AFRICAN DEVELOPMENT BANK GROUP

GUINEA BISSAU

BISSALANCA AIRPORT REHABILITATION PROJECT

Project Performance Evaluation Report (PPER)

OPERATIONS EVALUATION DEPARTMENT
(OPEV)

17 April 1990

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P R E F A C E

1. This is the Performance Audit Report on the Bissalanca Airport Rehabilitation Project in Guinea Bissau for which the Bank Group granted a loan of BUA 10 million to the Government of Guinea Bissau.

2. The objective of the project was to improve the existing airport to bring it up to the standard of a first category instrument landing airport capable of receiving DC8 and Boeing 707 aircrafts. The total cost of the project was estimated at BUA 18 million out of which BUA 10 million (55.6%) was provided by the Bank, BUA 6.3 million (35%) by the Kuwaiti Fund and BUA 1.7 million (9.4%) by the Government of Guinea Bissau.

3. Works and supplies required for the implementation of the project were completed in 1984. A completion report was sent by the Bank to Guinea Bissau in April 1986 and a completion report (PCR) was prepared by WISI Department in 1988.

4. As the PCR deals comprehensively with all the aspects of the project, it has not been necessary to undertake an audit mission to Guinea Bissau or make a complete performance audit report. An abridged performance audit report (PPAR) is considered adequate.

5. The PPAR reviews the major findings and conclusions of the PCR and highlights certain points for a better appreciation of the results of the project.

6. Copies of the PPAR are sent to the Bank's operational Departments and to the Borrower for comments. Their comments are included in the final report.

1. INTRODUCTION

1.1 The project under consideration is the rehabilitation of the Bissalanca airport launched in 1977 by the Government of Guinea Bissau with financing from the Kuwaiti Development Fund (KWDF). The project was beset with problems of (i) implementation of the civil works due to the failure of the contractor and (ii) cost overrun. The Bank was approached in 1981 to participate in the financing of the project to ensure its completion.

1.2 The objective of the project is to improve the existing airport to enable it to receive, in satisfactory conditions of security, long/medium range aircrafts of the Boeing 707 type. The project components were the following:

(i) extension of the runway from 2,400 metres to 3,200 metres;

(ii) construction of technical blocks;

(iii) supply and installation of navigation aid equipment; training of personnel for equipment maintenance; rehabilitation of the electricity supply and distribution system;

(iv) technical assistance for the monitoring of the project;

(v) consultancy services for works and supplies inspection.

1.3 The total cost of the project was estimated at UA 18 million. The Bank's loan of UA 10 million was for the financing of navigation aid equipment and the technical assistance for the monitoring of the project.

II. MAJOR FINDINGS AND CONCLUSIONS OF THE COMPLETION REPORT

2.1 It took 9 months for the loan to become effective after its approval, mainly because of a disagreement between the Bank and the Borrower on the list of goods and services. The navigation aid equipment which were to be procured through international competitive bidding were rather procured through a negotiated contract with a firm selected by the Government on the basis of tenders invited before the appraisal of the project by the Bank. Technical assistance composed of an accountant and an airport engineer was not obtained due to difficulties encountered by the Borrower in the application of the procurement procedure.

2.2 The project was implemented within the stipulated time. The real total cost amounted to US$ 20.63 million, showing an overrun of US$ 2.63 million compared to the original estimates. The overrun of the real total cost is the balance of an overrun of $ 4.63 million of the civil works component and savings of $2 million on the costs of the navigation aid equipment. There was a balance of UA 0.81 million from the Bank loan which has been cancelled.

2.3. The work on the runway was correctly done and in conformity with the initial technical specifications. The equipment supplied are of the approved standards. The airport can receive, in satisfactory conditions medium/long distance aircrafts of the B707 type. However, a number of constraints continue to hamper operations at the aiport. These include lack of spare parts for equipment, irregular electricity supply and lack of qualified personnel. In 1985, passenger traffic and movement of aircrafts recorded were respectively 30% and 70% lower than what were estimated for that year in the appraisal report. The real annual passenger traffic growth was 5% instead of the estimated 11%.

2.4 The airport is managed by the "Direction general de l'Aviation Civil" (DGAC), an administrative body of the "Ministry of Social Equipment". It was stated in the appraisal report that the Borrower should have the nature of the airport accounts modified and also have them audited. After the completion of the project, the accounts still remain the public type, since the DGAC's budget still depends on the general State budget and airport revenue is paid into the Public Treasury. No auditor has been recruited.

2.5 The project's financial internal rate of return has been recalculated taking account of actual traffic data and airport tariffs for 1985, and on the basis of the forecast using the following assumptions:

(i) international and neighbouring traffic growth: 2% a year from 1986 to 1990 and 40% a year from 1991 to 2000; internal flight growth: 2% a year;

(ii) a 30% tariffs incease;

(iii) amortization over a period of 30 years for the runway and 15 years for the technical equipment.

The rate of return recalculated on the basis of these assumptions is - 7.6%. At the time of the appraisal, the rate of return was +6.1%, but the calculation was based on different traffic growth and amortization assumptions.

2.6 The project's economic rate of return was not calculated at the time of the appraisal. On completion, the rate was determined for only the runway component on the one hand and for runway and navigation aid equipment together on the other hand; negative rates of respectively -2.4% and -7.7% were arrived at. According to the PCR, the extension of the runway was done prematurely and the navigation aid equipment component was financed by the Bank without a pre-investment economic justification (PCR para. 6.5.1).

III. COMMENTS OF THE PERFORMANCE AUDIT

3.1 Preparation and appraisal of the project

The project was appraised on the basis of a relatively scanty studies with shortcomings with regard to the technical justification and the economic and financial appraisal (PCR 7.0.1).

(i) This comment by the PCR applies mainly to the runway component in respect of which the Bank relied on the results of the available studies and did not make an in-depth engineering study of the state of the runway and an analysis of traffic the growth of which would necessitate the extension of the runway from 2,400m to 3,200m and raising of the LCN from 75 to 90. The technical justification given relates to only the fact that the airport should be able to receive B747 aircrafts in 1989. Unfortunately, this justification was not based on the intentions of international airlines using the Bissalanca airport to renew their fleet nor on the analysis of the number of aircrafts in the sub-region likely to use the airport in quite a near future (10 years).

(ii) It should be noted however that the Bank's influence on the design of the runway could only be limited since work on it had started already before the Bank came in and as its participation in the financing of the project was sought for only the "navigation aid equipment". This component was correctly prepared and appraised by the Bank which made a very detailed review of the state of the existing equipment and the need to replace or modernize them.

(iii) As stated in para. 6.5 of the PCR, the project's economic rate of return (runway + equipment) is negative. Although this rate was calculated on the basis of an assumed traffic growth lower than that for the over-size of the project compared to demand to be met and the non-optimality of the date of commissioning of the project. The equipment component was justified by the need for safe navigation vis-a-vis difficult atmospheric conditions (rain, fog, etc), but the extension of the runway could have been postponed without prejudice to airlines, since at the date of the completion report, neither the types of aircraft using the airport nor the distances they had to travel had undergone any significant change, remaining similar to those existing before the implementation of the project.

(iv) At the time of the appraisal, the Bank rightly anticipated the financial impact that the proposed investment could have on Guinea Bissau's economy. It made a substantial tariff increase as one of the loan conditions hoping to thus minimize the financial impact of the project cost on the country's economic situation in general. Given the high cost of the project and the terms of the ADB loan (7% interest, repayment over 16 years), the financial impact should have been thoroughly studied during the preparation and appraisal of the project so as to determine its optimum size and the type of loan the Bank could grant.

(v) The institutional aspects of the project were considered at the time of the appraisal. It was noted, among other things, that the airport had no financial autonomy nor autonomous management and that there was a dearth of qualified personnel. Loan conditions were put to take care of these shortcomings but they proved difficult for the Borrower to fulfil for lack of human and financial resources and lack of guidelines as to the successive stages of their fulfilment. For instance, the fulfilment of the condition concerning the introduction of cost accounting system for the airport proposes, among other things, that:

(a) legal measures are taken before hand by the Borrower to turn the adminstrative status of the airport into a commercial establishment;

(b) the principle of the allocation of revenue is accepted by the Government;

(c) studies are conducted to examine the budget system which would best suit the airport.

These measures should be discussed, taken and settled at the time of the preparation and appraisal of the project. As these measures were not taken at the appropriate time, the institutional shortcomings noted during the appraisal could not be corrected during the implementation of the project; the status of the airport has remained administrative and its budget still forms part of the State budget (PCR para. 4.1.3).

3.2 Implementation of the project

(i) Generally, the implementation of the project - civil works and equipment - raised no special problems. The procedures for the procurement of goods and services were suited satisfactorily to the actual conditions of the environment and the actual costs were lower than the estimated costs at the time of the appraisal, although there was an overrun with regard to the civil works as a result of shortcomings in the initial engineering studies and under-estimation of the works to be done (PCR para. 3.5.2). Certain works remained uncompleted after the final handover. These included the replacement of a high frequency transmitter and the application of an anti-kerosen product on the aprons and the extreme ends of the runway.

(ii) On the other hand, the implementation of the technical assistance component was difficult. The Borrower had not got the required ability to:

-- prepare the terms of reference for the technical assistance which did not feature in the appraisal report;

-- work out the process of recruitment of the requisite experts;

Consequently, the implementation of the technical assistance component was very fragmentary and the results of the project as a whole were seriously affected.

3.3 Financial appraisal

(i) Although no legal framework was laid down for the airport, the appraisal report considered the financial situation of the project using a number of assumptions concerning traffic, tariffs, amortization of equipment and interests on loans. The appraisal report provided for an appropriate increase of various fees to ensure adequate financial stability; even with the proposed tariff increase, the airport's operating accounts could record deficits throughout the economic life of the project (Appraisal Report, para. 5.4.8).

(ii) The project completion report reviews the financial situation of the airport on the basis of new and more realistic traffic growth assumptions and tariff increase assumptions similar to those of the appraisal. The durations of amortization of fixed assets taken into account by the completion report correspond however to an economic amortization and differ considerably from the durations of accounting and amortization adopted by the appraisal report which are more in line with a financial analysis (buildings and runway: 30 years according to the PCR and 50 years according to the appraisal report; navigation and equipment: 15 years according to PCR and 50 years according to appraisal report). The financial results determined by the PCR are not comparable to those calculated by the appraisal report and appear over-estimated (PCR para. 5.2.2) considering the amortization charges which are clearly higher than what the PCR takes into account.

