop a business plan to guide project implementation and facilitate access to capital needed for the construction of modern onion market infrastructure at the newly designated site at Amasaman.

Tasks

1. Develop the methodology for the assignment and submit for approval; facilitate meetings with stakeholders to introduce the methodology at the start of the assignment
2. Review the proposed phasing of the project and assess the market for the new facilities over the next five years
3. Assess the logistics required to link the wholesale market with terminal retail markets in Accra
4. Review the proposed contractual arrangement with the Amasaman Municipal Assembly
5. Assess the capacity of the institutions involved in the project, including their management capacity, and propose adequate schemes to address potential deficiencies (such as creating a union composed of the three existing trader associations to govern the project, creating a partnership with existing facility management companies, arranging for direct management by the association, or creating a facility management company)
6. Identify potential risks and various potential implementation partners, and structure the financing of the project to ensure that risks associated with the project are well distributed among these partners and that each party can make a profit
7. In conjunction with the partners, develop the business model, including the revenue stream from the utilization of facilities at each project phase; propose a timetable for their completion based on cash flow analysis

8. Draft a business plan for the operation and management of the market infrastructure, using the ATP-recommended format; validate this plan with stakeholders
9. Develop a basic manual of administrative, financial, and accounting procedures and a dashboard of indicators for monitoring; validate these with the selected partners
10. Report any environmental issues encountered during the design of the business plans to ATP

Environmental compliance

Market infrastructure construction may cause both direct and indirect potential adverse environmental impacts. Major environmental impacts of construction include: soil compaction and erosion, sedimentation of streams and surface waters, contamination of water supplies, forest conversion, pollution, and loss of habitat and environmental services. However, the facilities under consideration are small in scale: the total surfaces that will be disturbed are less than 10,000 square feet. Best practices in small-scale construction such as agricultural market, processing, and storage facilities outlined in the construction-related section of the EGSSAA must be observed. This includes appropriate siting, sourcing of materials, design, and construction/worksite practices.

Approach and detailed schedule

The selected consultant will submit the proposed approach indicating the different phases of the work three days after the commencement of the assignment. ATP project staff will review and validate the submitted proposal within two days.

Detailed schedule: **from December 5 to December 30, 2011**

Dates	Task	Location
December 5	Meet with PPP Advisor and project staff	Accra
December 6	Meet with stakeholders	Accra and Amasaman
December 7	Validate proposed approach (ATP staff)	Accra
December 14	Submit business model and validate with stakeholders	Accra
December 26	Submit draft business plan and procedures manual	Accra
December 28	Validate with stakeholders	Accra
December 30	Submit final report	Accra

Products

The products to be submitted to ATP are:

1. Work plan and methodology *(no later than three days after start of the assignment), in electronic Microsoft Word format*

- Detailed work plan and methodological notes
- Presentation of the market study methodology and tools

2. Draft business model *(no later than seven days after receiving comments from ATP on the work plan and methodology) in electronic Microsoft Word format*

- Description of the volume of onions traded and targets for the next five years
- Description of projected value-added services to customers, and phasing of the project

- Description of identified strategic partners and their respective roles and contributions
- Description of institutions involved in the project and management requirements
- Description of how to convert services rendered to association members into revenues in order to sustain the business

3. Draft business plan and procedures manual *(no later than 12 days after receiving comments from ATP and stakeholders on the business model) in electronic Microsoft Word format (*using ATP-recommended format)

4. Final business plan and report *(no later than five days after receiving comments from ATP) in electronic Microsoft Word format and in hard format (four copies)*
The report should include:

- A summary table with a brief description of the project, implementation partners, project cost and financing, capital needed and sources of funds, and social and economic impact
- Executive summary
- Project description
- Review of the architectural and engineering plan
- Market study and projected volume of onions traded
- Onion associations' institutional and management capacity assessment
- Key implementation partners
- Business model
- Financial projections
- Basic administrative and financial procedures manual

Level of effort

20 days, including field work in Accra area for a maximum of $7,000

Reporting

The consultant will work in close collaboration with Vincent Akue, ATP's PPP Advisor, and will report to Bechir Rassas, Technical Manager and Deputy Chief of Party.

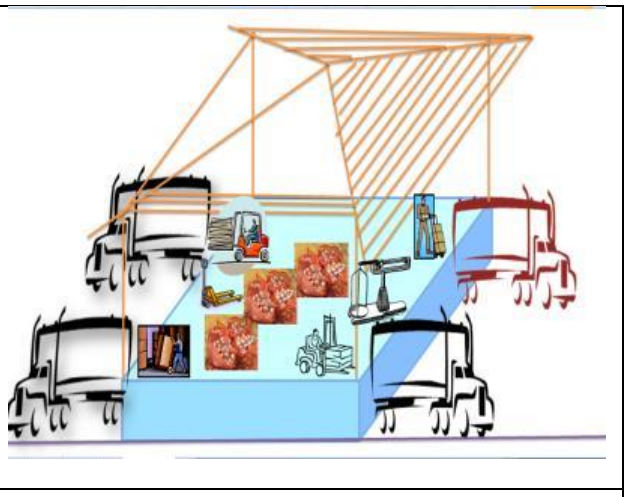
Experience and qualifications

- Agricultural economist with graduate degree in business and finance
- At least five years of experience in agribusiness and market infrastructure project design and financial structuring
- Demonstrated experience in community outreach and liaison functions within financial institutions and local government agencies
- Fluency in spoken and written English
- Knowledge of West Africa's formal and informal private sector institutions

3.7. Report Related to the Business Plan

See following pages for the report submitted by the business consultant who assisted the traders' associations in developing the wholesale market business plan.

FIVE-YEAR BUSINESS PLAN
FOR
ONION WHOLESALE MARKET



Sponsored by:
Agribusiness and Trade Promotion (ATP) Project

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ABBREVIATIONS

APFOG	Apex Farmers Organisation of Ghana
ASI	Accra Onion Sellers and Importers
CAADP	Comprehensive Africa Agriculture Development Program
DoC	Department of Cooperatives
FARDU	Food and Agriculture Research and Development Units
FASDEP	Food and Agriculture Sector Development Policy II
FONG	Farmers Organization Network in Ghana
GAPTO	Ghana Agricultural Producers and Traders Organization
GFAP	Ghana Federation of Agricultural Producers
GIDP	Ghana Irrigation Development Policy
GNAFF	Ghana National Association of Farmers and Fishermen
GNOTA	Ghana National Onion Traders Association
IRR	Internal rate of return
METASIP	Medium-Term Agriculture Sector Investment Plan
MoFA	Ministry of Food and Agriculture
NPV	Net present value
PCOFTS	Progressive Cooperative Onion Farmers and Traders Society
PFAG	Peasant Farmers Association of Ghana
PPPs	Public-private partnerships
PRO	Public Relations Officer
SOCAMAD	*Société Coopérative Agricole et Maraîchère de Débé*
SWOT	Strengths, weaknesses, opportunities, and threats
TUC	Trade Union Congress
WACC	Weighted average cost of capital

<table>
<tr><th>Item</th><th>Description</th></tr>
<tr><td>Name of Association</td><td>Onion Traders Union</td></tr>
<tr><td>Year of Establishment and Legal Status</td><td>December 2011

In the process of registering with the Registrar Generals Department and the Department of Co-operatives. However, the three associations forming the union have been duly registered as follows:
• PCOFTS: - Registrar General and Department of Cooperatives, 2001
• ASI: - Registrar General and Department of Cooperatives, 1997
• GNOTA: - Registrar general and Trade Union Congress, 1992</td></tr>
<tr><td>Contact Address and Telephone</td><td>Mohammed Ahmed
Administrative Secretary
P. O. Box 1175, Dansoman - Accra
President: 0200710800 Administrative Secretary: 0244741509</td></tr>
<tr><td>Email</td><td>ghanaonion1@yahoo.com</td></tr>
<tr><td>Location</td><td>Agbogbloshie Market, Accra</td></tr>
<tr><td>Number of Members</td><td>672 members</td></tr>
<tr><td>Project Name</td><td>Construction of Modern Bulk Breaking Onion Wholesale Market at Adzen Kotuku</td></tr>
<tr><td>Promoter (s)</td><td>Onion Traders Union</td></tr>
<tr><td>Project Description</td><td>The project involves the construction of modern bulk-breaking onion wholesale infrastructure with facilities such as a warehouse with the capacity to accommodate 4,000 125-kg bags of onion, a cross-docking center, 1,200 market sheds, administrative offices, a parking lot, a restaurant, a guest house, sanitary facilities, and garbage disposal points.</td></tr>
<tr><td>Market/Marketing</td><td>The target markets of the union includes:
• Retailers from terminal markets within Accra and surrounding areas
• Retailers from markets in the Eastern, Volta, Central, and Western regions
• Households within the Accra metropolis and the Adenta, Ga East, and Ga West Municipalities
Marketing strategies outlined by the Onion Traders Union during the plan period cover the key areas of pricing, promotion, positioning, and product quality.</td></tr>
<tr><td>Governance / Executives</td><td>The Executive Committee of the union will have temporary management over the project until a committee including all stakeholders (union members, the strategic investor, and the Ga West Municipal Assembly) is set up.</td></tr>
<tr><td>Project Cost</td><td>The total project cost is estimated at GHC 6.08 million (US$3.80 million)</td></tr>
<tr><td>Project Financing</td><td>
<table>
<tr><th>Stakeholder</th><th>Facilities</th><th>Total cost (GHC</th></tr>
<tr><td>Onion Traders Union</td><td>1. Market sheds
2. Administrative block
3. Mosque</td><td>2,466,763.30</td></tr>
<tr><td>Strategic Investor</td><td>1. Warehouse & sorting bay
2. Cross docking station
3. Ancillary facilities
4. Sanitary facilities
5. Restaurant
6. Guesthouse</td><td>1,146,247.82</td></tr>
<tr><td>GA West Municipal Assembly</td><td>1. Refuse disposal point
2. Water & Electricity supply
3. Roads, Pavement & car park
4. Security post
5. Drainage system
6. Tolling station</td><td>2,463,093.84</td></tr>
</table>
</td></tr>
<tr><td>Project Benefits</td><td>Project benefits include income generation opportunities for key stakeholders, better prices from onion sales, reduction of spoilage, employment generation, increased revenue, reduction in vehicular traffic congestion, and the opportunity to complete the Odawna river project.</td></tr>
<tr><td>Current Status</td><td>The Onion Traders Union members are currently trading at the Agbogbloshie market. The project site will be made available by the Ga West Municipal Assembly. The Onion Traders Union and some stakeholders are looking for a strategic investor as well as external financing to kick-start the project.</td></tr>
</table>

EXECUTIVE SUMMARY

Introduction

The Onion Traders Union is an association of onion farmers, importers, and traders currently using the Agbogbloshie market in Accra as their trade hub. The union comprises three associations, namely the Progressive Cooperative Onion Farmers and Traders Society (PCOFTS), Accra Onion Sellers and Importers (ASI), and Ghana National Onion Traders Association (GNOTA).

Project Concept, Justification and Benefits

The project involves forming a union from the three associations in order to promote construction of a modern bulk breaking onion market at Adzen Kotuku, within the Ga West Municipality. The project is proposed to be a private-public partnership (PPP) involving three actors: the new Onion Traders Union, a strategic investor(s) and the Ga West Municipal Assembly.

This project is proposed due to the apparent increase in the number of market participants and volume of trade at the Agbogbloshie market, which is resulting in inadequate market capacity, infrastructure, and logistics to cater to the growing business activities of union members. In addition, the current onion market at Agbogbloshie is functioning on a temporary basis. Efforts are being made to relocate the traders to the proposed bulk-breaking market at Adzen Kotoku, within the Ga West Municipality. These factors prompted ATP to support the Onion Traders Union by facilitating the development of a business plan to seek financing and partnerships, and to serve as a roadmap and management tool for the project. The project site is approximately 30 km northwest of Accra and 4 km from Medie on the Accra-Nsawam highway.

The project's expected benefits include income generation opportunities for all actors, better prices received by sellers due to quality improvements in the onions, reduction in spoilage, employment generation, increases in revenue for the government through additional taxes paid, and reductions in vehicular traffic congestion.

Legal and Organizational Framework of the Onion Traders Union

The Onion Traders Union was formed in December 2011 and is currently in the process of being registered with the Registrar General's Department as well as the Department of Cooperatives. It evolved from the existing three independent associations and currently has a membership of 672 businesses. The union's organizational framework makes provision for the following:

- Seven-member Advisory Council
- Five-member National Executive Committee (President, Vice President, Administrative Secretary, Financial Secretary, and Public Relations Officer/Organizer)
- Three-member Audit Committee.

