



**DEVELOPMENT OF THE KOTOKA
INTERNATIONAL AIRPORT AND DOMESTIC
AIRPORTS**

**PROPOSAL FOR
PUBLIC AND PRIVATE FINANCIAL SUPPORT**

November 2011

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1.0 Executive Summary

The aviation industry has emerged as a crucial driving force behind global socio-economic development and even more crucial for emerging economies in Africa. It is for this reason that Ghana, through the Investment and Gateway Programme, seeks to establish Kotoka International Airport (KIA) as a Hub to service the sub-sahara region of African. The total development of the industry in the country will also lead to increased economic activity at the Domestic Airports.

Ghana Airports Company Limited is public company incorporated in 2007 under the Ghana Companies' Act 1963. Having been de-coupled from Ghana Civil Aviation Authority (GCAA), it is primarily responsible for the planning, development, management and maintenance of all airports and aerodromes in the country. Government of Ghana is the sole shareholder.

The challenge to achieving the above objective is the requirement of heavy capital injection to develop the infrastructure necessary to expand capacity to meet the increasing demand and to provide opportunity for public and private investors to gain insight into the investment potential for a partnership with GACL to actualize this development agenda.

To offer impetus for this, there is currently a high demand for increase of flight frequencies by the twenty seven (27) scheduled airlines servicing the airport. In addition to that, there is a high demand by new airlines to initiate bilateral arrangements leading to commencement of flight operations into Ghana. This can be attributed to the commencement of oil production in Ghana. In the light of this, aircraft movement annual total is projected to rise from 28,063 in 2010 to 36,510 in the year 2013. Directly related to this is the projected passenger growth from 1,428,424 in 2010 to 1,710,884 in 2013. The details are provided in **Appendix I**

Against this backdrop, the gross corporate revenue is estimated to rise from \$33,800,184 in 2010 to \$53,392,375 in 2013. Correspondingly, the total corporate expenditure is expected to rise from \$23,726,333 to \$36,216,825 over the same period. The details are provided in **Appendix II**.

KIA, the only International Airport in Ghana is the first point of call for business executives as well as tourists. The airport is regarded as the gateway to the sub-region. World leaders also use the KIA as an entry point into Africa. Notable among such world leaders is the recent visit by President Barack Obama of United States of America. The other American presidents who used the airport in the recent past include President Bill Clinton and President George W. Bush.

The opportunity therefore to seek for financial assistance from private and public sources to undertake projects that will ensure increased capacity to accommodate the envisaged rise in flight operations cannot be overemphasized. The location map of airports under the management of GACL is depicted in Appendix III

A summary of the Needs Analysis and Justification for undertaking Capital Investment Programmes at each Airport is as indicated in Table 1.

S/N	Description	Cost Estimates (US\$ Million)	GACL Funding	Private / Public Funding
1	Kotoka International Airport	405.0	21.0	384.0
2	Tamale Airport	173.2	-	173.2
3	Kumasi Airport	64.0	-	64.0
4	Sunyani Airport	35.5	-	35.5
5	Takoradi Airport	63.5	-	63.5
	TOTAL	741.2	21.0	720.2

Table 1. Summary of Cost Estimates

2.0 Kotoka International Airport (KIA) Development Program

Situated 10 kilometers from the centre of Accra, KIA is Ghana's only international airport. The terminals consist of domestic and international terminals. While the international departure hall has 24 check-in counters to accommodate twenty four (24) scheduled airlines, the tarmac has the capacity for thirteen (13) parking bays. KIA also has a freight terminal, equipped with three parking bays to accommodate wide-body aircraft and is currently managed by one of the two ground handling companies known as Aviance.

2.1.1 Air Traffic Operations at KIA

The air traffic has experienced a study growth over a period and this is further emphasized by the fact that more airlines intend to start flight operations into Accra. The data presented in Table 2 indicates the list of airlines currently operating scheduled flights into Accra. Indicated in Table 3 is the projected traffic expectation.

