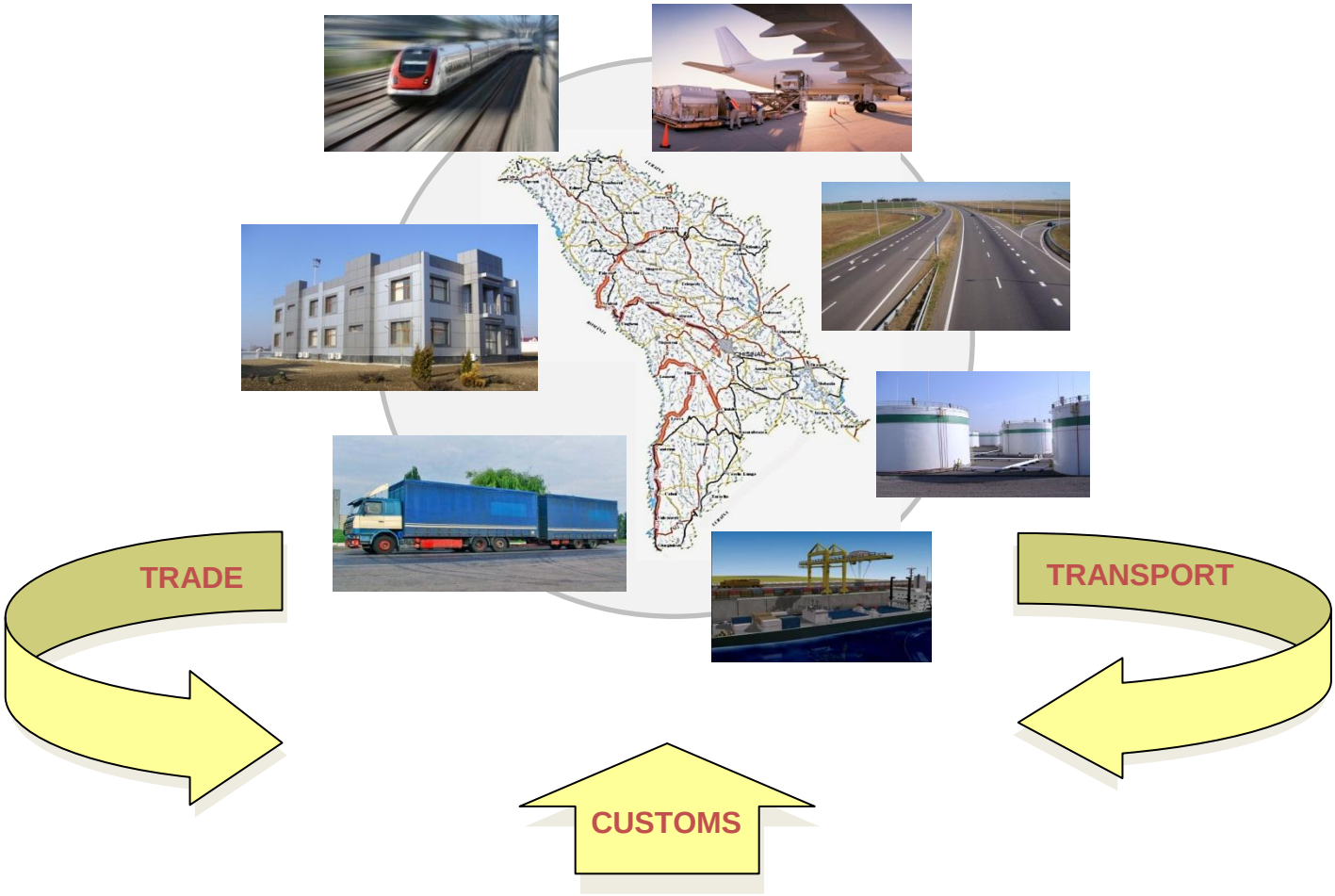
THE WORLD BANK AND GOVERNMENT OF MOLDOVA

Technical Report – Aviation **November 2012**



Support to the Government of Moldova
for the Preparation of a Transport and Logistics Strategy

TECHNICAL REPORT – AVIATION

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NOTE:

This report covers data collected and processed by the Project Team up to August 2012. The information presented herein has been compiled either from comprehensive research or from data provided by the relevant governmental and private institutions and agencies.

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ABBREVIATIONS

AAIA	Aircraft Accident and Incident Investigation Agency
AIS	Aeronautical Information Services
AMS	Aeromedical Section
ASK	Available Seat Kilometres
ASM	Airspace Management
ATFM	Air Traffic Flow Management
ATC	Air Traffic Control
ATS	Air Traffic Services
BSP	Billing and Settlement Plan
CCA	Civil Aviation Authority
CCAA	Croatian Civil Aviation Agency
CIS	Commonwealth of Independent States
CNS	Communication, Navigation and Surveillance
DGCA	Directorate General for Civil Aviation
DOT	Department of Transport
EASA	European Aviation Safety Agency
EBRD	European Bank for Reconstruction and Development
ECAA	European Common Aviation Area Agreement
ECAC	European Civil Aviation Conference
EIB	European Investment Bank
EU	European Union
GDP	Gross domestic product
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IGHC	IATA Ground Handling Council
ILS	Instrument Landing System
LCC	Low Cost Carriers
MET	Aviation Meteorology
MOLDATSA	Moldovan National Air Navigation Service Provider
MOTRI	Ministry of Transport and Road Infrastructure
MTOW	Maximum take-off Weight
PCN	Pavement Classification Number
PAX	Passenger
PLF	Passenger Load Factor
RPK	Revenue Passenger Kilometres
SAFA	Safety Assessment of Foreign Aircraft
SANA	Safety Assessment of National Aircraft
SMS	Safety Management System
KPI	Key Performance Indicators
UKCAA	UK Civil Aviation Authority

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1. INTRODUCTION

1.1. Role of Air Transportation for Moldova

Civil aviation plays a vital role in the economic development of Moldova by providing fast and efficient access to different destinations. The most important economic contribution of air transport in Moldova is through its impact on the performance of other industries as a facilitator of their growth.