Strategic Objectives During Plan Period

The Onion Traders Union has set seven strategic objectives that it must achieve during the plan period to realise the business concept and become financially and operationally sustainable. These are:

- Incorporate the union and develop an effective organizational platform by March 2012
- Build the capacity of Executive Committee members in key areas of organizational development and project management by June 2012
- Identify a strategic investor and reach an agreement on partnership terms with a suitable investor by July 2012
- Engage with and lobby the Municipal Assembly for the leasehold of land and the development of public infrastructure by June 2012
- Mobilize financing of GHC 416,272 from members and obtain external financing of GHC 320,000 towards the first phase by September 2012
- Ensure consensus is reached among stakeholders on market management and shed distribution by June 2012
- Ensure that construction of the onion market reaches acceptable standards and is consistent with project design by December 2012

Industry and Market

Onion is predominantly grown in two main countries in West Africa: Nigeria (621,000 tonnes) and Niger[1] (373,637 tonnes). In Ghana, the most popular onion cultivated is the Bawku Red. Exotic cultivars also grown include Early Texas Grano and Red Creole. However, about 70 percent of onions consumed in Ghana are imported from Niger and Burkina Faso and only 30 percent are cultivated in Ghana.[2] Data available from the Ghana Statistical Service indicate that a total of **51.01 million kg** of onions was imported into Ghana in 2010, out of which **47.13 million** (92 percent) and **3.60 million kg** (7 percent) were from Niger and Burkina Faso respectively. The key industry players include the Ministry of Food and Agriculture (MoFA), the Food and Agriculture Research and Development Units (FARDU), the National Association of Farmers and Fishermen, and the Ghana Agricultural Producers and Traders Organization (GAPTO).

Marketing strategies outlined by the Onion Traders Union during the plan period cover the key areas of pricing, promotion, positioning, and product quality.

Investment Need and Facilities

The investment requirement for the entire market infrastructure development project is estimated at **GHC 6.08 million** (approximately **US$3.80 million**). The project facilities, the proposed phases for construction, and the costs allocated to each stakeholder are noted below.

Stakeholder	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total cost (GHC)
Onion Traders Union	• Market sheds	• Market sheds	• Market sheds • Admin. block		• Mosque	2,466,763.30
Strategic Investor	• Warehouse & sorting bay • Cross-docking station • Ancillary facilities • Sanitary facilities	-	-	• Restaurant • Guest house	-	1,146,247.82
GA West Municipal Assembly	• Garbage disposal points • Water supply • Electricity supply	• Tolling station • Security post • Drainage system	• Connecting roads	-	• Pavements & parking lot	2,463,093.84

[1] http://en.wikipedia.org/wiki/List_of_countries_by_onion_production
[2] Onion Traders Union

The union intends to finance its cost component through members' contributions (**GHC 960,000**), internally generated funds (**GHC 239,921**) and debt (**GHC 1,266,842**).

Financial Projections

A summary of the key financial performance results and indicators of the project for both the Onion Traders Union and the strategic investor are noted below.

Description	2012	2013	2014	2015	2016	2017
ONION TRADERS UNION						
NPV = GHC 3.49 million **IRR = 33%**						
Revenue (GHC)		11,928	65,688	65,688	65,688	65,688
Net Income (GHC)		-2,074	47,974	43,208	43,208	41,864
Free Cash Flow (GHC)	-742,281	1,788	-686,733	-792,216	55,548	-78,890
Net Cash Balance (GHC)	6,500	8,288	63,836	13,901	69,449	-9,441
Interest Coverage Ratio (times)	-	0.98	1.30	1.23	1.45	2.56
Debt Service Coverage Ratio (times)	-	1.01	1.14	1.10	1.13	1.25
STRATEGIC INVESTOR						
NPV = GHC 1.16 million **IRR = 29%**						
Revenue (GHC)	-	353,570	445,170	521,170	579,770	579,770
Net Income (GHC)	-	109,498	179,980	236,629	226,759	226,759
Free Cash Flow (GHC)	-865,779	205,608	263,085	315,123	8,221	291,980
Net Cash Balance (GHC)	-	205,608	468,693	783,816	792,037	1,084,016

Conclusion

The project concept is based on the development of a specialty bulk-breaking onion market with the provision of modern facilities to support appropriate post-harvest handling and other social amenities that will lead to decongestion and reduction in traffic at the city center (Accra). The identified benefits, together with the market assessment results and positive financial and cash flow projections for both the Onion Traders Union and the strategic investor are indicative of the viability of the project.

1. PROJECT OVERVIEW AND BUSINESS CONCEPT

1.1 Introduction

Section 1 presents the business concept and model design of the Onion Traders Union, which comprises onion farmers, importers, and traders. The section further describes the benefits and risks of the business venture as well as the envisaged risk mitigating factors.

1.2 Project Background

Inefficiencies in West Africa's logistics infrastructure are a recognized constraint to trade within the region. Such inefficiencies increase supply chain costs for traders and impede the overall competitiveness of the regional value chain. In 2010, ATP carried out logistics studies on the Madaoua–Accra onion corridor[3] and identified priority investments to improve efficiency in transport and market operations. The study also identified potential business opportunities to facilitate the creation of new PPPs for investment in onion infrastructure and to improve the overall transport and logistics operations along the corridor.

Following the study, the ATP project provided technical assistance for the design of a modern bulk-breaking onion market at Adzen Kotoku, near Amasaman, in partnership with the Ga West Municipal Assembly. The design has identified and organized the delivery of overall facilities in multiple phases in order to enable capital injections at different times.

1.3 Promoters

The promoters are the Onion Traders Union, an association of onion farmers, importers, and traders who currently use the Agbogbloshie market in Accra as their trade hub. The union evolved from three established trade associations operating at Agbogbloshie who were eager to work jointly to execute the project. The associations are PCOFTS, ASI, and GNOTA.

1.4 Business Concept, Justification, and Model Design

1.4.1 Business and Project Concept

The project involves forming a union from the three associations in order to promote construction of a modern bulk-breaking onion market at Adzen Kotuku, within the Ga West Municipality. The project is proposed to be a PPP involving three actors—the new Onion Traders Union, a strategic investor(s) and the Ga West Municipal Assembly—each with specific roles and responsibilities:

- The *Onion Traders Union* will raise funds to build market sheds and other components on a BOT basis. The funds will be sourced from member contributions and debt capital.

[3] Extracted from ATP Terms of Reference.

- A *strategic investor* will invest in the warehouse and cross-docking station, including modern ancillary facilities such as pallets, forklifts, a mobile crane, hand trucks, and climbing ramps. This investor's contribution will also improve logistics services by providing light trucks to move onions from the wholesale market to retail markets in Accra and other surrounding markets.

- The *Municipal Assembly* will make land available on a leasehold basis and also make investments in public infrastructure, such as garbage disposal points, tolling systems, drainage systems, electricity and water provision.

1.4.2 Business Justification

Due to the apparent increase in the number of market participants and the volume of trade at the existing location, the market capacity, infrastructure, and logistics are increasingly becoming inadequate for growing business activities. In addition, the current onion market at Agbogbloshie is constructed on temporary premises and efforts are being made to relocate the traders to the proposed bulk-breaking market at Adzen Kotoku, within the Ga West Municipality. These factors prompted ATP to support the Onion Traders Union by facilitating the development of a business plan to seek financing and partnerships and to serve as a roadmap and management tool for the project.

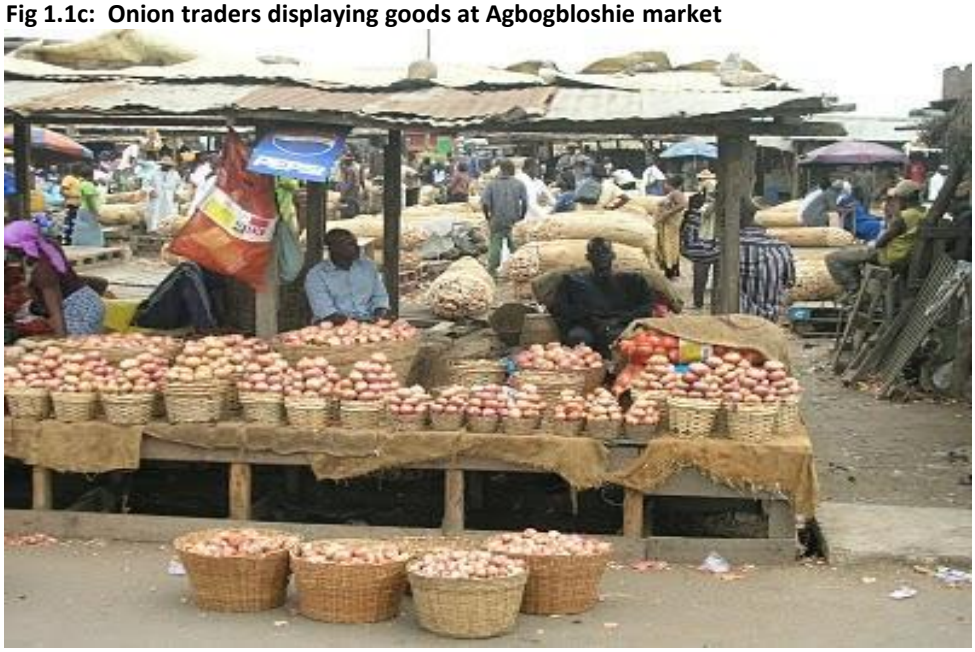
The relocation is part of efforts by the Accra Metropolitan Assembly and the Ga West Municipal Assembly to create a modern bulk breaking market for goods destined for Accra that are transported through the northern corridor of the country. This is intended to ease the constant heavy vehicular traffic and congestion in the market areas of Accra. It will also facilitate the complete elimination of the Agbogbloshie squatter community, and will shift Agbogbloshie towards planned development.

Photographs of some sections of the Agbogbloshie market are presented in figures 1.1a, b and c below:

Fig. 1.1a: Main Agbogbloshie market road

Fig. 1.1b: Onion trader at Agbogbloshie

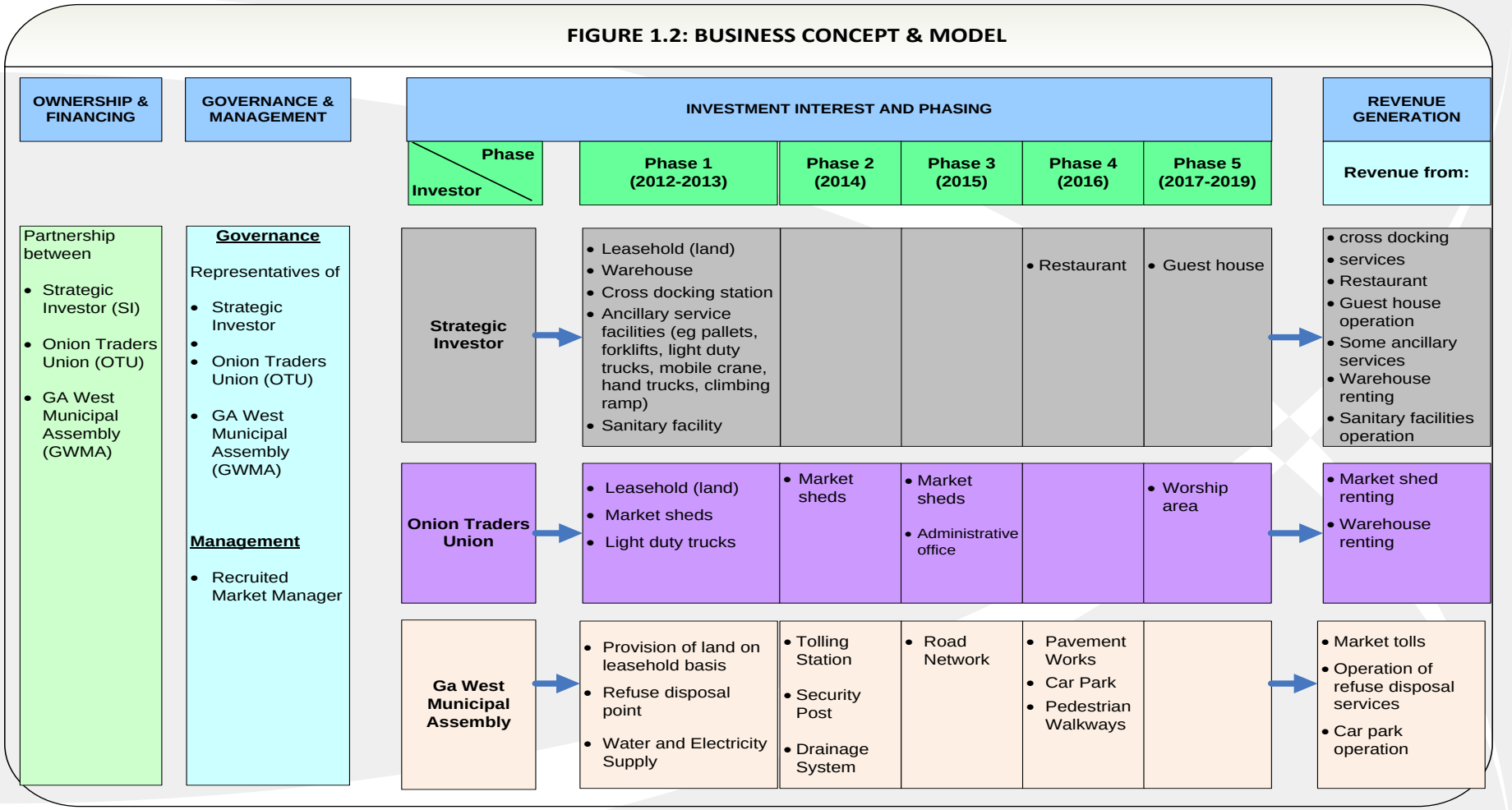
Fig 1.1c: Onion traders displaying goods at Agbogbloshie market



1.4.3 Business Model

The envisaged business model outlining the onion wholesale market infrastructure, financing (partnerships), management, operation, and revenue generation is presented in figure 1.2.