3.4 Economic appraisal

3.4.1 The Audit notes with the PCR (para. 6.1.1) that the economic appraisal made at the time of the appraisal of the project was restricted to a mere qualitative description of the socio-economic impact of the project on the country. Furthermore, the description repeated what has been said in previous appraisal reports on airport projects in Malawi (1977) and Lesotho where the geo-political environment and investment stategies are completely different from those of Guinea Bissau. No effort was made to quantify the project benefits with a view to calculating the economic rate of return.

3.4.2 On the other hand, the PCR uses the appropriate methodology for the economic appraisal and makes a careful analysis of the quantifiable benefits for determining the economic rate of return (PCR para. 6.2 to 6.5). Considering the low volume of traffic at the time of the completion report, the rate of return obtained by the PCR was -7.7% for the project as a whole. This means that the project is a burden for the country and that it was appraised without an in-depth analysis.

3.5 Project viability

(i) On completion, the project has turned out to be non viable, given that the institutional problems have not been solved and that the airport has no adequate qualified personnel to run and maintain it. Furthermore, lack of foreign exchange and inadequate local funds hamper the normal running of the airport.

(ii) The recent Bank operation, September 1988 (institutional support to the Civil Aviation), involving improvement of the quality and availability of human resources essential to the running of the airport will in the medium term increase the viability of the project. Beyond this period, the problem of human resources is likely to reappear.

(iii) Concering the financial charges resulting from the ADB loan, the project cannot be financially viable even in the medium term.

4. CONCLUSIONS, LESSONS AND RECOMMENDATIONS

4.1 The Audit comes to the same conclusions with the Completion Report. The project has recorded a very minimal success due mainly to:

(i) pre-existing institutional shortcomings which have not been solved by the project;

(ii) the extremly high cost of the investment.

The viability of the project is unconfirmed given that the airport has no foreign exchange and sufficient local currency.

In the final analysis, these initial causes of the limited success of the project are due to inadequate preparation, the phase where the Bank actually got involved only in the navigation aid component. The appraisal of this phase by the Bank was done on the basis of a thorough engineering study, whereas the appraisal of the runway was based on only the results of very scanty studies.

4.2 In addition to the recommendations by the PCR, the Audit recommends:

To the Government

(i) the administrative status of the airport into a commercial-oriented establishment;

(ii) to make tariffs increase of 30% in 1990 as agreed upon.

To the Bank

(iii) to, generally, appraise a project in its entirety even if it is financing only one of the components;

(iv) to give, in appraisal reports, the terms of reference of technical assistance personnel, procedures for the procurement of the services of such personnel and the results expected from their services;

(v) for airport projects, to fix, over a period, short, medium and long-term financial objectives so as not to increase airport charges inconsiderately.

AFRICAN DEVELOPMENT BANK

TRANSLATOR: Mrs. Moira SHORT-FERRAN

COMPLETION REPORT OF THE BISSALANCA AIRPORT (OSVALDO VIEIRA) REHABILITATION PROJECT - REPUBLIC OF GUINEA BISSAU

DEPARTMENT OF INFRASTRUCTURE AND INDUSTRY

Wang Ref. No. 0193M

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The present report was written by Mr. D. BONNET (Civil Aviation Engineer) Mrs N. LANARI (Financial Analyst) and H.G. OUEDRAOGO (Transport Economist), in the wake of the mission they carried out in Guinea Bissau in April 1986. The Division Chiefs are:

Messrs: W. BYARUHANGA - WISI (Extension 3154)
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EXCHANGE RATE

Currency Unit	Guinean Pesos
Rate of Exchange in the year of appraisal	Rate of Exchange of the Completion Report
1 BUA = 44.0 GP	1 BUA = 190.693 GP
1 BUA = 1.1506 US $	1 BUA = 1.13827 US $

Following the heavy fluctuation of the currency of the country (the Guinean Pesos) and given the fact that the deals were passed in US $ the latter currency was chosen for the estimates of the financial and economic appraisals.

ACRONYMS

ASECNA	:	African and Malagasy Air Navigation Safety Agency
TAA	:	ADF Technical Assistance Account
CAD	:	Civil Aviation Department
KDF	:	Kuwaiti Development Fund
IDA	:	International Development Association
ICAO	:	International Civil Aviation Organization
UNDP	:	United Nations Development Programme
TAGB	:	Guinea-Bissau National Airline
TAP	:	Portuguese Airline

COMPLETION REPORT
OF THE BISSALANCA AIRPORT REHABILITATION PROJECT
REPUBLIC OF GUINEA BISSAU

Basic Data

	Designation	Estimates of the Appraisal Report	Actual Results
1.	Total Cost of Project (in millions of US $)	20,7	22,73
2.	Overrun of cost (in millions of US $)	-	2,03
3.	Amount of ADB Loan (in millions of UCB)		
	- provided	10,0	
	- disbursed	-	9,019
	- balance		0,981
4.	Date of Completion (provisional handover)		08/06/1984
5.	Beyond the Deadline		
6.	Internaal Rate of Financial Profitability	6,1%	-7,6%
7.	Rate of Economic Profitability		-7,7%

Disbursements of ADB Loan

(in millions of UAs)

Fiscal Years	Estimates of the Appraisal Report	Actual Disbursements
1982	1,976	1,725
1983	4,762	2,350
1984	2,452	3,894
1985	0,810	1,050

Further Information on the Project

- Identification of the Project — June 1981
- Official Government Request — 25 June 1981
- Negociations — 20 January 1982
- Board Approval — December 1981
- Date of signing of the Loan Agreement — 22 January 1982
- Effectiveness — 21 September 1982
- Closure Date — 30 June 1986
- Borrower: Government of the Republic of Guinea-Bissau
- Executing Agency: Ministry of Transport, Tourism, Telecommunications, Civil Aviation Department

Dates of Missions

Designation	Month/Year	No. of Days	No. of Persons	Date of Report
Identification) Preparation) Appraisal)	June 1981	11 days	2 persons	December 1981
Supervisions			None	
Completion	April 1986	6 days	3 persons	

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1. INTRODUCTION

1.1 Description of the Transport Sector

1.1.1 There are three means of transport in Guinea Bissau, namely: road, sea and fluvial and air. At the moment the transport system is still at a rudimentary stage despite attempts initiated by the Government since the Country's Independence to equip her with facilities required to render all regions of the country accessible and hence to further her economic and commercial exchanges.

Road Transport

1.1.2 The road network of Guinea-Bissau was conceived so as to facilitate the transport of goods and persons at a low cost; the plan was strongly influenced by two main obstacles: the need to link the various sea-ports by means of roads and the necessity to supplement ferry services which make use of the various sea-arms.

1.1.3 The overall road network of the country comprises of about 2.300 Km, of which, 485 Km are tarred. The physical aspect of the country, her heavy penetration of sea-arms and high watercourse density accounts for the high number of roadworks, bridges and ferry boats seen across the country.

Fluvial and Sea Transport

1.1.4 Until recently, this form of transport was the most common because of the geographical lie of the land; the latter consists of a certain number of islands all permeated by sea-arms. The country can boast of eight secondary regional ports and divers smaller ports (27) which serve coastal navigation linking various regions. The Bissau Port is the only deep-water port and accounts for almost all international traffic. Generally speaking, facilities and equipment of this sub-sector were very out-dated till the Port was rehabilitated through funds made available by the KDF and the IAD.

Air Transport

1.1.5 Considering the surface of Guinea-Bissau: 36.125 sp Km, the number of landing tracks in the country is impressive (about 17). This is due to the fact that it is difficult to approach many regions by land. These airports are served by the National Airline, the Transports Aereos da Guine Bissau (TAGB). The Bissalanca Airport is the only one of International calibre and it is served by the National Airline (the TAGB) but also by neighbouring airlines such as Air Senegal and Air Guinee, for regional flights. International traffic is discharged by the following airlines: Air Portugal, Aeroflot, TAAG (Angola) and LAM (Mozambique).

1.2 Government Policy relating to Transport

1.2.1 Since the independence of Guinea Bissau (in 1974), the Powers-that-be have undertaken a vast programme of reconstruction of the country with a view to giving her a sound economic foundation. Since the success of such a programme is largely tributary to the existence of a good transport network, the authorities commissioned without delay a general transport survey in order to take steps favourable to a harmonious economic development. This survey, funded by the Bank Group has been available since 1980 and has since been one of the major groundwork documents the Government consults for its activities in the field of transport.

1.2.2 The priority goal set was to make the remote areas of the country accessible and to intensify communications between the different regions. Particular emphasis was laid on the need for more efficiency and complementarity between the different means of transport. To reach the set goals, the Government undertook to:

-- provide the country with a road, maritime, fluvial and air network to enable and encourage the efficient circulation of man and goods.

-- better the management of existing infrastructures and equipment and to rationalize the running of enterprises operating in the sector.

-- plan out state intervention in the various means of transport.

These various measures were made concrete by: the construction of the Jugudul-Bambadinca Road, rehabilitation of the Bissalanca Airport, road maintenance projects, rehabilitation of harbour installations started in 1980 by the Government with the help of external funds.

1.3 Identification and Objectives of Project

1.3.1 The Rehabilitation Project of the Bissalanca Airport was identified in June 1981, during the mission intended for the appraisal of the Catio-Buba-Tite Road construction project, during which the Government informed the Bank about a change in priorities in the transport sector. Indeed, the Bissalanca Airport Rehabilitation Project launched in 1987 needed supplementary funds as a result of an under-estimation of costs.

1.3.2 The Powers-that-be then made a request to the Bank for the Project's inclusion in the Bank's pipeline, in replacement of the initially identified project: that is to say, the construction of the Catio-Buba-Tite Road.

1.3.3 Operations relative to the extension of the landing strip and the putting-up of buildings were started in 1980 but were interrupted at the time of request because the firm failed to honour its commitments.