Development of air transport in Moldova creates the following main benefits:

1. Social Benefits
   - **Improvement of quality of life** by broadening people's leisure and cultural experiences;
   - **Maintenance of relationships** between people living and working abroad and their relatives living in Moldova;
   - **Improvement of living standards** and alleviation of poverty;
   - Contributions to **sustainable development** by facilitating tourism and trade.

2. Economic Benefits
   - **Trade facilitation** through improved access to the main markets and by enabling globalization of production and trade;
   - **Improvement of efficiency of the supply chain** and increase of the export potential through the development of an effective transportation network and just-in-time deliveries reducing the transportation time and costs;
   - **Development of tourism** through increased availability of travel connections, efficient airline services and reduced travel time and costs;
   - **Strengthening of the country's attractiveness and investment climate** by encouraging effective networking and development of cooperation between local and international companies.

1.2. Historical Development of Civil Aviation in Moldova

The history of the Moldovan civil aviation begins in 1944 when the first independent aviation squadron was established. In 1960, the first airport in Chisinau was founded. In 1970, the new passenger terminal expanded the capacity of the airport. In 1987, the number of passengers in Chisinau Airport reached a value of almost 1 million.

After the collapse of the Soviet Union the Moldovan civil aviation sector underwent a restructuring phase. The Department of Air Transportation was established under the authority of the Ministry of Transport. In 1993, the department was reorganized into the State Administration of Civil Aviation. The state airline company was divided into a number of separate enterprises, one of which became Air Moldova. The first official international route Chisinau-Frankfurt was established in 1990.

In the in early 1990s the number of air companies in Moldova reached a value of 30. Most of them were insolvent only a couple of months after their establishment. In 1994, the second largest airline, Moldavian Airlines, was established. In the beginning the airline operated only flights to Moscow. In 1995, the company signed a cooperation contract with Swiss Crossair and introduced flights to Europe on a Saab 340 received from the Swiss company.

Air Moldova remained the largest airline in the country. In 1995, a new company, Air Moldova International, was founded. The company was spun-off from Air Moldova as a provider of international flights to European destinations. The company was focused on the Russian and Ukrainian regions which did not have direct flights to European destinations at that time. Due to the strong competition from Russian and Ukrainian airlines, Air Moldova International went bankrupt in 2002 and was overtaken by Air Moldova.

In 1995, the state enterprises - “Chisinau International Airport” and “Moldavian Air Traffic Services Authority (MoldATSA)” were established.

In 1998, Chisinau International Airport started its first modernization project in cooperation with the European Bank for Reconstruction and Development (EBRD). The project was completed in 2001.

In 1999, new destinations to European countries were launched. First time after the breakup of Soviet Union the airline leased new aircrafts - Embraer 120 and Embraer 145.

In 2003, with the cooperation of Air Moldova and Chisinau International Airport, a number of joint ventures were established: Sky Alliance (ticket sales agency), Aeroport-Catering, Aeroport-Handling and Aeroport-Petrol (aircraft refuelling services).

Air Moldova launched new regular flights to Amsterdam, Lisbon and Madrid. In 2003-2004, the company leased two Airbus 320 (A320) aircraft. In 2004, Air Moldova became a member of the International Association of Air Transport (IATA).

In 2007, 688 800 passengers were counted at Chisinau International Airport. 15 airlines operated flights to 28 different destinations in18 European countries.

In 2008, Chisinau International Airport signed loan agreements with EBRD and the European Investment Bank (EIB) to continue the modernization of the airport infrastructure. With the grant of European Union’s Neighbourhood Investment Facility the 20 year Master Plan of Chisinau Airport was provided.

In 2010, Air Moldova expanded its fleet with an Embraer 190 which was dedicated for new routes.

In 2011, the number of passengers at Chisinau International Airport has exceeded 1 million. In the same year, 16 Airlines operated flights to 22 different destinations, resulting in a 15 022 aircraft movements.

On the 26th of June 2012, Moldova has signed the European Common Aviation Area Agreement (ECAA) with the European Union. Joining ECAA would enable the elimination of market access restrictions on flights between the EU and Moldova. It may create new market opportunities for Moldovan carriers due to an integrated aviation market in the EU.

2. NATIONAL CIVIL AVIATION POLICY AND LEGAL ENVIRONMENT

The national policy of the Republic of Moldova is aimed at integrating the country into the international environment, attracting international airlines and establishing a favourable investment environment, including the legal provisions for the economic liberalization policy. Moldova is a member of the following organizations:

- International Civil Aviation Organization (ICAO) since July 1992;
- European Civil Aviation Conference (ECAC) since December 1996;
- EUROCONTROL since March 2000;
- Joint Aviation Authorities (JAA) since January 2008;
- European Common Aviation Area Agreement (ECAA; signed on 26th of June 2012, expected to enter into force until 2014).

Also, on 7th of July 2009, Moldova has signed working arrangements with the European Aviation Safety Agency (EASA), which will succeed JAA after its reorganization.