FIGURE 1.2: BUSINESS CONCEPT & MODEL

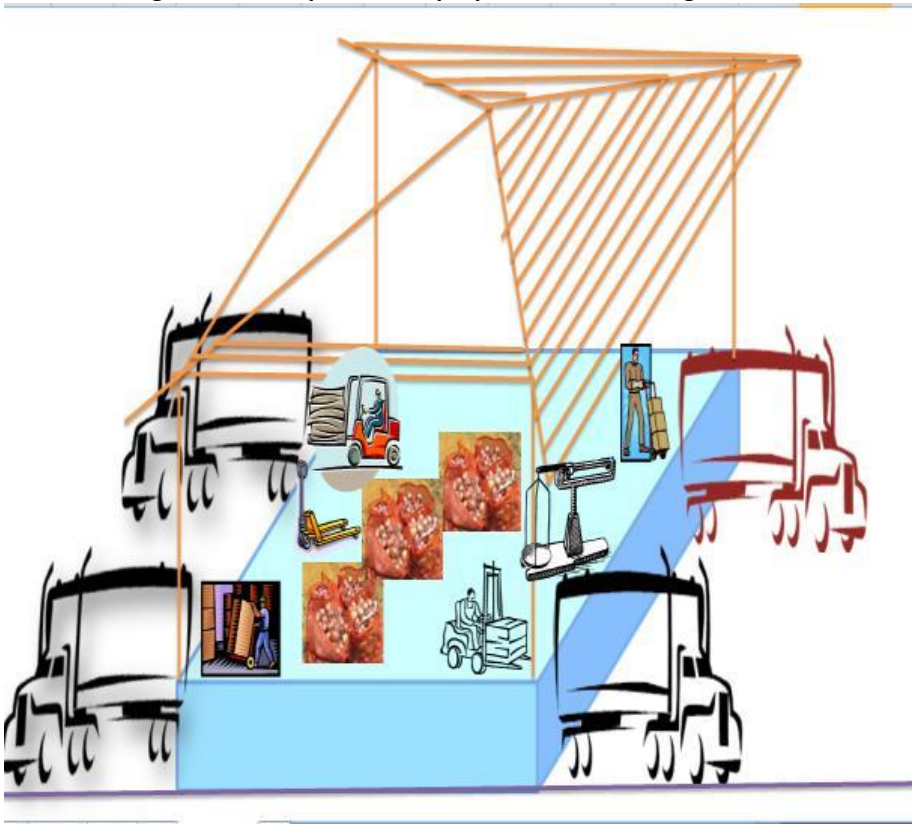


The total investment needed for the project is estimated at **$3.80 million** (**GHC 6.08 million**). Initial funding for the construction is proposed to be jointly made by a strategic investor and the Onion Traders Union. The Municipal Assembly is proposed to provide the land on a leasehold basis as well as other public works outlined in Figure 1.2 as part of its contribution towards the project.

The layout of the proposed onion market and a sample view of the cross-docking station to be constructed at Adzen Kotoku, near Amasaman, are presented in figures 1.3 and 1.4.

FIGURE 1.3: PROPOSED LAYOUT OF ONION MARKET ADJEN KOTOKU, NEAR AMASAMAN

Figure 1.4: Sample view of proposed cross docking station



1.5 Project Location

The project site is located at Adzen Kotoku in the Ga West Municipality, approximately 30 km northwest of Accra and 4 km from Medie on the Accra-Nsawam highway. It is located on part of a 300-hectare plot of land earmarked in the Ga West Municipal Area for the creation of a modern commercial town equipped with facilities to serve as bulk breaking markets for goods destined for Accra through the northern corridor of the country.

1.6 Project Benefits, Risks, and Mitigation Strategies

1.6.1 Project Benefits

The onion market infrastructure project is expected to generate the following significant benefits to stakeholders, especially the onion traders and importers, the strategic investor, the Ga West Municipal Assembly, and the associations.

- ***Income generation opportunity for key actors.*** The project will generate income for key stakeholders, including the Onion Traders Union (members), a strategic investor, and the Municipal Assembly.
- ***Better prices due to quality improvements in the onions.*** A major impact expected is significant improvement in onions through modern methods of handling, packaging, storage, and transportation, which are expected to lead to better prices.
- ***Reduction in spoilage.*** The interventions in technological infrastructure such as packaging, temperature-controlled storage, transportation, and better post-harvest management practices will help increase the shelf life of the onions. The improved shelf life will lead to less spoilage, even during transportation and marketing to other markets in Accra.
- ***Employment generation.*** Considering the high unemployment rate and the seasonal availability of work for agricultural labor, the project will provide a good opportunity to work throughout the year for the people of surrounding communities.
- ***Large increase in revenue and tax collection.*** The project envisages large investments (a total of **GHC 3.61 million** from the private sector and **GHC 2.46 million** from the public sector) in market infrastructure, which is likely to generate sufficient revenues and lead to incremental tax realization by the government.
- ***Reduction in vehicular traffic congestion and completion of Odawna river project***. The project, when undertaken, will reduce vehicular traffic congestion in the city center of Accra and will also aid in the planned development project at the Agbogbloshie site.

1.6.2 Project Risks and Mitigating Strategies

Risk	Mitigating Measures
Institutional Procedure for allocation of sheds among associations may bring conflicts if not well-handled.	To resolve this risk, the three associations are in the process of forming a trader's union with executives from each association to oversee project management and market shed distribution.
Organizational Union executives have inadequate capacity to manage the project.	An incremental approach with multiple phases is being adopted to mitigate this risk. However, vital and critical facilities (cross-docking

Risk	Mitigating Measures
	station, sheds, sanitation, and transportation) to support operations and ensure success will be developed as part of the initial phase. A strategic investor will manage some of the critical facilities (warehouse, cross-docking station, guest house, and restaurant). The executives of the Onion Traders Union have realized their project management capacity is inadequate and are in the process of initiating capacity building for selected executives in basic project management, change management, negotiation skills, and bidding and evaluation skills.
Financial Prices charged to rent facilities and use services may lead to disagreements or traders fleeing the facilities.	Partnership among the Municipal Assembly, the Onion Traders Union, and a strategic investor will allow union executives the opportunity to discuss and reach consensus on fees for services and facility usage.
Technical Selection of project contractors may not be thorough, leading to construction of sub-standard onion market infrastructure.	Only highly qualified and experienced technical consultants will be employed by the union to undertake the project. Bidding for the project will also be competitively carried out.
Market /Operational Disconnection with retail markets in Accra may lead to a decline in commercial activities at the new market.	It is proposed that the strategic investor invest in ancillary facilities (e.g., light-duty trucks) to facilitate the transportation and distribution of onions to other markets in Accra.
Political There is a likelihood of political interference, especially working with the Municipal Assembly.	Clarity in ownership and management structures and documentation of roles and responsibilities will minimize this risk.

2. ORGANIZATIONAL OVERVIEW, GOVERNANCE, AND CURRENT OPERATIONS REVIEW

2.1 Introduction

Section 2 presents an overview of the Onion Traders Union, including its history, legal background, and governance structures. The section also discusses the current operations of the union as well as the strengths, weaknesses, opportunities, and threats (SWOT).

2.2 Union Formation and Legal Background

The Onion Traders Union was formed in December 2011 as a result of the proposed relocation of the onion traders from the Agbogbloshie market to a new site at Adzen Kotoku, near Amasaman. The union is currently in the process of registering with the Registrar General's Department as well as with the Department of Cooperatives. It currently has 672 members inherited from the existing associations.

It was formed by three independent associations that came together to establish a union with a common name, revised constitution, and newly elected executives. The three independent associations are PCOFTS, ASI, and GNOTA.

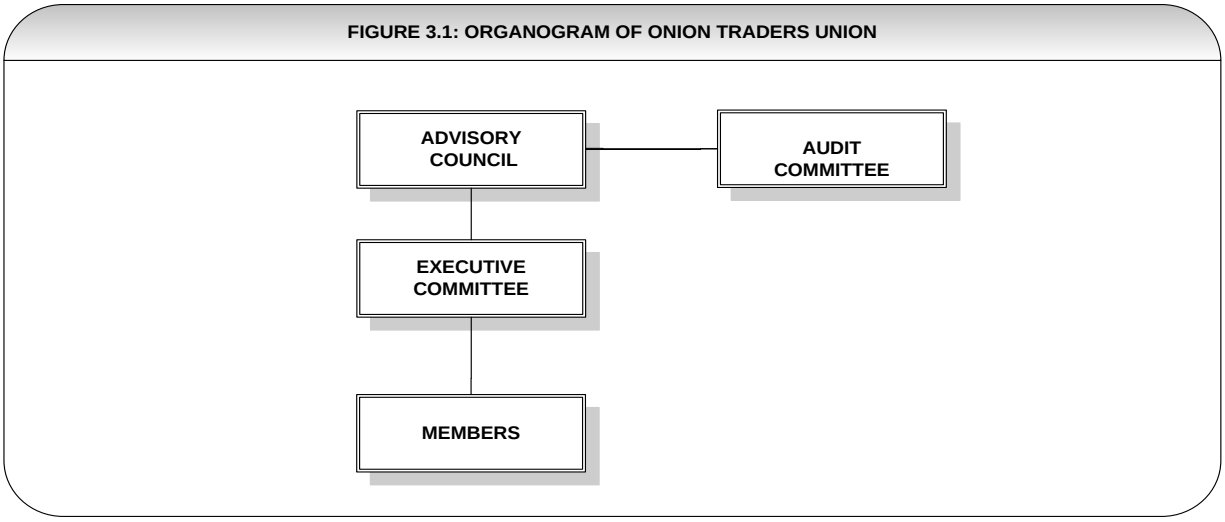
The operating structures of the three different associations are noted below.

	PCOFTS	ASI	GNOTA
Legal Registration and Year	Registrar General and Department of Cooperatives, 2001	Registrar General and Department of Cooperatives, 1997	Registrar General and Trade Union Congress, 1992
Governance and Organizational Framework	Six-member executive committee comprising • Chairman • Vice Chairman • Treasurer • Secretary • Public Relations Officer • Organizer	Six-member executive committee comprising • Chairman • Vice Chairman • Treasurer • Secretary • Organizer • Patron	Seven-member executive committee comprising • Chairman • Vice Chairman • Treasurer • Secretary • Organizer • Vice Organizer • Patron
Membership Size	Approx. 300	Approx. 240	Approx. 452 (nationwide) Approx. 132 (Accra)
Members' Income-Generating Activities	Onion farmers Onion sellers	Onion importers Onion sellers	Onion importers Onion sellers

2.3 Governance and Organizational Framework

The Onion Traders Union's organizational framework makes provision for an Advisory Council, Executive Committee, Audit Committee, and members, as presented in the organogram in figure 3.1.

FIGURE 3.1: ORGANOGRAM OF ONION TRADERS UNION



2.3.1 The Advisory Council

The Advisory Council is a seven-member decision-making organ composed of representatives of each association. The Advisory Council will meet at least twice a year to discuss and review the following:

- Report of the Executive Committee, including the annual financial report
- The annual report of the Audit Committee
- Motions for amendments of the constitution, if any
- Election of members of the Executive Committee
- Election of members of the Audit Committee
- Other matters

Membership of the Advisory Council is noted in table 2.1.

