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the World Bank

Report No: ICR2673

# IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IDA Grant H440-BJ and IDA Credit 4538-SN)

ON A

GRANT

IN THE AMOUNT OF SDR 6.1 MILLION
(US$9 MILLION EQUIVALENT)

TO THE REPUBLIC OF BENIN

AND ON A

CREDIT

IN THE AMOUNT OF SDR 4.70 MILLION
(US$7 MILLION EQUIVALENT)

TO THE REPUBLIC OF SENEGAL

FOR THE

WEST AND CENTRAL AFRICA AIR TRANSPORT SAFETY AND SECURITY PROGRAM

June 18, 2013

Transport Sector
Country Department AFCF1
Africa Regional Office

CURRENCY EQUIVALENTS

(Exchange Rate Effective April 30, 2013)

Currency Unit = FCFA (XOF)
SDR 1.00 = US$ 1.509240
US$ 1.00 = FCFA 498.16

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| ADS | Senegal Airport, *Aéroport du Senegal* |
| APL | Adaptable Program Loan |
| ANAC | National Civil Aviation Agency, Ag*ence Nationale de l'Aviation Civile (Benin)* |
| ANACIM | National Civil Aviation and Meteorology Agency, *Agence Nationale de l'Aviation Civile et de la Météorologie (Sénégal)* |
| AVSEC | Aviation Security |
| BEA | Accident Investigation Office, *Bureau Enquêtes Accidents* |
| CAA | Civil Aviation Authority, *Autorité de l'Aviation Civile* |
| CEMPA | Medical Center for Aviation Personnel, *Centre d'Expertise Médicale du Personnel Aéronautique* |
| CPPR | Country Portfolio Performance Review |
| DGTAIA | General Directorate of Air Transport and Aeronautical Infrastructure, *Direction Générale des Transports Aériens et des Infrastructures Aéronautiques* |
| DNCMP | National Directorate of Procurement Control, *Direction Nationale du Contrôle des Marchés publics(Benin)* |
| DPL | Development Policy Lending |
| ECOWAS | Economic Community for West and Central Africa |
| EOP | End of project |
| ESMP | Environmental and social management plan |
| FAA | Federal Aviation Administration |
| FCFA | African Financial Community Franc, *Franc de la Communauté Financière Africaine* |
| FMS | Financial Management Specialist |
| GSD | General Services Department |
| HAALSS | High Authority of the Léopold Sédar Senghor Airport, *Haute Autorité de l'Aéroport Léopold Sédar Senghor* |
| IASA | International Aviation Safety Assessment |
| ICAO | International Civil Aviation Organization |
| ICR | Implementation completion report |
| ICVM | ICAO Coordinated Validation Missions |

| | |
|---|---|
| IDA | International Development Authority |
| IDA 15 | IDA'S 15th replenishment |
| IDF | International Development Fund |
| KPI | Key Performance Indicators |
| LSS | Leopold Sédar Senghor Airport, *Aéroport Leopold Sedar Senghor* |
| M&E | Monitoring and Evaluation |
| MTR | Mid-Term Review |
| NGO | Non-Governmental organization |
| PAD | Project Appraisal Document |
| PDO | Project Development Objectives |
| PIU | Project Implementation Unit |
| PNSAC | National Civil Aviation Security Plan, *Programme National de Sûreté de l'Aviation Civile* |
| QER | Quality Enhancement Review |
| RIAS | Regional Integration Assistance Strategy |
| SAR | Search and Rescue Center, *Centre de Recherche et de Sauvetage* |
| SRP | Standards and Recommended Practices |
| SSA | Sub Saharan Africa |
| TSA | Transport Security Administration |
| TTL | Task Team Leader |
| UCP | Program Coordination Unit, *Unité de Coordination du Projet,* |
| WCA | West and Central Africa |
| WCAATSSP | West and Central Africa Air Transport Safety and Security Program |
| YD | Yamoussoukro Decision |

| | |
|---|---|
| Vice President: | Makhtar Diop |
| Regional Integration Director: | Colin Bruce |
| Sector Manager: | Supee Teravaninthorn |
| Project Team Leader: | Ibou Diouf |
| ICR Team Leader/Primary Author: | Peter Ngwa Taniform |

**Benin and Senegal**
West and Central Africa Air Transport Safety and Security Program

**CONTENTS**


Data Sheet
- A. Basic Information
- B. Key Dates
- C. Ratings Summary
- D. Sector and Theme Codes
- E. Bank Staff
- F. Results Framework Analysis
- G. Ratings of Project Performance in ISRs
- H. Restructuring
- I. Disbursement Graph

1. Project Context, Development Objectives and Design ..... 1
2. Key Factors Affecting Implementation and Outcomes ..... 6
3. Assessment of Outcomes ..... 10
4. Assessment of Risk to Development Outcome ..... 16
5. Assessment of Bank and Borrower Performance ..... 17
6. Lessons Learned ..... 19
7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners ..... 21

Annex 1. Project Costs and Financing ..... 22
Annex 2. Outputs by Component ..... 23
Annex 3. Economic and Financial Analysis ..... 27
Annex 4. Bank Lending and Implementation Support/Supervision Processes ..... 28
Annex 5. Beneficiary Survey Results ..... 30
Annex 6. Stakeholder Workshop Report and Results ..... 31
Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR ..... 32
Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders ..... 43
Annex 9. List of Supporting Documents ..... 44

MAP

| A. Basic Information | | | |
|---|---|---|---|
| Country: | Africa | Project Name: | 3A W/C Africa Air Transport Phase II-B |
| Project ID: | P108583 | L/C/TF Number(s): | IDA-45380,IDA-H4400 |
| ICR Date: | 06/18/2013 | ICR Type: | Core ICR |
| Lending Instrument: | APL | Borrower: | GOVERNMENT OF BENIN AND SENEGAL |
| Original Total Commitment: | XDR 10.80M | Disbursed Amount: | XDR 7.50M |
| Revised Amount: | XDR 10.80M | | |
| **Environmental Category: C** | | | |
| **Implementing Agencies:**<br>Civil Aviation of Benin<br>Civil aviation of Senegal | | | |
| **Cofinanciers and Other External Partners:** | | | |

| B. Key Dates | | | | |
|---|---|---|---|---|
| **Process** | **Date** | **Process** | **Original Date** | **Revised / Actual Date(s)** |
| Concept Review: | 01/08/2008 | Effectiveness: | 08/11/2009 | 12/09/2009 |
| Appraisal: | 08/25/2008 | Restructuring(s): | | |
| Approval: | 02/25/2009 | Mid-term Review: | 05/09/2011 | 06/17/2011 |
| | | Closing: | 12/31/2012 | 12/31/2012 |

| C. Ratings Summary | |
|---|---|
| **C.1 Performance Rating by ICR** | |
| Outcomes: | Moderately Unsatisfactory |
| Risk to Development Outcome: | Substantial |
| Bank Performance: | Moderately Satisfactory |
| Borrower Performance: | Moderately Unsatisfactory |

| C.2 Detailed Ratings of Bank and Borrower Performance (by ICR) | | | |
|---|---|---|---|
| **Bank** | **Ratings** | **Borrower** | **Ratings** |
| Quality at Entry: | Moderately Satisfactory | Government: | Moderately Unsatisfactory |
| Quality of Supervision: | Moderately Satisfactory | Implementing Agency/Agencies: | Moderately Satisfactory |
| **Overall Bank** | Moderately Satisfactory | **Overall Borrower** | Moderately |

| | | | |
|---|---|---|---|
| **Performance:** | | **Performance:** | Unsatisfactory |

| **C.3 Quality at Entry and Implementation Performance Indicators** | | | |
|---|---|---|---|
| **Implementation Performance** | **Indicators** | **QAG Assessments (if any)** | **Rating** |
| Potential Problem Project at any time (Yes/No): | No | Quality at Entry (QEA): | None |
| Problem Project at any time (Yes/No): | Yes | Quality of Supervision (QSA): | None |
| DO rating before Closing/Inactive status: | Moderately Satisfactory | | |

| **D. Sector and Theme Codes** | | |
|---|---|---|
| | **Original** | **Actual** |
| **Sector Code (as % of total Bank financing)** | | |
| Aviation | 18 | 18 |
| Public administration- Transportation | 82 | 82 |

| | | |
|---|---|---|
| **Theme Code (as % of total Bank financing)** | | |
| Regional integration | 30 | 30 |
| Trade facilitation and market access | 70 | 70 |

| **E. Bank Staff** | | |
|---|---|---|
| **Positions** | **At ICR** | **At Approval** |
| Vice President: | Makhtar Diop | Obiageli Katryn Ezekwesili |
| Regional Director: | Colin Bruce | Richard Scobey (Acting) |
| .Country Director | Vera Songwe / Madani M. Tall | Mark D. Tomlinson |
| Sector Manager: | Supee Teravaninthorn | C. Sanjivi Rajasingham |
| Project Team Leader: | Ibou Diouf | Pierre A. Pozzo di Borgo |
| ICR Team Leader: | Peter Ngwa Taniform | |
| ICR Primary Author: | Peter Ngwa Taniform | |

**F. Results Framework Analysis**

**Project Development Objectives (**from Project Appraisal Document**)**
The Project Development Objectives are as follows: (i) improve national Civil Aviation Authorities' (CAAs') compliance with International Civil Aviation Organization's (ICAO's) safety standards, (ii) increase national CAA's compliance with ICAO's security standards, and (iii) enhance main international airports' compliance with ICAO's security standards.

**Revised Project Development Objectives (as approved by original approving authority)**
The Project Development Objectives were not revised.

**(a) PDO Indicator(s)**

| Indicator | Baseline Value | Original Target Values (from approval documents) | Formally Revised Target Values | Actual Value Achieved at Completion or Target Years |
|---|---|---|---|---|
| **Indicator 1:** | Improve CAA's compliance rates with ICAO's safety standards | | | |
| Value quantitative or Qualitative) | (a) Senegal: 58%<br>(b) Benin: 20% | (a) Senegal: 85%<br>(b) Benin >60% | | (a) Senegal: 66.5%<br>(b) Benin: 43% |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved=78%<br>Benin: achieved=72%<br>Based on internal Audit following guidelines for improvement of the project given by the ICAO on its last visit. | | | |
| **Indicator 2:** | CAA's compliance rates with ICAO's security standards | | | |
| Value quantitative or Qualitative) | (a) Senegal: 28%.<br>(b) Benin: 32% | (a) Senegal >80%<br>(b)Benin: 70% | | (a) Senegal: 81.6%<br>(b) Benin: 32% |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved=102%<br>Benin: achieved=0%<br>Based on internal Audit following the guidelines for improvement of the project given by the ICAO on its last visit. | | | |
| **Indicator 3:** | Percentage of embarking passengers stopped in possession of illegal objects as defined by ICAO, by private security personnel mandated by airlines or airport authorities, or/and by the National Police | | | |
| Value quantitative or Qualitative) | (a) Senegal: 4%<br>(b) Benin: 2.6% | (a) Senegal <2%<br>(b) Benin <1% | | (a) Senegal: 0.00%<br>(b) Benin: 0.74% |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved= 100%<br>Benin: achieved=100%<br>Baseline value revised from 0.3 to 2.6 (see page 32 of the PAD (footnote 13) for the reason of percentage change of the baseline data). | | | |