Table 2.1. Civil Aviation Regulations (RAC) and Joint Aviation Requirements (JAR) adopted by Republic of Moldova

Document	Enacted/ Order No	Date	Document	Enacted/ Order No	Date
RAC-RNAV	125	03.09.1999	RAC-AOC Edition 02 1) Amendments 2) Amendments 3) Amendments 4) Amendments	66/GEN 27/GEN 137/GEN 58/GEN 177	28.06.2005 05.02.2007 16.11.2007 11.07.2008 17.06.2010
RAC-11	147	11.11.1999	RAC-ATE Edition 02 Amendments	02/GEN 111/GEN	04.01.2006 19.07.2007
RAC-ACAS	155	09.12.1999	RAC-HOC	8/GEN	17.01.2006
RAC-LS	163	30.12.1999	RAC-AAII	42/GEN	25.04.2006
RAC-MET Amendments	28/GEN 58/GEN	23.06.2000 19.06.2006	RAC-FTL Edition 02	129/GEN	26.12.2006
RAC-AOA Amendments	26/GEN 59/GEN	30.03.2001 11.07.2008	RAC-REAC	06/GEN	15.01.2007
RAC-47 1) Amendments 2) Amendments 3) Amendments 4) Amendments	46/GEN 51/GEN 21A/GEN 29/GEN 55/GEN	03.05.2001 05.05.2005 13.02.2006 05.02.2007 23.03.2007	RAC-SAFA	07/GEN	16.01.2007
RAC-AW 1) Amendments 2) Amendments	47/GEN 28/GEN 343/GEN	03.05.2001 05.02.2007 03.12.2010	RAC-TABP	56/GEN	26.03.2007
RAC-AZ Edition 01 1) Amendments 2) Amendments 3) Amendments	33/ GEN 29 /GEN 22/GEN 26/GEN	19.06.2002 25.06.2003 26.01.2007 24.03.2005	RAC-TA Amendments	97/GEN 18/GEN	17.10.2006 25.02.2008
RAC-CAO 1) Amendments 2) Amendments	48/GEN 13/GEN 40/GEN	16.08.2002 12.02.2008 08.05.2008	RAC-APL 3 Edition 02 Amendments	56/GEN 81/GEN	07.07.2008 16.09.2008

RAC-RA Edition 02 1) Amendments 2) Amendments 3) Amendments	 40/GEN 48/GEN 72/GEN 53/GEN	 14.08.2003 14.04.2005 01.08.2005 20.03.2007	RAC-ANSPC	57/GEN	07.07.2008
RAC-ATS Edition 02 1) Amendments 2) Amendments	42/GEN 47/GEN 53/GEN	25.08.2003 14.04.2005 20.03.2007	RAC-IAW	16	19.01.2012
RAC-VLA (LSpA)	27/GEN	10.06.2004	RAC-CAW	16	19.01.2012
RAC-APL 1) Amendments 2) Amendments	68/GEN 28/GEN 04/GEN	25.10.2004 18.10.2007 17.01.2008	RAC-OPS1	18	19.01.2012
RAC-AML 1) Amendments 2) Amendments	71/GEN 129/GEN 60/GEN	03.11.2004 18.10.2007 11.07.2008	RAC-OPS3	17	19.01.2012
RAC-AID Edition 02	74/GEN	09.11.2004			

Joint Aviation Requirements	Enacted/ Order No	Date
JAR-1: Definitions and Abbreviations	57/GEN	26.03.2007
JAR-21: Certification Procedures for Aircraft and Related Products Parts	4/GEN	19.01.2000
JAR-22: Sailplanes and Powered Sailplanes	31/GEN	18.04.2001
JAR-23: Normal, Utility, Aerobatic and Commuter Category Aeroplanes	32/GEN	18.04.2001
JAR-25: Large Aeroplanes	9/GEN	01.02.2001
JAR-26: Additional Airworthiness Requirements for Operations	33/GEN	18.04.2001
JAR-27: Small Rotorcraft	34/GEN	18.04.2001
JAR-29: Large Rotorcraft	35/GEN	18.04.2001
JAR-34: Aircraft Engine Emission	16/GEN	08.02.2005
JAR-36: Aircraft Noise	36/GEN	18.04.2001
JAR-66: Certifying Staff Maintenance	5/GEN	19.01.2000
JAR-145: Approved Maintenance Organizations	13/GEN	01.02.2001
JAR-147: Approved Maintenance Training/Examinations	3/GEN	19.01.2000
JAR-APU: Auxiliary Power Units	10/GEN	01.02.2001
JAR-AWO: All Weather Operations	39/GEN	18.04.2001
JAR-E: Engines	11/GEN	01.02.2001
JAR-P: Propellers	12/GEN	01.02.2001
JAR-MMEL/MEL: Master Min. Equipment List/ Minimum Equipment List	38/GEN	18.04.2001
JAR-TSO: Joint Technical Standard Orders	37/GEN	18.04.2001
JAR-VLA: Very Light Aeroplanes	40/GEN	18.04.2001
JAR-OPS1: Commercial Air Transportation (Aeroplanes)	46/GEN	31.10.2000
JAR-OPS3: Commercial Air Transportation (Helicopters)		
JAR-FCL1: Flight Crew Licensing (Aeroplane)	7/GEN	19.01.2000
JAR-FCL2: Flight Crew Licensing (Helicopter)		
JAR-FCL3: Flight Crew Licensing (Medical)		
JAR-FCL4: Flight Crew Licensing (Flight Engineers)	43/GEN	26.04.2001
GAI-20: Joint Advisory Material-Advisory Circular Joint	28/GEN	25.06.2003
JAR-FSTD A: Aeroplane Flight Simulation Training Devices JAR-FSTD H : Helicopter Flight Simulation Training Devices	218	10.08.2010