Table 2.1: Membership of Advisory Council

Name	Association
1. Alhaji Karim Musah	ASI
2. Alhaji Mahmoud Abdulai	GNOTA
3. Alhaji Abdulai Magaria	GNOTA
4. Alhaji Zakaria Mumuni	PCOFS
5. Alhaji Yakubu Alieu	GNOTA
6. Hamidu Musa	ASI
7. Haruna Yousif	ASI

2.3.2 The Executive Committee

The National Executive Committee is the collective representation of the union. Members are elected by the Advisory Council for a two-year term of office, and any member of the Executive Committee may only be re-elected for a second two-year term. The Executive Committee is composed of a President, a Vice President, an Administrative Secretary, a Financial Secretary, and a Public Relations Officer (PRO)/Organizer.

A brief profile of Executive Committee members is provided below.

Table 2.2: Brief Profile of Executive Committee

Name	Position	Association	Qualification
1. Ibrahim Abdul Rahman	President	PCOFS	Middle School Leaving Certificate
2. Alhaji Obuman Issah	Vice President	ASI	-
3. Mohammed Ahmed	Administrative Secretary	GNOTA	O' Level
4. Issah Mumuni	Financial Secretary	PCOFTS	City and Guilds of London Inst.
5. Saed Salifu	PRO/Organizer	PCOFS	O' Level

The roles of the Executive Committee members are noted below.

Position	Role
President	• Head of the association and spokesman of the Executive Committee • Responsible for the Advisory Council and the Executive Committee • Presents annual report of the union to members annually • Represents the union internally and externally • Spearheads advocacy and representation with key stakeholders and investors
Vice President	• Assists the President in the performance of his duties and acts as head of the union in the absence of the President • Carries out other duties as entrusted to him by the President, the Executive Committee, or the Advisory Council
Administrative Secretary	• Responsible for general correspondence and the union's mailing • Takes minutes at Executive Committee meetings and keeps records and documents of the union • Prepares, in consultation with the President and other members of the Executive Committee, the union's annual report • Develops the agenda for meetings • Supports the President and Vice President during official functions
Financial Secretary	• Keeps the union's financial records • Responsible for the execution of the economic programs drawn by the Executive Committee • Prepares and submits financial reports of the union at executive meetings • Handles the union's bank account transactions
PRO/Organizer	• Mainly responsible for the organization of meetings and other programs and engagements of the union

2.3.3 The Audit Committee

The Audit Committee is a three-member committee responsible for auditing the accounts of the union as frequently as necessary (at least twice a year) and submitting reports to the Advisory Council. The committee will also work with the auditors of the Department of Cooperatives.

2.4 Members' Operations Review

The business activities of members of the Onion Traders Union are in two main parts: imports and local production of onions.

2.4.1 Importation of Onions from the West Africa sub-Region

The current operations of the import business can be grouped into three main categories as presented in Table 2.3 below:

- Aggregating onions from producers
- Transporting onions
- Wholesale selling of onions on the market

Table 2.3: Operations Review

Type of Operation	Process
Aggregation of onions from producers in Burkina Faso, Niger, and Holland	Individual members of the association contact producers of onions in the West Africa sub-region and purchase the required quantities from them. The onions are bagged in sacks of various weights: • Burkina Faso: 110 kg, 50 kg, and 25 kg • Niger: 120 kg and 50 kg Onions are also imported from Holland (in 25 kg sacks) through the association's agents.
Transportation of onions	The onion traders usually rent 40-foot haulage trucks from producing areas in the West Africa sub-region (Burkina Faso and Niger) to transport them to Accra. When the traders collect enough (usually between 24 tons and 40 tons), the onion is loaded onto a truck and transported to Agbogbloshie market in Accra for distribution to wholesalers, large-scale retailers, and small-scale retailers (also called "market women"). In transit, the onion traders incur various tariff and non-tariff expenses (bribes and other unofficial expenses) that have implications for the final cost of the product. The tariff payments total approximately GHC 835, while the non-tariff payments amount to GHC 150. The turnaround time for collecting and transporting onions is about four to five days.
Wholesale of onions	The produce, upon arrival at the Agbogbloshie market in Accra, is off-loaded and kept in the sheds of the traders. From there it is sold to distributors, market women, supermarkets, institutions, schools, and hospitals. Most of the distributors who buy in large quantities come from the Central Region, Volta Region, Western Region, Eastern Region, and the Greater Accra Region.

2.4.2 Local Production of Onions

Local production of onions is very minimal (about 30 percent of all onions consumed in Ghana) as a result of various factors. Average land sizes are between two to three acres. About 25 percent of the membership of the union is engaged in the cultivation of onions. The unreliable weather conditions and the variety of onions grown in Ghana (Allium Cepa, commonly called Bawku Red) do not encourage large-scale cultivation. The cropping season is also long: it takes four months for the crop to mature in Ghana whereas the imported ones take three months to mature.

2.5 SWOT Analysis

Using the internal assessment and analysis of the business environment as a starting point, the Executive Committee conducted an analysis of the strengths, weaknesses, opportunities and threats (SWOT) facing the union, as noted in table 2.4. These will be monitored and utilized to benefit of the new organization.

Table 2.4: SWOT Analysis

Strengths	**Weaknesses**
1. Strong marketing capabilities (market information), which enables the union to get competitive prices for its members 2. Income-generating capacity capable of supporting both individuals and the union's activities 3. Forward-looking executives who serve the interest of the union 4. A strong union, which ensures that members' needs (legal and business) are met 5. Numbers of traders provide requisite critical mass needed to undertake at least the first two phases of proposed wholesale market building project	1. Operating in a market without facilities specific to onion trading 2. Union is new and therefore needs legal registration 3. Lack of adequate and modern market infrastructure to support trading activities (packaging, handling, storage, and transport of onions) 4. Irregular payment of dues, which can affect the association's activities 5. Inadequate project management capacity of current executives 6. Lack of access to funds, which hampers trading activities and other member projects 7. Lack of access to equipment (irrigation pumps, water tanks, tractors) for farmers
Opportunities	**Threats**
1. Expanding international markets, which in the long term would facilitate the sustainability of businesses and bring additional revenue to the union and its members 2. Moving into a new market with modern operational facilities to support packaging, handling, storage, and transport of onions	1. Moving the market to new location, which has the potential to disrupt trade activities to the disadvantage of the association 2. Occasional armed conflicts in the Agbogbloshie market area 3. Road harassment along the routes in the sub-region to Accra 4. Inability to find suitable strategic partners and support from Municipal Assembly, which may hamper the project 5. Political interference that may arise, especially working with the Municipal Assembly.

3. STRATEGIC ISSUES, OBJECTIVES, AND STRATEGIES

3.1 Introduction

This section presents the strategic issues that might affect the onion wholesale market infrastructure development project and its operations during the business plan period. It also discusses the strategic objectives and strategies formulated to achieve objectives.

3.2 Strategic Issues

Deriving from the SWOT analysis are the following critical challenges that may affect the wholesale onion market's business model/concept, financing, management, and operational sustainability:

1. A need to register the union and develop an effective organizational platform to support the project
2. A need to identify and work with suitable partners to realise the full potential of the project
3. A need to harness resources from union members to enable work with external partners
4. A need to agree on an acceptable framework for resource allocation
5. A need to build infrastructure that meets international quality standards

3.3 Strategic Objectives

Based on the identified strategic issues, the Onion Traders Union has set strategic objectives that it must achieve to fulfill the business concept and financially and operationally sustain the wholesale onion market project. The strategic objectives are noted below.

Strategic Issue	Strategic Objectives
1. Need to register the union and develop an effective organizational platform and capacity of executives to support the project	• Incorporate the union and develop an effective organizational platform by March 2012 • Build capacity of Executive Committee members in key areas of organizational development and project management by June 2012
2. Need to identify and work with suitable partners to realise the full potential of the project	• Identify and agree to partnership terms with a suitable strategic investor by July 2012 • Engage and lobby the Municipal Assembly for the leasehold of land and the development of public infrastructure by June 2012
3. Need to harness resources from union members to enable work with external partners	• Mobilize financing of GHC 320,000 from members and obtain external financing of GHC 422,282 towards the first phase by September 2012
4. Need to agree on acceptable framework for resource allocation	• Ensure consensus is reached on market management and shed distribution by June 2012
5. Need to build infrastructure that meets international quality standards	• Ensure construction of onion market to meet acceptable standards and project design by December 2012

3.4 Strategies

To ensure attainment of objectives set for the plan period, the union has developed strategies to achieve each objective. The respective objectives, expected output, related strategies and timeframe are presented in the rest of this section.

Objectives	Expected Outputs	Strategies & Activities to Achieve Objectives	Responsibility	Timeframe
Objective 1 **Incorporate the union and develop an effective organizational platform by March 2012**	Union registered at: • Registrar General • Trade Union Congress (TUC)	1. Obtain registration forms from Registrar General's Department 2. Complete and submit registration forms at the Registrar General's Department 3. Obtain approval from the Registrar General's Department 4. Obtain registration forms from Department of Cooperatives (DoC) 5. Complete and submit registration forms at the DoC 6. Obtain approval from the DoC	Executive Committee Executive Committee Executive Committee Executive Committee Executive Committee Executive Committee	January 2012 January 2012 February 2012 February 2012 February 2012 March 2012
Objective 2 **Build capacity of Executive Committee members in key areas of organizational development and project management by June 2012**	• Capacity building workshops held • Executives have clear understanding of organizational development and ability to manage projects	1. Invite consultants to bid for capacity building of executives in key areas: basic project management, change management, negotiation skills, and bidding and evaluation skills 2. Evaluate bid proposals and select suitable consultant 3. Organize and undergo training in selected topics	Executive Committee Executive Committee Executive Committee	March 2012 April 2012 April 2012
Objective 3 **Identify and agree to partnership terms with suitable strategic investor by July 2012**	• Suitable potential strategic investors identified • Partnership agreement signed with strategic investor	1. Identify a list of suitable potential strategic investors 2. Discuss wholesale onion market project with suitable potential strategic investors and propose partnerships with them 3. Upon receiving positive feedback or interest from suitable potential strategic investors, discuss details of the project with them using a business plan as supporting document 4. Agree to partnership terms with most suitable strategic investor and sign partnership agreements	Consultants/ATP PPP Advisor/ Exec. Comm. Consultants/ATP PPP Advisor/ Exec. Comm. Consultants/ ATP PPP Advisor/ Executive Comm. Executive Comm.	January 2012 March 2012 May 2012 June/July 2012

Objectives	Expected Outputs	Strategies & Activities to Achieve Objectives	Responsibility	Timeframe
Objective 4 **Engage and lobby Municipal Assembly for the leasehold of land and the development of public infrastructure by June 2012**	• Leasehold terms on land agreed to and signed by the Onion Traders Union and the Municipal Assembly. • Official commitment by Municipal Assembly to develop public infrastructure	1. Continue to engage Municipal Assembly and discuss terms of leasehold of land 2. Agree and sign leasehold agreement with Municipal Assembly 3. Engage and lobby Municipal Assembly for development of public infrastructure at the onion bulk breaking market 4. Pursue development of public infrastructure through other stakeholder groups—government officials, donor community, established businesses, etc.	Executive Committee/ Consultant Executive Committee Executive Committee Executive Committee	March 2012 March 2012 June 2012 and beyond June 2012 and beyond
Objective 5 **Mobilize financing of GHC 320,000 from members and obtain external financing of GHC 422,282 towards the first phase by September 2012**	• Members' contributions mobilized • External financing obtained	1. Discuss and agree to financial commitment and contributions from members 2. Obtain list of members willing to contribute towards obtaining market sheds under phase 1 3. Collect dues regularly to support efforts aimed at engaging all stakeholders 4. Collect members contributions towards phase 1 5. Identify a list of suitable financing institutions 6. Discuss wholesale onion market project with financing institutions and the possibility of obtaining finance towards the project 7. Once positive feedback is received, discuss details of project and proposed loan amount and financing terms with the financing institution 8. Agree and sign loan contract terms with financing institution	Executive Committee Executive Committee Executive Committee Executive Committee Consultants/ ATP PPP Advisor/ Executive Comm. Executive Committee Executive Committee Executive Committee	February 2012 March 2012 March 2012 and beyond June 2012 January 2012 April 2012 and beyond April 2012 and beyond September 2012
Objective 6 **Ensure consensus reached on market management and shed distribution by June 2012**	• Consensus reached on market management and shed distribution	1. Discuss shed allocation thoroughly with members and reach consensus on allocation among all interest groups 2. Discuss and agree on specific shed allocation to individual members 3. Inform members of the number and size of sheds allocated during collection of members' contribution to project to avoid future conflicts	Executive Committee Executive Committee Executive Committee	March 2012 April 2012 June 2012

Objectives	Expected Outputs	Strategies & Activities to Achieve Objectives	Responsibility	Timeframe
Objective 7 **Ensure acceptable standards for onion market construction and project design**	• Competitive bidding on project components • Most qualified technical consultant selected • Effective project monitoring and market construction according to model design and standards	1. Announce or advertise tender from qualified technical consultants 2. Evaluate tender from technical consultants 3. Select appropriate technical consultant considering technical and financial proposal, experience with similar projects, and required financial capacity 4. Agree to terms and sign contract with technical consultant for the first phase 5. Regularly monitor project to ensure construction according to model design, specific standards and use of specified materials, and work undertaken according to schedule	Executive Committee Executive Committee Executive Committee Executive Committee Executive Committee	April 2012 May 2012 June 2012 June 2012 December 2012 and beyond

4. INDUSTRY AND MARKET

4.1 Introduction

Section 4 presents a brief overview of the West African onion sector, particularly the Ghanaian onion sector. It also highlights the private sector and the Government of Ghana's initiatives, as well as key players in the onion market, demand for onion in Ghana, and marketing strategies.