**(b) Intermediate Outcome Indicator(s)**

| Indicator | Baseline Value | Original Target Values (from approval documents) | Formally Revised Target Values | Actual Value Achieved at Completion or Target Years |
|---|---|---|---|---|
| **Indicator 1 :** | Proportion of technical personnel of the CAA complying with ICAO safety standards. | | | |
| Value (quantitative or Qualitative) | (a) Senegal: 39%<br>(b) Benin: 1% | (a) Senegal: 85%<br>(b) Benin > 50% | | (a) Senegal: 70%<br>(b) Benin: 11% |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved= 82%<br>Benin: achieved= 22%<br>Based on an independent audit. | | | |
| **Indicator 2:** | CAA's Total budget amount. (in FCFA billions) | | | |
| Value (quantitative or Qualitative) | (a) Senegal: 3.42<br>(b) Benin: 1.20 | (a) Senegal: 4.76<br>(b) Benin: 1.40 | | (a) Senegal: 6.9<br>(b) Benin: 2.98 |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved= 145%<br>Benin: achieved= 213%<br>Based on Internal audits following the guidelines for improvement of the project given by ICAO on its last visit. | | | |
| **Indicator 3:** | Proportion of security inspectors employed by the CAA having received, during the last three years security training compliant with ICAO standards. | | | |
| Value (quantitative or Qualitative) | (a) Senegal: 45%<br>(b) Benin: 20% | (a) Senegal: 80%<br>(b) Benin: 60% | | (a) Senegal: 100%<br>(b) Benin: 65% |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved= 125%<br>Benin: achieved= 108% | | | |
| **Indicator 4:** | Level of CAA and other entities' budget dedicated to security (in FCFA billions). | | | |
| Value (quantitative or Qualitative) | (a) Senegal: 2.00<br>(b) Benin: 0.286 | (a) Senegal: 3.30<br>(b) Benin: 0.378 | | (a) Senegal: 3.40<br>(b) Benin: 1.89 |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved=103%<br>Benin: achieved=500%<br>Achieved. | | | |
| **Indicator 5:** | Proportion of airport security personnel with at least three or more years of experience. | | | |

| | | | | |
|---|---|---|---|---|
| Value (quantitative or Qualitative) | (a) Senegal: 72%<br>(b) Benin: 37% | (a) Senegal >80%<br>(b) Benin >50% | | (a) Senegal: 85%<br>(b) Benin: 57% |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved=106%<br>Benin: achieved=114%<br>Achieved. | | | |
| **Indicator 6:** | Number of serious problems recorded during airport crisis simulation exercises | | | |
| Value (quantitative or Qualitative) | Senegal: 5<br>Benin: N/A | Senegal: <3<br>Benin: <3 | | Senegal: 3<br>Benin: NA |
| Date achieved | 02/03/2009 | 12/31/2012 | | 12/31/2012 |
| Comments (incl. % achievement) | Senegal: achieved=100%<br>Benin: achieved=Not Available<br>Simulation exercise for Benin to determine this value was not carried out by the time of this report. | | | |

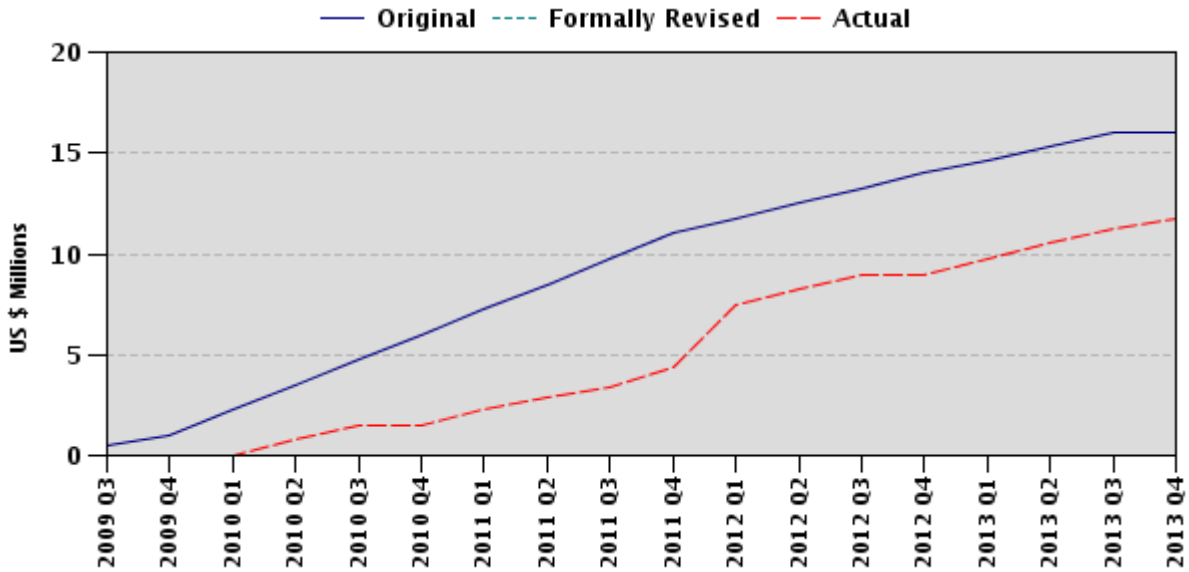
**G. Ratings of Project Performance in ISRs**

| No. | Date ISR Archived | DO | IP | Actual Disbursements (USD millions) |
|---|---|---|---|---|
| 1 | 11/30/2009 | Moderately Unsatisfactory | Moderately Unsatisfactory | 0.67 |
| 2 | 03/09/2010 | Moderately Satisfactory | Moderately Satisfactory | 1.46 |
| 3 | 09/04/2010 | Moderately Satisfactory | Moderately Satisfactory | 1.65 |
| 4 | 03/27/2011 | Moderately Satisfactory | Moderately Satisfactory | 3.40 |
| 5 | 10/09/2011 | Moderately Satisfactory | Moderately Unsatisfactory | 7.50 |
| 6 | 06/23/2012 | Moderately Satisfactory | Moderately Satisfactory | 9.02 |
| 7 | 12/31/2012 | Moderately Unsatisfactory | Moderately Unsatisfactory | 10.58 |

**H. Restructuring (if any)**

Not Applicable

## I. Disbursement Profile



## 1. Project Context, Development Objectives and Design

### 1.1 Context at Appraisal

1. **Country and sector background.** At the time of appraisal, air transport accounted for up to 40 percent of world trade by value. In Africa, air transport plays a significant role in the economic development of countries. Poor road, port and railway infrastructure often constrains the rapid and efficient movements of high value goods earmarked for export. Air transport holds both a potential for growth and a role for the economic development of the continent.

2. In order to address these shortcomings, African Ministers responsible for civil aviation adopted on November 14, 1999, the Yamoussoukro Decision (YD) on the liberalization of access to air transport markets in Africa. It is enforceable continent-wide since it was endorsed by the African Union Heads of State under the African Union treaty framework in 2000. The Decision's primary aim is to liberalize intra-African air transport. In order to achieve this goal without compromising safety and security standards, the region's Civil Aviation and Airport Authorities (CAAs) must be capable to collectively reach International Civil Aviation Organization's (ICAO) standards in these areas. ICAO's Standards and Recommended Practices (SRP) are contained in most of the Annexes of the Chicago Convention on International Civil Aviation in the case of aviation safety, and Annexes 9 and 17 in the case of aviation security and facilitation.

3. The main safety[1] issues facing West and Central Africa's (WCA) air transport sector included the lack of a compliant and enabling legal framework as well as a critical shortage in qualified inspection manpower. In WCA, fewer than six countries[2] out of 23 were considered to have the required level of Civil Aviation Administration capacities. The situation resulted in the presence of unqualified operators. Their operations distorted the air transport market preventing access to the world market for local African airlines and contributed largely to WCA high accident rates. According to ICAO's statistics, the WCA region air transport accident rate was thirty times higher than of the United States during the past years[3].

4. In terms of security[4], less than five of WCA's numerous international airports were compliant with world standards. Indeed, most WCA international airports lacked basic access control to runways and terminals as well as adequate security procedures. This situation endangered WCA's air transport network security, resulting in sky-high insurance costs and high internal security costs for airlines. Moreover, in a post September 11, 2001 environment, WCA has been further isolated from main air trade flows.

5. **Rationale for Bank assistance.** The Bank was instrumental in the adoption of the YD. It later supported through successive regional International Development Fund (IDF) grants, the

[1] ICAO Definition of Air Transport Safety: *A condition in which the risk of harm or damage is limited to an acceptable level.*
[2] Burkina Faso, Cameroon, Guinea , Benin , Mali and Senegal
[3] In 2005 alone, out of 35 fatal accidents and the 1,269 related deaths worldwide, Sub-Saharan Africa (SSA) accounted for 13 of these accidents and 374 of these deaths or 37 percent and 29 percent of the World's total, respectively. These figures compare to SSA's share of the world's total departure of only 4.5 percent.
[4] ICAO Definition Air Transport Security: *A combination of measures and human and material resources intended to safeguard civil aviation against acts of unlawful interference.*

adoption of common policies in safety and air transport regulations in WCA. The Bank along with regional institutions, as well as other international lenders had to acknowledge that most WCA states did not and would not, in the foreseeable future, have the financial and human resources to comply with either United States' or International ICAO's safety and security requirements, unless external assistance was provided to them. Moreover, even when a State did prove its ability to comply with ICAO's requirements, its capacity to maintain compliance and retain qualified personnel remained questionable. This can be illustrated by the Ghanaian CAA loss of its US Federal Aviation Administration (FAA) International Aviation Safety Assessment (IASA) category I certification in April of 2005. Accordingly, the Bank in coordination with regional institutions and other international lenders, adopted a comprehensive approach to globally address these problems by supporting: (a) the establishment of regional mechanisms to oversee safety and security standards in member countries, and (b) the financing of national safety and security support programs to enhance local CAA's ability to comply with ICAO's standards.

6. In spite of the long term goal of establishing regional[5] aviation safety agencies in WCA, the enforcement of aviation safety and security at the time of appraisal remained in the foreseeable future, a national endeavor if only for legal reasons[6]. It was critical that known shortcomings affecting national CAAs aviation safety and security oversight capacity, as well as airport security personnel and infrastructure be addressed at a national level, because regional aviation safety and security reflects each country's achievements in these areas. This critical linkage between national and regional aviation safety and security was confirmed by a review of passenger traffic flows that showed that in 2006, more than 90 percent of all passengers in Senegal and Benin were regionally and internationally bound. This approach was in line with the Regional Integration Assistance Strategy (RIAS) for West Africa, adopted on August 2, 2001, and for Central Africa, adopted on February 6, 2003, as well as the Africa Action Plan adopted in September 6, 2005, in as much as it promotes, through regional integration, regional exchanges and economic growth.

7. In light of the above, the West and Central Africa Air Transport Safety and Security Program (WCAATSSP) met all of the Bank's regional eligibility criteria as it: (a) involved more than two countries; (b) included economic and social benefits by enhancing carriers services and lower transport costs that promoted national and regional tourism and trade growth; (c) supported ongoing regional initiatives to enhance aviation security and safety levels within WCA countries which, in turn, enhanced the implementation of the YD, and (d) funded national activities which had clear externalities, as the overall WCA countries' air safety and security depend on each country's achievement in these areas and most WCA countries' air traffic is international, with a significant intra-regional market share.

8. **Lending instrument.** At appraisal, since the readiness and needs of the 23 WCA countries that were to receive support from the program varied significantly, it was decided to

[5] Regional as used in this paragraph refers to the Economic Community for West and Central Africa

[6] According to the 1944 Chicago convention, aviation regulation remains a sovereign activity. All signatory states (191) to the Chicago Convention are bound to ICAO Standards and Recommended Practices, and must comply in terms of safety oversight. If they cannot, they can choose to delegate. Until this approach is altered, air safety and security will continue to be managed at national levels.

select a horizontal Adaptable Program Loan (APL) instrument to allow for a phased long-term development program. Countries were to join the program under three successive phases using similar eligibility criteria. These criteria were: (a) the creation of an administratively and financially autonomous national civil aviation agency, (b) the use of aviation security and/or safety taxes for the purpose of financing its civil aviation agency and, (c) the attainment of definite percentage of compliance level with ICAO's standards in the areas of aviation security and safety, as well as improved airport security. The program was financed through the IDA program for regional projects under the IDA's 15th replenishment (IDA 15), with country IDA allocations funding one third of its cost and regional IDA funding financing two thirds of its costs in recognition of the positive externalities of the program.

9. Under Phase I of the program, approved by the Board in April 2006, four countries; namely Burkina Faso, Cameroon, Guinea and Mali, received a total of US$33.57 million in grant and credit financing. Phase II-A of the program was initiated with Nigeria following Board's approval in October 2007, with a Credit amounting US$46.65 million. Phase II-B of the program included Benin and Senegal, focus of this review, for an estimated total investment cost of US$16.00 million. Phase III to include: Mauritania, the Republic of Congo, Equatorial Guinea, Cote d'Ivoire, Ghana, Niger, Guinea Bissau, Liberia, Sierra Leone, Chad, Central African Republic, Sao Tomé & Principe, and Togo for an estimated investment cost of US$55.28 million, was never triggered.

### 1.2 Original Project Development Objectives (PDO) and Key Indicators

10. **The PDO[7].** As stated in the Project Appraisal Document (PAD) which were applicable to all program's phases, and therefore to Benin and Senegal, the PDO were to: (a) improve national CAAs compliance with ICAO safety standards, (b) Increase CAA's compliance with ICAO's security standards, and (c) Enhance main international airports' compliance with ICAO's security standards.