1.3.4 The objectives fixed by the Bissalanca Airport Rehabilitation Project meant the extension of facilities in view of accomodating the landing of the B. 707 type aircraft on its medium or long distance flights, the renewal and build-up of technical equipment thereby making the Airport operatable in all conditions and in conformity with international safety regulations. This project had been recommended by an overall transport survey of Guinea-Bissau (1980) and its priority was asserted at the level of the country's economic development programme.

1.4 Role of the Bank Group in the Transport Sector

1.4.1 The Bank Group contributed to the financing of three transport-related projects in Guinea-Bissau:

1) The first road project which cost 9.8 million BUAs in all (5.2 million BUAs in 1976 and 4.6 million BUAs in 1980), consisted of:

- the implementation studies of the Jugudul-Bambadinca Road and of the bridge over the Geba;

- the feasibility and implementation studies of the Catio-Buba-Tite Road and the Joa Landin Bridge;

- a general transport survey. This project has been completed since 1982 and the Completion Report of this first project which was written in August 1984 mentions in its conclusion that the cardinal goals set were reached.

ii) The Bissalanca International Airport Rehabilitation Project: a loan of 10 million BUAs was granted in December 1981 for the supply and installation of Airport equipment and this project is the subject of the present Completion Report;

iii) feasibility study and up-dating the detailed technical study as well as inviting bids for the Bambadinca-Xitole-Queba Road: a loan of 424.000 FUAs was granted on funds made available by the TAA in May 1984; these surveys have been completed and the project will be appraised in 1988. In 1983, the Bank also funded a study on the possibilities of setting up a public enterprise for transport in Guinea-Bissau.

1.5 Origin of information and Basic Data Used

1.5.1 The present report was written following consultation of appraisal reports of the project, of the final report written by the consultant commissioned to control and supervise operations and inquiries carried out by the Bank mission which was dispatched to Guinea-Bissau from 21-26 April 1986. Certain points have been up-dated in the wake of the project's appraisal mission institutionally backed by the Civil Aviation Department in October 1987.

2. Description of Project

2.1 Description of Project

2.1.1 The project as a whole involves not only the infrastructure and equipment of the airport but the following operations as well:-

a) engineering works to extend the main landing strip which is 45 metres wide by two shoulders, 7.5m wide, so as to lengthen the strip from 2.400m to 3.200m; drainage and reinforcement of the top layer of the landing strip of the runway and of the parking apron;

b) building of a technical block adjoining the control tower and facilities to house the main power station and the five sub-power stations;

c) rehabilitation of the transmitting station buildings;

d) supply and installation of equipment needed for:

i) day visual aids and lighting appliances;

ii) communications equipment, air-traffic control equipments, meteorological and Navigation Office;

iii) power supply and distribution system.

e) engineering works relative to the electrical supply and distribution systems;

f) supervision and control of civil engineering works as well as the supply and installation of technical equipment;

g) technical assistance at the Civil Aviation Department for the implementation and management of the Project.

2.2 Technical Justification

2.2.1 Technical justification of the Project is based on the findings of the General Survey of Transport carried out in 1975 and of the technical study carried out in 1978. The length of the strip was determined by the Guinea Bissau/Lisbon connections effectuated in the B.707-type aircraft. Concerning technical equipment, the objective is to make the Airport operative at all times (steering aids) and to conform to international safety regulations (aerial communications).

2.3 Financing of the Project

2.3.1 The Bank loan was intended to cover most of the cost of sections d) and g): Technical Equipment and Technical Assistance.

2.3.2 The civil engineering sections a), b), c), and e) and the control and supervision of all operations of section f) were financed by the Government and the Kuwaiti Fund.

3. Implementation and Cost of Project

3.1 Effectiveness of the Loan

3.1.1 Among the preliminary conditions stipulated by the Loan Agreement and to be fulfilled at the time of the first disbursement were the following specific conditions:

i) committment of the Government to nominate a Chief Accountant responsible for the financial management of the Project and for expenses and disbursement requests relative to the entry into force of the loan;

ii) committment of the Government to include in its budget, the annual dues required to finance that part of the budget expenditure encumbent on it and application of the funding programme;

iii) committment of the Government to seek complementary funding sources in the event of an overrun of the cost of the project as compared to initial estimates.

3.1.2 These three conditions were fulfilled on 18th March 1982. However, the Government did not recruit a Chief Accountant even though someone was nominated on this same date.

3.1.3 Other conditions include:

i) nominating of an Auditor and dispatch of his reports to the ADB;

ii) recruiting of a qualified Accountant who would work out a modern cost accounting system in view of the management of the Airport;

iii) providing in due course, of premises designed to store equipment which will be used under the Project;

iv) commissioning the Implementing Agency to ensure the maintenance of equipment as well as the training of personnel;

v) appraising the financial impact of the Project and proposing the revision of airport taxes before the putting into service of the new installations.

3.1.4 Condition i) was never carried out. Condition ii) was not carried out either for reasons stated in paragraph 3.1.2 above; the Government had offered to recruit the person nominated as Chief Accountant. Condition iii) was carried out; equipment was installed very near the deadline set in the provisional calendar. Condition iv) was carried out in part; the after-delivery service was ensured within the guarantee period; on the other hand, personnel training services were not very far-reaching (see paragraph 3.7.3). Condition v) was met with the 1985 tax increase and the carrying out in June 1983, of a survey on the Management of the Civil Aviation Department. The proposals put forward by the survey have not been followed by any action.

3.2 Procurement of Goods and Services

Sections not financed by the ADB

3.2.1 The contract signed in 1978 with the Associated Engineers Consulting Agency relative to the control and supervision of the whole operation was amended on 19th February 1982. Consequently, the whole project was supervised by the same consultant which meant a proper coordination of all concerned.

Equipment Section (financed by the ADB)

3.2.3 In 1979, at the time of the Project's take-off, an international bids invitation was launched for the supply and installation of equipment, to 13 enterprises from eight different countries. Only three enterprises replied to the invitation translating the country's difficult accessibility. The offer of the Italian firm Vitroselinia was accepted but negociations had not been finalized because of the time-lag in the civil engineering operations and because of serious financial setbacks. With the resumption of project activities and in order not to delay its implementation, the Government asked the Bank for permission to negociate directly with Vitroselenia, arguing that an international bids invitation had little chances of leading to better conditions. The Bank having ratified this procedure, the up-dated offer of Vitroselenia was negociated with the Government and finally on 27th April 1982, the deal was concluded for the fixed and non-revisable price of 9.800.000 US dollars.

Technical Assistance Section (Financed by the ADB)

3.2.4 As mentioned in Chapter 3.1.4, this section was started off with the proposal to recruit an Accountant; the proposal fell through and the person who had been singled out and who had already been nominated Chief Accountant of the Project was in the end recruited on funds made available by another development institution involved in other projects. Similarly, no Airport Engineer was recruited.

3.3 Amendments made to the Project and Difficulties met

Engineering Operations

3.3.1 Resuming engineering operations was not without its obstacles as a result of the deterioration of works that the first bankrupt firm had done. This meant the definition of a number of additional activities representing about 6% of the initial cost of the deal.

Additional Activities consisted mainly of:

i) the regularisation of the runway platform of the landing strip and of the two shoulders;

ii) the modification of the glide slope transmitter platform;

iii) the reinforcement of some parts of the runway;

iv) the stepping-up of anti-erosive measures: drainage and sowing of grass-seeds;

v) the renovation of some buildings.

3.3.2 After a relatively slow start due to a lack of means, the Enterprise was able to make up for lost time and to handover the technical buildings within the deadline.

3.3.3 One major setback which the project faced was the application of an anti-kerosene product on the aircraft parking lots and on the extreme ends of the landing strip. The firm Soares da Costa applied a chemical to part of the aircraft park and Vitroselenia was entrusted with the completion of the operation. The chemical used by the latter, notwithstanding the reservations of the Consulting Engineer, turned out to be ill-adapted and the Enterprise undertook to repair the damage during the period of guarantee, but the problem was still to be solved.

Equipment

3.3.4 The initial technical study carried out in 1976 by Associated Engineers and on the basis of which Vitrosetenia made an offer, was adapted to suit the intervening changes:

Revision involved mainly:

- the ground lighting systems;
- the adaptation of the central electricity arrangement at the request of the Energy Supply Firm;
- the cutting down of equipment considered superfluous.

Other minor alterations were made during the implementation of the contract.

3.3.5 In the wake of an accident which occured during the transportation by road of some equipment from Dakar to Bissau, the implementation deadline was extended by a month.

3.3.6 Flight control services by radio-electrical means were not provided for in the contract relative to the procurement of equipment but are part of the project and were entrusted to the African and Malagasy Air Safety Agency (ASECNA) and entirely paid for with the Bank loan.

3.4 Project Implementation Programme

3.4.1 According to the implementation programme, engineering works were to resume in January 1982. The contract with the Soares da Costa Enterprise was signed on 26th February 1982 and although the order to start operations was

given on 5th March, operations actually started on 30th March 1982. The initial 18-month period of execution was curtailed so that the projected date of handover could be changed from July 1983 to June 1983. Following obstacles met especially at the early stages, the end-of-project date was extended to July 1983, that is to say, the initially set date. The provisional handover was announced on 26th July 1983 but operations actually came to an end in December 1983.

3.4.2 Regarding equipment, the procedure of the negociated deal made it possible to launch orders as planned during the third term of 1982. The duration of implementation as stipulated in the contract for the whole project i.e. 24 months was respected since provisional handover took place on June 8 1984. Final handover was announced on 28th June 1985 with reservations which were the subject of a guarantee. One of these reservations (replacement of a high frequency transmitter) had still not been lifted at the time of the writing-out of the present report.

3.4.3 All in all, the project was implemented following the provisional calendar and all implementation deadlines were respected.

3.5 Cost of Project

3.5.1 Apart from the technical assistance section which was left out, the cost of the project amounts to 22.74 million dollars to be compared to the 20.10 million dollar estimate which was made of the project in December 1981. A detailed comparison of costs per section is shown in the table below:

Table 3.1
Detailed Comparison of Costs of the Project
(in millions of dollars)

Sections	Cost			
	At appraisal	Actual	Difference	%
Engineering	7,36	11,99	4,63	+63%
Equipment	11,47	9,80	-1,67	-15%
Control and Supervision	1,27	0,94	-0,33	-26%
Total	20,10	22,73	2,63	+13%
Technical Assistance	0,60	Not provided.		