NO	Airlines	Destination	A/C Type
1.	AT – Royal Air Maroc	Casablanca	B 738
2.	AJ- Aero Contractors	Lagos	B 737
3.	AZ - Alitalia	Rome	B 767, A 330
4.	BA – British Airways	London, Heathrow	B 767
5.	DL – Delta Airlines	JFK, New York	B 767
6.	EK – Emirates Airlines	Dubai	A 343
7.	ET – Ethiopian Airlines	Addis Ababa	B 757
8.	VK – Virgin Atlantic	Gatwick, London	B 757
9.	KQ – Kenya Airways	Nairobi	B 738
10.	KL – KLM Royal Dutch Airlines	Amsterdam	B 777
11.	LH – Lufthansa Airlines	Frankfurt	A 333/ A 343
12.	ME – Middle East Airlines	Beirut	A 332
13.	MS – Egypt Air	Cairo	B 738
14.	SA – South African Airways	Johannesburg	B 747
15.	VK – Air Nigeria	Lagos	E 90, B 737
16.	VU – Air Ivoire	Abidjan	B 737
17.	W3 – Arik Air	Lagos	B 737/ B727
18.	2J – Air Burkina	Ouagadougou	MD 87
19.	8U – Afriqiyah Airways	Tripoli	A 320/ A 330
20.	SW – Air Namibia	Windhoek	
21.	C2 – Ceiba Intercontinental	Malabo	ATR 72
22.	UA – United Airlines	Dulles, Washington DC	B 747
23.	TK – Turkey Airlines	Ankara	B 757
24.	SN – Brussels Airline	Brussels	A 343
25.	KP – Asky Airlines	Lome	A 343
26.	UN - UNMIL	Monrovia	B 757
27.	TAP – Portugal Airlines	Lisbon	A 343

Table 2. Airlines Operating at KIA

2.1.2 Air Traffic Forecast

Airport business is dependent on aircraft movements (i.e. landings and take-offs) as well as passenger uplifts and freight through-put to generate revenues. In order to strategize for development, availability of such data is crucial for the planning process. The data presented in Table 3 forms the basis for airport development purpose.

	2010	2011	2012	2013
Aircraft Movement	28,063	32,304	34,335	36,510
Passengers	1,277,073	2,043,317	3,269,307	5,230,891
Freight (Tons.)	46,480	47,410	48,358	49,325

Table 3. Projected Traffic Forecast: 2010-2014

I. Capacity Challenges in the International Terminal Building at KIA

An examination of critical infrastructure available for operations indicates a sorry state of over-aged equipment. The current infrastructure is not only inadequate but unreliable in coping with the increased operations at the airport. Notable areas that this situation impacts adversely on operations include:

1. Inadequate Security systems:

- Limited CCTV coverage
- Unavailable electronic Access Control systems

2. International Departures

The Terminal Building generally has capacity constraints. Furthermore, the limited space and layout limitations adversely affect facilitation of Passenger processing. This challenge compels remodeling, expansion and refurbishment to address the following:

- Check-In Hall
 - Inadequate Space to process passengers
 - Inadequate Check-in Counters
 - Pressure on Washroom facilities
 - Inadequate space for support services (Customs Services)

- Obsolete and under capacity of Baggage Carousels & X-ray Screening Equipment
- Obsolete Escalator
- Immigration Hall and Departure Lounge
 - Inadequate Booths to Process Passengers
 - Inadequate space for support services (National Security, Narcotics Control Board)
- Boarding Gates
 - The three (3) Boarding Gates are not enough for allocation to growing number of airlines at peak periods
 - Holding area of Boarding Gates are not spacious enough to hold increasing number of passengers
- Unavailability of Passenger Boarding Bridges (Aerobridges). This will improve security and aircraft turn-around time.

3. International Arrivals

- Immigration Hall
 - Inadequate Space and Booths for processing passengers at required service levels.
 - Inadequate space and facilities for support services (Port Health)
- Baggage Claim Hall
 - Inadequate, under capacity and obsolete Baggage Carousels and Conveyor Belts
 - Inadequate space to handle Arriving Passengers at Peak Hours i.e. for more than 2 wide-bodied aircraft at the same time.
 - Inadequate space for Customs, Excise and Preventive Service operations

4. Major roof leakages of Terminal Building

II. Airside Deficiencies

- **Runway**
 - i. Cracks on Runway
 - ii. Rubber deposits at Touch Down Zone

- **Taxiway**
 - i. Major deficiencies on Taxiway pavement including noticeable Cracks.
 - ii. Parallel Taxiway falls short of Runway Extension thus limiting capacity of Runway in terms of Turn-around time.