11. **Key Indicators of Performance.** In order to measure attainment of these PDOs, the following key outcome indicators and target values were used for all participating countries:

[7] PDO as stated in the Financing Agreement: *"The objective of the Project is to support the Recipient in improving compliance of its civil aviation sector and its international airports with International Civil Aviation Organization (ICAO) safety and security standards"*

**Table 1: Indicators at Appraisal**

| Key Performance Indicators | Main Project Output Indicators |
|---|---|
| 1. Improve CAA's compliance with ICAO's safety standards. | • Compliance rate with ICAO aggregate safety standards based on ICAO's audits, with all actions in their Corrective Action Plan completed;<br>• Percentage of technical personnel in compliance with ICAO's safety standards; and Total CAA's budget amount. |
| 2. Improve CAA's compliance with ICAO's security standards. | • Compliance rate with ICAO's aggregate security standards based on ICAO's audit, with all recommendations addressed;<br>• Percentage of CAA's ICAO's certified security inspectors trained during the last three years;<br>• Level of CAA's budget dedicated to security; and<br>• National Security Plan compliance with ICAO's standards. |
| 3. Enhance main international airports' compliance with ICAO's security standards. | • Percentage of airport security personnel with three or more years of experience;<br>• Number of serious problems recorded during annual airport crisis exercises; and<br>• Percentage of embarking passengers stopped in possession of illegal objects, as defined by the ICAO, by airlines security personnel or the police. |

### 1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification.

12. The PDO was not revised. Key Performance Indicators (KPI) were similarly left unchanged. The most critically examined indicators during project implementation, were those related to the compliance rate with ICAO's aggregate security standards based on past ICAO's audits in both countries.

### 1.4 Main Beneficiaries:

13. The PAD did not explicitly identify project beneficiaries. However, it infers at design stage that the CAA's and airport authorities of countries, airlines and passengers were expected to benefit directly from the outcomes of the project. More specifically through the: (a) improvement of national CAAs compliance with ICAO's safety standards, (b) increase of CAA's compliance with ICAO's security standards, in both cases, to achieve international average with

all actions in their Corrective Action Plan contained in the respective audits completed, and (c) enhancement of main international airports' compliance with ICAO's security standards.

### 1.5 Original Components (as approved)

14. The project consisted of three components at appraisal for a total amount of US$16 million (US$9 million for Benin and US$7 million equivalent for Senegal). They were clearly linked to the PDOs and key indicators and built upon the work carried out under Phase I. These components[8] were:

#### (a) Component 1: Aviation safety improvements (US$7.6 million)

***For Benin*** *(US$3.9 million):*

- Equipment and training for "Search and Rescue" activities;
- Replacement of basic communication and inspections equipment (e.g., very high frequency (VHF) radios, telephone network within the airport area, IT network at headquarters, etc.);
- Purchase of technical library equipment (e.g., relevant ICAO's manuals, directives, online library, training materials, etc.);
- Training of civil aviation staff in the area of civil aviation safety oversight;
- Dissemination and translation (in English) of updated regulations; and
- Personnel training based on a prior needs assessment study.

***For Senegal*** *(US$3.7 million):*

- Medical equipment for the National Civil Aviation (Ag*ence Nationale de l'Aviation Civile, ANACS*);
- Equipment and training for "Search and Rescue" activities;
- Setting-up of an independent office for aircraft incidents and accidents investigation;
- Purchase of technical library equipment (e.g., relevant ICAO's manuals, directives, online library, training materials, etc.);
- Training of civil aviation staff in the area of civil aviation safety oversight;
- Dissemination and translation (in English) of updated regulations; and
- Personnel training based on a prior needs assessment study.

#### (b) Component 2: Aviation security improvements (USS6.2 million)

***For Benin*** *(US$3.8 million):*

- Improvement of airport security through the acquisition of passengers and cargo x-ray machines as well as an explosive material tracer;
- Acquisition of airport personnel identification equipment, security cameras, communications systems, and inspection equipment;
- Training of civil aviation staff in the area of civil aviation security;
- Training of airport security personnel.

[8] As stated in the PAD

***For Senegal*** *(US$2.4 million):*

- Updating of technical regulation;
- Installation of an access control system at the airport;
- Training of airport security personnel;
- Acquisition of training equipments, communication equipments, and patrol vehicles; and
- Review of the institutional framework and fees allocation among civil aviation entities.

**(c) Component 3: Management and governance oversight of the national component of the program (US$4.2 million)**

- ***For Benin*** *(US$2.3 million) and for* ***Senegal*** *(US$1.9 million).* This activity was meant to encompass the financing of national program component operating costs covering CAA program dedicated personnel salaries for fiduciary management and technical management, office rentals and expenses as well as *inter alia* annual fiduciary audits and day-to-day management.

### 1.6 Revised Components

15. No changes were made to the project components throughout its duration

### 1.7 Other significant changes

16. During the Mid-Term Review (MTR) conducted in June and July 2011, the project implementation was assessed and the results framework for the project was updated based on the findings of the MTR. Some activities were refined or added after the MTR to allow a better measurement of the achievements, and to align more closely with the results framework. Most of these activities were small in size and based on the implementing agencies' capacity, availability of funds and relevance to PDO. These additional activities were implemented within the scope of the project as described in the Financing Agreement, so no restructuring of the project was needed.

## 2. Key Factors Affecting Implementation and Outcomes

### 2.1 Project Preparation, Design and Quality at Entry

17. Project preparation was driven by the urgent reality to establish a compliant aviation safety and security oversight regime in Africa, especially in WCA, which were poor by international standards and which continued to be inefficient, expensive and unreliable. The main safety issues facing WCA's air transport sector at the time included the lack of a compliant and enabling legal framework, as well as critical shortage in qualified inspection manpower. According to ICAO's statistics then, the WCA region air transport accident rate was thirty times higher than that of the United States.

18. Overall the series of operations addressing regional aviation security and safety program in the Africa region were pioneering in their nature, and there were few precedents in the Bank that could be used during the project design phase. However, in the case of the project, its

preparation was facilitated as it benefitted from findings from the implementation of the APL1 [and APL2A] [9] in its design. More specifically, project preparation and design made use of the analysis of previous projects that preceded it in the APL series, and from a thorough assessment of the lessons learned under APL 1, the YD and ICAO audits. Lessons learned for project design included: (a) reflection in the project design of the intent, interest, and priorities of the beneficiaries and stakeholders so as to ensure their ownership and particularly their support to the accompanying reform processes; (b) coordination with other donors in order to ensure consistency in the goals and expected outcomes of all planned and ongoing programs within the same sector; and (c) emphasis on capacity building for the targeted agencies.

19. A feature of the project design was the use of several effectiveness conditions. These set of effectiveness conditions did not seem to take into account the particularity and responsiveness of each country at the time. Consequently, expectations were too optimistic with regard to their attainment. For example, while Benin had a fast declaration of effectiveness, Senegal had two extensions of effectiveness deadline and managed to fulfill this barely a week before the expiration of the second effectiveness deadline. The seven month delay in the effectiveness of the Senegalese credit agreement resulted in significant delays in the implementation of key project activities, which created a disbursement lag of about eight months and which were never re-absorbed throughout the life of the project. Furthermore, the initial implementation set up in each country had a direct implication on the overall performance of the project, greatly affecting the status of the project throughout as well. Beside the effectiveness delay in Senegal, the performance of the project was equally penalized by Benin's poor implementation capacity.

20. The project design was simple and innovative. It was responsive to critical aviation safety and security requirements and had room for flexibility which allowed for the modification of project activities without having to modify the PDO. The project design paid close attention to an effectively measurable results framework. Its objectives and design remain highly relevant today. Nonetheless, the project implementation timeframe, failed to integrate the challenges linked with institutional and policy reforms which usually lasts very long, and often require a substantial lead time to get a reform/policy underway.

21. The PAD assessed key potential risks that could jeopardize implementation. In retrospect, the mitigating measures to prevent these risks were not effective enough, as two main risks identified and rated as Moderate did materialize. These included; the underestimation of the implementation capacity of the program's activities by CAAs and the governance risks especially as related to procurement.

### 2.2 Implementation

22. The project had three distinct phases: (a) the period before the MTR during which there were overly optimistic evaluation of KPIs in both countries; (b) a subsequent 10-month phase of uncertainty during which there were implementation bottlenecks in Senegal and procurement delays in Benin; and (c) a final phase where performance progressively improved for Senegal but

[9] Adaptable Program Loan (APL): *instrument to allow for a phased long-term development program APL 1 (included; Burkina Faso, Cameroon, Guinea and Mali) and 2A included Nigeria.*

deteriorated for Benin. The MTR recommendations were implemented in both Benin and Senegal with some delays in their implementation. Evaluation of project performance and implementation status became complex given the correlation of overall project performance to each country's performance. When one country performs well and the other poorly, overall project performance is greatly influenced by the poor performing country's rating.

23. A major issue that impacted the implementation of the Senegal's component was the decision in mid-2011 by the Government to cancel the procurement of the video surveillance equipment for the Leopold Sédar Senghor Airport (*Aéroport Leopold Sédar Senghor LSS*), which at that time, was ready to disburse about 20 percent of the credit amount. This decision was overturned a year later by the new Government that took office. Implementation was equally affected by the fact that the Government took a long time to finalize arrangements related to the management of the aeronautic medical center, and the funding and procurement of works to rehabilitate the buildings that would house the Aeronautic medical center and the Search and rescue center.

24. In Benin, even though implementation and disbursements were initially Satisfactory, by mid-2010, the Benin component was negatively impacted by the slow national procurement processes which resulted in significant delays in the implementation of key project activities. The slow implementation of the training plan and the preparation of the airport crisis simulation exercise, as well as the persistence of the Project Implementation Unit (PIU) in pushing unjustified single-source contracts only resulted in prolonged procurement processes. Delays were aggravated by the two complaints registered in the procurement process of key equipment to be purchased under the project and which were essential to the attainment of PDOs.

25. Looking back, project implementation seemed to consistently face challenges. This resulted in an overall impression that many elements could have been better implemented or handled. Implementation was almost never rated as satisfactory after the MTR in June/July 2011 (Moderately Satisfactory, Moderately Unsatisfactory or Unsatisfactory depending on the issues). Globally, the project fell short of its development objectives and the attainment of KPIs, even though in the end, it seemed to have accomplished more activities than what was initially projected. This was because activities were added after MTR to make up for the cost savings that resulted from over-estimation of most initial project's activities in both countries.

### 2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization

26. The M&E system was design at the time of project preparation based on the findings of the various ICAO audits that were needed to improve aviation safety and security in Senegal and Benin. The KPIs for the project were for the most part measurable and meaningful. Initially the evaluation of the KPIs was too optimistic vs. achievements. This was more of an implementation constraint as the design was clear on what should be measured and how it should be measured. These gradually became inconsistent when subsequent ICAO audits were carried out to follow up the progress of KPIs after MTR. Given the unpredictability, and lack of coordination between the ICAO and national audit missions, the PIUs did not always have in a timely manner the real values of these indicators.

27. The self-evaluation from the CAAs which were more vague and difficult to follow, were not reliable and led to inconsistent data for KPIs. As a result, these indicators were not closely evaluated and monitored during the course of implementation as per ICAOs audits as noted by the Bank team during several supervision missions. At the end of the project, it became imperative to revise the self-evaluated indicators as per ICAOs audits in order to fully reflect real project achievements. This was not possible for both countries and therefore made it difficult to actually measure real achievements and compliance at project closure. An independent certified ICAO auditor was recruited to revise Senegal's achievements while Benin relied solely on the evaluation carried out by the Economic Community for West and Central Africa (ECOWAS). The achievements recorded in the Result framework are those compared to previous ICAO audits and may improve after such audit is carried out after project completion[10]. The project M&E design fell short to capture the shortcomings. One weak area for M&E as well was the lack of a measureable indicator for the social impacts of the project, even though this was considered secondary at design; the main being regulatory.

### 2.4 Safeguard and Fiduciary Compliance

28. **Environment.** At the time of appraisal no sensitive environmental issues were identified and none of the policies were triggered. That's because the proposed investments essentially consisted in the acquisition of basic communication and inspection equipment and the development of safety and security programs which had no direct environmental or social safeguard implications.

29. **Financial Management (FM).** Financial management was mostly rated satisfactory throughout project implementation. This could be attributed to the due diligence accorded to this during appraisal, which consisted of strengthening the financial management team of each PIU with a Financial Management Specialist (FMS) whose terms of reference included a clear obligation to train counterparts' staff in order to strengthen their capacity.