Source: CAA

Table 2.2. Bilateral Relations with Countries

Country	Signing date	№ Decision GRM	Date of entry into force
Ukraine	20.03.1993	686 (05.11.1993)	23.03.1993
Romania	28.06.1993	419 (07.07.1993)	14.12.1993
Austria	20.07.1993	498 (09.08.1993)	01.09.1993
Russia	26.09.1994	128 (27.02.1995)	-
Uzbekistan	30.03.1995	285 (10.05.1995)	28.11.1995
Hungary	19.04.1995	45 (29.01.1996)	23.02.1996
Turkey	03.06.1995	966 (20.10.1997)	11.05.2004
Poland	27.07.1995	222 (07.03.1997)	-
Belorussia	12.09.1995	113 (18.02.1997)	-
Lithuania	05.04.1996	223 (27.02.1998)	03.06.98
Bulgaria	17.04.1996	262 (20.03.1997)	
Israel	22.06.1997	961 (20.10.1997)	13.01.1998
Italy	19.09.1997	254 (05.03.1998)	-
Georgia	28.11.1997	47-XIV (04.06.1998)	05.07.1999
Germany	21.05.1999	708 (27.07.1999)	08.11.2001
China	07. 06.2000	775 (01.08.2000)	22.12.2000
Cyprus	15.07.2002	1176 (05.09.2002)	-
Czech Rep.	24.02.2004	1044 (22.09.2004)	-
Greece	29.03.2004	-	14.02.2005
Azerbaijan	25.04.2005	-	08.11.2005

Source: CAA

According to CAA data, the Republic of Moldova has not signed any other bilateral agreements in the aviation sector since 2005.

2.1. Organization Structure of Civil Aviation

In 2009, the Moldovan Government has initiated a reorganization process of the national civil aviation sector. According to the Law on Civil Aviation Nr. 1237 of 09.07.1997, the Moldovan Government has replaced the Ministry of Transport and Road Infrastructure (MoTRI) and the State Administration of Civil Aviation with the Agency of Transportation and the Civil Aviation Authority. The Agency of Transportation was established as a policy promoter in the transportation sector and was reorganized later back into the Ministry of Transport and Road Infrastructure. The Civil Aviation Authority will undertake the responsibility for implementation and supervision of flight safety and security in the national aviation sector. In fact, the State Administration of Civil Aviation continued performing its functions without being defined by Civil Aviation Law of Republic of Moldova until May 2012.

To fulfil the Law on Civil Aviation, on May 11th 2012 the Moldovan Government issued the decree Nr. 294 for approving the Regulation of organization and functioning of the Civil Aeronautic Authority (published in the Official Gazette of the Republic of Moldova nr. 92 of 15.05.2012, art. 329). The State Administration of Civil Aviation still exists while its obligations are being fully transferred to **Civil Aviation Authority (CAA)** – a process which is expected to take approximately three months.

2.2. Civil Aviation Authority of Republic Moldova

CAA is a regulatory state authority, which is a subordinated body of MoTRI. CAA is a self-financing organization with an independent budget. The General Director of CAA is appointed by

the Minister of Transport and Road Infrastructure. This creates a conflict of interest of CAA with MoTRI. MoTRI subordinates the state airline company Air Moldova and CAA at the same time (see Figure 2.1.), which is responsible for certification and oversight of the above mentioned state airline. The main tasks of CAA are the implementation of the state civil aviation development strategy and supervision and overseeing of compliance of legislation in the area of civil aviation.

The main responsibilities of CAA are:

- Preparation and implementation of international agreements in the field of civil aviation;
- Issuance of permits for regular and irregular flights;
- Development, coordination and implementation of the national aviation security program;
- Verification, issuance and withdrawal of certificates for aircrafts and aviation equipment;
- Certification and oversight of the airports operation, airport ground services and equipment;
- Investigation of accidents occurred on the territory of the Republic of Moldova. Participation in investigations conducted by other states in case of accidents of an aircraft registered in the Republic of Moldova.

The newly established CAA has prepared the recommendations to the Moldovan Government for the amendments to the existing Civil Aviation Law of the Republic of Moldova. Among other issues, the recommendations include the authority of CAA for the economic regulation of the civil aviation sector. This type of economic regulation includes the regulation of airport charges, which can be a very effective instrument to avoid a monopoly in the aviation sector, in particular the monopoly of Chisinau International Airport.

2.3. Other Stakeholders in Civil Aviation Sector

Other major public stakeholders in the aviation sector of Moldova are listed below:

Governmental and Municipal Bodies:

- Ministry of Transport and Road Infrastructure;
- Ministry of Economy / Public Property Agency;
- Ministry of Defence;
- Municipality of Cahul.

State Owned Companies:

- National Air Navigation Service Provider - “MOLDATSA”;
- Chisinau International Airport;
- Moldaeroservice operator of Balti International Airport;
- Marculesti International Airport;
- Air Moldova;
- Aeroport Handling;
- Aeroport Catering.

2.4. Governmental and Municipal Bodies in the Aviation Sector

The **Ministry of Transport and Road Infrastructure (MoTRI)** is responsible for policy making in the aviation sector. It is also in charge of development, implementation and monitoring of the regulatory framework for sustainable development of civil aviation to ensure flight safety, security and quality of services. The ministry is active in the preparation and enforcement of international agreements in the field of civil aviation.

MoTRI subordinates the following state enterprises: Air Moldova, Moldaeroservice (the state owned operating company of Balti International Airport), Aeroport Handling, Aeroport Catering, and the national air navigation service provider "MOLDATSA".

The **Ministry of Economy** subordinates Chisinau International Airport through its structural body - **Public Property Agency**. Chisinau International Airport was put under control of the Ministry of Economy following a recommendation by the EBRD, which provided financing for the modernization of the airport. An objective of this restructuration was to avoid a conflict of interest between the state companies Chisinau International Airport and Air Moldova which were at that time under control of the MoTRI.