3.5.2 The increase in the Engineering Section stems from:

- an under-estimation of operations planned;
- the bankrupcy of the first contracting firm which meant the extension of deadlines and actualization of prices on the one hand and repairs of damages caused by the suspension of operations on the other.

3.5.3 The appraisal of the cost of equipment section had been based on the offer made by Vitroselenia in 1978 in application of the actualisation ratio for the period 1978-1981 and taking into account an 18% price revision for the implementation period. Direct negociation of the deal with the Vitroselenia Enterprise made it possible to conclude by a firm and non-revisable price which explains the 15% difference between the estimated and actual costs.

3.5.3 The profit on the Control and Supervision Section arises out of the fact that a clause was added to the initial deal for the control and supervision of civil engineering works and could be concluded with the consulting agency for the supply and installation of equipment.

3.6 Disbursements

3.6.1 The sum of the loan was 10.00 million BUA. Of that sum, 9.019 m.BUA. was disbursed for the portion in foreign exchange of the Technical Equipment Section.

3.6.2 The comparative programme of disbursements is as follows:

Table 3.2
Comparative Programme of Disbursements
(in millions of BUA)

Section	1982	1983	1984	1985	TOTAL
Equipment					
Estimated	1,900	4,750	2,375	0,475	9,500
Actual	1,725	2,350	3,894	1,050	9,019
Technical Assistance					
Estimated	0,076	0,012	0,077	0,335	0,500
Actual	-	-	-	-	-
Total					
Estimated	1,976	4,762	2,452	0,810	10,000
Actual	1,725	2,350	3,894	1,050	9,019

3.6.3 The discrepency in the 1983 disbursements is tributary to the delay in implementing engineering operations and hence to the postponement of the delivery of the goods. The actual expenditure programme per section of the project and according to financial source, could not be drawn up because of the non-availability of information relative to the sections financed by the KDF loans.

3.7 Responsibility of the Consultant, the Borrower, Enterprises and the Bank

3.7.1 The services of the Italian Consulting Agency, Associated Engineers, which had prepared the feasibility studies of the project and which controlled and supervised all operations were as a whole satisfactory. The agency wrote 5 Progress Reports on the project, as well as a completion Report.

3.7.2 The Soares da Costa Enterprise in charge of carrying out engineering operations came up to expectations, despite a slow start and insufficient means.

3.7.3 The Vitroselenia Enterprise also came up to expectations concerning the supply and installation of technical equipment with the exception of various reservations which had still not been cleared a year after final delivery. Vitroselenia had besides accepted to cover the cost of the anti-kerosene treatment although as to the training of personnel and the maintenance of new equipment for which 500.000 dollars had been earmarked, only a limited number of training courses were organized in factories and they had no bearing with the needs of airport personnel. This is because there was no crystal clear definition of these services in the clauses of the contract.

3.7.4 Owing to a shortage of well qualified personnel, the Borrower could not focus its attention on the Project's execution. No Progress or Completion Reports were prepared and to boot, two of the six conditions stipulated in the Loan Agreement were not met, nor were any measures taken in favour of the Technical Assistance Component.

3.7.5 The Bank for its part hardly followed the Project's progress even though the conditions which led to its participation and the patent weakness of the country's administrative services should have instigated it into paying particular attention to the Project. No supervisory mission was sent out to Guinea-Bissau and the Bank took no heed of the complete disregard for the Technical Assistance Section, indispensable as this section was, for the implementation and more so, of the very running of the project.

4. ORGANIZATION AND EFFECTIVENESS OF ACTIVITIES OF THE CIVIL AVIATION DEPARTMENT

4.0.1 Civil Aviation activities are incumbent on the Transport Secretariat of the Ministry of Social Equipment. The Civil Aviation office is responsible for the regulation and control of activities specific to civil aviation and is responsible for the workings of airport facilities. The National Airline TAGB ensures national and international connections within the sub-region.

4.1 The Civil Aviation Department

4.1.1 This office does not have any central administrative department to deal in particular with matters concerning regulation, tutelage of air transport, international relations and more globally, policies in the field. Its total manpower is made up of personnel at the Bissalanca Airport organized in the three following departments:

- -- an operations department responsible for activities pertaining to air-traffic control, statistics, aeronautical information, safety measures, fire control and telecommunications;
- -- an administrative and financial department responsible for the patrimony and for activities relative to personnel, to general services and to financial aspects (accounts, invoicing, funds);
- -- a maintenance department responsible for the up-keep of vehicles, electrical and telecommunications equipment as well as civil engineering (except for the maintenance of the strip which is done by the Public Works Department). Other Departments such as Police, Customs, Health, Weather, do not come under the responsibility of the CAD, as the organization chart to the effect, shows in Appendix 2.

Personnel and Training

4.1.2 The workforce of the CAD is 156, 31% of whom are in the Administrative Department, 41% in the Maintenance Department and 23% in the Operations Department. Generally speaking, members of staff are under-qualified and there is a shortage of executive personnel; consequently, the post of Director General is currently held by a top grade technician. The CAD has since 1978 been provided with technical assistance by the ICAO. The Civil Aviation Department Project funded by the UNDP, made it possible to:

- -- set up a Training Centre for Civil Aviation personnel; designed on the one hand to give basic general training to staff picked to go on specialized training courses abroad and on the other hand, to provide all-time and re-training courses for certified agents;
- -- grant a relativly high number of scholarships to train air-traffic supervisors, runway office agents electricians, electro-mechanics, electronics specialists and some administrative assistants;

-- provide the CAD with two experts.

i) a technical adviser who in practive will carry out the duties of Airport Director in the absence of a guinean official;

ii) an equipment expert who will be responsible for the maintenance of airport installations.

-- procure spare parts for safety equipment.

The technical assistance played an important role in the ICAO implementation of the Project, covering the cost of new equipment, in good terms. The end of these services planned for late 1986 may in the short run have adverse repercussions on the functioning of the Airport.

The appraisal of immediate training needs was done and involves about twenty technicians but the corresponding funds are still to be found.

Budget, Accounting, Finances

4.1.3 As far as the budget is concerned, the Airport operates like a Government department; its operational costs figure in the budget of the Ministry of Social Equipment and proceeds from various taxes and dues are paid into the Treasury. The airport does not have its own commercialized accounting system and identifying income and expenses is not an easy task.

Functioning of the Airport

4.1.4 The functioning of the airport is beset with various deficiencies and restraints, namely:-

i) the shortage of foreign exchange makes it difficult to procure materials and spare parts and consequently, the fire control service is almost inexistent;

ii) the shortage of a reasonable number of qualified executive personnel and technicians;

iii) the unreliability of the power supply network of the town of Bissau means an over-utilization of generators which in turn means their replacement earlier than planned;

iv) the insufficient financial resources means limiting the opening hours of the airport to twelve, thereby restricting air transport possibilities.

4.2 The National Airline

4.2.1 The TAGB (The Guinea Bissau Air Transport Company) possesses a fleet of seven planes of which only one is in any flying condition: the HS 748 (48 seats) which flies regularly twice a week to Dakar and to Cufar in the South of the country.

5. FINANCIAL APPRAISAL

5.1 General Information

5.1.1 The objective of the Bissalanca Airport Rehabilitation Project was to provide the country with the infrastructure that will enable the possible landing of the "jumbo-jet" type aircraft, considering the rapid growth prospects of air traffic, according to the transport programme devised by the Lavalia-Dekaade Consulting Agency. Under the Project, the financial appraisal had formulated the requisite conditions for an efficient discharge of the affair to be made lucrative as of 1992.

These conditions projected in particular:-

i) the gradual increase of airport taxes in accordance with the following lapses:-

1984: a 20% increase - more than the rate applied as of June 1981 at the Abidjan airport.

1990: a 30% increase.

2000: a further 30% increase.

ii) the setting up of a commercial accounting system headed by a qualified Accountant.

5.1.2 After some delay, the first condition relative to tax increases was met as of January 1985. However, the nomination of an Accountant and the setting up of a commercial accounting system were not carried through. Besides, the CAD does not have a budget to defray its expenses in foreign currencies. In the absence of minimum management conditions, the two main Airlines using the airport (TAP and Aeroflot) calculate their own taxes and pay them directly to the National Bank of Guinea-Bissau. The National Airline (TAGB) does not pay any dues although it is not exempted from doing so.

5.2 Financial Results

5.2.1 With the help of the ICAO, the CAD drew up a recapitulation of expenditure and receipts of recent years as well as a provisional budget of the Airport for 1986. A comparison of the operational results planned in the appraisal report and those which were actually carried out (1985) or in progress (1986), is shown in the table below:

Table 5.1
Bissalanca Airport - Operational Receipts and Expenses
(in thousands of GP)

	1985		1986		
	Proposed	Attained	Proposed	Estimated	Attained
Receipts	35.540	22.548	38.276	30.000 (1)	72.496
Expenditure	48.100	55.100	54.200	89.000 (2)	69.019
Gross Operational Results	(12.560)	(32.551)	(15.924)	(59.000)	+3.477

(1) ICAO/CAD Estimate
(2) ADB mission estimates of April 1986
(3) Information received after the ADB mission of October 1987.

5.2.2 Growth estimates of passenger traffic were not made during the 1979-1985 period. There was even a decrease between 1980 and 1983. The average growth rate for the period was around 5% per annum instead of the 11% estimate of the appraisal report. It is however important to point out that if all taxes due had actually been paid in 1985 the operation could have been balanced.

5.3 Financial Projections

5.3.1 The estimates established during appraisal of the Project were revised and up-dated to take into account:

i) new traffic prospects explained in chapter 6.3 below and in appendix 7;

ii) a 30% increase of tariffs, except those concerning ground lights which have already reached those of the sub-region;

iii) an increase of about 19 to 35% of salaries as of the second half of 1986.

However, future financial results will depend not only on the growth proceeds but more on the efficiency of the airport management system.

