

AVIATION INFRASTRUCTURE FOR AFRICA GAP ANALYSIS

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ICAO



DEVELOPMENT OF AIRPORT INFRASTRUCTURE EQUIPMENT & FACILITIES IN ECOWAS REGION

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PRESENTATION OUTLINE

- ❑ INTRODUCTION

- ❑ OBJECTIVES

- ❑ SCOPE AND FINDINGS OF THE FEASIBILITY STUDY

- ❑ MASTER PLAN FOR THE DEVELOPMENT OF AIRPORT INFRASTRUCTURE

- ❑ FINANCING THE AIRPORT INFRASTRUCTURE





INTRODUCTION

ARTICLE 32 (ECOWAS REVISED TREATY – 1993):

For the Purpose of Ensuring the Harmonious Integration of the Physical Infrastructures of Member States and the Promotion and Facilitation of the Free Movement of Persons, Goods and Services Within the Community. Some of the Primary Functions of the ECOWAS Commission agreed to be undertaken by the Member States Include:

- ❑ Evolve Common Transport Policies, Laws & Regulations
- ❑ Develop an Extensive Network of Railways & All-Weather Highways Within the Community, Priority Being Given to Inter-State Road Highways





INTRODUCTION

ARTICLE 32 (ECOWAS REVISED TREATY – 1993) Continued:

- ❑ Formulate Programs for the Improvement of Coastal Shipping Services & Inter-State Inland Waterways
- ❑ Promote the Development of Regional Air Transportation Services & to Bring About the Merger of National in Order to Promote their Efficiency & Profitability
- ❑ Endeavor to Standardize Equipment Used in Transport & Establish Common Facilities for Production, Maintenance & Repair
- ❑ Encourage participation of Public Private sector



IMPORTANCE OF AIR TRANSPORT



AIR TRANSPORT DEVELOPMENT WILL ENABLE ECOWAS MEMBER STATES TO:

Improve operation of their huge mineral and agricultural resources

Export by air freight of flowers, fruits, vegetables, seafood and meat products

Face specific needs of land-locked countries (Burkina, Mali, Niger) or island (Cabo Verde)

Alleviate negative effect of famine and epidemics through rapid conveyance of foodstuff and medicine, thereby making a concrete contribution to poverty reduction and health care (such as Ebola Outbreak)

CONTRIBUTION TO ECOWAS INTEGRATION

Catalyst of job creation for youth and women

Boosting of Economic Growth and Political Integration within ECOWAS space

Consolidate international relations and trade with partners through Air Carrier operations.





2013 ECOWAS AIR TRANSPORT MARKET

YEAR 2013	PAX m	CARGO Ton	AIRCRAFT mvts	POPULATION m	SURFACE Km2	GDP Billions
BENIN	476,704	7,616	12,309	10,300,000	112,760	8.30
BURKINA FASO	523,355	7,011	9,936	17,800,000	273,600	12.2
CAPE VERDE	1,957,747	3,061.5	28,702	0,530,000	4,030	1.9
COTE D'IVOIRE	1,152,887	17,548	18,195	22,400,000	318,000	28.2
GAMBIA	348,248	1,387.3	5,298	1,880,000	10,120	0.90
GHANA	2,447,989	23,437	43,688	25,200,000	227,540	44.2
GUINEA	331,558	3,967	8,596	11,180,000	245,720	6.3
GUINEA BISSAU	61,000	400	1,100	1,660,000	28,120	0,9
LIBERIA	220,000	8,621.4	3,456	3,990,000	96,320	1.9
MALI	572,105	10,047	10,296	15,970,000	1,220,190	11.1
NIGER	203,487	3,201	7016	16,900,000	1,266,700	7.4
NIGERIA	14,853,248	246,238.8	245,398	175,000,000	910,770	286.5
SENEGAL	1,883,806	25,198	22,955	13,300,000	192,530	15.1
SIERRA LEONE	227,649	4,693.7	3003	5,600,000	71,620	4.8
TOGO	538,697	4,004	10,228	7,150,000	54,390	4.4
TOTAL	25,798,458	366,432	430,176	328,460,000	5,032,410	434
WORLWIDE	3,100,000,000	44,000,000	N/A	7,000,000,000	148,326,000	74,900
AFRICA	163,000,000 (4,1%)	2,000,000	N/A	1,100,000,000	30,221,532	2,600,
ECOWAS share	16%	18%		30%	18%	17%