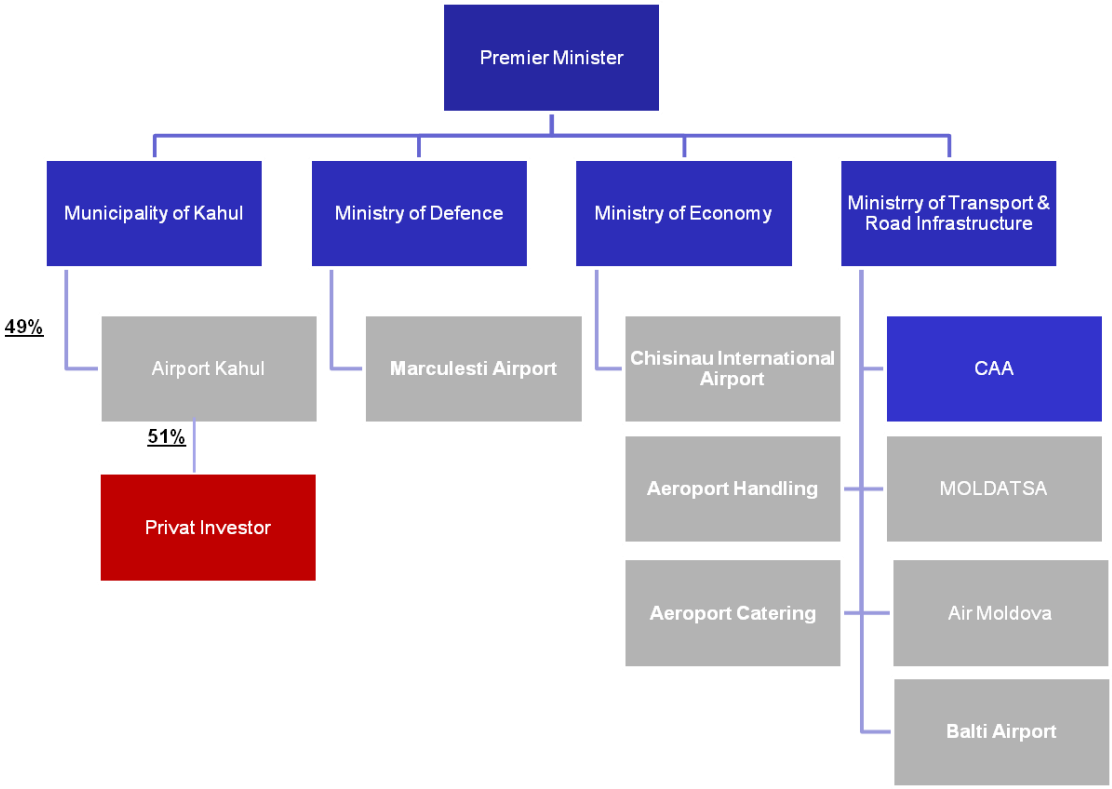
The **Ministry of Defence** subordinates Marculesti International Airport which was in past a military airport. Currently, Marculesti Airport is mainly used as a civil airport. Military activities only play a minor role.

The **Municipality of the City of Cahul** owns a 49% share of the Airport of Cahul. A 51% share is held by a private investor.

2.5. State Owned Companies

The **National Air Navigation Service Provider "MOLDATSA"** is a 100% state owned enterprise, which provides air navigation services including meteorological services and aeronautical information. In addition, MOLDATSA is providing air navigation services to all military flights in Moldovan airspace. MOLDATSA is under the subordination of MoTRI.

Figure 2.1. Organizational Structure of the Aviation Sector in Moldova



Source: The Consultant

Table 2.3. Responsibilities of the Governmental Bodies and MOLDATSA in Civil Aviation Sector

#	Stakeholder	Responsibilities in aviation sector	Ownership / Subordination in aviation sector
1	Ministry of Transport and Road Infrastructure	- **Policy making in the aviation sector** - Development, implementation and monitoring of the regulatory framework - Preparation and enforcement of international agreements in the field of civil aviation.	Subordination of: - Air Moldova - Moldaeroservice (Balti International Airport) - Aeroport Handling - Aeroport Catering - MOLDATSA.
2	Civil Aviation Authority	- **Implementation of the state civil aviation development strategy** - Supervision and overseeing of compliance of legislation in area of civil aviation - Certification of aircrafts and equipment - Safety oversight for all certified or approved systems or processes.	
3	MOLDATSA	Providing of air navigation services including meteorological services and aeronautical information.	
4	Ministry of Economy, Public Property Agency		Subordination of Chisinau International Airport.
5	Ministry of Defence		Subordination of Marculesti International Airport.
6	Municipality of the City Cahul		Owner of 49% share of Airport Cahul.