- **Apron (Parking Bays)**
 - i. Inadequate Parking Bays for growing number of Airlines
 - ii. Inadequate refueling points for aircraft

- Isolation Bay Unavailable
- Aircraft Stand for Executive (Jubilee) Lounge
- **Runway Aeronautical Ground Lighting (AGL) System**
Sub-standard and Deficient Aeronautical Ground Lighting (AGL) System
- **Inadequacy of Airfield Maintenance Equipment**
The following equipment unavailable:
 - i. Apron Scrubbing (Degreasing) Equipment
 - ii. Runway and Pavement Sweeper

III. Power Supply Inadequacy, Unreliability and Deficiencies

- Unreliability of Power Supply from National Grid
- Inadequate backup standby power generation systems
- Unavailability of equipment to ensure uninterrupted and quality power supply.

IV. Inadequate Water Supply for Airport Users and Fire Fighting

V. Unavailable Aircraft Maintenance, Repair and Overhaul (MRO) Facilities

VI. Unserviceable Aircraft Hangars required to be relocated in line with Master Plan

- VII. Unavailable Fixed Based Operators (FBO) Facilities
- VIII. Need for Relocation of Administrative Offices. Current location of Administrative Offices is space for Apron expansion.

3.0 Strategies for Addressing Challenges at KIA

To help in determining infrastructural requirements to meet the expected growth, The LPA group of USA was contracted to conduct feasibility studies and traffic projections. The LPA group has presented a Master Plan for KIA as well as for the expansion of the International Terminal Building to meet growth expectations up to year 2025. It is estimated that the total cost of the infrastructural requirements for KIA is about US\$405 million.

The strategies for address the capacity challenges are as follows:

I. KIA Development Phase III

KIA Phase III Development project, will address the following major operational challenges at a total cost of US\$51million:

- i. The Provision of a new Fire Station
- ii. The Reconstruction of Taxiway and Apron Pavements including the Installation of Aeronautical Ground Lighting Systems and Fuel Mains
- iii. Extensions to main Aprons.
- iv. Runway Touchdown Zone pavement repairs and Rubber Removal.

The collateralization of both GCAA and GACL revenues was used to obtain a credit facility from BNP Paribas and syndicating Banks. However, only GACL is currently saddled with the repayment after GACL decoupling from GCAA event. To finance the Phase III loan, 40% of GACL revenue from navigational charges as well as its portion of Airport Passenger Service Charge (APSC) from designated airlines are paid into an escrow account. Additionally, a local escrow account has been set up to reimburse GCAA for their share of en route aeronautical (over flight) revenue committed to repayment of the loan. In total, an average of 30% of GACL income is committed to the repayment of the KIA Phase III loan for the next five (5) years. Against this background therefore, it is almost impossible for GACL to undertake a project of this magnitude from its own internally generated sources.

In spite of the huge financial burden placed on GACL by these projects, any further delay in executing the development projects cannot be justified in the face of safety and security as well as facilitation reasons.

II. **KIA Terminal Remodeling, Expansion and Refurbishment Objectives**

The following objectives are expected to be achieved over the project period:

- i. The remodeling will provide for an expanded Check-in Hall with almost unlimited capacity for expansion at the current Airport Square and Car Parks 1 & 2 locations.
- ii. The Departure Baggage Handling and Security Screening Systems replacement will upgrade the capacity to handle current and future loads.
- iii. To Expanded Departure Lounge at the current location
- iv. Procurement of a new linear pier will provide for additional Boarding Gates with Passenger Boarding Bridges
- v. The expansion of Immigration area will provide adequate facilities for current and future requirements
- vi. The expansion of Baggage Reclaim Hall with more Carousels will provide the required capacity to handle current and future loads.
- vii. The installation of lifts and escalators will ensure a more efficient passenger facilitation.
- viii. The installation of a fully integrated CCTV and Access Control systems will ensure safety and security at KIA.
- ix. The Construction of a new Administration Office Block will provide support for a much more efficient management of the airport

The estimated cost details of the projects outlined for the achievement of these objectives are as presented in Table 4.