OBJECTIVES



AIRPORTS IN ECOWAS IN 2012 BY ACI

WORLDWIDE	REGIONAL	AIRPORT	COUNTRY	Code IATA	PAX IN 2012	PAX IN 2011	%
4	1	Lagos	Nigeria	LOS	7 186 595	6 764 076	6,3
12	2	Abuja	Nigeria	ABV	3 523 393	4 211 560	16,3
15	3	Accra	Ghana	ACC	2 424 153	1 930 436	25,6
21	4	Dakar	Sénégal	DKR	1 732 687	1 842 389	6
27	5	Port Harcourt	Nigéria	PHC	1257 216	1 328 832	5,4
29	6	Abidjan	Côte D'Ivoire	ABJ	961 643	646 942	48,6
30	7	Brazzaville	Congo	BZV	957 472	828 927	15,5
33	8	Libreville	Gabon	LBV	839 571	783 091	7,2
39	9	Ilha Do Sal	Cap Vert	SID	703 425	669 861	5
45	10	Bamako	Mali	BKO	533 054	582 143	8,4
46	11	Praia	Cap Vert	RAI	498 155	530 715	6,1
47	12	Ouagadougou	Burkina Faso	OUA	485 815	404 726	20
49	13	Lomé	Togo	LFW	472 313	551 608	14,4
50	14	Cotonou	Benin	COO	466 778	430 080	8,5



ECOWAS AIR TRANSPORT ACTION PLAN 2014-2020

1st Meeting of the Air Transport Committee, held in Banjul, The Gambia, from 21-23 October, 2013, approved a new Air Transport Action Plan 2014-2020 with the following targets:

❖ AIRPORTS

- **Assist member States to fully comply with the ICAO SARPs especially Annex 14 of the Chicago Convention**
- **Rehabilitation and upgrading of airport infrastructure and equipment and facilities of air navigation services, Construction**
- **Aerodromes Certification**

❑ ROLE OF THE ECOWAS COMMISSION

- **Carry out feasibility study**
- **Convene a Validation Workshop**
- **Resource mobilization with donors and partners**

FEASIBILITY STUDY ON DEVELOPMENT OF AIRPORT INFRASTRUCTURE OF ECOWAS MEMBER STATES



Objective

This project is meant to remove deficiencies unveiled by the ICAO's Safety Oversight Audit reports at the international airport infrastructure, equipment and facilities (including refrigerating cargo warehouses, airfield lightning, airport security fences, Control Towers, Generators as well as status of Instrument Landing System (ILS), VHF Omni Range (VOR), Distance Measuring Equipment (DME), Radars, status of implementation of CNS/ATM, status of security control equipment for issuing of access ID cards, electromagnetic detectors, X-ray walkthrough devices, surveillance camera and handheld metal detectors) of the ECOWAS member States.

Procurement procedure

- 2013 TORs and Express of Interest in the framework of PPDU activities
- 2014 Consultants shortlisted within a Tender relating to a Feasibility study, Technical & Financial Evaluation
- 2015: contract with successful Bidder: Consortium IOS Partners/APA
- 2015: Data collection in the 15 ECOWAS member States, Inception Report, Draft Report
- 2015: First Experts Validation Workshop on the Report of the Consultant, in Lome, Togo, in October
- 2016: Second Experts Validation Workshop in May at Niamey, Niger

Feasibility study cost USD 760,000

- Feasibility study: \$460,000
- 2 Validation Workshops: \$300,000

Expected results

- Assessment of the capacity of ECOWAS regional airports with international links on the airside (runway, taxiways, and apron areas) and landside (terminal facilities). Validated Final Report