4.2 Onion Sector in Ghana and West Africa

Onion is predominantly grown in two countries in West Africa: Nigeria (621,000 tons) and Niger[4] (373,637 tons). Other onion-producing countries in the sub-region include Burkina Faso, Senegal, Ghana, and Mali. Importing countries include Benin, Côte d'Ivoire, Ghana, and Togo.

In Ghana, the most popular onion cultivar is the Bawku Red. Exotic cultivars also grown include Early Texas Grano and Red Creole. However, about 70 percent of onions consumed in Ghana are imported from Niger and Burkina Faso and only 30 percent are cultivated in Ghana.[5] This is due to the many challenges faced by the onion sector, including an unfavorable climate, low yields, high post-harvest losses, high production costs, low sales prices, low profit margins, market failure, price inefficiencies, and weak organizational structures.

At the farm level, onion production (predominantly by smallholders) suffers from unreliable input markets that inhibit yield and affect quality. Post-harvest losses, limited storage facilities, poor road networks, and insufficient transport facilities result in further product value loss.

4.2.1 Input Supply

Input supply for onion cultivation includes seeds, fertilizers, and pest management products. These are usually sourced from farmers, private businesses, and government agencies. However, the inadequate availability of high-quality and affordable seeds, fertilizers, disease and pest management products, and other productive inputs greatly constrains the ability of farmers to effectively respond to and meet sub-regional market demand.

4.2.2 Production

Cultivation of onions is generally an off-season activity. The vast majority of West Africa's onions are produced in arid and semi-arid zones where climatic conditions are conducive to cultivation. In Niger and Burkina Faso, the planting begins in November and December, with the harvest arriving 90 to 150 days later. Peak harvest takes place in March and April, when massive volumes arrive in the market at once, causing prices to drop precipitously.

4.2.3 Processing

[4] http://en.wikipedia.org/wiki/List_of_countries_by_onion_production
[5] Onion Traders Union

Traditional sun drying is used to preserve onions and to reduce losses due to spoilage. Drying can also stabilize the price of fresh produce by reducing the availability of onions on the market during peak harvest seasons, create a value-added product, and enhance producer incomes. Although the practice of dehydrating onions is common in the onion belt of West Africa, it is geared toward household or local consumption. Studies have shown that there is no evidence of large quantities of internationally traded processed onion products or by-products.

4.2.4 Storage

Onions are packaged in wide-meshed jute fabrics and stored in open sheds or warehouses that are usually made of wood. The optimum temperature for long-term storage of onions is 0°C with 65-70 percent relative humidity.

Post-harvest losses due to spoilage of onions are estimated to be roughly 30 percent of total production. The ability to store onions depends on a number of factors, including variety type, water content, bulb size, maturity at harvest, and the climatic conditions under which it is being stored.

Harvested onions due for storage need to be properly cured post-harvest, a process that allows the natural dormancy of the onion to develop and also dries out the onion to protect against disease organisms. An onion that has been cured correctly and is ready for storage is relatively hard, with a dry shrunken neck and dry outer scales. The storage facility should have a good air flow to inhibit the build-up of condensation on the bulbs.

4.2.5 Marketing

The majority of onion producers in West Africa, who are subsistence cultivators, are often obligated to sell all or some of their produce shortly after harvest in April and May, at a time when local markets are saturated and prices are at their lowest. Individual growers typically organize themselves into cooperatives that help them leverage efficiencies of scale, training, and access to credit.

As members, they agree to collective marketing of their produce to increase their bargaining position and obtain better pricing terms from buyers. The ability of such cooperatives to deliver on their promised benefits is limited, however, leading to weak membership cohesion and often resulting in side-selling which further weakens the groups' credibility and effectiveness.

Typically, collectors handle purchasing at the farm level, organizing transport from collection points to urban markets where wholesalers receive, sort, bag, and warehouse their stock for local resale or export. When bulbs are prepared for export, they are sorted and packed in 125 kg jute bags. Efforts are underway to change to 25 kg mesh bags to enable more appropriate storage and preservation of onions.

When a truckload of onions arrives in a terminal market such as Accra or Cotonou, onions are displayed for wholesale in the receiving depot market. The primary wholesale depot markets for Accra and Cotonou are the Agbogbloshie and Dantokpa markets, respectively. Distributors come to source their produce for resale to retailers both within the city and beyond. Transactions between traders are based on both cash and credit, with credit becoming more pervasive as the goods move down the supply chain towards the end consumers.

Some onion farmers also organize themselves into cooperatives and unions to aid in accessing credit, sourcing input supplies, marketing and exporting produce to coastal markets, especially Ghana, Côte d' Ivoire, and Togo. One such farming cooperative in Burkina Faso is Société Coopérative Agricole et Maraîchère de Débé (SOCAMAD). In 2007, SOCAMAD entered into trade agreements with Accra

Onion Sellers and Importers (through GAPTO) for a supply of onions at fixed prices during the peak and non-peak onion seasons. This resulted in several benefits accruing to both parties as indicated below

Producers	Traders
• The producers, organized into SOCAMAD, are assured of a ready market for their produce. • The producers deal with a respected organization (GAPTO) instead of an individual trader, so are sure of payment. • The agreement with GAPTO gives SOCAMAD the collateral with which to get a bank loan. • The producers are assured of a stable price, even during the peak season.	• The individual traders do not need to travel, make separate transport arrangements, or bargain on prices in Burkina Faso. GAPTO does this on their behalf. • The traders know how much they are going to pay for supplies over a period of time. • The traders have a credit facility through GAPTO. They do not have to pay for their onions until three weeks after delivery. • The traders are spared harassment and extortion along the road.

Culled from: **Building Market Institutions (*http://www.mamud.com/Docs/TradingUp_5mktinst.pdf*)**

4.2.6 Transport

Onions are usually packaged in wide meshed jute fabrics and transported from the farm gate to the primary and secondary collection centers primarily as headloads or by means of farm animals, carts, bicycles, motorbikes, and motor vehicles of all sorts. From there, they are transported to urban central wholesale markets mainly in cargo. Due to inadequate infrastructure, transport and insurance represent more than 25 percent of the value of exports. This results in high transport costs that affect onion prices.

4.2.7 Regulatory and Non-Regulatory Barriers

Official duties and transport taxes levied at the local, regional, and national levels amount to an average of 8 percent of the final wholesale price. In addition, bribe-seeking behavior by customs officials and security forces is rampant across the region. Unofficial taxation elicited at multiple barriers along the routes adds 20 percent in supplemental costs.

4.3 Government and Private Sector Initiatives

As the largest sector of Ghana's economy, with half of the country's population engaged in it, the agricultural sector has been important to the government over the years. The government and other private institutions have set up several initiatives to address issues affecting the agricultural sector, including the following:

- The Food and Agriculture Sector Development Policy II (FASDEP II) is the major sector policy strategy to develop the agriculture sector. FASDEP II adopts a value chain approach to agricultural development, and value addition and market access receive more attention than in previous policy strategies. At the same time, a strong focus on food security is maintained. The six objectives of FASDEP II are:

  1) Food security and emergency preparedness
  2) Improved growth in incomes and reduced income variability
  3) Increased competitiveness and enhanced integration into domestic and international markets

4) Sustainable management of land and the environment
5) Science and technology applied to food and agriculture development
6) Enhanced institutional coordination

- The Medium Term Agriculture Sector Investment Plan (METASIP) covers the period 2011 to 2015. This plan aims to raise the agricultural growth rate, over the next four years, to between 6 percent and 8 percent per annum. METASIP sets out to ensure the sustainability of growth through improvements in the productivity of all operators along the value chain. This is to be achieved by modernizing agricultural techniques and operations, producing raw materials for industries, and—by producing more with fewer people—freeing labor for use in other strongly growing sectors of the economy.[6]

- The Ghana Irrigation Development Policy (GIDP) addresses problems, constraints, and opportunities linked to irrigated agriculture.

Other initiatives in place to boost the agriculture sector include the Comprehensive Africa Agriculture Development Program (CAADP), which is an Africa-owned and Africa-led initiative working to boost agriculture productivity in Africa.[7]

4.4 Key Industry Players

The key players in Ghana's onion sector include the following:

STAKEHOLDERS	FOCUS
The Ministry of Food and Agriculture (MoFA)	MoFA is charged with the development and growth of agriculture in the country, with the exceptions of cocoa, coffee, and forestry. Its primary roles are the formulation of appropriate agricultural policies and planning, coordination, monitoring, and evaluation as a part of overall national economic development.
Food and Agriculture Research and Development Units (FARDU)	The FARDU were established for specific categories of agricultural products to maintain value chains and facilitate effective linkages between various stakeholders in the sector.
Farmers' Organization Network in Ghana (FONG)	FONG is a network of farmer-based organizations established in 2003 as an apex body of farmer organizations in Ghana. FONG was formed as a result of a follow-up workshop at the "World Food Summit" held in June 2002. FONG proposes intervention in three areas: i. Enhancing the development of basic farmer organizations and their members ii. Bridging policy gaps iii. Institutionalizing the network
Ghana National Association of Farmers and Fishermen (GNAFF)	In 1992, GNAFF was established to bring small-scale farmers, fishermen, and women engaged in micro-food processing under one umbrella.
Ghana Federation of Agricultural Producers (GFAP)	GFAP comprises four major apex farmers associations: 1) the Apex Farmers Organisation of Ghana (APFOG), 2) FONG, 3) the Peasant Farmers Association of Ghana (PFAG), and 4) GNAFF. The mission of the federation is to unify all agricultural producers and related actors in the agricultural value chain in Ghana to advocate for agricultural and environmentally friendly policies at the local and international levels for sustainable livelihoods.

[6] http://zotomelo.blogspot.com/2011/05/new-initiatives-to-finance-ghanas.html
[7] http://www.ghana.gov.gh/index.php/news/general-news/192-agriculture-sector-investment-plan-confab-held

STAKEHOLDERS	FOCUS
Ghana Agricultural Producers and Traders Organization (GAPTO)	GAPTO, based in Agbobloshie market in central Accra, is an umbrella organization of 16 commodity groups and associations. Some 12,000 traders (wholesalers, retailers, distributors, etc.) are members of GAPTO's member associations. About 500 individual farmers are also members. Acting on behalf of the Accra onion association, GAPTO entered into a formal agreement with SOCAMAD, a farming cooperative group in Burkina Faso, for the supply of 8,000 tons of onions in 2007. The agreement covered the quality of the produce, the credit terms, mode and terms of payment, roles of each partner, the exchange rate between Cedis (the Ghanaian currency) and FCFA (used in Burkina Faso), and the means of settling disputes.
Other Onion Markets	Apart from the Agbogbloshie market in Accra, other onion markets include the Makola Market and the Kaneshie Market.

4.5 Demand for Onion in Ghana

4.5.1 Trend in Onion Importation (Volume)

Data available from the Ghana Statistical Service indicate that the volume of onion imports into Ghana increased from **4.50 million kg** in 2008 to **51.01 million kg** in 2010, representing an increase of 1,035 percent over the two-year period. In 2010, approximately 92 percent of total onion imports came from Niger, 7 percent from Burkina Faso and the remaining 1 percent from Netherlands and Belgium. The total volume of onion imported from 2008 to 2010 and the distribution of imports are presented in figures 5.1 and 5.2 respectively.