4.0 Summary of Capital Investment for KIA

S/N	Description	Cost Estimates (US\$ Million)	GACL Funding	Public / Private Funding
1	KIA Terminal Remodelling, Expansion & Refurbishment	150.0	-	150.0
2	Remodeling, Expansion and Refurbishment of the Domestic Terminal	30.0	-	30.0
3	Departure & Arrival Baggage Handling & Security Screening Equipment	10.0	-	10.0
4	Security Screening & Scanning Equipment	5.0	1.0	4.0
5	CCTV & Intruder Detection Systems	15.0	-	15.0
6	Construction of Additional Aprons & AGL	70.0	15.0	55.0
7	Provision of Radar	10.0	-	10.0
8	Refurbishment of the AGL system	3.0	3.0	-
9	Runway Pavement and Edge Repairs	20.0	-	20.0
10	Extension to the Taxiway to the End of Runway 21	20.0	-	20.0
11	Provision of Airfield Maintenance Equipment	1.0	1.0	1.0
12	Power Supply Improvement	20.0	-	20.0
13	Development, Storage and Distribution of Alternative Water Supply for Airport Users and Fire Fighting	1.0	1.0	-
14	Construction of Infrastructural Facilities for the Construction of Maintenance, Repair and Overhaul (MRO) Facilities, Aircraft Hangars, Fixed Based Operators (FBO) Facilities	50.0	-	30.0
Total		405.0	21.0	384.0

Table 4. Capital Expenditure Investment for KIA

5.0 Domestic Airports

It is equally the responsibility of GACL to manage and operate the **Regional Airports** located in the hinterlands of Kumasi, Tamale and Sunyani as well as the airstrips under its jurisdiction. These airports however, have to be maintained in accordance with the regulations for continued certification for safety, security and service standards. It is also necessary to position the domestic airports to accommodate increased traffic as expected to be generated from rapid economic growth envisaged for the near future. A pictorial presentation of airports in Ghana is indicated in Appendix II.

5.1 Tamale Airport

Tamale Airport will be developed for international operations and serve as a hub for the Sahalien Region to support agricultural industrialisation and eco-tourism. Strategically, it will also be the alternate to KIA for handling international operations.

The rehabilitation of Tamale Airport will develop a high level infrastructure by optimizing existing levels of infrastructure that will leverage the integrated development of agriculture and tourism being the competitive sectors of the regions to eventually catalyze industrialization and rapid socio-economic development of the Savanna regions. This is in line with the Government's decentralisation policy for an integrated regional infrastructural development for effective economic growth.

VII. Socio-economic development of the Savanna regions of which the aviation development in the region would be a driving force include the following:

- Integrated development of Tamale and its environs
- Boeing International Maintenance Base
- Development of Tamale Airport to International Standards
- Development of Tamale Airport as Hub to link neighbouring ECOWAS Countries
- Extension of Runway to handle Boeing 747
- Operation of schedule services to Jeddah
- Industrialization of mechanized agriculture and export of agric produce by air
- Development of housing estates - all categories

- Optimum Utilization Of Sports Stadium
- Expansion of University of Development Studies
- Establishment of Medical School and the Development of Tamale Hospital as a Teaching Hospital
- Tourism Development of Savannah Belt : North, Upper West, Upper East, parts of Brong Ahafo region

The breakdown of the Tamale Airport Investment Requirements is as follows:

S/N	Description	Amount US\$
A	Master Plan Studies	0.5
B	Buildings	
1	Construction of New 500 Capacity Terminal Building	24.0
2	Construction of New Control Tower	4.5
3	Construction of New Fire Station	6.5
4	Construction of Freight Terminal & 4 No. Aircraft Parking Bays	6.5
C	Airside	
	<i>Airfield to be designed to Code 4F</i>	
1	Rehab & Extension of Runway and Taxiway & Fencing	45.0
2	Construction of 14 Stands for Wide Bodied Aircraft (Aprons)	14.0
3	Construction of Fuel Hydrant System for 14 Bays	2.5
4	Water Storage Fire Fighting Facilities	2.0
5	Upgrading of Power System	2.0
6	Aeronautical Ground Lighting	6.2
C	Operational Vehicles	
1	Rescue and Fire Fighting Vehicles	4.0
2	Runway Sweeper & Scrubbing (Degreasing) Equipment	0.5
D	General	
1	Construction of Sewage Treatment Systems	2.0
2	Water Storage & Distribution Facilities for Public Use & Fire Fighting	2.0
	ATC Equipment	
1	Communication, Navigation Systems and Radar Systems (<i>Communication, Navigation & Surveillance Systems</i>)	21.0
F	Cargo Terminal	10.0
G	Hajj Terminal	10.0
H	Aviation Fuel Facilities	10.0
	TOTAL	173.2