30. **Procurement.** At project appraisal, all procurement arrangements including procurement plan and procurement methods were discussed and agreed consistent with the Bank's guidelines. Procurement faced major challenges throughout project implementation for both countries. Initial difficulties in the preparation of terms of references and technical specifications of key project activities were common for both Senegal and Benin components of the project. The situation improved through experience sharing with countries of APL-1[11]. At project closure, procurement performance was rated "Moderately Satisfactory" for both countries.

31. **Benin.** Procurement was affected by: (a) long delays (up to 10 months) in approval of tender documents by the National Directorate of Procurement Control (*Direction Nationale du Contrôle des Marchés publics, DNCMP Benin)* (the Government entity in charge of national procurement); (b) continued delays in the approval of contracts and procurement documents by the Ministry of Transport and the Ministry of Finance; and (c) the weak capacity of PIU,

[10] It is recommended that each country carries out a follow-up ICAO audit to effectively measure the impact of the project since at the time of completion this had not been done.
[11] Burkina Faso, Cameroon, Guinea, Mali and Nigeria.

resulting in poor quality of procurement documents which were often not up to standard when submitted to IDA. This was evidenced also by deficiencies in procurement planning and monitoring; procurement cycle management; and procurement record keeping. The lack of proactivity in addressing procurement delays by the PIU and two complaints registered in the procurement process of key equipment which were essential to the attainment of PDOs were other factors that impeded procurement performance. The systemic slow processing of procurement documents was brought to the Governments' attention and pointed out during Country Portfolio Performance Review (CPPR) meetings which resulted in a slight improvement of the national procurement processing timelines.

32. **Senegal.** Even though the procurement performance of the PIU was mostly rated satisfactory, procurement process was negatively impacted by interference of government officials (cf. paragraph 23). Consequently, procurement of equipment to be purchased and of works to refurbish the buildings that would house the Aeronautic medical and the search and rescue centers, were delayed by the laborious national procurement procedures.

### 2.5 Post-completion Operation/Next Phase

33. Extensive training program offered by the project, for civil aviation staff in Safety and Security, yielded positive results and drastically improved both Senegal and Benin's compliance rate with ICAO standards. It is expected that this momentum generated in building staff capacity as well as the significant increases of financial resources dedicated to Safety and Security by both countries will help sustained project achievements and act as a better platform for future investments after project closing. If finally ratified, the revised Civil Aviation codes and key decrees on aviation for both countries initiated by the project will continue to serve as excellent tools in facilitating progress towards efficiency in the sector.

34. Given that aviation security and safety remains a major pre-occupation in determining the future and success of Africa's aviation industry, it will be necessary to re-think the design of a new package to address these critical needs taking into account the lessons learnt from previous projects. The Bank should equally consider strengthening its dialogue in the sector with other development partners and work at helping the continent toward a more meaningful and robust approach.

## 3. Assessment of Outcomes

### 3.1 Relevance of Objectives, Design and Implementation (HIGH)

35. The project design was relevant to the country's development priorities and their air transport safety and security needs. The project objectives were clear, relevant and important to improve regulatory oversight and in strengthening institutional management. The project components had a good linkage with the project objectives. The project also contributed to improving the compliance rate with respect to ICAO standards as per the audit report at project start. The project objectives were also in line with the WCAATSS priorities, which targeted the (a) improvement of national CAAs' compliance with ICAO's safety standards, (b) increase of

national CAA's compliance with ICAO's security standards, and (c) enhancement of the main international airports' compliance with ICAO's security standards.

### 3.2 Achievement of Project Development Objectives

36. On the basis of the assessment of what was achieved under the project against the specific project objectives described below, the overall achievement of the PDOs has been rated as Moderately Unsatisfactory.

37. What follows is a detailed assessment of the project's achievements against its specific objectives.

#### 3.2.1 Improve National Civil Aviation Authorities compliance with ICAO safety standards.

**(a) Senegal**

The Senegal component of the project has been rated Moderately Satisfactory for the following reasons.

38. First, although there was an improvement compared to before project situation, the registered ICAO safety compliance rate of Senegal CAA remains short of expectations. Indeed, the safety compliance rate as verified by an independent audit stands at 66.5 percent compared to a baseline of 58 percent and an end of project (EOP) target of 85 percent. The most critical weaknesses identified were: (a) the lack of enforcement of some technical procedures; (b) the insufficient number of qualified (certified by ICAO) human resources; and (c) the fact that some operational procedures were not formalized.

39. The above-mentioned improvement in the safety compliance rate of Senegal's civil aviation is largely attributable to the revision of the Civil Aviation Code supported by the project. In fact, the draft code which has been approved by experts was taken into account by the ICAO safety audit although its formal approval is in the process of being approved by the Government. This draft code so far, given its quality, has helped in inspiring current and future aviation projects.

40. Second, in terms of ICAO compliance of technical personnel involved in safety, the support provided under the project helped ensure that 70 percent of National Civil Aviation and Meteorology Agency (*ANACIM)* safety staffs possess standardized skills and knowledge to allow them to perform their duties in a way that is fully compliant with ICAO standards, compared to 39 percent in 2009. Although the end of project target of 85 percent was not achieved, this is substantial progress

41. More specifically, the project has trained a total of 188 civil aviation safety staffs: 118 from *ANACIM*, 67 from Senegal Airport (*Aéroport du Sénégal, ADS*), one from Leopold Sédar Senghor Airport Authority (*Haute Autorité de l'Aéroport Léopold Sédar Senghor HAALSS*) and two from the Search and Rescue Centre (SAR). Areas covered by the training program include: Navigation, Accident Investigation, Accident Prevention, Dangerous Merchandise, Search and Rescue, and Safety audits.

42. Third, the project supported the establishment of an aeronautical health center in Senegal which is being made operational. The center which was provided by the project with key medical equipment (equipment for cardiology, ophthalmology, radiology, and laboratory function) is expected to have a sub-regional coverage. That's because, until now, medical examination of flight crews in West Africa is performed in Europe and North Africa due to lack of such a center in the sub-region. The Government provided the building which houses the medical center and also the doctors and other medical staffs.

43. The SAR center which is a key element of the aviation safety chain was strengthened under the project. The Government rehabilitated the building which houses the center while the project provided office and computer equipment, vehicle equipped with telecommunication equipment and other key communication equipment. This has allowed the successful organization of a Search and Rescue Exercise to test the capabilities of the CAA in responding to accidents and crisis.

44. The Accident Investigation Office (*Bureau Enquêtes Accidents BEA*) which is another important ingredient of safety oversight has been established by decree on October 11, 2004. However, it is not operational due to lack of initial capacity in terms of staffing and technical equipment. The support planned under the project did not materialize due to delay in the establishment of the *BEA*.

45. Finally, the overall budget of *ANACIM* has substantially increased over the life of the project mainly as a result of a better recovery and allocation of aviation related taxes. The initial target of African Financial Community Franc, *Franc de la Communauté Financière Africaine FCFA*) 4.76 billion for 2012 was exceeded by 145 percent. The current annual average budget which is estimated at FCFA 6.9[12] billion (compared to a baseline value of FCFA 3.42 billion) is sufficient to allow *ANACIM* to perform its regulatory duties.

**(b) Benin**

The Benin component of the project has been rated Moderately Unsatisfactory for the following reasons.

46. First, the Benin CAA safety compliance rate remains significantly short of expectations as documented in the ICAO audit conducted in 2011. Although the registered compliance rate (43 percent) is an improvement compared to the 20 percent compliance rate recorded in 2009, the end of project target of 60 percent is unmet for the similar reasons as for Senegal (cf. paragraph 38). The safety compliance rate took into account the updated regulatory framework of the aviation sector contained in the revised Civil Aviation Code which is in the process of being approved by the Government.

47. Secondly, the compliance rate of safety technical staffs of *ANAC* remains extremely low in spite of the extensive training program implemented under the project: 11 percent compared to

[12] This value was revised by the government after the ICR mission from 5.05 to 6.9 FCFA billions.

an End of Project (EOP) target of 50 percent. This poor performance can be attributed to the inexistence of a coherent training plan, main factor of ICAO compliance.

48. Thirdly, due to the absence of a coherent training plan approved by ICAO, it is difficult to ascertain the relevance and the effectiveness of the training program implemented under the project.

49. On a more positive note, overall Safety budget of *ANAC*, largely exceeded target value of FCFA 1.40 billion. Indeed, the current budget is FCFA 2.98 billion (213 percent) compared to a baseline value of FCFA 1.20 billion.

50. Benin's SAR center was established and made operational under the project. This entailed the purchase of office and computer equipment, technical documents such as Search and Rescue maps, and telecommunication equipment. This achievement and the significant increase in safety budget however, fell short in complementing the Benin's component of the project to reach its target objectives.

**3.2.2 Improve CAAs compliance with ICAO security standards, and enhance main international airports' compliance with ICAO's security standards.**

**(a) Senegal**

The Senegal component has been rated Satisfactory for the following reasons.

51. First, the overall ICAO security compliance rate of Senegal CAA has met EOP target of 80 percent. It has significantly improved from 28 percent in 2009 to 81.6 percent by EOP. The National Airport security plan which has been approved by ICAO is being implemented. It currently serves as a basis for the certification of national security inspectors.

52. Secondly, the security standard of Senegal's main international airport (*LSS*) has improved with the help of the project with regard to ICAO standards. The risk of unauthorized entry in restricted areas of the airport has been minimized through the enhancement of the access control system of the airport, and the installation of a video-surveillance equipment to monitor activity in the vicinity of LSS's perimeter.

53. Thirdly, screening of passengers, their cabin luggage, checked-in luggage and cargo has been enhanced thanks to the use of state of the art X-ray equipment acquired under the project. Indeed, less than 2 percent of embarking passengers are in possession of illegal objects (as per ICAO's definition) compared to 4 percent in 2009. Such improved security screening at *LSS* international airport is equally attributable to the extensive training program provided by the project to airport security personnel, including police forces, *HAALSS*, and *ADS* staff. All of them have passed the competency requirements for their respective duties.

54. Fourthly the majority of airport security staff (85 percent) has now more than three or more years of experience. Most importantly, all of Senegal's ICAO certified security inspectors have received training within the last 3 years in view of maintaining and improving their expertise.

55. Finally, the share of the budget of the civil aviation authority earmarked for airport security stands at FCFA 3.4 billion compared to an EOP target of FCFA 3.3 billion and a baseline of FCFA 2.0 billion. This will ensure that *ANACIM* has the resources to maintain and renew security equipment acquired under the project.

**(b) Benin**

The Benin component has been rated Moderately Satisfactory for the following reasons.

56. First, the ICAO security compliance rate stands at 32 percent which corresponds to the 2008 baseline level. In fact, the latest ICAO security audit conducted in October 2011 uncovered several weaknesses mainly in the areas of: (a) personnel qualification and training; (b) issuance of certifications; (c) quality control; and (d) resolution of security problems. The Corrective Action plan of the 2011 security audit has been implemented by *ANAC*. Nonetheless, the compliance rate has remained at 32 percent against a target of 70 percent, pending confirmation of actual value from an independent ICAO audit to be carried out by the government of Benin after project closure.

57. Security oversight capacity has been reinforced thanks to the project. *ANAC* now has 14 ICAO certified security instructors, out of which 4 are specialized in imagery, 5 are national inspectors, 3 are Aviation Security (AVSEC) auditors, and 2 are AVSEC Professional managers. Furthermore, 65 percent of ICAO certified inspectors have been trained within the last 3 years compared to 20 percent in 2009.

58. As in Senegal, security screening at Cotonou Airport has remarkably improved thanks to the project financed equipment and training: It is estimated that less than 0.74 percent of embarking passengers are in possession of illegal objects compared to 2.6 percent in 2009.

59. Finally, Benin's National Airport security plan was approved by ICAO and the share of budget of the civil aviation authority earmarked for security largely exceeds end of project target; FCFA 1.89 billion (about 500 percent) as against a target of FCFA 0.378 billion.

**3.3 Efficiency**

60. The project contributed to achieving efficiency gains in the following areas: (a) efficiency improvements in the legal and regulatory frameworks of Senegal civil aviation seen in a modern civil aviation code. Even though still in the process of being approved by the government, it has helped in inspiring the design of ongoing and future aviation projects; (b) improved and updated civil aviation technical regulations for Senegal and Benin; (c) for Senegal, optimized distribution of airport fees between *ANACIM*, *HAALSS*, and *ADS* to finance key airport regulatory functions, and airport safety and security; and (d) improved efficiency of airport security monitoring operations in Dakar and Cotonou using state of the art equipment financed by the project.