5.3.2 The provisional operational costs are made of salaries and social welfare contributions, of maintenance and running costs. The actual growth of salaries was estimated at 2% per annum, as of 1986. Financial expenses were calculated in the light of the ADB and KDF loan conditions, maintenance and depreciation costs were calculated on the basis of suppositions given in paragraph 6.4.2 below.

5.3.3 The main sources of operational earnings of the Bissalanca Airport are passenger embarkation and landing taxes, parking and ground-light taxes from national and international passengers and movements.

5.4 Operating Account Projections

5.4.1 The analysis of operational projections on the basis of suppositions outlined above, shows an operation which will show a deficit during the period the project lasts. Even the gross operational results before the deduction of financial expenses will become positive only as from 1999. If one considers an increase in the ground-light taxes in 1987 (150$/movement) the operation will be profitable as from 1998. The airport is therefore a financial burden on the state budget, will still be so even with a sound financial management. The operating projections estimates are shown in appendix 4.

5.5 Internal Financial Rate of Profitability

5.5.1 A further calculation of the financial profitability brings out a negative rate of 7.6%, against a positive rate of 6.1%, projected in the appraisal report. In calculating, account was taken of the total cost of the project i.e. 22.73 million US dollars. In the post-project situation, expenses and receipts are those of the operational accounts shown in appendix 4.1 drawn up in the light of suppositions given in paragraph 6.4.2 below. Projections of the operational accounts in the pre-project situation are shown in appendix 4.2 and the rate of profitability estimates are given in appendix 5.

6. ECONOMIC SURVEY

6.1 General Information

6.1.1 The line followed in the economic appraisal of the Rehabilitation Project for Bissalanca Airport, was not the traditional line consisting of comparing expenses and economic advantages of the project with a view to determing profitability; rather, it was limited to a description of the socio-economic repercussions expected of the investment. This line of approach is justified in part, by the weakness of the feasibility study of the investment in question, which took into consideration only the overall impact of the project on the national income, without any prior micro-economic analysis of the direct advantages of the investment in the operation and of the functioning of the Airport.

6.2 Methodology

6.2.1 The methodology adopted in the report is that of the advantages-expenses analysis which is also limited in its appreciation of the quantifiable benefits of the project as a result of inadequate information on the Bissalanca Airport as it was before the Project and more precisely, on the expected operational impact of the Airport in the wake of the installation of new technical equipment.

6.3 Traffic

6.3.1 The mission could not acquire satisfactory information on the past and present traffic situation of the Airport. It however attempted a traffic estimate for 1985 from statistics available from some airlines (Air Portugal and Aeroflot) as well as for the filling rate for aircrafts bound for Bissau (see Appendix 6, rates estimated from information given by the Civil Aviation Department). A comparison of the 1979 traffic (35.000 passengers) with the estimates for 1985 (about 46.000 passengers) makes it possible to arrive at an average annual traffic growth rate of 5%. This rate will however not be taken into account for traffic projections because of the short and medium term development prospects for the aviation sub-sector in Guinea-Bissau. The table below makes a comparison between the traffic estimates of the evaluation report (aircraft and passenger movements) and the actual results for 1985.

Estimated and Actual Traffic (1985)

Number of Passengers			Movements		
Estimated	Actual	% of Achievement	Estimated	Actual	% of Achievement
66.290	46.239	70%	3.672	1.032	28%

6.3.2 As the table illustrates, there was an over-estimation of the traffic expected; this stems not only from optimistic growth rates put forward during appraisal (an 11% average yearly rate for passengers and 9.5% for movements), but especially, of the empiric justification of the strip extension, from 2.400 to 3.200 metres, assuming a heavy traffic of "jumbo-jets" of the DC8 type (about 27%). This assumption could not be proven, in so far as the type of aircrafts landing at the Bissalanca Airport before and after the Project are the same. In other words, the extension of the strip fell short of the desired results. Further investment efforts in other sectors of the economy and in hotel facilities in particular, might have favoured the arrival of jumbo jets.

6.3.3 The scope for development at short and medium term in the air transport sub-sector in Guinea-Bissau being slim and since the only available traffic data (from TAP and Aeroflot) show an average annual growth rate oscillating between 1 and 2% (for the period 1982-1985) it seemed reasonable to consider the following assumptions of traffic growth:

- International and neighbouring traffic: 2% per annum from 1986 to 1990; 4% per annum from 1991 to 2000
- Domestic traffic: 2% per annum till the year 2000 (this low rate is justified by the current precariousness of what is offered in the line of transport).

Although these rates are classic, they also correspond to those put forward as the "average estimate" of growth (as compared to the "low" and "high" estimates) of the "Survey of the Accounting Division of the Civil Aviation Division Department for the Bissalanca Airport" (June 1983). Traffic estimates stemming from the above growth assumptions are shown in Appendix 7.

6.4 Cost and Advantages of the Project

6.4.1 As specified in paragraph 6.1.1 no advantage cost analysis was carried out during the economic appraisal of the project which makes any comparison with the current situation impossible. The economic costs examined in the subsequent paragraphs are those up-dated in 1985, tax free and price-adjustment free.

6.4.2 The economic cost of the project amounts to 25.54 million dollars and can be broken down as follows:

- Air Strip section: 13.88 million dollars
- technical equipment Section: 11.66 million dollars.

These costs cover the control and supervision of operations. The annual cost of maintaining the airstrip, buildings and equipment were estimated for pre and post project conditions, on the basis of investment costs, at the rate of 0.50% for buildings, 0.2% for the strip and 2% for equipment. Account was also taken of the fact that the landing strip was compulsorily reinforced before the Project started, for a total of 1.5 million dollars. Lastly, a residual value was estimated on the basis of a depreciation period of 30 years for aeronautic roadways and buildings and 15 years for technical equipment.

6.4.3 The quantifiable benefits of the Project are represented by the following factors: increase of aeronautical receipts (landing, ground-lights and parking taxes, cf Appendix 8) following the Projects implementation. These advantages, to the exclusion of those related to parking, are attributable to the two sections of the project (strip and equipment).

6.4.4 There are also a certain number of quantifiable benefits which could not have been set down, owing to a scarcity, in particular, of meteorological data indispensable in determining the operational minima made possible by the installation of navigation aids. These advantages are generally very important in the justification of Airport equipment but could not be assessed owing to a lack of precise details on the "pre" and "post" project eras.

6.4.5 The Project can also boast of unquantifiable benefits linked mainly to safety. They include:

- more safer and more regular flights, which in the medium term should promote the development of air transport in general and air freight in particular;

- moreover, the rehabilitation of the Bissalanca Airport will have enabled the creation of about thirty jobs for specialized technicians who manipulate Airport equipment; related training was given through the UNDP/IOCA (cf paragraph 4.1.2).

Lastly, the project has to a greater extent made Guinea-Bissau more accessible and that could only invigorate the country's economic activity.

6.5 Economic Profitability of the Project

6.5.1 Determining the economic profitability of the whole project solely on the basis of costs and advantages enumerated above would be theoretical and insignificant without the following specifications: thus as stated in paragraph 6.4.4, some advantages linked to the equipment section could not be assessed for want of precise details relative to before and after project conditions (especially meteorological data, operational cost of equipment etc ...). Consequently, the following points must be evaluated:

- the economic profitability of the airstrip section taken in isolation the results of which may be considered significant;

- the economic profitability of the two sections together (airstrip and equipment).

6.5.2 Calculating the internal economic profitability of the strip brings out a negative rate of-2.4%. This confirms the fact that extending the strip was an unjustified investment and prematurely carried out. The low level of traffic means furthermore, that even with more optimistic traffic growth rates (than those given) profits will nevertheless be small.

6.5.3 Appendix 9 shows the economic profitability of the whole project not including equipment and their maintenance costs but without any supplementary profits. In this particular case, the economic profitability of the Project is around - 7.7% and as stated in paragraph 6.5.1, this rate is still not significant in so far as the advantages of the equipment section were under-estimated.

6.5.4 Considering what precedes one may conclude that:

- the extension of the airstrip of Bissalanca Airport was carried through prematurely;

- the Bank granted a loan for the financing of the equipment section of the project without any prior economic justification of the investment concerned.

7. CONCLUSIONS AND RECOMMENDATIONS

7.0.1 In 1981 the Government of the Republic of Guinea-Bissau asked the Bank to assist it and to provide complementary funds needed for the Bissalanca Airport Rehabilitation Project already underway since 1980. The Project consisted of extending the landing strip on the one hand and on supplying and installing technical equipment required for safe and regular flights on the other. Project studies had been completed and bid invitations opened prior to the Bank's intervention. The Project was assessed very quickly on the basis of rather scanty and sketchy studies not only on the technical justification but also on the economic and financial appraisal. Furthermore, the loan was approved by the Bank's Board of Directors before being negociated with the Government.

7.1 Attainment of Objectives

7.1.1 The technical objectives fixed by the Project were as a whole reached; Bissalanca Airport now has facilities to satisfy international air transport needs. But the target to provide the Airport with an efficient management and operational structure was missed.

7.2 Technical Justification of the Project

7.2.1 If the equipment section was defined in accordance with international regulations, one may have reservations as to the relevance of lengthening the landing strip from 2400 to 3200 metres. Indeed, before extending the strip Bissalanca Airport was already connected to Europe by flight stopping over in Cape Verde and other airports. Considering the general flight trends and because the potential traffic of Guinea-Bissau following estimates, can barely justify more than a few direct flights to Europe, the advantages of such an extension are rather limited as compared to the rather high corresponding investment. The main beneficiary is in reality, Air Portugal which can reduce its operational costs by flying non-stop from Lisbon to Bissalanca although that does not necesserily mean a reduction in transport costs.

7.3 Financial and Economic Results

7.3.1 The economic analysis of the Project justification was based on a macro-economic approach ill-adapted to this type of investments for which a detailed micro-economic approach would have been more relevant.

7.3.2 The economic analysis and financial estimates were based on traffic projections which turned out to be much too optimistic thereby leading to an over-estimation of expected advantages and receipts.

7.3.3 The fact that investments related to air safety are not easy to make profitable, economic and financial results are on the whole poor; the charge is all the more leavy in the light of the country's indebtedness, given the hugeness of the loans granted.