Table 5. Capital Expenditure Investment for Tamale Airport

5.2 Kumasi Airport

The Capital Investment requirements for the Kumasi Airport are as follows.

S/N	Description	Amount (US\$)Million
A	Terminal Buildings & Associated Facilities	
1	Relocation of Terminal/Control Tower Building, New Fire station, VIP Lounge	20.0
2	Baggage Handling & Security Screening Equipment, CCTV system	2.0
3	Expansion of Existing Car Park	1.0
4	Water Storage & Distribution Facilities for Public Use & Fire Fighting	2.0
B	Airside	
1	Rehab & Extension of Runway and Construction of Aprons	30.0
2	Aeronautical Ground Lighting & Equipment	4.0
3	Instrument Landing System	1.5
C	New Substation and Standby Generating Systems	2.0
D	Operational Vehicles	
1	Rescue and Fire Fighting Vehicles	1.0
2	Runway Sweeper & Pavement Scrubber etc	0.5
	TOTAL	64.0

Table 6. Capital Expenditure Investment for KIA

5.3 Sunyani Airport

The Capital Investment requirements for the Sunyani Airport are as follows.

S/N	Description	Amount US\$ Million
A	Buildings	
1	Rehabilitation/Refurbishment of Terminal Building	3.0
2	Terminal Equipment (X-ray Equipment, CCTV, Baggage Carousels, Seats etc)	1.0
3	Construction of VIP Lounge	0.5
4	Refurbishment of Fire Station	0.5
5	Rehab of Access Road and Car Park	1.0
6	Construction of Perimeter Fencing	1.5
B	Airside	
1	Rehab & Extension of Runway and Aprons	20.0
2	New Substation and Standby Generating Systems	2.0
3	Aeronautical Ground Lighting System	3.0
C	Water Storage & Distribution Facilities for Public Use & for Fire Fighting	1.5
D	Operational Vehicles	
1	Rescue and Fire Fighting Vehicles	1.0
2	Runway Sweeper & Pavement Scrubber etc	0.5
	TOTAL	35.5

Table 7. Capital Expenditure Investment for Sunyani Airport.

5.4 Takoradi Airport

The Takoradi Airport is a Military base but there is the intention to share the facilities for civil operations. Consequently, new Terminal Facilities for handling aircraft and passengers will need to be constructed for this purpose.

The Capital Investment requirements for the Takoradi Airport are as follows.

S/N	Description	Amount US\$ Million
1	250m Extension to the Runway	20.0
2	Construction of Civil Apron and Taxilanes	15.0
3	Provision of AGL System & Emergency Airfield Lighting Kit	2.0
4	Construction of Terminal Building & Operational Offices	15.0
5	Terminal Equipment (X-ray Equipment, CCTV, Baggage Carousels, Seats etc)	1.0
6	Construction of Fire Station	1.0
7	Construction of Access Road & Car Parks	2.0
8	Construction of a Security Fence	1.0
9	Construction of Substation for Standby Power Generation	1.5
10	Air Traffic Control & Meteorological Equipment	1.0
11	Provision of Very High frequency Omni-directional Range Equipment	1.0
12	Water Storage & Distribution Facilities for Public Use & for Fire Fighting	1.5
13	Rescue and Fire Fighting Vehicles	1.0
14	Runway Sweeper & Pavement Scrubber etc	0.5
	Total	63.5

Table 8. Capital Expenditure Investment for Takoradi Airport

6.0 Revenue Sources and Projections

An analysis of the revenue projections clearly indicate that meeting the high cost of infrastructure and operations in order to provide world class facilities will pose a major challenge. Current gross annual average revenue projections of an estimated **USD** 45 million will not be adequate for the expected capital expenditure. It is for this reason that there is the need for additional source of revenue is required purposely for infrastructural development of the airports.