### 3.4 Justification of Overall Outcome Rating

The rating is Moderately Unsatisfactory for the following reasons:

61. Although safety compliance rates are significantly below EOP targets, both countries have committed significant effort in assuming their safety oversight responsibilities as member states of ICAO and signatories of international conventions. In both countries, the regulatory framework is in place and there is an independent agency with increasing resources and capacity to ensure compliance with most of ICAO's regulations. Furthermore, the basic elements of SAR services are in place in both Senegal and Benin.

62. In terms of aviation security, both countries have established and are implementing credible security programs. It appears that all preventive measures are in place in both countries, in terms of airport security compliance.

63. The outcome indicators for the project as outlined in the approved results framework put more weight to ICAO audits recommendations. Those audits were reported as being rather volatile during implementation and could not fully capture the overall positive developments that, undoubtedly took place as a result of the project. The capacity building efforts in the public sector, and the strengthening of civil administration oversight in the two countries which have been greatly improved as outlined above, had very little influence on the overall outcome rating.

64. The overall Moderately Unsatisfactory rating was largely influenced by the below EOP targets for both Senegal and Benin with regard to safety compliance rates, which were critical in attaining PDO. For Benin the safety compliance of aviation safety staff and overall security compliance remained static, while for Senegal, the non-approval before project closure of the Civil Aviation Code was a major setback.

65. Compliance rates provided above are the latest results of audits conducted on the basis of ICAO methodology either by ICAO or by independent external auditors. However, these compliance rates tend to improve rapidly as authorities implement the corrective action plans recommended by the audits. Unfortunately, even though the prospects of significant improvement in compliance rates are encouraging, the real impact may only be noticed after project completion.

### 3.5 Overarching Themes, Other Outcomes and Impacts

66. **Poverty Impacts, Gender Aspects, and Social Development.** The project had no specific poverty, gender or social development related objectives**.**

67. **Institutional Change/Strengthening.** The project implementation period saw important changes in aviation policies on safety and security for both countries. The counterparts' and other stakeholders' views towards aviation safety and security also evolved as a result of the experience accumulated during the implementation of the project. The project was in fact a pilot and learning experience.

68. The following activities were undertaken to develop the institutional capacity of both countries:

- **Senegal.** (a) staff capacity building; (b) modernization of aviation communication and inspection capacity; (c) review of the aviation institutional framework and creation of an aviation accident research center; and (d) the provision of state of the art equipment for the aeronautic medical, and Search and Rescue centers.

- **Benin.** (a) staff capacity building; (b) improved aviation communication and inspection capacity; (c) review of the aviation institutional framework; and (d) the provision of the necessary equipment for the equipped GPS cartographic center which helped in the update of the outdated 1950 maps and which is among the best in the sub region.

69. **Other Unintended Outcomes and Impacts (positive or negative).** A specific unintended outcome identified as resulting from project implementation include the newly established aeronautical medical center in Senegal (cf. paragraph 42). It will henceforth bring about cost savings for sub-regional airline companies and military aviation, since they will be able to receive medical examination services closer to their bases. Furthermore, the center will equally benefit the local neighborhood habitants who will be able to use the facility on certain days.

### 3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops

70. This is a core ICR which does not require a beneficiary survey/stakeholder workshop.

## 4. Assessment of Risk to Development Outcome

The rating is Substantial for the following reasons:

71. The risks identified during project preparation were generally appropriate. The overall project risk was rated "*Substantial*" and was analyzed in terms of failure to achieve critical assumptions to project indicators. The analysis appears appropriate for most of the assumptions made. However, two risks could have been analyzed differently. The analysis was probably too optimistic to consider the risk related to the implementation capacity of Benin's CAA as modest. The lack of proactivity by the PIU in addressing procurement delays and the country's structural procurement issues which resulted in procurement delays attest to this. Secondly, the rating related to political interference and governance was Substantial for Senegal as the elements that posed the highest risk to its development outcomes were mostly linked to political-economy. The late effectiveness of the project, the decision of the Government relative to the acquisition of the video surveillance equipment and the delays in the approval of the civil aviation code and other decrees confirm this. In the meantime, the overall institutional capacity-building which occurred during project implementation for both countries and the new government for Senegal are likely to reduce the impact of these risks on the overall sustainability of investments.

72. In both Senegal and Benin, the extensive training program for civil aviation staff in Safety and Security yielded positive results and has drastically improved the compliance rate with respect to ICAO standards in terms of percentage of staff trained (as detailed above in

paragraphs 40, 54 and 57). There is a risk that this momentum generated in building staff capacity may not be sustained after project closing even though civil aviation authorities in both countries have registered significant increases of their financial resources dedicated to Safety and Security.

## 5. Assessment of Bank and Borrower Performance

### 5.1 Bank Performance

**(a) Bank Performance in Ensuring Quality at Entry**
The rating is Moderately Satisfactory for the following reasons:

73. The project design was based on the strategic assumption that lessons learnt from Phase I APL covering Burkina Faso, Cameroon, Guinea, Mali and Nigeria, would be fully integrated to optimize project outcomes. The project was identified and designed closely with government and major stakeholders. It was well-designed, with in-depth analysis of lessons learned from previous similar operations, and with a well-designed M&E framework. The project did not have a QER but was carefully peer-reviewed by senior technical staff. Preparation was fast, as it took less than one year to complete preparation.

74. However, project design and preparation could have benefited from: (a) a more realistic assessment of the cost of various activities, which would have helped in mitigating the overestimation of activities, observed at mid-term; and (b) a more realistic consideration of the complexity of the project and the time that it takes to put in place policy/legislative reforms vis-à-vis the duration of a regular Bank project, which may have influenced project duration or implementation phasing since this was an APL. These risks which were somehow underestimated ultimately had a direct impact on the achievement and sustainability of development objectives. Bank performance in ensuring quality at entry is therefore rated as Moderately Satisfactory.

**(b) Quality of Supervision**
The rating is Moderately Satisfactory for the following reasons:

75. Project supervision was more than adequate, with regular video conferences between site visit missions. Supervision missions were always followed by detailed and timely aide-memoires and ISRs which were effective instruments for providing candid findings. They were often extensive and provided highlights on key issues and prompt information to the client and Bank management. However, some KPIs ratings before project closure were overly optimistic, and this was rightly justified by the limited window of opportunities to have ICAO audits to confirm the compliance rates derived by self-evaluation. The decision to transfer TTL to country-based staff in 2009 helped improved supervision frequency and enhanced pro-activity in identifying implementation threats. There was a high level commitment by Bank staff to resolving project implementation issues and clear communication from Bank management to the client on critical issues identified.

76. The actions taken by the Bank to resolve implementation bottlenecks were adequate and proactive as well as its efforts to strengthen project Monitoring and Evaluation framework, even though sometimes with much resistance from government agencies. Among the actions taken by the Bank to resolve issues that arose during project implementation was the organization in March 2010, in Ouagadougou, of an experience sharing/dissemination meeting for all francophone Phase I and II PIU staff. This collaborative process launched and supported by Bank team led to a real knowledge sharing between CAAs and PIUs. The Bank's performance is therefore rated as moderately satisfactory.

**(c) Justification of Rating for Overall Bank Performance**
Rating: Moderately Satisfactory

77. The factors taken into consideration in rating the Bank's overall performance include the quality at entry and supervision as elaborated above.

**5.2 Borrower Performance**

**(a) Government Performance**
The Rating is Moderately Unsatisfactory for the following reasons:

- **Senegal.** The government performance is rated as Moderately Satisfactory. It was negatively impacted by its decision to suspend procurement of the video surveillance equipment for several months and delays in the approval of the civil aviation code and other decrees. Such issues were beyond the control of the PIU. Furthermore, the steering committee of the project did not provide enough support to the project at critical times, in particular regarding the video surveillance equipment and the approval process for the civil aviation code and the Accident Investigation Unit.

- **Benin.** The performance of the government was Moderately Unsatisfactory mainly because of the country's structural procurement issues which resulted in procurement delays sometimes as long as 10 months for some activities and delays in the approval of the revised civil aviation code.

**(b) Implementing Agency or Agencies Performance**
The rating is Moderately Satisfactory for the following reasons:

- **Senegal.** The performance of the PIU was Satisfactory. Initial difficulties in terms of project effectiveness and procurement were rapidly resolved and implementation rate improved. Financial management was Satisfactory throughout implementation and all audits reports were unqualified.

- **Benin.** The performance of the PIU was Moderately Satisfactory mainly due to the slow pace of project implementation and lack of proactivity in addressing procurement delays.

**(c) Justification of Rating for Overall Borrower Performance**
Rating: Moderately Unsatisfactory

78. Based on the combination of the two ratings above, overall Borrower performance is rated as Moderately Unsatisfactory.

## 6. Lessons Learned

### 6.1 Project Preparation and Design

79. Lessons learned in relation to project preparation and design are the following:

- The justification of the overall outcome rating for the project put more weight to ICAO audits recommendations. They were reported as being rather volatile during implementation and could not fully capture the overall positive developments that undoubtedly took place as a result of the project. Incorporating the experiences and lessons learned from the design and implementation of similar projects is critical to avoid similar design pitfalls;

- The effectiveness of this project was delayed significantly for Senegal due to the multiplicity of effectiveness conditions. There should therefore be a consideration for the elimination of effectiveness conditions to avoid delays in effectiveness by making sure that all conditions are met prior to negotiations;

- The performance of one country during implementation had a great impact on the overall performance of the project. Hence, there is need to put in place a more formalized mechanism to share implementation experiences between countries involved in the same APL series for future design considerations;

- There was lack of a more realistic consideration of the complexity of the project and the time needed to put in place regional projects with policy/legislative reforms vis-à-vis regular single country Bank projects, in the design stage of this project. Hence, there is need to strike the right balance regarding the time needed to put in place policy/legislative reforms often politically influenced vis-a-vis the duration of implementing a regular Bank project;

- There was lack of a realistic assessment of the initial cost of various activities which resulted in overestimation of these activities. Similar future projects should avoid any complex and over design of activities. Aviation pilot projects of this nature are subject to change and require constant adjustments during implementation, as the parameters needed for success are usually not exactly known at project start;

- There is a need to engage and receive strong support from Country Management Units to ensure stronger ownership by the countries involved and to resolve policy related issues as this was found helpful in this project; and

- project design should include an agreed exit strategy with an action plan which defines clear responsibilities during all stages of implementation to ensure that each agency concerned has a good grasp of its role and is committed to its implementation. This will help give visibility of the overall vision to all stakeholders.

### 6.2 Project Implementation

80. Institutional development and capacity building are critical factors to ensure sustainability during and after project. Experience from this project suggests that best results are achieved through long-term relationships where new ideas can be introduced indirectly and gradually, in pursuit of a shared vision and with a clear road map. It is also critical to support institutional building by encouraging synergy among implementing agencies especially across countries for regional projects, while making sure that all initiatives are demand-driven and developed in a participatory manner to enhance achievement of the PDO and in accordance to Bank procedures. Following this approach could have helped to limit some of the shortfalls observed in the course of implementation.

81. The project did well to build counterpart capacity in both countries especially through staff training. However, a systematic use of simplified guides and procedural manuals would have helped achieve better quality insurance and greater fiduciary compliance; especially when dealing with a client with limited prior exposure to Bank procedures/guidelines.

82. A well laid out structure for institutional collaboration in a well-coordinated manner for all project activities is fundamental for effective project implementation, especially where there are multiple stakeholders. This was a major setback for this project during implementation.

83. There is need for early identification of qualified firms in the market, relative to required specialized and/or critical services and engage their interest. The same can be done for the identification of qualified individuals so that required consultant competence is sought as a contingency measure, in order to avoid or limit the danger of not getting very competent and qualified consultants to respond to requests and unjustified single source contracts which was the case for the Benin component of this project.

### 6.3 Project Supervision

84. Continuous and quality supervision missions by the Bank team, with increasing use of country-based staff was found to be an important factor. This was essential to ensure that steady progress and effective supervision were maintained to readily address specific needs during implementation in a timely manner.

85. The need for a clear articulation for the measurement of outcome indicators taking into consideration regional and international institutional priorities was particularly important for this project which covered more than one country. With its diverse activities of both institutional/capacity building and policy reform nature, this consideration would have helped facilitate the improvement of monitoring by the implementing agencies in line with international standards. Hence avoiding unambiguous evaluation of performance at every stage, and

contributing to the identification of timely corrective actions. The limited window of opportunity to have an ICAO audit to confirm the compliance rates to international standards led to self-evaluation by PIUs of KPIs. Throughout project implementation these self-evaluated KPIs were used to evaluate progress, making real evaluation difficult. The consequence of this is that, at project closing, most self-evaluated indicators were not in conformity to ICAO audit values.