Fig. 5.1: Total Volume of Onion Imports (M'kg)

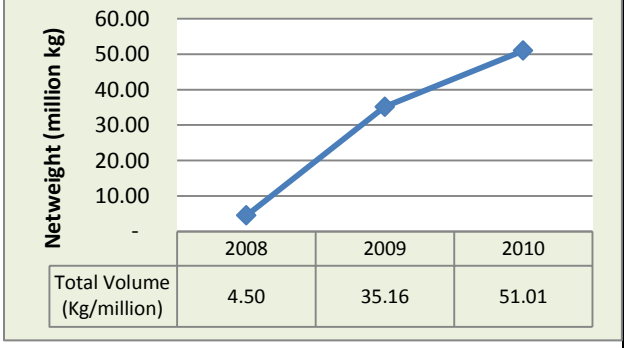


Fig. 5.2: Volume of Onion Imports by Country

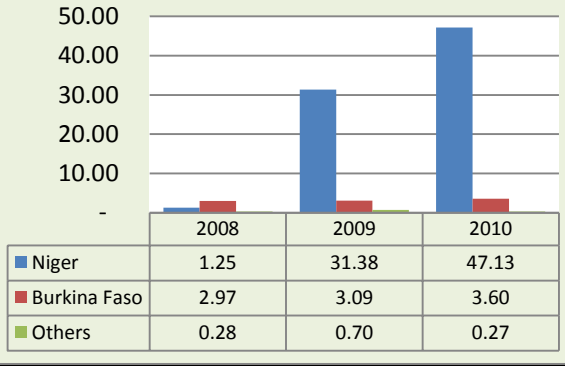


Table 5.1 presents the percentage of onion imports by country.

Table 5.1: Onion Imports by Country of Origin

Country of Origin	2008		2009		2010	
	Net Weight (kg)	%	Net Weight (kg)	%	Net Weight (kg)	%
Niger	1,251,800	28	31,379,661	89	47,132,909	92
Burkina Faso	2,965,193	66	3,087,007	9	3,601,881	7
Others	278,975	6	695,127	2	274,622	1
Total	**4,495,968**	**100**	**35,164,795**	**100**		**100**

					51,009,412	

Source: Ghana Statistical Service, December 2011

However, we believe that the import volumes from the Ghana Statistical Service is grossly understated, as research has shown that in 2007/08 season, SOCAMAD alone supplied Ghana Onion Sellers and Importers (through an agreement with GAPTO) a total of 8 million kg of onions.

4.5.2 Onion Trade at Agbogbloshie and Returns Generated

Over the past three years (2009–2011), the volume of onion traded at the Agbogbloshie market has increased from an average of **18.64 million kg** in 2009 to **27.03 million kg** in 2010 and **39 million kg** in 2011, representing an average annual increase of 45 percent. Due to the increasing volumes of onion imports, facilities to be provided at the new wholesale market at Adzen Kotoku are expected to be utilized.

The current status of trading activities and financial performance of both onion traders (agents) and importers have been analyzed and compared with projections linked to the use of the new wholesale market. This was done to indicate the annual benefits (and cost savings) to be derived from the use of the wholesale market. The current and projected income statement for a trader (onion agent) at Agbogbloshie and Adzen Kotoku Markets is noted below.

Sample Annual Income Statement for an Onion Trader

	Current at Agbogbloshie Market (GHC)	Projected at Adzen Kotoku Market (GHC)
Income	**260,000**	**260,000**
Expenses		
Cost of Onion	239,200	239,200
Security	1,040	-
Warehouse Expense		347
Rubber Material to Cover Onions	160	-
Packaging Fees (Rubber and Mesh)	10,400	10,400
Loading Fees	4,160	4,160
Other Expenses	1,040	1,040
Total Expenses	**256,000**	**255,147**
Profit per Year	**4,000**	**4,853**

Assumptions Used

1. Income (25kg * 200 mesh bags/week * GHC 25/25kg mesh bags * 52 weeks)
2. Cost of onion (GHC 23/25 kg mesh * 200 meshes/week * 52 weeks)
3. Security (GHC 0.1/25kg mesh * 200 meshes/week * 52 weeks)
4. Rubber material (GHC 40 per every 3 months)
5. Packaging material (GHC 1 for every 120kg bag)
6. Loading fees (GHC 0.4/25 kg mesh * 200 meshes/week * 52 weeks)
7. Other expenses (market tolls, membership dues, lunch, business permits, etc.)

Source: Data collected through discussions with traders, using their cashflow statements.

Sample Annual Income Statement for Onion Importer

	Current at Agbogbloshie Market	Projected at Adzen Kotoku Market

	(GHC)	(GHC)
Income	**480,000**	**480,000**
Expenses		
Cost of Onion	288,000	288,000
Lorry fare	120,000	120,000
Customs Duty	8,640	8,640
Road Expenses in Ghana	3,840	3,840
Road Expenses in Niger & Burkina Faso	36,000	36,000
Loading and Off-loading expenses	9,600	6,720
Total Expenses	**466,080**	**463,200**
Profit per Year	**13,920**	**16,800**

1. Income from onion (2 trucks per month @ GHC 20,000/ truck *12 months)
2. Cost of onion (2 trucks per month @ GHC 12,000/ truck * 12 months)
3. Lorry fare (GHC 25 per bag of onion)
4. Customs duty (GHC 360 per truck per trip)
5. Road expenses in Ghana (GHC 160/truck per trip)
6. Road expenses in Niger & Burkina Faso (GHC 1,500/truck per trip)
7. Loading and off-loading expenses (GHC 1 for loading and another GHC 1 for off-loading). At the new market offloading fees (use of cross-docking facility) is expected to be GHC 0.4 per bag

Source: Data collected through discussions with importers, using their cashflow statements.

A comparative analysis of an operating statement under the current place of business and the proposed market for an onion trader and an onion importer indicate increased profits estimated at 21.3 percent and 20.7 percent, respectively.

4.5.3 Onion Distribution in Coastal Ghana

Onions imported from Niger and Burkina Faso are usually offloaded at the Agbogbloshie wholesale market in Accra and the Anloga onion market in Kumasi. While the onions from the Anloga onion market are further distributed to retail markets in the middle belt of Ashanti and Brong Ahafo regions and the northern districts (zones) of the eastern and western regions, onions from Agbogbloshie are distributed to retail markets in the coastal regions, namely Greater Accra, Volta, and the central region, as well as parts of the western and eastern regions.

In the Accra metropolis alone, the onions are distributed to 29 other retail markets, with the majority going to the Kaneshie, Makola, Malata, Salaga, Dansoman, Nima, and Mallam Junction markets. Other neighboring major onion retail markets include Dome, Ashiaman, Kasoa, Madina, Tema Community 1, and Baatsonaa.

4.6 Competition and Marketing Strategies

Competition in the onion sector is seen among onion producers and onion importers, albeit on a small level compared to other sectors and other agricultural produce. The main areas of competition are based on product quality, price, promotion, and positioning. The marketing strategies outlined by the Onion Traders Union during the plan period are therefore in line with the above areas.

Product Quality. Imported onions from the sub-region are considered to be of higher quality than locally produced onions and are therefore in higher demand. Onion importers therefore compete more favorably on the market than traders in locally cultivated onions. In order to sell more of their onions in the market, union members are adopting the strategy of aggregating good-quality onion from Burkina Faso and Niger. This will be in addition to the use of appropriate and current post-harvest processes, including handling, packaging, storage, and transportation through the use of the facilities at the new onion bulk breaking market, thus increasing the shelf life of the onions.

Price. The union members intend to price their products competitively during the plan period.

Promotion. Promotion of the new bulk-breaking market will be carried out extensively by all stakeholders, especially the Onion Traders Union, the strategic investor, and the Municipal Assembly. This will be done through electronic (TV and radio) and print (newspapers) media. Due to the history of the relocation of the Agbogbloshie market, which always generates extensive radio and newspaper discussions, it is expected that the final resettlement at the Adzen Kotoku site will do same, thus promoting the place.

Positioning/Place. The new market has all the relevant and modern facilities important to have in a bulk-breaking market' it will thus be attractive for use by the onion importers and traders as well as the public. It is also situated in a non-traffic zone and with adequate ancillary and transport facilities to aid re-distribution to other markets.

5. INVESTMENT NEEDS AND FINANCING PLAN

5.1 Introduction

This section presents the financing requirements of the project under the various project phases and the financing/partnership plans outlined by the Onion Traders Union for the development of the proposed market infrastructure. It also discusses the proposed terms and conditions of financing to be obtained.

5.2 Investment Requirements

The investment requirement for the entire market infrastructure development project as estimated by the technical consultants is **GHC 6.08 million** (approximately **US $3.80 million,** using an exchange rate of US $1: GHC 1.6). A summary of the cost components are described in table 5.2 below.

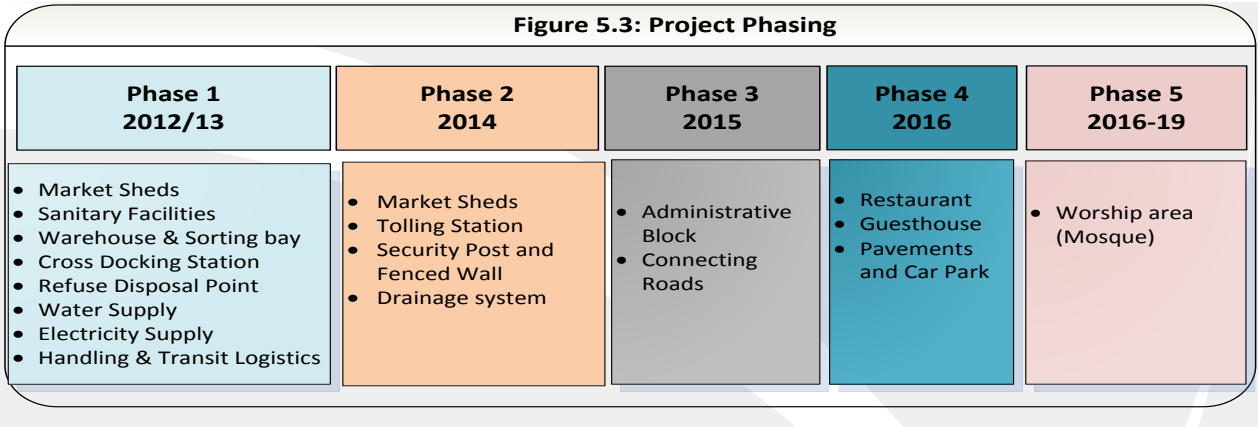
Table 5.2: Summary of Market Infrastructure Cost Components

Description	Amount GHC	Amount US$
Market Sheds (1,500 units)	2,226,842.34	1,391,776.46
Sanitary Facilities	96,271.79	60,169.87
Administrative Block	105,482.75	65,926.72
Worship Area (Mosque)	134,438.21	84,023.88
Pavements and Parking Lot	1,425,000.00	890,625.00
Warehouse and Sorting Bay	359,647.28	224,779.55
Cross-Docking Station	209,859.69	131,162.31
Restaurant	107,438.77	67,149.23
Guesthouse	173,030.29	108,143.93
Handling and Transit Logistics	200,000.00	125,000.00
Garbage Disposal Point	38,093.84	23,808.65
Tolling Station	50,000.00	31,250.00
Security Post and Fenced Wall	100,000.00	62,500.00
Drainage System	250,000.00	156,250.00
Connecting Roads	400,000.00	250,000.00
Water Supply	100,000.00	62,500.00
Electricity Supply	100,000.00	62,500.00
Total	**6,076,104.96**	**3,797,565.60**

5.3 Project Phasing

Due to the high initial investment requirement, the project is proposed to be undertaken in five different phases as indicated in figure 5.3.

Figure 5.3: Project Phasing



5.4 Project Financing Plan

Out of the project cost of **GHC 6.08 million**, the Onion Traders Union proposes to finance **GHC 2.47 million** (41 percent) through members' contributions and debt financing while a strategic investor will be expected to finance **GHC 1.15 million** (19 percent) and the Ga West Municipal Assembly will contribute **GHC 2.46 million** (41 percent). The financing schedule for the project is presented below.