6.1 Airport Tax

Airport charges have recently become the most reliable and sustainable source of revenue in the aviation industry. Airport Tax in Ghana relates to taxes imposed by government for the use of airport facilities by passengers.

The Airport Tax Act provides for the sharing of revenue between Government and GACL. The apportionment of Airport tax most commonly referred to as Airport Passenger Service Charge (APSC) needs to be reviewed so a larger proportion is given to GACL to enable it meet operational costs and improve infrastructure acceptable to industry standards so safety and security is not compromised.

Annex 9 of the Chicago Convention provides the basis for charging passengers for Facilitation. The Annex provides that airports facilitate landside formalities for clearance of aircraft and commercial traffic through customs, immigration, public health etc. ICAO Resolution 3/5 on Communications Navigation Satellite/Air Traffic Management (CNS/ATM) resolved that States apply revenues from airport and air navigation service charges solely towards defraying the cost of these facilities and services. It is in line with ICAO recommendations that the Aviation Sector Policy Report also states inter alia that ‘the provision of aviation infrastructure is not an end in itself, but is required to provide the facilities and services to meet the needs of the airlines, their passengers, ground handling and freight forwarding customers and the general aviation community’.

Management notes that the 2011 national budget statement has increased the Airport Tax from US\$75 to US\$100, US\$150, US\$200 for economy, business and first class passengers respectively for international travel. The budget further increased from US\$50 to US\$60 for regional travel, and USD \$ 0.7 to USD\$3.33 for domestic travels. Out of this, the Ghana governments share is 60% to support national development budget while 40% is allocated for airports development. This is grossly inadequate.

7.0 Conclusion

Given the need to commence the KIA Terminal Expansion Project, as well as the development of the Regional Airports especially Tamale; in addition to the KIA Phase III project which is in progress, the need for financial support from external agencies will go a long way to help realize the airports development agenda in the short term.

Air Traffic Forecast Details

Airports in general make income when they provide air service to airlines and also facilitate the movement of passengers and freight. The table below shows Air Traffic Forecast for the medium term.

Table 5: Projected Traffic Forecast: 2011-2013

	2010 Year end	2011	% Increase 2011/2010	2012	% Increase 2012/2011	2013	% Increase 2013/2012
Aircraft Movements (Int'l)	20,495	23,979	17.0	25,178	5.0	26,437	5.0
Aircraft Movements (Dom)	7,568	8,325	10.0	9,157	10.0	10,073	10.0
Aircraft movements Total	28,063	32,304	15.1	34,335	6.3	36,510	6.3
Int'l Passenger Movements	1,308,945	1,374,392	5.0	1,443,112	5.0	1,515,267	5.0
Domestic Passenger Movements	119,479	147,915	23.8	170,102	15.0	195,617	15.0
Total Passenger (Int'l + Domestic)	1,428,424	1,522,307	6.6	1,613,214	6.0	1,710,884	6.1
Freight Mov't. (Tons)	46,480	47,410	2.0	48,358	2.0	49,325	2.0

Table 9. Air Traffic data analysis

Income Statement for 2010 - 2013

	2010 USD	2011 USD	2012 USD	2013 USD
Projected Revenues	33,800,184	44,784,803	49,554,707	53,392,375
Employee	12,869,518	17,192,195	18,917,414	20,802,555
Operating	8,393,321	9,660,149	10,626,164	11,688,781
General & Admin	2,463,493	4,625,772	3,952,257	3,725,489
Total Recurrent Expenditure	23,726,333	31,478,116	33,489,835	36,216,825
Net Profit before Tax	10,073,851	13,306,687	16,064,872	17,175,549
Corporate Tax (@25%)	2,518,463	3,326,672	4,016,218	4,293,887
Net Profit After Tax	7,555,388	9,980,015	12,048,657	12,881,662

Table 10. GACL Financial analysis and projection



Figure 1. Ghana Airports Map