## 7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners

### (a) Borrower/implementing agencies

86. Participating countries have analyzed the draft ICR and accepted its key elements, including main conclusions, ratings and recommendations. They have also proposed some corrections and clarifications, which have been integrated into this final version of the document.

### (b) Cofinanciers

Not applicable

### (c) Other partners and stakeholders

Not applicable

## Annex 1. Project Costs and Financing

### (a) Project Cost by Component (in USD Million equivalent)

| Components | Appraisal Estimate (USD millions) | Actual/Latest Estimate (USD millions) | Percentage of Appraisal |
|---|---|---|---|
| | | | |
| Aviation safety improvements | 7.60 | 5.20 | 68 |
| Aviation security improvements | 6.20 | 3.80 | 61 |
| Management and governance oversight of the national component of the program | 4.20 | 3.40 | 81 |
| **Total Baseline Cost** | **18.00** | **12.40** | **69** |
| Physical Contingencies | - | - | - |
| Price Contingencies | - | - | - |
| **Total Project Costs** | **18.00** | **12.40** | **69** |

### (b) Financing

| Source of Funds | Type of Cofinancing | Appraisal Estimate (USD millions) | Actual/Latest Estimate (USD millions) | Percentage of Appraisal |
|---|---|---|---|---|
| Borrower | | 2.00 | 2.00 | 100 |
| International Development Association (IDA) | | 7.00 | 5.10 | 73 |
| IDA Grant | | 9.00 | 5.30 | 59 |

**Annex 2. Outputs by Component**

**Table 2.1: Indicators at Appraisal**

| **Project Development Objective:** The Project Development Objectives are as follows: (a) improve national Civil Aviation Authorities' (CAAs') compliance with International Civil Aviation Organization's (ICAO's) safety standards, (b) increase national CAA's compliance with ICAO's security standards, and (c) enhance main international airports' compliance with ICAO's security standards. | | | | | |
|---|---|---|---|---|---|
| **Main Project Output Indicators** | **Activities** | **Country** | **Target** | **Actual** | **Outcome/Comments** |
| **Key Performance Indicator 1:** Improve CAA's compliance with ICAO's safety standards. | | | | | |
| Compliance rate with ICAO aggregate safety standards based on ICAO's audits, with all actions in their Corrective Action Plan completed | •Medical equipment for ANACS' medical center;<br>•Equipment and training for "Search and Rescue" activities;<br>•Setting-up of an independent office for aircraft incidents and accidents investigation;<br>•Purchase of technical library equipment (e.g. relevant ICAO's manuals, directives, online library, training materials, etc.); | Senegal | 85% | 66.5% | Based on internal Audit following the guidelines for improvement of the project given by the ICAO on its last visit. Implementation of the corrective action plan.<br>Partially Achieved |
| | •Equipment and training for "Search and Rescue" activities;<br>•Replacement of basic communication and | Benin | >60% | 43% | Achieved. |

| | | | | | |
|---|---|---|---|---|---|
| | inspections equipment (e.g. very high frequency (VHF) radios, telephone network within the airport area, IT network at headquarters, etc.)<br>•Purchase of technical library equipment (e.g., relevant ICAO's manuals, directives, online library, training materials, etc.); | | | | |
| Percentage of technical personnel in compliance with ICAO's safety standards; and Total CAA's budget amount. | • Training of civil aviation staff in the area of civil aviation safety oversight;<br>•Dissemination and translation (in English) of updated regulations.<br>• Personnel training based on a prior needs assessment study. | Senegal | 85% | 70% | Based on an independent audit.<br>Not Achieved. |
| | • Training of civil aviation staff in the area of civil aviation safety oversight;<br>• Dissemination and translation (in English) of updated regulations; and Personnel training based on a prior needs assessment study. | Benin | >50% | 11% | Not achieved. |

| **Key Performance Indicator 2:** Improve CAA's compliance with ICAO's security standards. | | | | | |
|---|---|---|---|---|---|
| Compliance rate with ICAO's aggregate security standards based on ICAO's audit, with all recommendations addressed; | •Installation of an access control system at the airport;<br>•Acquisition of training equipment, communication equipment, and patrol vehicles; | Senegal | >70% | 816 % | Achieved |
| | •Improvement of airport security through the acquisition of passengers and cargo x-ray machines as well as an explosive material tracer;<br>•Acquisition of airport personnel identification equipment, security cameras, communications systems, and inspection equipment; | Benin | 70% | 32% | Not Achieved |
| Percentage of CAA's ICAO's certified security inspectors trained during the last three years; | Training of airport security personnel; | Senegal | >80% | 100% | Achieved, |
| | •Training of civil aviation staff in the area of civil aviation security;<br>•Training of airport security personnel. | Benin | >60% | 65% | Achieved |
| Level of CAA's budget dedicated to security | | Senegal | 3.3 | 3.40 | Achieved |
| | | Benin | 0.378 | 1.89 | Achieved |

| | | | | | |
|---|---|---|---|---|---|
| National Security Plan compliance with ICAO's standards. | •Updating of technical regulation;<br>•Review of the institutional framework and fees allocation among civil aviation entities. | Senegal | | | Yes |
| | | Benin | | | Yes |
| **Key Performance Indicator 3:** Enhance main international airports' compliance with ICAO's security standards. | | | | | |
| Percentage of airport security personnel with three or more years of experience; | | Senegal | >80% | 85% | Achieved |
| | | Benin | >50% | 57% | Achieved with a percentage of 114 percent; |
| Number of serious problems recorded during annual airport crisis exercises | | Senegal | <3 | | 3 |
| | | Benin | <3 | Not available | Simulation exercise for Benin to determine this value was not carried out by the time of this report |
| Percentage of embarking passengers stopped in possession of illegal objects, as defined by the ICAO, by airlines security personnel or the police. | | Senegal | <2% | 00% | Achieved |
| | | Benin | <2% | 0.74% | Achieved |

**Annex 3. Economic and Financial Analysis**
(Including assumptions in the analysis)

Not Applicable

## Annex 4. Bank Lending and Implementation Support/Supervision Processes

### (a) Task Team members

| Names | Title | Unit | Responsibility/ Specialty |
|---|---|---|---|
| **Lending** | | | |
| Hugues Agossou | Senior Auditor | IADVP | Auditor |
| Itchi Gnon Ayindo | Senior Procurement Specialist | AFTPW | Procurement |
| Nina Chee | Senior Environmental Specialist | MIGEP | Environmentalist |
| Renee M. Desclaux | Senior Finance Officer | CTRLD | Finance |
| Bourama Diaite | Senior Procurement Specialist | AFTPW | Procurement |
| Anta Tall Diallo | Program Assistant | AFCF1 | Assistant |
| Sidy Diop | Senior Procurement Specialist | AFTPW | Procurement |
| Saidou Diop | Sr. Financial Management Specialist | AFTMW | Financial Management |
| Ibou Diouf | Senior Transport. Specialist. | AFTTR | TTL |
| Alain Hinkati | Senior Financial Management Specialist | AFTMW | Financial Management |
| Michel J-L. Iches | Senior Transport. Specialist. | TWITR | Aviation |
| Sariette Jene M. C. Jippe | Temporary | MNSPR | Assistant |
| Alain L. Labeau | Consultant | SASFP | Transport |
| Antoine V. Lema | Senior Social Development Specialist | AFTCS | Social Scientist |
| Jean-Francois Marteau | Senior Transport. Specialist. | ECSTR | Transport |
| Pepita Hortense C. Olympio | Program Assistant | AFMBJ | Assistant |
| Noroarisoa Rabefaniraka | Senior Transport. Specialist. | AFTTR | Transport |
| Charles E. Schlumberger | Lead Air Transport Specialist | TWITR | Aviation |
| Rafael Treibich | Temporary | AFTTR | Assistant |
| **Supervision/ICR** | | | |
| Itchi Gnon Ayindo | Senior Procurement Specialist | AFTPW | Procurement |
| Sidy Diop | Senior Procurement Specialist | AFTPW | Procurement |
| Roukaya El Houda | Temporary | AFTTR | Analyst |
| Papa Mamadou Fall | Transport Specialist | AFTTR | Co-TTL |
| Maimouna Mbow Fam | Senior Financial Management Specialist | AFTMW | Financial Management |
| Alain Hinkati | Senior Financial Management Specialist | AFTMW | Financial Management |
| Sariette Jene M. C. Jippe | Temporary | MNSPR | Assistant |
| Osval Rocha Andrade Romao | Financial Management Specialist | AFTMW | Financial Management |
| Peter Ngwa Taniform | Senior Transport. Specialist. | AFTTR | ICR author |

(b) **Staff Time and Cost**

| Stage of Project Cycle | Staff Time and Cost (Bank Budget Only) | |
|---|---|---|
| | No. of staff weeks | USD Thousands (including travel and consultant costs) |
| **Lending** | | |
| FY08 | 7.93 | 50.33 |
| FY09 | 21.36 | 113.09 |
| **Total:** | **29.29** | **163.42** |
| **Supervision/ICR** | | |
| FY08 | 0.56 | 10.60 |
| FY09 | 6.56 | 22.23 |
| FY10 | 11.94 | 72.96 |
| FY11 | 12.79 | 74.35 |
| FY12 | 10.37 | 49.63 |
| FY13 | 8.22 | 55.96 |
| **Total:** | **50.44** | **285.73** |

**Annex 5. Beneficiary Survey Results**
Not Applicable

**Annex 6. Stakeholder Workshop Report and Results**
Not Applicable

## Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

**SENEGAL:**

### 1. Introduction

1. On April 15, 2009 the Republic of Senegal and IDA signed a Financing Agreement (4538-SN) in the amount of Special Drawing Rights (SDR) 4,700,000 representing approximately US$7,000,000 to assist in the financing of the West and Central Africa Air Transport Safety and Security Project (WCAATSSP). The Agreement entered into effect on December 8, 2009. Under a Subsidiary Agreement signed on September 14, 2009 the Government of Senegal made the proceeds of the IDA financing available to the Civil Aviation Authority of Senegal (ANACS), which became the Civil Aviation and Meteorology Authority of Senegal (ANACIM) in July 2011, as the project implementing agency. The project was closed on December 31, 2012.

### 2. Background

2. At the time of project preparation, aviation services in Africa and particularly in West and Central Africa (WCA) were inefficient, expensive and hardly reliable.

3. Air transport safety in WCA was suffering from significant weaknesses due to unsuitable national legal framework that was neither harmonized nor in conformity with international regulatory standards, and a severe shortage of qualified investigation personnel. This was also the case in terms of security considering that most international airports did not have the appropriate systems and procedures in place to control access to tarmacs and terminal buildings. This situation resulted in the rising costs of services. It was also jeopardizing the security of the air transportation network in the WCA sub-region and could hence aggravate the isolation of the main commercial traffic flow.

4. The project was designed to supplement the four (4) sub-regional projects of the Cooperative Development of Operational Safety and Continuing Airworthiness Program (COSCAP) signed between the International Civil Aviation Organization (ICAO) and WCA countries between 2003 and 2004, which lacked the resources to finance country level activities in the vital area of air safety and airport security.

5. In addition to non-compliances with international safety and security standards identified during audits conducted by the ICAO, the civil aviation industry in Senegal was faced with: (i) a lack of transparency in the collection, management and utilization of security fees; (ii) the existence of a plethora of instruments governing the financing of sector agencies resulting in a lack of clarity between aeronautical charges levied and services provided in this regard; and (iii) a lack of autonomy, reported numerous times by the ICAO, of the agency in charge of air traffic incidents and accidents.

## 3. Project objectives

6. The development objectives of the project were to: (i) increase the compliance rate of the Civil Aviation Authority of Senegal (CAA) with the safety standards of the (ICAO); (ii) increase the compliance rate of the CAA with the security standards of the ICAO; and (iii) increase the compliance rate of major airports with the security standards of the ICAO.

## 4. Amendments to the objectives

7. The development objectives were not amended during project implementation.

## 5. Project components and activities

The project consisted of: (i) an air transport safety component aimed at increasing the compliance rate of the Civil Aviation Authority of Senegal with ICAO safety standards; (ii) an aviation security component aimed at increasing the compliance rate of the Civil Aviation Authority of Senegal with ICAO safety standards; and (iii) a project management component aimed at strengthening the capacities of the ANACS and the Program Coordination Unit (*Unite de Coordination du Projet, UCP*). Initial activities of the project included:

8. **Air transport safety component.** (i) training of personnel on air transport safety; (ii) updating of technical regulations governing safety; (iii) translation into English of the new Civil Aviation Code and its attendant regulations; (iv) acquisition of aviation medicine equipment; (v) acquisition of equipment for the Accident Investigation Unit; (vi) acquisition of office furniture, computer and communications equipment for the Coordination and Rescue Center; (vii) organization of a Search and Rescue exercise; (viii) acquisition of vehicles equipped with communication materials for investigation purposes; and (ix) a study for the establishment of the "Accident Investigation Unit".