Table 5.3: Financing Schedule

	Phase 1 2012 GHC	Phase 2 2014 GHC	Phase 3 2015 GHC	Phase 4 2016 GHC	Phase 5 2017 - 2019 GHC	TOTAL GHC
Onion Traders Union						
Market Sheds (1,500 units)	742,280.78	742,280.78	742,280.78			
Administrative Block			105,482.75			
Worship Area (Mosque)					134,438.21	
Sub-Total	***742,280.78***	***742,280.78***	***847,763.53***		***134,438.21***	***2,466,763.30***
Strategic Investor						
Warehouse & Sorting Bay	359,647.28					
Cross-Docking Station	209,859.69					
Sanitary Facilities	96,271.79					
Restaurant				107,438.77		
Guesthouse				173,030.29		
Handling & Transit Logistics	200,000.00					
Sub-Total	***865,778.76***	***-***	***-***	***280,469.06***	***-***	***1,146,247.82***
Municipal Assembly						
Refuse Disposal Point	8,093.84					
Tolling Station		50,000.00				
Security Post & Fenced Wall		100,000.00				

Drainage System		250,000.00				
Connecting Roads			400,000.00			
Water Supply	100,000.00					
Electricity Supply	100,000.00					
Pavements and Car Park				1,425,000.00		
Sub-Total	***38,093.84***	***400,000.00***	***400,000.00***	***1,425,000.00***		***2,463,093.84***
Grand Total	**1,846,153.38**	**997,763.53**	**992,280.78**	**414,907.27**	**1,825,000.00**	**6,076,104.96**

5.5 The Union's Financing Plan, Financing Conditions, and Interest Payable

Due to the high investment requirement of the market infrastructure components proposed to be undertaken by the Onion Traders Union, a financing facility from a financial institution will be required. The proposed financing of the union's infrastructure components is presented in table 5.4 below.

Table 5.4: Union's Financing Plan

	Phase 1	Phase 2	Phase 3	Phase 5	TOTAL
Initial Contribution From Union Members Towards Market Sheds and Mosque	320,000.00	320,000.00	320,000.00		**960,000.00**
Internally Generated Funds			105,482.75	134,438.21	**239,920.96**
Loan Amount	422,280.78	422,280.78	422,280.78	-	**1,266,842.34**
Total	**742,280.78**	**742,280.78**	**847,763.53**	**134,438.21**	**2,466,763.30**

The loan terms and conditions for each tranche of loan are presented below.

LOAN TERMS			
Proposed Loan Start Date	**September 2012**	**January 2013**	**January 2015**
Loan	422,280.78	422,280.78	422,280.78
Interest Rate	25%	25%	25%
Duration of Loan (Months)	36	36	36
Moratorium Period (Months)	4	4	4

5.6 Loan Guarantee (Collateral)

The loan will be secured by a fixed and floating charge on the assets of the union (the market infrastructure to be developed).

6. FINANCIAL PROJECTIONS

6.1 Introduction and Basic Assumptions

This section presents the financial projections of the Onion Traders Union and the proposed strategic investor from 2012 to 2017. The projections have been made based on expected income to be generated by the Onion Traders Union from levies and membership dues and by the strategic investor from the warehouse facility, cross-docking station, guesthouse, restaurant, and ancillary and sanitary facilities. The detailed assumptions are presented in Appendix 1.

6.2 Projected Income Statement Extracts

6.2.1 Income

Total income to be generated by the Onion Traders Union is estimated at **GHC 11,928** in 2013 and is projected to increase to **GHC 65,688** from 2014 to 2017, representing an increase of 451 percent. The increase is due to contributions of levies towards the construction of the administrative office and mosque for the union. The projected income of the strategic investor from the operations, estimated at **GHC 353,570** in 2013, is also expected to increase by 64 percent, to **GHC 579,770** in 2017, due to increases in operational activities. Figure 6.1 presents the trend in income to be generated from both groups.

Figure 6.1: Projected Income

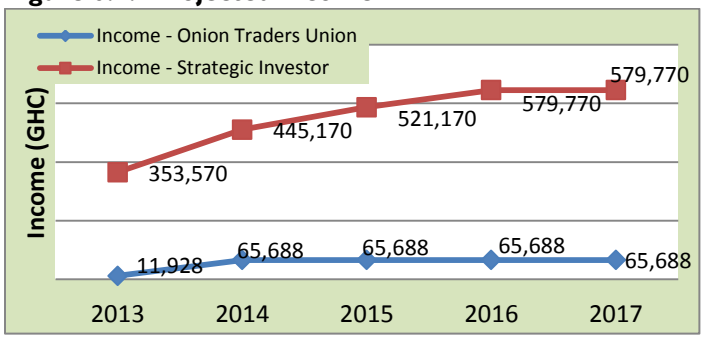


Table 6.1 below shows the breakdown of income components for the Onion Traders Union and the strategic investor.

Table 6.1: Breakdown of Income Components

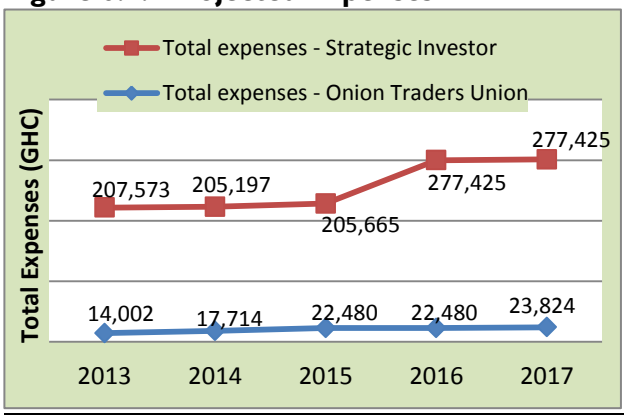
	2013 GHC	2014 GHC	2015 GHC	2016 GHC	2017 GHC
Onion Traders Union					
Membership Dues	11,928	11,928	11,928	11,928	11,928
Levies	-	53,760	53,760	53,760	53,760
Total	**11,928**	**65,688**	**65,688**	**65,688**	**65,688**
Strategic Investor					
Cross-Docking Operation	124,800	187,200	234,000	234,000	234,000
Ancillary Services	49,920	49,920	49,920	49,920	49,920
Warehouse Operation	146,000	175,200	204,400	204,400	204,400

Sanitary Facilities	32,850	32,850	32,850	32,850	32,850
Guesthouse	-	-	-	53,800	53,800
Restaurant	-	-	-	4,800	4,800
Total	**353,570**	**445,170**	**521,170**	**579,770**	**579,770**

6.2.2 Direct and Administrative Expenses

The Union's direct and administrative expenses for the business plan period are estimated to increase annually from a level of **GHC 14,002** in 2013 to **GHC 23,824** in 2017, representing an average year-on-year increase of 18 percent. The projected direct and administrative expenses by the strategic investor are estimated at **GHC 207,573** in 2013. As presented in figure 6.2, this is expected to increase by 34 percent, to **GHC 277,425** in 2017. Details of the direct and administrative expenses are presented in.

Figure 6.2: Projected Expenses

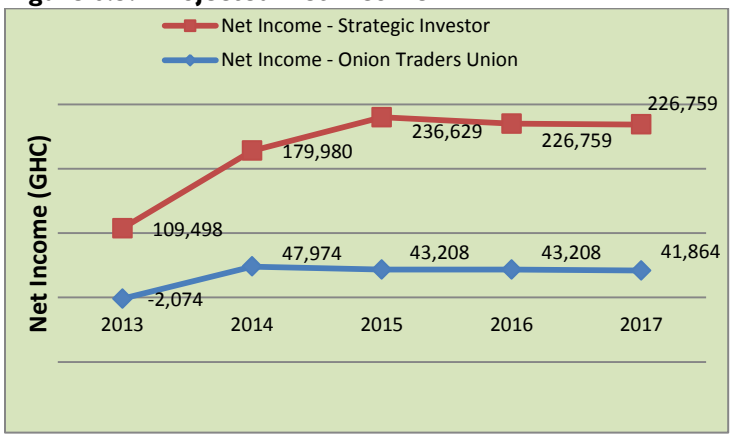


Financing expenses related to the proposed three tranches of loans to be obtained by the union are estimated at **GHC 93,969, GHC 159,026, GHC 184,359, GHC 95,735** and **GHC 26,856** from 2013 to 2017. The financing expenses will be paid through contributions from beneficiaries of market sheds.

6.2.3 Net Income and Returns

From the operational activities of the union, a net loss of **GHC 2,074** is expected in 2013 due to the high level of depreciation of **GHC 3,862**. Net income is projected to increase to **GHC 47,974** in 2014 before declining to **GHC 41,864** in 2017. However, net income due to the strategic investor is projected to increase from **GHC 109,498** in 2013 to **GHC 226,759,** representing an increase of 107 percent. The trends in net income for the Onion Traders Union and the strategic investor are presented in figure 6.3.

Figure 6.3: Projected Net Income



Net profit margins are expected to follow similar trends as net income for the strategic investor, increasing from **31 percent** in 2013 to **40 percent** and **45 percent** in 2014 and 2015, respectively.

6.3 Projected Capital Expenditure and Cash Flow Extracts

Cash flow from operations of the Onion Traders Union is projected at **GHC 1,788** in 2013 and is expected to increase to **GHC 55,548** in both 2014 and 2015.

Investments in capital (fixed) assets in 2012 will result in cash outflow of **GHC 742,281;** this will be equally financed through debt and member contributions. Capital expenditure and its related financing will fluctuate during the remaining period as indicated in table 6.3.

Net cash balance is expected to remain positive during the plan period and will range from **GHC 6,500** to **GHC 63,836**. Table 6.2 presents cash flow extracts during the plan period for both the Onion Traders Union and the strategic investor.

Table 6.2: Projected Cash Flow Extracts

	2012 GHC	2013 GHC	2014 GHC	2015 GHC	2016 GHC	2017 GHC
Onion Traders Union						
Cash Flow from Operations	-	1,788	55,548	55,548	55,548	55,548
Cash Flow from Investing	-742,281	-	-742,281	-847,764	-	-134,438
Cash Flow from Financing	742,281	-	742,281	742,281	-	-
Cash Balance	6,500	8,288	63,836	13,901	69,449	9,441
Strategic Investor						
Cash Flow from Operations		205,608	263,085	315,123	288,690	291,980
Cash Flow from Investing	-865,779	-	-	-	-280,469	-
Cash Flow from Financing	865,779	-	-	-	-	-
Cash Balance	-	205,608	468,693	783,816	792,037	1,084,016

The high cash balance for the strategic investor is due to the high cash inflows as part of the project and the non-provision of dividend payments to shareholders.

The ability of the union to cover both its principal and interest payments as represented by the debt service coverage ratio is projected to improve from **1.0 times** in 2013 to **1.1 times** in 2014 and 2015. This will further improve to **1.3 times** in 2017.

6.4 Balance Sheet Extracts

The total asset base of the Onion Traders Union is expected to increase from the current level of **GHC 15,099** to **GHC 0.76 million** at the end of 2012, mainly as a result of expected capital investments in the market sheds. The projected value of total assets will increase in subsequent years to **GHC 2.42 million** in 2017 due to additional capital investments. However, the market sheds will be transferred to members after payment of loans obtained.

The Onion Traders Union's total liabilities (debt) is projected to range from **GHC 115,308** to **GHC 341,529** during the period, with equity (members contribution and income surplus) projected to increase from **GHC 338,000** to **GHC 2.42 million** in 2017 due to annual contributions towards loan repayment and income surplus.

Total assets for the strategic investor are estimated to reach **GHC 865,779** at the end of 2012. This is projected to increase annually to **GHC 1.92 million** in 2017, mainly due to non-provision of dividend payments. Liabilities (tax outstanding) will range from **GHC 36,499** to **GHC 75,586** during the period, and equity will increase from the initial investment amount of **GHC 865,779** in 2012 to **GHC 1.85 million** in 2017.

Figures 6.4a and 6.4b below summarize the breakdown of the financing structure of the union and the strategic investor, in terms of assets, liabilities and equity.