7.4 Implementation and Cost of Project

7.4.1 The intentions of the appraisal report were generally speaking, taken into account with regards to the implementation schedule, with the exception of the technical assistance section which was shelved. Concerning the material components engineering and equipment, inclusive of control and supervision, the final cost was 13% above estimates as a result of an under-estimation of engineering operations. Technically speaking, one may consider the Project satisfactority implemented with nevertheless, reservations as to personnel training and equipment maintenance.

7.5 Institutional Aspects

7.5.1 It is in this field that the project leaves much to be desired. Although identified, since they justified the existence of the "Technical Assistance" section, the institutional aspects were under-estimated. To crown it all, this section was not carried through; consequently, there is no appropriate structure to ensure the smooth running of the Airport nor are there sufficient means to guarantee its operational effectiveness. There are still huge setbacks connected with personnel (top grade staff shortage and insufficient training) added to external limitations (irregular power supply), these conditions are enough to call into question not only the reaching of the projects' set goals, but also the investments as such, through a lack of means and qualified personnel to keep track of these investments.

7.6 Environmental Aspects

7.6.1 The Project did not have any far-reaching effects on the environment; some engineering operations made it possible to improve the drainage system of the platform, thereby curbing the erosive effects of the rain on the natural terrain. The renewing of navigation and landing aids allow for a guarantee of circuit specifications and hence for a control of all possible acoustic disturbances.

7.7 The Bank's Conditions of Intervention and Monitoring of the Project

7.7.1 The Bank at once identified and appraised the project on the basis of studies which were not sufficiently analysed and some of whose conclusions are open to question. The Project's implementation was not closely followed and no mission was dispatched; this would no doubt have made it possible to watch over the implementation of the institutional section, of cardinal importance in the project's accomplishment.

7.7.2 The situation was made worse by the fact that the loan conditions, termed mere committments for the Government were not binding enough to guarantee their actual entry into force.

7.8 Conclusions

7.8.1 Improving the Bissalanca Airport was technically justifiable if Guinea-Bissau was to be in a position to maintain and expand her air relations which are of prime importance to her economic development. Nevertheless, part of the investments should have been curtailed or postponed, given the economic unprofitability which the Bank did not appreciate. More notice should have been taken of this issue.

7.8.2 Because the Bank failed to be attentive to the Project and because of administrative hitches, the institutional structures needed to warrant the existence of the Project were not set up, a further intervention by the Bank in the form of a technical assistance loan seems imperative.

7.9 Recommendations

7.9.1 The Bank is therefore advised to:

i) lay more emphasis on the economic and financial justification of projects of this nature, as well as on the institutional aspects based on thorough studies which would have explored the realities of the country;

ii) see to it that the terms of the loan connected with meeting the targets be actually respected;

iii) attach more importance to the supervision of the project especially in the event of any obvious defect on the part of the implementing agency;

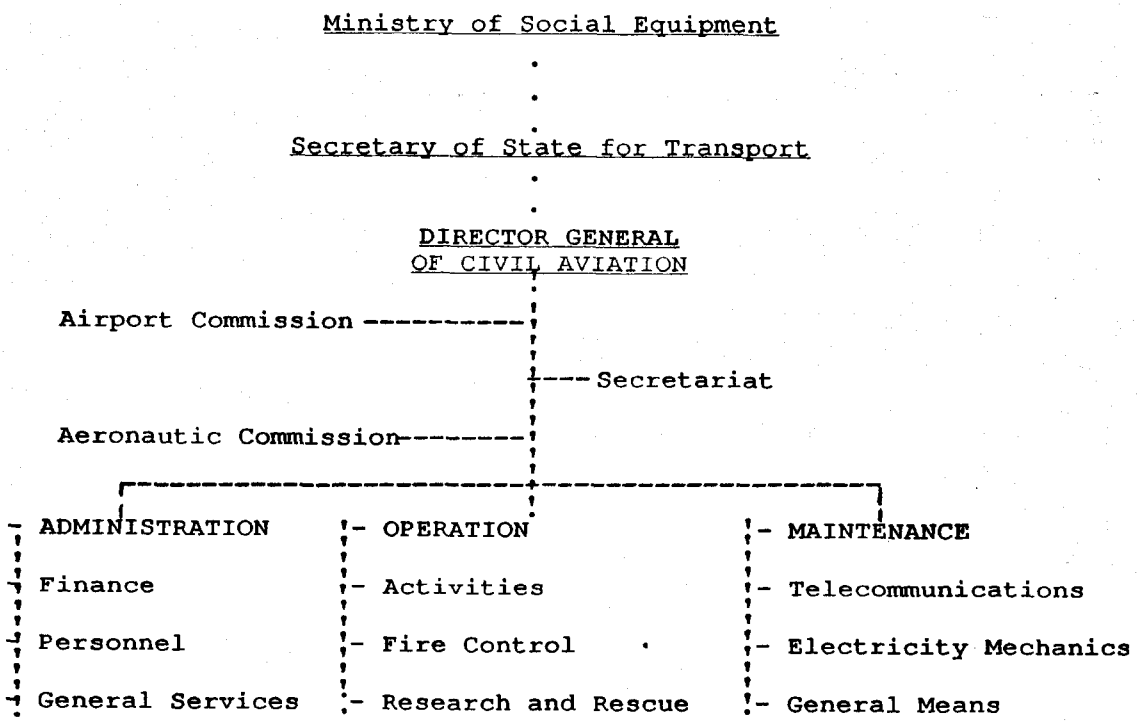
iv) intervene again by providing the technical assistance needed to keep the project going.

N.B.: A solution has just been found for recommendation iv) with the approval in September 1988, of a Project relative to an institutional support for the Civil Aviation Department.

REPUBLIC OF GUINEA-BISSAU

COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Organization Chart
of the Civil Aviation Department