Next steps: Elaboration of a Master Plan for the development of ECOWAS airports





SCOPE AND FINDINGS OF THE FEASIBILITY STUDY





SCOPE OF FEASIBILITY STUDY

	Country	Location	Airport Name	IATA Code
1	Benin	Cotonou	Cotonou Cadjehoun Airport	COO
2	Burkina Faso	Ouagadougou	Ouagadougou Airport	OUA
3	Cape Verde	Sal Island	Amílcar Cabral International Airport	SID
4	Cape Verde	Santiago Island	Nelson Mandela International Airport	RAI
5	Cote d'Ivoire	Abidjan	Félix-Houphouët-Boigny International Airport	ABJ
6	Gambia, The	Banjul	Banjul-Yundum International Airport	BJL
7	Ghana	Accra	Kotoka International Airport	ACC
8	Guinea	Conakry	Conakry International Airport	CKY
9	Guinea Bissau	Bissau	Osvaldo Vieira International Airport	OXB
10	Liberia	Monrovia	Roberts International Airport/Robertsfield	ROB
11	Mali	Bamako	Bamako-Sénou International Airport	BKO
12	Niger	Niamey	Diori Hamani International Airport	NIM
13	Nigeria	Lagos	Murtala Muhammed International Airport	LOS
14	Nigeria	Abuja	Nnamdi Azikiwe International Airport	ABV
15	Nigeria	Kano	Mallam Aminu Kano International Airport	KAN
16	Nigeria	Port Harcourt	Port Harcourt International Airport	PHC
17	Senegal	Dakar	Léopold Sédar Senghor International Airport	DKR
18	Sierra Leone	Freetown	Freetown-Lungi International Airport	FNA
19	Togo	Lome	Gnassingbé Eyadéma International Airport	LFW

AIRSIDE SYSTEMS - Runways and Taxiways

DEFICIENCIES

- Benin – Cotonou (surface degradation)
- Guinea Bissau – Bissau
- Liberia – Monrovia (Roberstfield)
- Niger – Niamey
- Nigeria – Lagos (taxiways)
- Nigeria – Abuja (runway resurfaced in March/April 2017)
- Cape Verde – Praia (2100m): ICAO Compliance Issues
- Burkina Faso – Ouagadougou (runway-apron separation)

NAVAIDS AND AIRFIELD GROUND LIGHTING SYSTEMS

All major airports in the region equipped with ILS and AGL systems, in varying degrees of functionality and reliability (especially electrical power supply).

Main concerns

- **The Gambia: Banjul NDB and DME reported unserviceable**
- **Guinea – Conakry : ILS in state of degradation, lack of replacement parts for repair and maintenance**



Airside Ancillary Facilities, Perimeter Fencing, Obstacles to Air Navigation, etc.

- Nigeria – Lagos/ fire station dilapidated, 1 fire tender defective, communications equipment inadequate

Airfield Maintenance Equipment and Facilities

- Nigeria – Lagos : insufficient airfield maintenance sweepers, airfield service roads in poor condition

Airport Security and Perimeter Fencing

- Nigeria – Lagos: porous areas in fence
- Guinea – Conakry: security fence inadequate
- Senegal – Dakar LSS: fencing subject to infringement due to location in dense urban area



PASSENGER TERMINALS (1) OVERVIEW

Full range of facilities: New and/or expanded terminals completed or under construction:

Sal Island Amilcar Cabral
Praia Nelson Mandela
Abidjan Félix-Houphouët-Boigny
Accra Kotoka
Bamako Senou
Abuja Nnamdi Azikiwe
Dakar-AIBD
Lome Gnassingbé Éyadéma

Obsolete, undersized or inadequate terminals:

Cotonou Cadjéhoun, Ouagadougou, Sal Amilcar Cabral, Praia Nelson Mandela, Banjul Yundum, Bissau, Niamey Hamadi Niori, Freetown Lungi



AIRPORT ACCESS

Airport Access: not a major problem at most ECOWAS airports, but some exceptions:

- **Burkina Faso – Ouagadougou: congested roads: location in center of town**
- **Ghana – Accra: roads OK but risk of congestion**
- **Nigeria – Lagos: road conditions OK but severe congestion**
- **Nigeria – Abuja: good roads and lack of congestion, but remote location; monorail planned *soon operational***
- **Senegal – new AIBD airport: good roads and lack of congestion, but remote location; access by toll road**
- **Sierra Leone – Freetown Lungi airport: separated from city by large estuary: access only by boat, ferry, helicopter or hovercraft**





Electrical power supply problematic at many ECOWAS airports, related mainly to deficiencies of the national grid