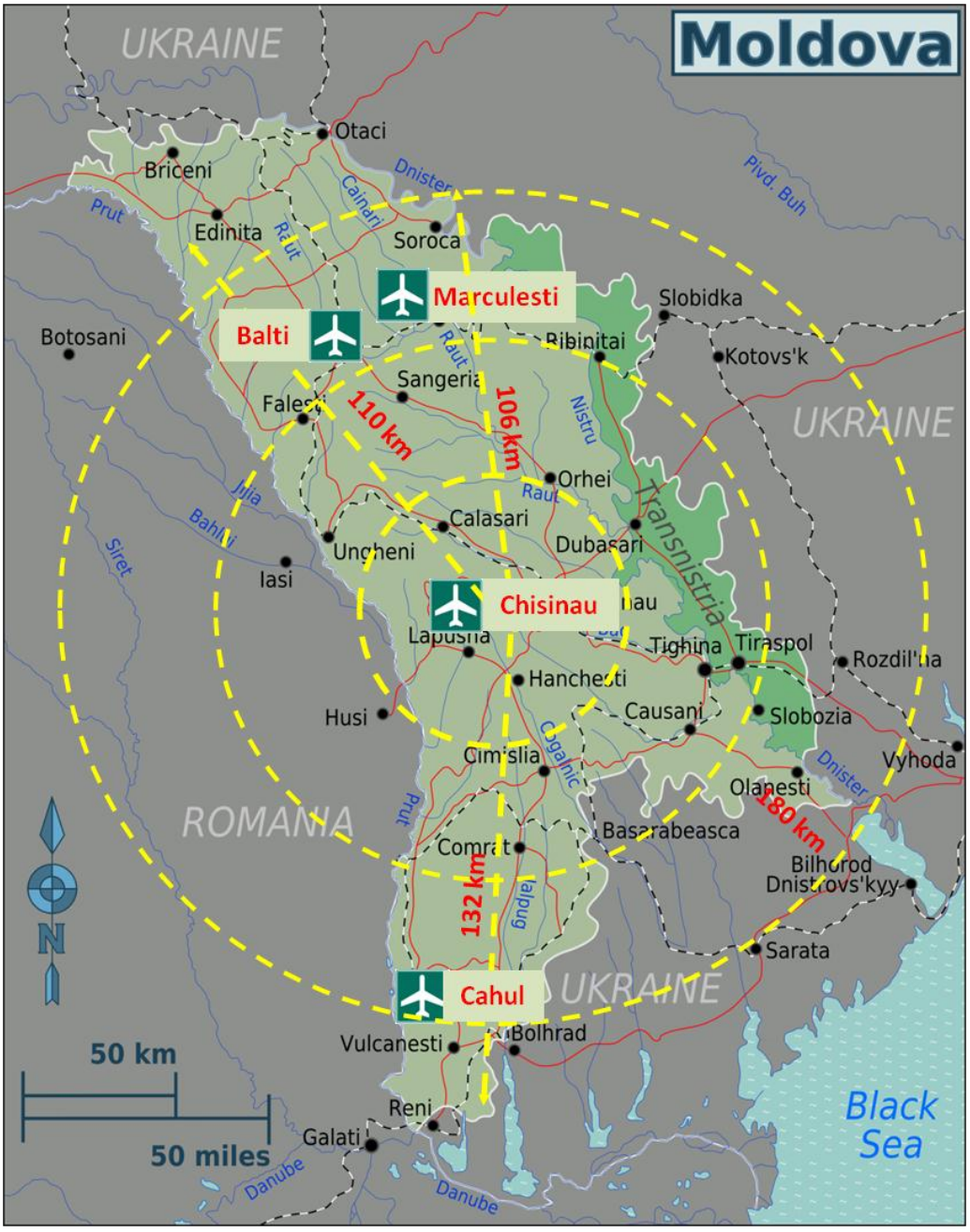
Source: The Consultant

3. AIRPORT INFRASTRUCTURE

There are four international airports in Moldova:

1. Chisinau International Airport;
2. Marculesti International Airport;
3. Balti International Airport;
4. Cahul Airport.

Figure 3.1. Locations of International Airports in Moldova



Source: The Consultant

3.1. Chisinau International Airport

Thanks to its favourable geographical position in the middle of Moldova, Chisinau International Airport is the main airport in the country. It is located 14 away from the city centre of Chisinau. Chisinau Airport is a 100% state owned company, which is under the responsibility of the Ministry of Economy of Moldova.

Between 1998 and 2001, Chisinau International Airport implemented its first modernization project amounting to 12 million USD (ca 9.5 million EUR). 9 million USD (ca 7.1 million EUR) from this amount were provided by EBRD, 3 milion USD (ca 2.3 million EUR) by the Government of the Republic of Moldova. At the end of 2008, Chisinau International Airport signed loan agreements amounting to 47.25 million EUR with EBRD and EIB. The project comprises the following measures:

- Rehabilitation of the runway, apron and the extension of taxiways;
- Expansion of the passenger terminal and procurement of airport equipment;
- Refurbishment and modernization of aviation ground lighting, electrical equipment, modernization of the transforming stations and modernization of drainage system.