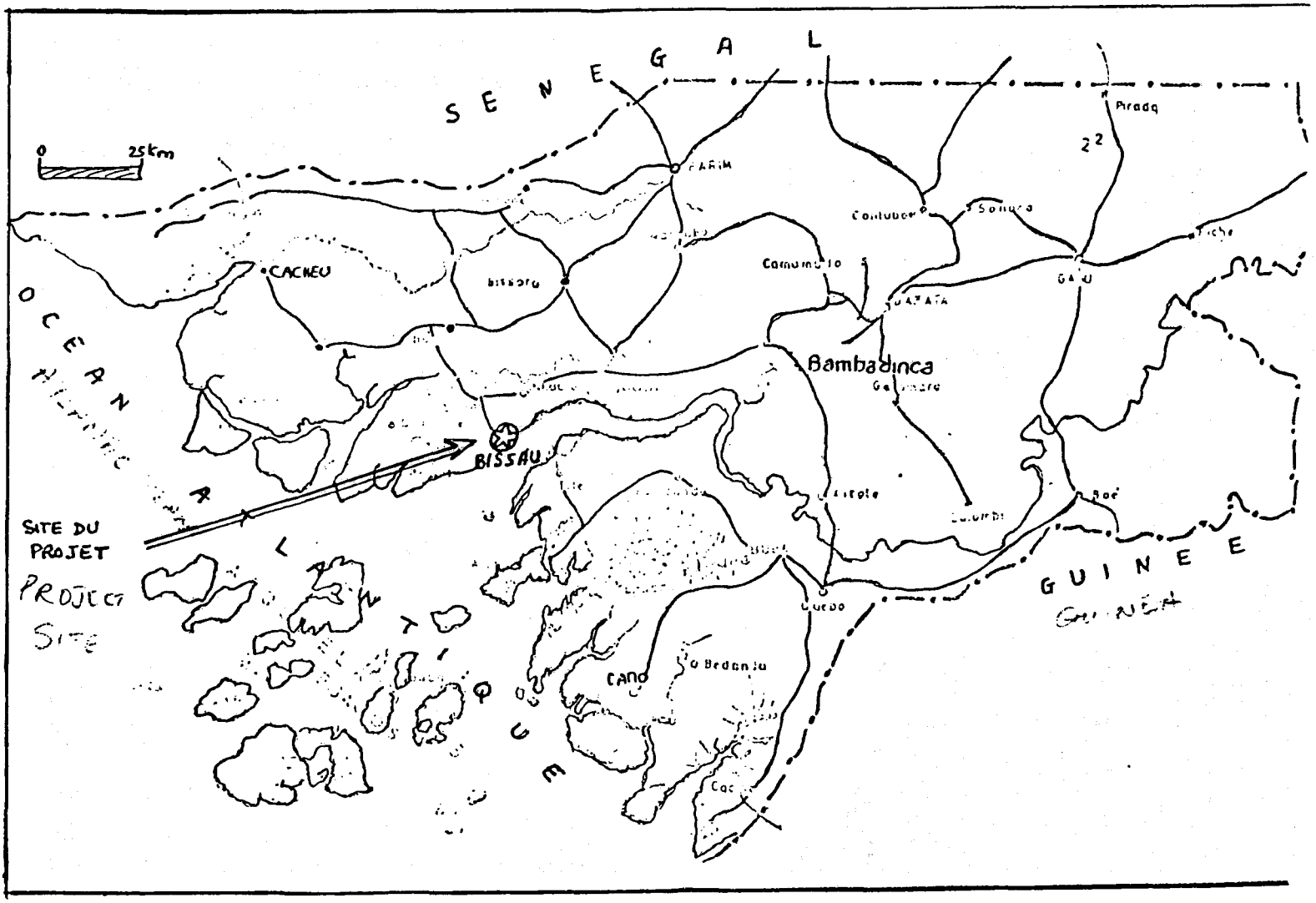
REPUBLIC OF GUINEA-BISSAU

COMPLETION REPORT OF

BISSALANCA AIRPORT REHABILITATION PROJECT

Map of Guinea-Bissau

and Project Site

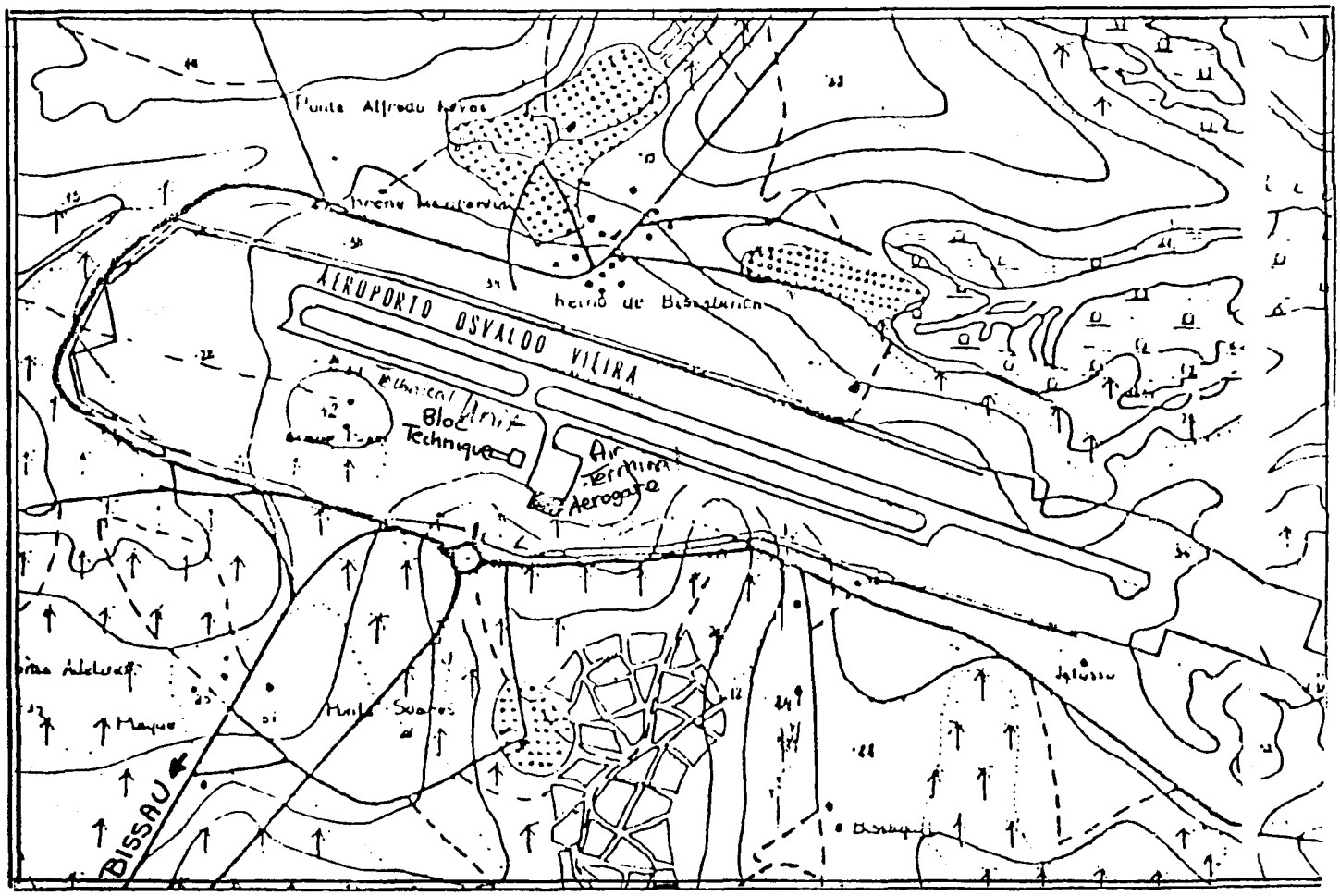


REPUBLIC OF BUINEA-BISSAU

COMPLETION REPORT OF

THE BISSALANCA AIRPORT REHABILITATION PROJECT

Plan of Bissalanca Airport

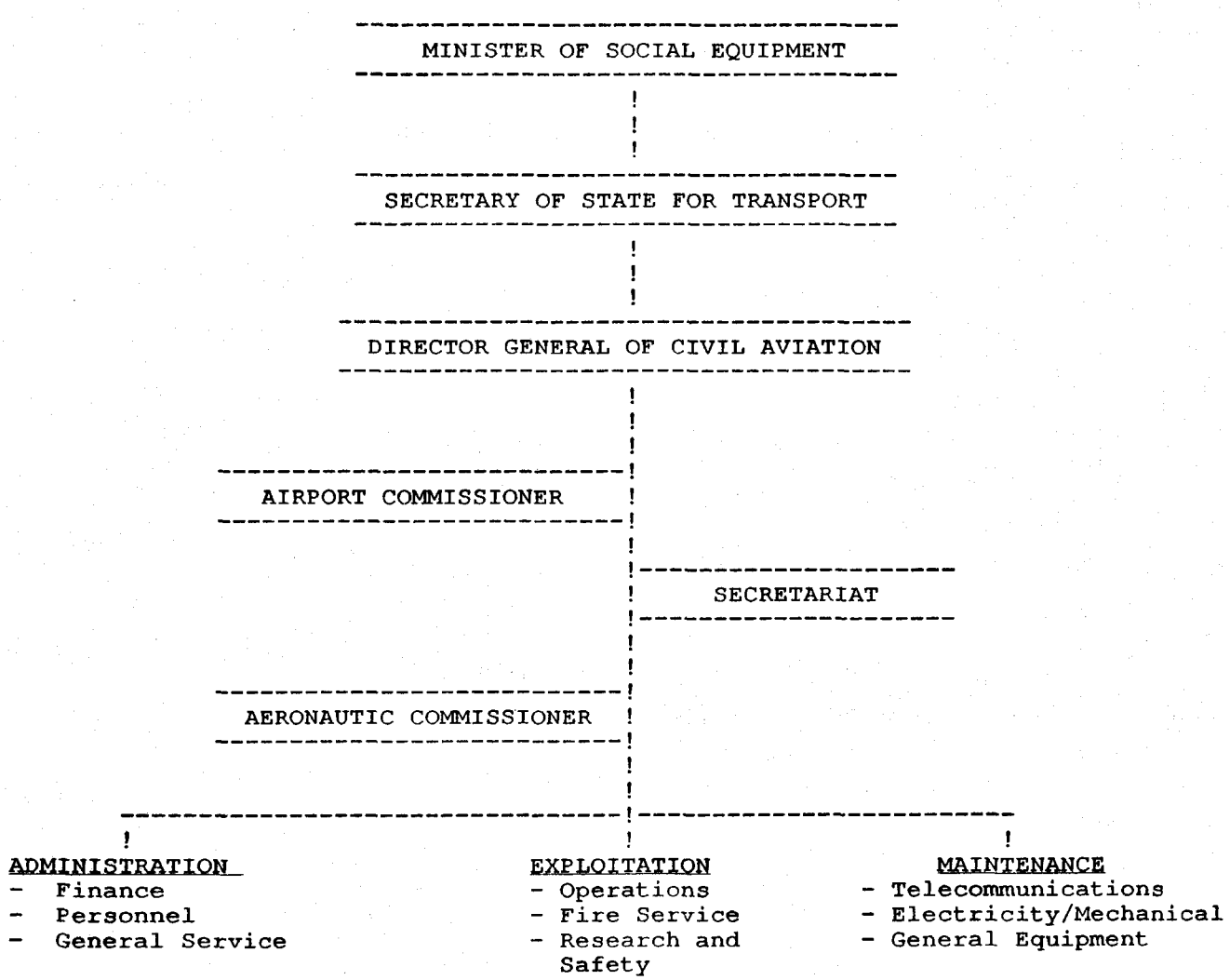


REPUBLIC OF GUINEA-BISSAU

PROJECT COMPLETION REPORT ON THE

IMPLEMENTATION OF THE BISSALANCA AIRPORT

ORGANIZATION CHART OF THE GENERAL DIRECTORATE
OF CIVIL AVIATION



REPUBLIC OF GUINEA-BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Rate of Airport Taxes
in Bissalanca and in the ASECNA Countries

COUNTRY	L A N D I N G (in US $/t)								Parking	Ground Lighting
	International Flights				Domestic Flights					
	1 to 25t	26 to 75t	75 to 150t	to 150t	1 to 14t	15 to 25t	26 to 75t	75 to 150t	to 150t		
GUINEA-BISSAU	3,9	7,8	11,7	11,7	0,2	0,7	1,4	1,8	0,18	0,13	97
SENEGAL	2,0	3,9	5,4	5,0	0,3	1,2	2,4	3,1	2,9	0,02	142
BURKINA FASO	2,1	4,1	5,9	5,5	0,4	1,7	3,3	4,2	3,9	0,06	164
COTE D'IVOIRE	2,0	4,0	5,6	5,3	0,4	1,5	3,0	3,8	3,6	0,06	82
TOGO	1,9	3,9	5,5	5,1	0,4	1,5	3,1	3,9	3,6		164
BENIN	2,1	4,3	6,0	5,6	0,5	1,9	3,8	4,8	4,5	0,02	164
NIGER	2,1	4,2	6,0	5,6	0,5	1,7	3,4	4,3	4,0	0,02	164
MALI	2,8	5,7	8,0	7,5	0,4	1,5	3,0	3,8	3,6	0,02	164
MAURITANIA	2,2	4,4	6,2	5,8	0,5	1,8	3,5	4,1	4,4		80
CONGO	2,2	6,1	6,1	5,7	0,4	1,6	3,2	4,0	3,8	0,11	164
CAMEROON	2,2	6,2	6,2	5,8	0,5	1,8	3,6	4,5	4,2	0,02	174
CENTRAL AFRICA REPUBLIC	2,8	8,0	8,0	8,0	0,6	2,3	4,6	5,8	5,8	0,06	164
GABON	1,9	5,4	5,4	5,1	0,4	1,5	3,0	3,8	3,6	0,02	71
TCHAD	2,6	7,2	7,2	6.8	0,5	1,7	3,4	4,3	4,0	0,03	118
EQUAT. GUINEA	2,2	6,0	6,0	5,5	1,1	1,1	3,8	4,9	4,4		82

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Operating Account Projections