Benin	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Frequent blackouts • Backup generator for airfield and tower OK
Burkina Faso	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Frequent blackouts • Backup generator for airfield and tower OK • Backup generator for terminal insufficient
Cape Verde (Praia)	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Back-up power supply inadequate to support passenger terminal cooling system
Cape Verde (Sal Island)	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Excellent
Cote d'Ivoire	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Good
The Gambia	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Frequent black-outs from national grid • Back-up systems good but expensive to maintain • No central waste treatment facility and a rudimentary system of septic tanks and soak ways
Ghana	<ul style="list-style-type: none"> • Primary electrical supply 	<ul style="list-style-type: none"> • Frequent black-outs despite agreement with National Power Company
Guinea		
Guinea-Bissau	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • No electrical supply from local grid • Airport generator power until 22:00
Liberia		
Mali	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Upgraded connection to national grid
Niger	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Frequent black-outs from national grid • Back-up generator systems OK
Nigeria (Lagos)	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Frequent black-outs from national grid • Secondary power supply system OK but costly
Nigeria (Abuja)	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Frequent black-outs from national grid • Secondary power supply system OK but costly
Nigeria (Port Harcourt)	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Irregular power and need for back-up generator
Nigeria (Kano)	<ul style="list-style-type: none"> • Electrical supply 	<ul style="list-style-type: none"> • Irregular power and need for back-up generator
Senegal (existing airport)		
Sierra Leone		
Togo	<ul style="list-style-type: none"> • Electrical supply and distribution 	<ul style="list-style-type: none"> • Well maintained and in good condition



ENVIRONMENTAL ISSUES IMPACTS ON POPULATION



■ **Bird Hazards and Wildlife Intrusion Risks:**

- Benin- Cotonou, Burkina Faso – Ouagadougou, Cape Verde – Praia (serious), Cape Verde – Sal (potential), Guinea – Conakry, Nigeria – Lagos, Nigeria – Abuja, Togo – Lomé

■ **Waste water, sewage and drainage problems**

- Burkina Faso – Ouagadougou, Côte d'Ivoire – Abidjan, Gambia – Yundum, Nigeria – Lagos, Togo – Lomé

■ **Cases of problematic impact due to airport locations in densely urbanized zones (noise, air pollution, safety, traffic congestion, etc**

- Benin – Cotonou, Burkina Faso – Ouagadougou, Guinea – Conakry, Nigeria – Lagos,

- **Risk of urban encroachment:** Côte d'Ivoire – Abidjan, Ghana – Accra



DEVELOPMENT OF AIRPORT INFRASTRUCTURE



DRAFT MASTER PLAN FOR 19 AIRPORTS OF ECOWAS MEMBER STATES



SHORT TERM 2015-2020
Estimated at US\$956 Million

MEDIUM TERM 2020-2030
Estimated at US\$1,500,000

LONG TERM 2030-2045
Estimated at US\$ 2.1 Billion

NEXT STEPS

Master Plan to be validated by ICAO under the ECOWAS/AfDB Grant Agreement PASTA-CO



NEW AIRPORT DEVELOPMENT PLANS

Confirmed:

Senegal – Blaise-Diagne: construction being completed – scheduled for end 2016

Benin – Glo Djigbe: site identified, studies under way

Burkina Faso – Donsin: construction of basic infrastructure commenced, studies under way

Abuja: construction of a new runway in March/April 2017 and new Terminal on going

Potential or pending (in discussions):

Ghana – Prampram: site identified but no immediate plans

Guinea – Maferinya: site identified, negotiations underway with Chinese contractor

Guinea Bissau – Bubaque (site identified)

Sierra Leone – Manamah: site identified, negotiations underway with Chinese contractor



FINANCING AIRPORT INFRASTRUCTURE





ECOWAS DONORS ROUNDTABLE FOR INFRASTRUCTURE

- ❑ **2016: LAUNCHING OF AN INITIATIVE OF ECOWAS ROUND TABLE FOR INFRASTRUCTURE UNDER THE COMMUNITY DEVELOPMENT PLAN**
- **Elaboration of TORs and Project Fiches including for Air Transport sector**
- **Awareness campaign towards donors and partners: AfDB, World Bank, EBID, BOAD, IsDB, BADEA, Kuwait Fund, JICA, Private Sector, PPP, etc**
- **FODETE initiative: creation of a special fund dedicated to infrastructure financing using a percentage of mineral and agricultural resources: Feasibility study on going by ECOWAS PPDU**





THANK YOU !
OBRIGADO !
JE VOUS REMERCIE !