9. **Aviation security component.** (i) security training for personnel; (ii) drafting of technical regulations on security; (iii) acquisition of learning materials and inspection equipment (inspection/screening kits and standardized teaching kits); (iv) acquisition of vehicles equipped with communication materials for investigation purposes; (v) organization of security crisis management exercises; (vi) acquisition of Very High Frequency and Ultra High Frequency communication equipment; (vii) acquisition of a closed circuit television system.

10. **Project management component.** (i) project coordination, financing of operating costs, external audit and technical assistance for procurement; (ii) acquisition of office equipment; (iii) review of the institutional framework for the distribution of fees; (iv) updating and editing of the new Civil Aviation Code and its attendant regulations and implementation of IEC activities; and (v) technical assistance for the setting up of a slot management system.

11. The initial components were not amended during project implementation. Changes were not made to activities under the air transport safety component. For the aviation security component, the acquisition of the following additional equipment was decided during the mid-

term review of the project to enhance control systems: (i) explosives trace detectors; (ii) X-ray materials; and (iii) night-vision goggles.

12. The main reason for the acquisition of this additional equipment was to consolidate actions undertaken to increase compliance rates with ICAO security standards. In fact, the export of freighted goods to the United States from the Leopold Sedar Senghor Airport (LSS) was suspended in May 2011 due to the lack of explosives detection equipment in the freight control unit. Existing X-ray equipment for the screening of passengers had begun to be subjected to repeated breakdowns and had to be replaced urgently. The use of night-vision goggles had become necessary to enhance the effectiveness of inspection patrols in the airport vicinity.

13. Under the project management component, the study of a strategic orientation plan for the General Directorate of Air Transport and Aeronautical Infrastructure *(Direction Générale des Transports Aériens et des Infrastructures Aéronautiques, DGTAIA)* was included as a complementary activity to aid the Ministry in charge of civil aviation, and strengthen its capacity in sector management.

## 6. Assessment of objectives

14. The initial objectives were clear and concise. In view of the prevailing situation at the time of project identification and preparation, the objectives were realistic and linked to issues that civil aviation authorities in Senegal had to address without delay for greater compliance with international standards. Moreover, activities were in line with the urgent needs identified in the sector and their implementation could support the attainment of objectives targeted.

## 7. Achievement of project objectives and results

15. **Achievement of Project Objectives rated Moderately Satisfactory.** The objectives of the project, which were to assist civil aviation authorities in Senegal and the LSS international airport increase their compliance rates with the ICAO safety and security standards, were partially achieved. With regard to security standards, performance indicator levels targeted were reached by the end of the project. (81 per cent compliance with the ICAO security standards, while the objective was 80 per cent; 100 per cent of technical security personnel complied with the ICAO security standards, while the objective was 80 per cent; 85 per cent of security personnel had at least 3 years of experience in airport security, while the objective was 80 per cent; the total amount of resources allocated to security activities by all relevant institutions reached (Franc of the African Financial Community, *Franc de la communauté Financière Africaine, FCFA*) 3.4 billion, while the objective was FCFA 3.3 billion. However, targets relating to safety were not reached in particular for: (i) overall compliance with the ICAO safety standards (66.5 percent reached whereas the objective was 80 per cent); (ii) compliance of safety personnel with the ICAO safety standards (70 per cent reached whereas the objective was 80 percent)[13].

[13] *Some of these values are based on self-evaluation by the client and may not be consistent with other values in the main text of this ICR.*

16. All initial activities and those included during the mid-term review were implemented with the exception of: (i) the translation into English of the revised Civil Aviation Code and technical regulations; (ii) IEC activities on the new Civil Aviation Code; (iii) the slot management system; (iv) the acquisition of specialized technical equipment for the Accident Investigation Unit; and (v) technical assistance for the setting up of a slot management system. The completion rate of activities is higher than 82 percent (19 activities implemented out of 23 planned).

17. **Key project outcomes include:** (i) a significant strengthening of technical capacities of aviation safety and security personnel; (ii) sound institutional reforms (establishment of an Accident Investigation Unit (*Bureau Enquêtes Accidents, BEA*) reinforcement of the Search and Rescue Center (*Centre de Recherche et de Sauvetage, SAR*), establishment of a medical center for aviation personnel); (iii) updated regulations and greater compliance with the ICAO standards (revision of the Civil Aviation Code, the National Civil Aviation Security Plan (*Programme National de Sûreté de l'Aviation Civile du Sénégal, PNSAC*)), as well as safety and security rules); (iv) a more transparent management of aeronautical charges; (v) up-to-date technical equipment and tools; and (vi) enhanced effectiveness in security management (organization of two civil aviation security crisis management exercises).

18. Results achieved enabled corrective actions to be taken regarding major shortcomings in the supervision of civil aviation safety and security that were observed during project preparation.

## 8. Key factors that affected project implementation

19. The factors beyond the control of the Government and the Implementing Agency were: (i) Retendering for the procurement of highly specialized technical equipment due to the lack of a sufficient number of bidders with the required qualifications; (ii) insufficient exchange of experience between the WCAATSSP national components; and (iii) difficulties to have the ICAO and Economic Community for West and Central Africa (ECOWAS) perform safety and security audits at the desired period.

20. Factors generally within the control of the Government were: (i) a delay of more than 4 months for the project to enter into effect; (ii) a certain number of activities were called into question particularly the installation of a closed circuit television system at the LSS airport which could only be done at the end of the project subsequent to a change of government; and (iii) lengthy procedures for the approval of legislative and regulatory instruments drafted within the framework of this project (revised Civil Aviation Code, decree on the establishment of the *BEA*, decree on the determination and distribution of aeronautical charges, decree on the approval of *PNSAC* and security rules).

21. Factors within the control of civil aviation authorities were: (i) a lengthy process for the validation of study reports; and (ii) significant delays in the setting up of the Medical Center for aviation personnel (*Centre d'Expertise Médicale du Personnel Aéronautique, CEMPA)* and in the normal operation of the Search and Rescue Center.

## 9. Sustainability of results

22. Current conditions for the sustainability of project results are Moderately Satisfactory. The following are positive signals for the sustainability of results: (i) the capacities of technical staff of civil aviation authorities (*ANACIM*; High Authority of the Léopold Sédar Senghor Airport, *Haute Autorité de l'Aéroport Léopold Sédar Senghor HAALSS;* Senegal Airport, *Aéroport du Senegal ADS*) that were strengthened under the project have so far been maintained; (ii) by project close-out on December 31, 2012 the amount of resources allocated to security had exceeded the target value (FCFA 3.3 billion) set for this performance indicator; (iii) the total budget of the *ANACIM* for 2012 is higher than the target value set for the end of the project (FCFA 6.9[14] billion compared to FCFA 4.76 billion).

23. However: (i) the availability of adequate financial resources to continue staff capacity-building and the modernization of equipment initiated by the project is not yet fully guaranteed; (ii) the infrastructure maintenance system, particularly the airport enclosure walls, is still ineffective; and (iii) there are delays in the modernization of out-dated equipment (EDS devices, scanners at the freight inspection/screening unit and at customs for baggage check).

## 10. World Bank performance

24. Performance was Satisfactory for project identification and preparation as well as for supervision and implementation. The Bank strongly backed actions to identify and prepare national activities which led to the WCAATSSP. It conducted supervision missions on a regular basis punctuated by visits to airport facilities. It was sensitive to issues arising during project implementation and collaborated positively to address these.

## 11. Government performance

25. Government performance is Satisfactory for both project identification and preparation and Moderately Unsatisfactory for implementation.

26. The Government and all agencies in the civil aviation sector endorsed the idea of the project and contributed positively to its rapid preparation. The Government was however behind schedule in satisfying the conditions of effectiveness. Furthermore, during project implementation, the Government often challenged certain project activities and lacked efficiency in the approval of legislative and regulatory instruments.

## 12. Performance of civil aviation agencies

27. The overall performance of the *ANACIM* and the project coordination unit is Moderately Satisfactory. It is Satisfactory for financial management and procurement and Moderately Satisfactory for the implementation of studies, which experienced significant delays. Mid-term audit reports were not prepared.

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[14] *This value was revised by the government after the ICR mission from 5.05 to 6.9 FCFA billions.*

28. The performance of the *ADS* is Moderately Unsatisfactory. The latter did not sufficiently involve itself in project implementation and in efforts to increase the airport's compliance rate with the ICAO safety and security standards, particularly the LSS airport enclosure walls. Damages to these walls periodically contributed to lowering the safety and security levels of the airport.

29. The performance of the *HAALSS* is Satisfactory. End-of-project performance indicator targets were reached both for overall compliance with the ICAO security standards and for the training of personnel. Moreover, the *HAALSS* was strongly involved in project implementation and took effective ownership of the various equipment and management tools made available.

**13. Performance of consulting firms, consultants and suppliers**

30. The performance of individual consultants, consulting firms and equipment and furniture suppliers that were involved in the implementation of the project is globally Satisfactory.

**14. Most significant positive lessons**

31. The establishment of a project coordination unit within the implementing agency with a full-time coordinator in charge of monitoring the progress of and coordinating activities greatly contributed to the project's satisfactory results.

32. The development, following each supervision mission, of an action plan integrated into the aide-memoire and summarizing priority actions to be undertaken by all units concerned before the next mission, was an excellent tool for monitoring project implementation.

**15. Most significant negative lessons**

33. Equipment procured under the project could not be tested as much as necessary before the expiry of the contractual warranty period because the locations where they should have been installed were not rehabilitated sufficiently on time before delivery. This situation stems from the fact that building renovation was not included among initial project activities and this did not allow for proper coordination between the acquisition of equipment and the performance of works.

**BENIN**

## 1. Introduction

1. Following the systemic audit of the International Civil Aviation Organization (ICAO) in Benin in February and March 2007, the Republic of Benin benefited from the World Bank a financial support under the Regional Program West and Central Africa Air Transport Safety and Security Program II (WCAATSSP), implemented through the International Development Association (IDA) for the purpose of helping the recipient countries which have been the subject of a security and civil aviation safety audit, to raise their level of compliance with ICAO Standards. The signing of the grant agreement (H-440 BJ) was held on April 3, 2009.

## 2. Background

2. At the beginning of the project in 2007-2008, air transport accounted for 40 percent of the value of world trade, and played a significant role in the economic development of countries.

3. In Africa, where the lack of roads, rail and port infrastructure would often limit the fast and efficient movement of goods dedicated to high export value, the airline had both a potential of growth and a role in the economic development of the continent. However, the reality does not meet expectations and air services in West Africa and Central (WCA) continued to be ineffective, expensive and unreliable.

4. The main security issues that have been and are still being faced by the air transport sector in WCA include the absence of a favorable legal framework and a significant lack of qualified inspection staff.

5. Moreover, even when a country managed to demonstrate its ability to comply with ICAO standards, its ability to maintain compliance and retain qualified staff remained uncertain. Therefore, the Bank, in coordination with regional institutions and other international donors, has adopted a comprehensive approach to address all of these problems by bearing:

a. the establishment of regional mechanisms for supervision of safety standards and security in member countries, and
b. fund safety and national security programs to increase the capacity of the National Agency of Civil Aviation (*ANAC*) to comply with ICAO standards.

## 3. Project Objectives

6. The main objective of this program is to create a secure and safe environment for air transport in West Africa and Central, and enabling African airlines to have competitive access to regional and global markets in the hope of supporting sustainable economic growth in the entire region. The implementation of this program for Benin, includes the following:

a. Improve compliance of the National Agency of Civil Aviation with the safety and security of the Organization of International Civil Aviation. This requires in particular

the strengthening of the administrative and financial management of the Agency, ensuring its independence and financial sustainability, and

b. Increase the level of compliance of the main international airport with the safety standards of ICAO. This requires in particular, extensive training programs for personal safety and airport security

7. **Key project outcomes include** (i) institutional reforms that have been implemented to ensure administrative and financial autonomy of the National Agency of Civil Aviation; (ii) the necessary infrastructure in the areas of safety and security and monitoring capabilities that have been implemented; and (iii) appropriate funding mechanisms that have been developed and adopted to support and supervision capacity in the areas of safety and security.