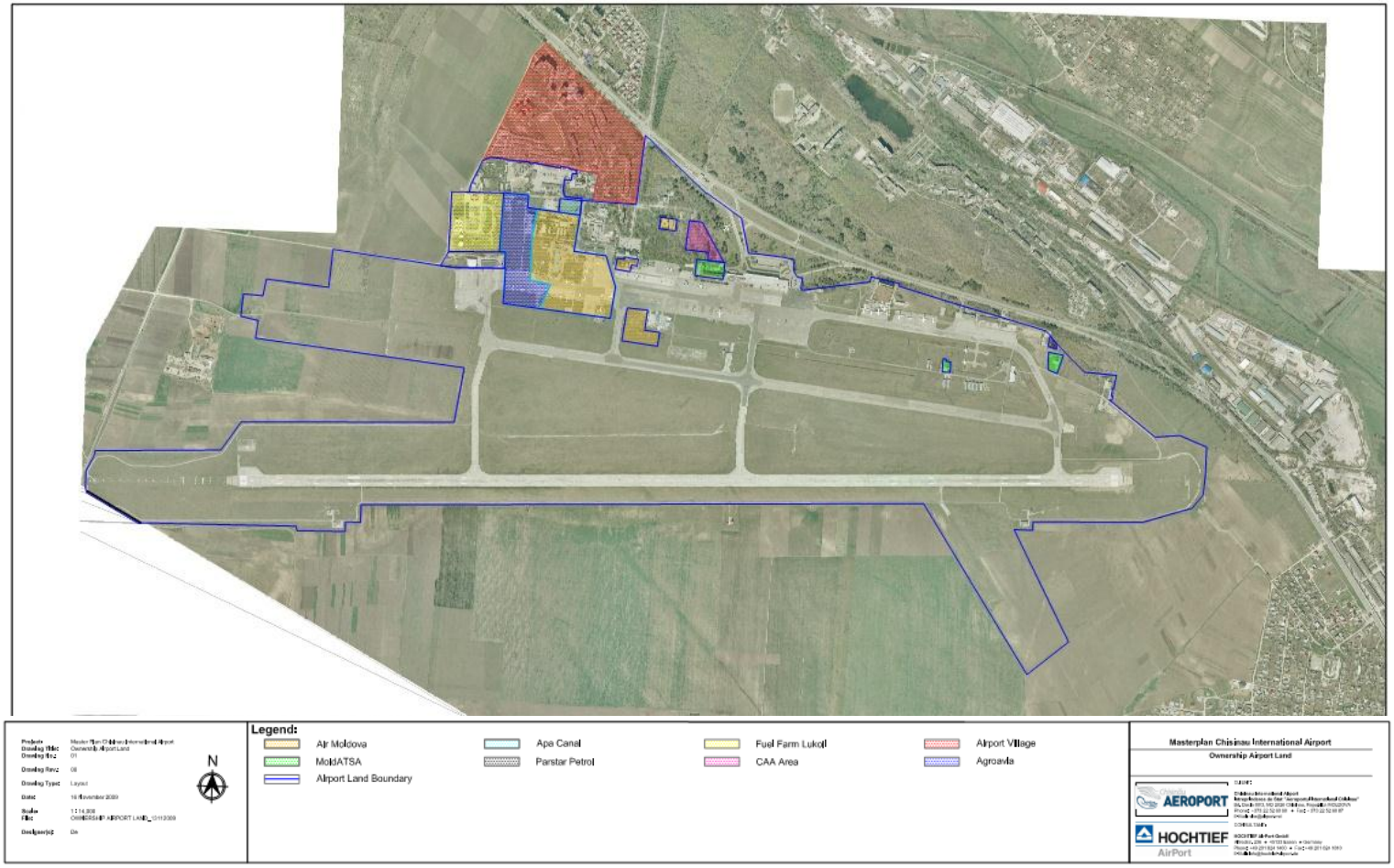
With a 1.75 million EUR grant of the European Union's Neighbourhood Investment Facility, Chisinau Airport prepared the 20 year Master Plan until 2030. The Master Plan was provided in May 2010 by HOCHTIEF AirPort GmbH. It is a major strategic development document of Chisinau Airport which includes the following phases:

- Phase 1: Implementation of the Modernization Project II, funded by EBRD and EIB, which includes rehabilitation of the existing airfield. (Time period 2015/2016);
- Phase 2: Development of a new passenger terminal at the west side of the existing passenger terminal and expansion of the aprons according to ICAO regulations (Time until 2025);
- Expansion of the airfield, the passenger terminal and support facilities to meet growing demand (Time period until 2030).

3.1.1. Land Use and Ownership

The total area of the airport is 363 ha. The airport land is a state property. According to the land use title, 311 ha are operated by Chisinau Airport. The administration of the land is under control of the Agency of Land Relations and Cadastre. Remaining land plots are in the public ownership and operated by state enterprises e.g. Air Moldova and MOLDATSA. The aircraft refuelling facility on the landside is under ownership of the Russian Company Lukoil.

Figure 3.2. Land Ownership Structure of the Chisinau International Airport



Source: Chisinau International Airport

3.1.2. Runway

The runway of Chisinau Airport was constructed in 1987. Runway and airport facilities are providing services 24 hours per day. The runway consists of reinforced concrete slabs with asphalt joints. It has a length of 3,590 m and a width of 45 m without shoulders. The existing runway width meets the requirements of the International Civil Aviation Organization (ICAO). However, according to the recommendations of ICAO Code letter D, shoulders (2 x 7.5 m) have to be added in order to increase the overall width of the runway to 60 m. The length of the runway is sufficient for current and planned flight destinations. In summer, the runway capacity is limited to 14-16 movements per hour.

The runway has the following technical specifications:

Length:	3,590 m
Width:	45 m
Shoulders:	-
Slope:	1%
Pavement Strength:	PCN 51 R/C/W/T
Pavement Type:	reinforced concrete
Safety Strip:	3,710 m x 234.5 m

3.1.3. ILS

In 2008, a Category II (CAT II) Instrument Landing System (ILS) from landing direction 08 and CAT I from landing direction 26 was installed at Chisinau Airport.

Runway threshold 08 is equipped for ILS CAT II with an approach lighting system 870 m in length, mounted on poles, and a touchdown zone lighting 899 m in length. The ILS for threshold 08 is equipped with a DVOR. Runway threshold 26 is equipped with ILS CAT I with an approach lighting system 899 m in length, mounted on poles.

Thanks to relatively good weather conditions and good visibility, CAT II operation is necessary only 20-25 days a year at Chisinau Airport. However, to achieve a usability level of the airport of above 95%, it is necessary to maintain CAT II standards. For this reason, the first phase of the Airport Modernization Plan includes the installation of the centre line lights at taxiways B1 and B2, which is necessary to comply with CAT II standards.