Situation before the Project
(in thousand of US$)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	2000
RECEIPTS											
Landing	225,4	261,2	267,8	274,6	282,5	293,8	305,6	317,8	330,5	343,3	417,7
Ground-Lighting	27,0	31,8	31,8	32,4	33,1	34,3	35,6	37,0	38,4	39,9	48,1
Parking	4,4	6,0	6,2	6,3	6,4	6,7	7,0	7,3	7,6	7,9	8,7
Passengers	137,5	140,2	142,9	145,9	148,8	154,5	160,4	166,5	172,9	179,5	216,5
TOTAL	394,3	438,6	448,7	459,2	470,8	489,3	508,6	528,6	549,4	570,6	691,0
EXPENSES											
Personnel	210,0	238,0	243,0	247,0	252,0	257,0	263,0	268,0	273,0	278,0	308,0
Maintenance	109,0	218,0	219,0	219,0	219,0	219,0	219,0	219,0	219,0	224,0	224,0
Running	105,0	107,0	109,0	111,0	113,0	115,0	117,0	120,0	122,0	125,0	138,0
GROS RESULTS	-29,7	-124,4	-122,3	-117,8	-113,2	-101,7	-90,4	-78,4	-64,6	-56,4	21,0
DEPRECIATIONS	985,0	985,0	985,0	985,0	985,0	985,0	985,0	985,0	985,0	985,0	985,0
FINANCIAL CHARGES	1090,0	1039,0	988,0	937,0	886,0	835,0	784,0	733,0	682,0	631,0	376,0
NET RESULTS	-2104,7	-2148,4	-2095,3	-2039,8	-1984,2	-1921,7	-1859,4	-1796,4	-1731,6	-1672,4	-1340,0
GROSS MARGIN	-1119,7	-1163,4	-1110,3	-1054,8	-999,2	-936,7	-874,4	-811,4	-746,6	-687,4	-355,0

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Operating Account Projections

Situation before the Project
(in thousands of US$)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	2000
RECEIPTS											
Landing	113,7	116,6	119,6	122,6	125,7	130,6	135,8	141,3	146,9	152,6	185,3
Ground-Ligthing	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Parking	2,3	2,3	2,4	2,4	2,5	2,6	2,7	2,8	2,9	3,0	3,7
Passengers	137,5	140,2	142,9	145,9	148,8	154,5	160,4	166,5	172,9	179,5	219,7
TOTAL	253,5	259,1	264,9	270,9	277,0	287,7	298,9	310,6	322,7	335,1	408,7
EXPENSES											
Personnel	183,0	183,0	183,0	183,0	183,0	183,0	183,0	183,0	183,0	183,0	183,0
Maintenance	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	32,0	34,0	34,0
Running	98,0	98,0	98,0	98,0	98,0	98,0	98,0	98,0	98,0	98,0	98,0
TOTAL	313,0	313,0	313,0	313,0	313,0	313,0	313,0	313,0	313,0	315,0	315,0
GROSS RESULTS	-59,5	-53,9	-48,1	-42,1	-36,0	-25,3	-14,1	-2,4	-9,7	-20,1	93,7

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Financial Profitability Estimates
(in thousands of US $)

YEAR	INVESTMENTS	OPERATING RESULTS		NET FLOWS
		With Project	Without Project	
1981	2137,0			-2137,0
1982	3530,0			-3530,0
1983	11371,0			-11371,0
1984	4192,0			-4192,0
1985	57,6	57,6	-65,0	122,6
1986		-29,7	-59,5	29,8
1987		-124,4	-53,9	-70,5
1988		-122,3	-48,1	-74,2
1989		-117,8	-42,1	-75,7
1990		-113,2	-36,0	-77,2
1991		-101,7	-25,3	-76,4
1992		-90,4	-14,1	-76,3
1993		-78,4	-2,4	-76,0
1994		-64,6	9,7	-74,3
1995		-56,4	20,1	-76,5
1996		-42,2	33,6	-75,8
1997		-28,3	47,9	-76,2
1998		-12,1	62,6	-74,7
1999		3,3	78,1	-74,8
2000	-6123,0	21,0	93,7	6050,3

INTERNAL RATE OF FINANCIAL PROFITABILITY: -7,57%

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Types of Aircrafts and Airlines Using Bissalanca Airport in 1986

Airlines	Type of Aircraft	Number of Seats	Filling Coefficient
AIR PORTUGAL	B 727	210	74%
	B 150	150	30%
AEROFLOT	TU 5	168	30%
AIR SENEGAL	HS 748	50	80%
AIR GUINEE	DASH 7	50	50%
TAAG	B 707	150	30%
TAGB	HS 748	50	80%

Source: ADB Mission, April 1986.

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Traffic Estimates

PASSENGER TRAFFIC	1985	1990	1995	2000
AIR PORTUGAL	11 399	12 585	15 312	18 629
AEROFLOT	2 392	2 641	3 213	3 909
TAAG	9 360*	10 334	12 573	15 297
AIR SENEGAL	8 320*	9 186	11 176	13 598
AIR GUINEE	2 600*	2 871	3 492	4 250
TAGB	12 168*	13 434*	15 867	18 777
	46 239	51 051	61 634	74 460

AIRCRAFT MOVEMENTS		1985	1990	1995	2000
AIR PORTUGAL:	B 727	48	54	64	78
	B 707	104	114	140	170
AEROFLOT	: TU 5	48	52	64	78
AIR SENEGAL	: HS 748	208	230	280	340
AIR GUINEE	: DASH 7	104	114	140	170
TAAG	: B 707	208	230	280	340
TAGB	: HS 748	312	344	404	478
		1 032	1 138	1 372	1 654

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* ADB Mission Estimates

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Airport Receipts
(in US $)

1 - Before Project Situation

YEAR	LANDING *1	GROUND LIGHTING *1	PARKING *1	EMBARKATION *2	TOTAL A
(1985)	(190 068)	(8 100)	(5928)	(86 742)	(290 838)
1986	246 368	10 476	5928	88 473	351 245
1987	252 596	10 844	6047	90 240	359 727
1988	258 981	11 072	6170	92 043	368 266
1989	265 528	11 305	6294	93 882	377 009
1990	272 242	11 543	6422	95 762	385 969
1991	283 093	12 008	6694	99 549	401 344
1992	294 377	12 492	6978	103 486	417 333
1993	306 111	18 995	7274	107 579	433 959
1994	318 313	13 519	7582	111 834	451 248
1995	331 004	14 065	7904	116 261	469 234
1996	344 158	14 620	8222	120 963	487 963
1997	357 834	15 198	8554	125 856	507 442
1998	372 055	15 798	8899	130 947	527 699
1999	386 840	16 423	9259	136 244	548 766
2000	402 233	17 072	9633	141 759	570 697

*1 Only taxes paid by foreign airlines were taken into account (those of the National Airline or of National Passengers are considered as internal transfer into the national economy).

*2 Regarding embarkation taxes only those paid by international passengers were taken into account; moreover, 30% of passengers on international flights are Guinean Nationals. Finally, 40% of passengers in the TAGB's neighbouring flights are foreigners.

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Airport Receipts
(in US $)

2 - Pre-Project Situation

YEAR	LANDING x1	GROUND-LIGHTING x2	PARKING x1	EMBARKATION x3	TOTAL B
1985	(95.380)	0	(1.824)	(86.742)	(183.946)
1986	109.464	0	2.280	88.473	200.217
1987	112.229	0	2.326	90.240	204.795
1988	115.063	0	2.373	92.043	209.479
1989	117.970	0	2.421	93.882	214.273
1990	120.953	0	2.470	95.762	219.185
1991	125.775	0	2.574	99.549	227.898
1992	130.790	0	2.683	103.486	236.959
1993	136.004	0	2.797	107.579	246.380
1994	141.427	0	2.916	111.834	256.177
1995	147.068	0	3.040	116.261	266.369
1996	152.913	0	3.162	120.963	277.038
1997	158.992	0	3.290	125.856	288.138
1998	165.312	0	3.423	130.947	299.682
1999	171.883	0	3.561	136.244	311.688
2000	178.116	0	3.705	141.759	324.180

*1 A 15% rise in the tarifs is taken into account following the reinforcement of the airstrip. (Periodic maintenance).

*2 In the Pre-Project Situation no ground-lighting taxes were levied.

*3 Embarkation taxes have nothing to do with the Project (they are therefore the same before and after the Project).

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Estimates of Economic Profitability

1 - Airstrip Section Only
(in millions of dollars)

YEAR	INVESTMENT	MAINTENANCE*	BENEFITS	NET FLOW
1981	2,775	-	-	-2,775
1982	1,662	-	-	-1,662
1983	9,447	-	-	-9,447
1984		0,007	0,104	0,097
1985		0,007	0,107	0,100
1986		0,007	0,151	0,144
1987		0,007	0,155	0,148
1988		0,007	0,159	0,152
1989		0,007	0,163	0,156
1990		0,007	0,167	0,160
1991		0,007	0,173	0,166
1992		0,007	0,180	0,173
1993		0,007	0,187	0,180
1994		0,009	0,195	0,186
1995		0,009	0,203	0,194
1996		0,009	0,211	0,202
1997		0,009	0,219	0,210
1998		0,009	0,228	0,219
1999		0,009	0,237	0,228
2000	(6,467)	0,009	0,246	6,704

Rate of Profitability: -2,4%

*Maintenance Costs represent the difference in cost before and after the Project.

REPUBLIC OF GUINEA BISSAU
COMPLETION REPORT OF
THE BISSALANCA AIRPORT REHABILITATION PROJECT

Economic Profitability Estimates

2 - The whole Project
(in millions of dollars)

YEAR	INVESTMENT	MAINTENANCE	BENEFITS	M.C.
1981	2,775	-	-	-2,775
1982	4,245	-	-	-4,245
1983	12,662	-	-	-12,662
1984	5,868	-	-	5,868
1985		0,187	0,107	-0,080
1986		0,187	0,151	-0,036
1987		0,187	0,155	-0,032
1988		0,187	0,159	-0,028
1989		0,187	0,163	-0,024
1990		0,187	0,167	-0,020
1991		0,187	0,173	-0,014
1992		0,187	0,180	-0,007
1993		0,187	0,187	0,000
1994		0,190	0,195	0,005
1995		0,190	0,203	0,013
1996		0,190	0,211	0,021
1997		0,190	0,219	0,029
1998		0,190	0,228	0,038
1999		0,190	0,237	0,047
2000	(6,285)	0,190	0,246	6,341

Rate of Profitability: -7,7%