8. These factors have resulted in indicators of the project as well as by legal agreements to ensure long-term sustainability of the project

## 4. Project components and activities

9. Through this IDA grant in an amount equivalent to US$9 million, the Government of Benin (GoB) proposed to use the funds to address the funding of supplies, works and services to be acquired under the project through the following components**:**

*1) Strengthening the sector policy and monitoring capabilities of the security and civil aviation safety of ANAC*

a. Strengthening of sectoral transport policy in the field of civil aviation and airport, through the provision of technical assistance services, and
b. Strengthening the monitoring capacity of *ANAC* security and safety by: (i) the improvement of the technical library;(ii) improving the means to carry out the operations of search and rescue, and (iii) the conduct of training programs for its staff to deal with problems relating to the safety and security of flights.

*2) Strengthening the standards of safety and security of Cotonou airport*

a. Acquisition and installation of security equipment (scanning, personal identification) and equipment search and rescue;
b. Implementation of projects and training of personnel security and safety;
c. Installation of systems of closed circuit television, and
d. Acquisition of radio and communication equipment.

*3) Coordination, management and supervision of the Project*

a. Funding for operating expenses and technical assistance of *ANAC* and the PIU to support the coordination, management and supervision of the Project, and
b. Training of trustees and staff responsible for procurement.

*4) Cost and Financing*

10. The total cost estimated at US$9.00 million was used to finance**:**

**Table 1: detail project cost allocation**

| Component | US$ (in millions) |
|---|---|
| 1. Staff Training | 1.47 |
| 2. ANAC Facilities | 0.79 |
| 3. Aviation facilities | 2.89 |
| 4. Airport Security facilities | 1.53 |
| 5. Crisis Center Facilities | 0.13 |
| 6. Airport Infrastructure facilities | 0.75 |
| 7. Consultants and other | 0.93 |
| 8. Program management (incl. in-kind contribution of the client) | 0.58 |
| **TOTAL** | **9.00** |

**Achievement of project objectives and results**

11. **Achievement of Project Objectives rated Substantial**. WCAASSTP-Benin primary objective was to raise respectively 70 percent and 60 percent rate of compliance with ICAO standards in safety and security aviation; and respectively 60 percent and 50 percent compliance rate on the technical staff safety and security. Safety came to 70 percent (for standards) and 92 percent (for technical staff). Security came to 43 percent (for standards) and 11 percent (for technical staff) against 60 percent and 50 percent expected.

**1. Sustainability and risk**

12. The most important risk was that of the ability of implementation of program activities by *ANAC*. It was considered Moderate because it had not yet managed a project of the World Bank**.**

13. Another risk of the program was the limited ability of *ANAC* to enforce rigorously the standards of safety and security by national operators such as airlines and airport operators

14. An additional risk concerned the ability of the *ANAC* to recruit and maintain a technically competent workforce to ensure the sustainability of the program. Although the autonomy of the *ANAC* is guaranteed by law through Decree No. 2004-598 of 29 October 2004, the number and proportion of non-qualified personnel within it are high. Indeed, the security audit conducted by ICAO in Benin showed that the technical staff had been in conformity with the technical standards of ICAO at more than one percent. And this had indicated serious concerns about its ability to meet global standards of security and air safety.

15. It took the Government's commitment to the World Bank to improve budgeting and management autonomy of the *ANAC* during the implementation of the program through specific objectives in terms of budget and training to reassure against this risk. Nevertheless, the

experience of Phase I of the program and the lack of qualified personnel in the field of aviation in WCA had suggested that the risk continues to be important for the component of Benin

16. All these identified risk factors and mitigation are summarized in the following table

**Table 2: risk and rating**

| Risk | Mitigation measures | Rating |
|---|---|---|
| Limited ability to implement | Specialists Recruitment (consultants) in financial management and procurement project to strengthen *ANAC* staff | Moderate |
| Limited capacity of the *ANAC* to enforce safety standards and safety aggressively by national operators | Creation of regional security agencies and aviation safety, public communication of the results of the audit on the safety of ICAO | Moderate |
| Capacity *ANAC* to secure and maintain a technical competent staff | Strengthening of *ANAC* Capacity through training programs and budget targets | Substantial |
| Governance | Recruitment of External fiduciary consultants within *ANAC.* Adoption of a governance plan for the component | Moderate |

17. Based on the rankings presented, the overall risk of Benin component was therefore assessed as Substantial.

## 2. Lessons learned

18. The WCAATSSP has produced tangible results discussed in this report in terms of the objective of security and safety of civil aviation. It reflected the interest and priorities of the component of Benin including ANAC which adhered to accompany the subsequent processes. The program was coordinated with other donors including France through the project ASACA of CRASAC (SCTIP) to ensure consistency with the objectives and outcomes of expected AVSEC training.

19. The WCAATSSP particularly insisted on the capacity of ANAC, the recipient agency. However, simultaneous submission for clearance of the project activities to the National Control Department of Procurement and IDA negatively impacted performance since this contributed to prolonged delays.

20. Moreover, the strategic choices for the management of the program did not produce the desired results. As such it would be advisable in the future, to no longer accommodate the

Coordination Units of specific projects of its kind in public administrations, because the objective of capacity building is often misunderstood by these administrations.

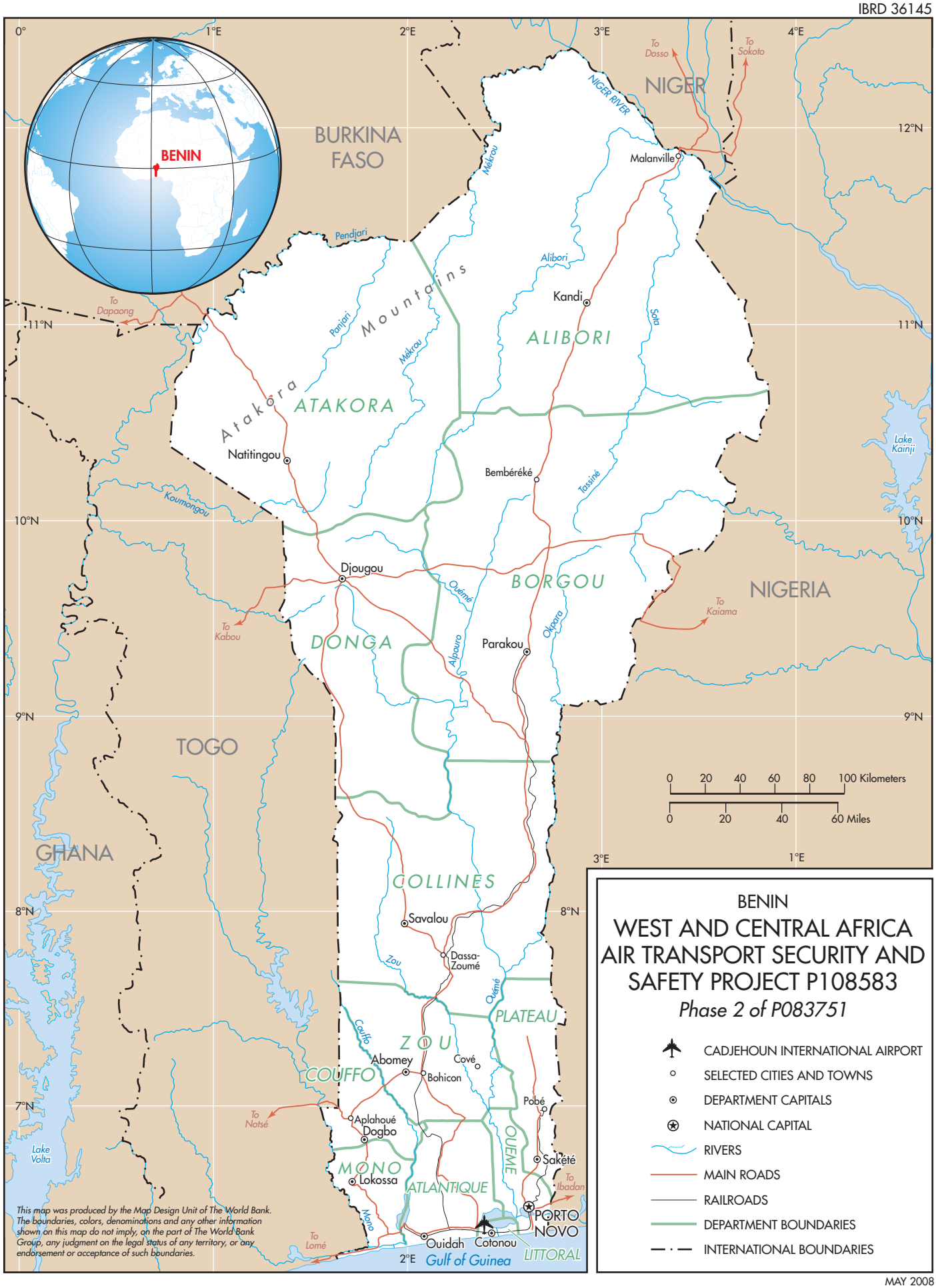
21. Some activities were declared ineligible for IDA Grant, even though essential for the improvement and achievement of security and safety of civil aviation in Benin. These activities could not be further processed because of project Closure

**Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders**
Not Applicable

**Annex 9. List of Supporting Documents**

1. West and Central Africa Air Transport Safety and Security Program: Program Appraisal Documents for Phase I & II;
2. Financing & Development Credit Agreements, and Project Agreements;
3. Harmonized Evaluation Criteria for ICRs and OED Evaluations;
4. Air Transport Action Group (ATAG), "The economic and social benefits of Air Transport", 2008;
5. Mid-Term Review Report;
6. Implementation Status and Results Reports (ISR);
7. Country Assistant Strategy for Both Countries
8. Poverty Reduction Strategy Paper for Both Countries
9. Aide Memoires;
10. Various memos and communications listed in project files and WBDocs.

IBRD 36145




BENIN

# WEST AND CENTRAL AFRICA AIR TRANSPORT SECURITY AND SAFETY PROJECT P108583

*Phase 2 of P083751*

- CADJEHOUN INTERNATIONAL AIRPORT
- SELECTED CITIES AND TOWNS
- DEPARTMENT CAPITALS
- NATIONAL CAPITAL
- RIVERS
- MAIN ROADS
- RAILROADS
- DEPARTMENT BOUNDARIES
- INTERNATIONAL BOUNDARIES

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MAY 2008

SENEGAL
WEST AND CENTRAL AFRICA AIR TRANSPORT SECURITY AND SAFETY PROJECT P108583
Phase 2 of P083751
LEOPOLD SEDAR SENGHOR INTERNATIONAL AIRPORT
SELECTED CITIES AND TOWNS
REGION CAPITALS
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MAIN ROADS
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INTERNATIONAL BOUNDARIES
MAURITANIA
MALI
GUINEA-BISSAU
GUINEA
THE GAMBIA
ATLANTIC OCEAN
SAINT-LOUIS
LOUGA
MATAM
DIOURBEL
THIÈS
CAP-VERT
FATICK
KAOLACK
KOLDA
ZIGUINCHOR
TAMBACOUNDA
La Ferdo
Casamance
Malinke
Saloum
Gambia
Sénégal
Doue
Lac de Guier
Vallée du Ferlo
Vallée du Mboun
Sandougou
Koulountou
Kayanga
Falémé
Podor
Rosso
To Nouakchott
Dagana
Richard-Toll
Ndiayène
Haïré Lao
Kaedi
To Mbout
Saint-Louis
Mpal
Lagbar
Thilogne
Matam
Léona Ndiaye
Louga
Koki
Linguère
Daraa
Tioukougne Peul
Kébémèr
Fâs Boye
Darou Khoudos
Mékhé
Darou Mousti
Vèlingara
Mamâri
Kayar
Tivaouane
Mbaké
Thiès
DAKAR
Rufisque
Diourbel
Gossas
Bakel
To Kayes
Payar
Toubéré Bafal
Nayé
Mbour
Fatick
Guinguinéo
Kaffrine
Ndangane
Kaolack
Niahène
Koungheul
Koussanar
Salone
Keur Madiabel
Nganda
Tambacounda
Nioro du Rip
Maka
Karang
To Barra
To Banjul
Dialakoto
Meedina Gounas
Velingara
Diouloulou
Bounkiling
Diana Malari
Kolda
Bignona
Mako
Saraya
Ziguinchor
Sédhiou
Tanaf
419 m
Kédougou
Diembéreng
Oussouye
Goudomp
To Farim
To Bafata
To Koundara
To Ingore
To Balake
0 25 50 75 Kilometers
0 25 50 Miles
16°W
14°W
12°W
18°W
16°N
14°N
12°N
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