Fig. 6.4a: Summary of Assets, Liabilities & Equity—Onion Traders Union

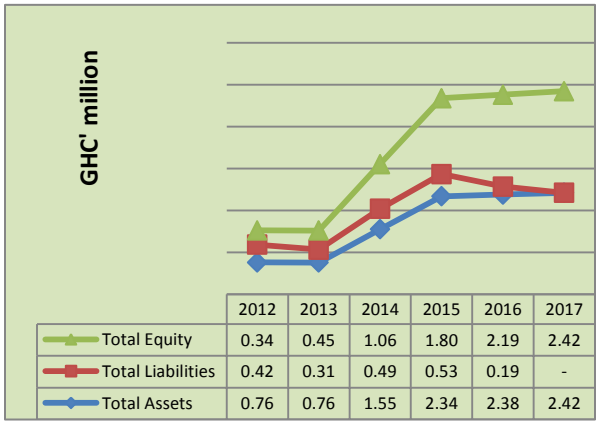
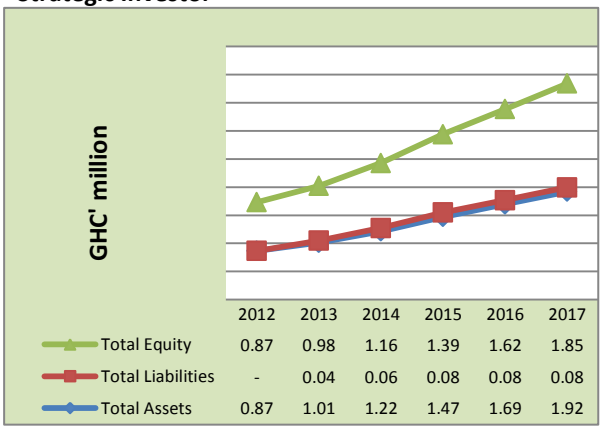


Fig. 6.4b: Summary of Assets, Liabilities & Equity—Strategic Investor



6.5 Capital Budgeting: Net Present Value and Internal Rate of Return

The net present value (NPV) and the internal rate of return (IRR) of the proposed projects to be undertaken by the Onion Traders Union and the Strategic Investor are noted below.

	Onion Traders Union	Strategic Investor
Net Present Value	GHC 3.49 million	GHC 1.16 million
Internal Rate of Return	33%	29%
Discount Rate (WACC)	4%	20%

The positive NPVs indicate the viability and profitability of the project to be undertaken. The NPV was calculated considering the economic period of the project as 20 years for the union and a plan period of five years for the strategic investor. The discount rate for calculation of NPV is the weighted average cost of capital (WACC), which was calculated for the Onion Traders Union by assuming the capital cost of 0 percent for the union and 25 percent for debt. However, a discount rate of 20 percent was proposed and used for the strategic investor.

The IRR, which is a measurement of the rate of growth of the projects, is higher than the discount rates used, indicating that the projects are worthwhile to undertake.

6.6 Sensitivity Analysis

The assumptions supporting the critical variables used in the financial projections have been modified under varying scenarios to examine the effect of these changes in the financial performance of the Onion Traders Union and the strategic investor. The changes made in the key variables are:

- Decrease in fees (income items) by 10 percent
- Increase in direct and administrative costs by 10 percent

The results of the sensitivity analysis are presented in the sensitivity table (Table 6.3).

Table 6.3: Sensitivity Results Table

Base Case Scenario

Description	2012	2013	2014	2015	2016	2017
Onion Traders Union						
NPV = GHC 3.49 million **IRR = 33%**						
Revenue (GHC)		11,928	65,688	65,688	65,688	65,688
Net Income (GHC)		-2,074	47,974	43,208	43,208	41,864
Free Cash Flow (GHC)	-742,281	1,788	-686,733	-792,216	55,548	-78,890
Net Cash Balance (GHC)	6,500	8,288	63,836	13,901	69,449	-9,441
Interest Coverage Ratio (times)	-	0.98	1.30	1.23	1.45	2.56
Debt Service Coverage Ratio (times)	-	1.01	1.14	1.10	1.13	1.25
Strategic Investor						
NPV = GHC 1.16 million **IRR = 29%**						
Revenue (GHC)	-	353,570	445,170	521,170	579,770	579,770
Net Income (GHC)	-	109,498	179,980	236,629	226,759	226,759
Free Cash Flow (GHC)	-865,779	205,608	263,085	315,123	8,221	291,980
Net Cash Balance (GHC)	-	205,608	468,693	783,816	792,037	1,084,016

Scenario 1: Decrease in Fees (Income Items) by 10 Percent

Description	2012	2013	2014	2015	2016	2017
Onion Traders Union						
NPV = GHC 3.28 million **IRR = 31%**						
Revenue (GHC)		10,735	59,119	59,119	59,119	59,119
Net Income (GHC)		-3,267	41,405	36,639	36,639	35,295
Free Cash Flow (GHC)	-742,281	595	-693,302	-798,784	48,979	-85,459
Net Cash Balance (GHC)	6,500	7,095	56,074	-429	48,550	-36,909
Interest Coverage Ratio (times)	-	0.97	1.26	1.20	1.38	2.31
Debt Service Coverage Ratio (times)	-	1.00	1.12	1.09	1.11	1.22
Strategic Investor						
NPV = GHC 859,669 **IRR = 23%**						
Revenue (GHC)	-	318,213	400,653	469,053	522,793	522,793
Net Income (GHC)	-	84,192	147,851	198,835	185,813	185,813
Free Cash Flow (GHC)	-865,779	171,867	228,681	275,441	-33,776	251,034
Net Cash Balance (GHC)	-	171,867	400,548	675,989	642,213	893,247

Scenario 2: Increase in Direct Costs by 10 Percent

Description	2012	2013	2014	2015	2016	2017
Onion Traders Union						
NPV = GHC 3.45 Million **IRR = 32%**						
Revenue (GHC)		11,928	65,688	65,688	65,688	65,688
Net Income (GHC)		-3,088	46,960	42,194	42,194	40,850
Free Cash Flow (GHC)	-742,281	774	-687,747	-793,230	54,534	-79,904
Net Cash Balance (GHC)	6,500	7,274	61,808	10,859	65,393	-14,511
Interest Coverage Ratio (times)	-	0.97	1.30	1.23	1.44	2.52
Debt Service Coverage Ratio (times)	-	1.00	1.14	1.10	1.12	1.25
Strategic Investor						
NPV = GHC1.05 million **IRR = 27%**						
Revenue (GHC)	-	353,570	445,170	521,170	579,770	579,770
Net Income (GHC)	-	99,525	169,061	225,674	210,934	210,934
Free Cash Flow (GHC)	-865,779	192,312	251,850	304,157	-9,228	276,154
Net Cash Balance (GHC)	-	192,312	444,162	748,319	739,091	1,015,246

The sensitivity analysis indicates that the financial projection is more sensitive to decreases in fees (income items) than increases in direct and administrative costs. However, reductions in selling prices or increments in direct cost components of more than 20 percent will have adverse effect on the financial projections.

6.7 Conclusion

The project concept is based on the development of a specialty bulk-breaking onion market with the provision of modern facilities and other social amenities to support appropriate post-harvest handling, which will lead to decongestion and reduction in traffic at the city center (Accra). These benefits, together with the market assessment and the positive financial and cash flow projections for both the Onion Traders Union and the strategic investor, indicate the viability of the project.

7. FRAMEWORK FOR IMPLEMENTATION, MONITORING, AND EVALUATION

7.1 Introduction

The achievement of objectives set for the business plan period depends on the institution of an effective framework for linking the business plan to both the union and the strategic investor's annual budget preparation process. Monitoring and evaluating the implementation of the business plan will also be key. An effective evaluation mechanism is a prerequisite for a realistic periodic review of the business plan during implementation.

7.2 Implementation Plan

Union leaders and the strategic investor will use the business plan as basis for preparing annual budgets. This will involve extracting the respective budget year's activities from the operational section of the business plan and using these to develop the budget for implementation, which will set the pace for monitoring.

The key activities that will link the annual budget to the business plan are as follows

- Review the annual operational plan through a recap of the objectives set for the relevant year in the business plan
- Review current challenges confronting the union and the strategic investor that are not included in the business plan but must be addressed in the budget year
- Revise the budget year portion of the business plan to obtain a draft annual budget
- Revise the business plan to add an additional year to the document

7.3 Monitoring and Evaluation Plan

Monitoring of the plan begins as soon as implementation starts through the approved budget. Monitoring will aim to ensure adherence to the strategies and actions envisaged in the business plan and detailed in the annual budget.

An internal activity planning schedule and a business plan monitoring schedule to be filled in and used for the implementation and monitoring activities are presented on the next page.

ACTIVITY PLANNING SHEET

ACTIVITY	TARGET	INDICATOR	TIME FRAME IN QUARTERS				RESPONSIBLE PERSON/DEPT/ BRANCH	IMPLEMENTATION STATUS/REMARKS
			1	2	3	4		

BUSINESS PLAN ACTIVITY MONITORING SCHEDULE

PLANNED ACTIVITY	TIME PERIOD	WHEN ACTUALLY ACHIEVED	LENTH OF TIME BEHIND SCHEDULE	PROBLEMS ENCOUNTERED	SOURCE OF VERIFICATION	REMARKS & RECOMMENDATION

8. THE WAY FORWARD

8.1 Introduction

This section presents a comprehensive plan for the future direction and focus of the Onion Traders Union and the key activities that should be undertaken to achieve a successfully functioning wholesale onion market at Adzen Kotoku, Amasaman.

8.2 The Way Forward

The union is expected to ensure that a number of issues raised in the business plan are addressed by undertaking the following activities:

- Incorporate the union and develop an effective organizational platform by March 2012
- Build the capacity of Executive Committee members in key areas of organizational development and project management by June, 2012; the union hopes to solicit technical assistance from existing partners in order to accomplish this
- Continue to identify potential strategic investors to partner with and financing institutions/partners for funding towards the project
- Continue to engage with the GA East Municipal Chief Executive and other key public stakeholders for the leasehold of land and the development of key public infrastructure in the market

In addition to the above, it is also important for the union to identify a technical and management service provider to support it in implementing the strategies proposed in the business plan.

APPENDIX: ASSUMPTIONS UNDERLYING THE FINANCIALS

The assumptions underlying the financial projections are presented below.

Price Levels

The projections are based on constant price levels during the plan period. No provision has been made for increases in costs of services and charges by the Onion Traders Union, the strategic investor, or the Municipal Assembly.

Projected Operational Levels

The projected membership levels and facilities usage levels are noted below:

Activity	2013	2014	2015	2016	2017
Number of members	672	672	672	672	672
Average number of times cargo trucks use market facilities per year	1,560	2,340	2,925	2,925	2,925
Number of times KIA trucks are hired per year	1,248	1,248	1,248	1,248	1,248
Storage capacity of warehouse (number of bags)	4,000	4,000	4,000	4,000	4,000
Number of sanitary facility users per year	164,250	164,250	164,250	164,250	164,250
Number of rooms at guesthouse	-	-	-	12	12
Number of businesses operating in the market	400	800	1,200	1,200	1,200
Number of tickets issued per year (daily)	146,000	292,000	292,000	292,000	292,000
Average number of users per year	14,600	29,200	29,200	29,200	29,200

These numbers are based on estimates provided by traders.

Revenue

Operational activities of each revenue-generating stakeholder and their proposed fees are:

Activity	Income Generating Activity	Income Estimate per Activity
Onion Traders Union	• Receipt of membership dues • Levies towards administrative office and mosque	• GHC 1 per member per month • GHC 80 per year in 2014, 2015, 2016 and 2017
Strategic Investor	• Warehousing facility rental • Cross-docking station charges • Restaurant rental • Guesthouse services • Ancillary facility • Sanitary services	• GHC 0.2 per load per night for warehousing • GHC 0.4 per sack of onion offloaded at the cross-docking facility • On rental basis of GHC 400 per month • GHC 20 per night of hotel usage • Average fee of GHC 40 per KIA truck hired

		• GHC 0.2 per usage of sanitary facilities
GA West Municipal Assembly	• Business operating permit • Market tolls • Garbage disposal/private car park	• Average of GHC 25 per business • GHC 0.5 per ticket for market tolls • GHC 0.5 for garbage disposal • GHC 1.0 per private car park usage

Direct Costs

The direct cost for the union is the leasehold on the land. The strategic investor's direct costs relate to fuel and maintenance for light trucks, repair and maintenance of the cross-docking facility, toiletries and utilities of the guesthouse and sanitary facility, and land leasehold payments for the land occupied by the facility built by the strategic investor.

Administrative Expenses

Administrative expenses relating to the Onion Traders Union are assumed to remain constant during the period. Except for salaries and allowance and insurance costs, all other administrative costs paid by the strategic investor are assumed constant. Insurance is assumed to be 2.5 percent of assets.

Term Loan and Interest Rates

It is assumed that out of the total investment cost of **GHC 2.56 million** to be paid by the Onion Traders Union, the union will finance the onion wholesale market construction by obtaining **GHC 1.27 million** through a bank loan in three different tranches. Each loan tranche is estimated at **GHC 422,280.78**.

The loan will be repaid over a three-year period with four months moratorium on the repayment of principal. The interest rate on the loan facility is estimated at 25 percent per annum. Interest is computed using the PMT function, which calculates payment for a loan based on constant payments and a constant interest rate.

Both principal and interest payments are proposed to be settled on monthly basis.

Depreciation

Fixed assets are depreciated at the following rates:

- Warehouse - 2%
- Cross-docking station - 5%
- Market Sheds - 1%
- Buildings - 1%