In an average year, visibility falls below the CAT II minimum of 300 m during 2% of the time according to MOLDATSA. Improvement of the usability of the airport during low-visibility condition requires an upgrade of CAT II to CAT IIIa or CAT IIIb. According to the Airport Modernization Plan, investment for the implementation of CAT IIIa amounts to 1.5 million EUR, while for CAT IIIb, it amounts to 2.5 million EUR. However, to prove the economic feasibility of CAT III, it is recommended to provide a detailed cost-benefit analysis.

3.1.4. Taxiways

1. Chisinau airport has eight taxiways. Five of them (A1, B1, B2, C1, C2) are located rectangular to the runway, and two further taxiways (A2 and D) are located parallel. The taxiway E connects the taxiway D with the apron.

The number of taxiways is sufficient for the current level of activity.

To meet the specifications of ICAO classification 4D, the pavement width of Taxiway A1 should be extended to 23 m, and shoulders should be extended so that the overall width is 38 m. The pavement of the A2 Taxiway should be strengthened to enable taxiing of most Code C (e.g.B737; A320; CRJ 700/900) type of aircraft. The conditions of other taxiways are sufficient for the existing operations of up to Code C aircraft. The main technical characteristics of taxiways are given below:

Taxiway	Width	Shoulder width	PCN	Surface
A1	22.5 m	2 x 5 m	PCN 28/R/C/W/T	Concrete
A2	31.0 m	-	PCN 31/FB/W/T-350M PCN 16F/C/W/T-856M	Asphalt
B1	22.5 m	2 x 5 m	PCN 53/R/C/W/T	Concrete
B2	21.0 m	2 x 5 m	PCN 24/F/D/W/T	Asphalt
C1	22.5 m	2 x 5 m	PCN 57/R/C/W/T	Concrete
C2	21.0 m	2 x 5 m	PCN 27/F/D/W/T	Asphalt
D	42.0 m	-	PCN 37/F/C/W/T-1200M PCN 49/F/C/W/T- 1200M	Asphalt
E	21.0 m	2 x 5 m	PCN 57/F/A/W/T	Asphalt

Source: Chisinau International Airport

3.1.5. Apron

The apron of Chisinau Airport is designed for the soviet type aircrafts with lower PCN and limited dimensions. Chisinau Airport has four aprons:

1. The **Passenger apron** is the main apron of the airport. It is located in front of the terminal. It includes a parking place for 30 aircrafts which absolutely meets to the current operational capacity. The configuration of the apron is characterized mainly by Roll-In, Roll-Out positions.

The passenger apron has the following physical characteristics:

Aircraft Parking	Dimensions (m)	Strength	ICAO Code
1, 3, 5, 10	38x48	PCN 26/F/C/W/T	D
2	29X24	PCN 26/F/C/W/T	C
4	29X33	PCN 26/F/C/W/T	C
7	29X37	PCN 26/F/C/W/T	C
16, 18, 20, 22, 24, 26, 28	29X24	PCN 23/F/C/W/T	C
27, 29, 31, 33, 35	29X24	PCN 23/F/C/W/T	C
15, 17, 19, 21, 23, 25	29X37	PCN 23/F/C/W/T	C
17A, 21A	34X37	PCN 23/F/C/W/T	C
9, 11, 13	20X20	PCN 23/F/C/W/T	B
12, 14	35X37	PCN 23/F/C/W/T	C
38	**50X46**	**PCN 21/F/C/W/T**	**D**

Source: Chisinau International Airport

2. The **Cargo Apron** is located in the western part of the airport. The apron is in poor condition. Based on current operation of light freighters, there is no necessity for improvement.

3. The **Apron operated by Air Moldova** is located between taxiways C2 and E. It is mainly used for parking of old soviet aircraft fleet. The condition of this apron is poor.
4. The **Maintenance Apron** is used for maintenance of the aircraft and for parking of old aircraft. It is in poor condition.

Figure 3.3. Apron of Air Moldova in Chisinau International Airport

Source: The Consultant

3.1.6. Air Traffic Control

Air Traffic Control (ATC) Tower is located at the west side of the airport. The tower and ATC are operated by the state owned company MOLDATSA. The ATC system at Chisinau Airport is in good condition and meets all current requirements.

Figure 3.4. ATC Tower in Chisinau International Airport

Source: The Consultant

3.1.7. Passenger Terminal

The existing passenger terminal of Chisinau airport was built in 1970. In 2000, the terminal was reconstructed and extended. The financing of this reconstruction was provided by EBRD. The total area of the terminal is circa 10,000 sqm. The first floor comprises 6,800 sqm.

Figure 3.5. Passenger Terminal at Chisinau International Airport

Source: The Consultant

The passenger terminal has the following physical characteristics:

- The check-in area has 440 sqm. It consists of a check-in zone with two separate baggage belt system and in-line screening after check-in;
- The departure customs section and departure passport control area have 100 sqm;
- The area of the arrival hall is 780 sqm and is connected to the landside departure zone;
- The airside departure hold room is 720 sqm large and has 4 departure gates. In the room various duty-free shops are located;
- Offices of the border police and transport security are located adjacent to the security control area;
- The arrival area is 150 sqm large and has six passport controls. A limited space of the arrival area creates a bottleneck in the event of simultaneous arrivals of high capacity passenger aircrafts;
- The VIP Terminal is located between the air traffic control tower and the passenger terminal. The delegation terminal, which is usually used by the local government, is located next to the VIP terminal. There is a dedicated landside access for the delegation terminal. The second floor of the VIP Terminal has been renovated between January-June 2012. It is in a very good condition right now.

3.1.8. Car Parking

The car parking facility of Chisinau International Airport is located directly in front of the passenger terminal. There are 150 parking spaces available. Car parking is currently operated by a third company. The existing capacity is very limited.

3.1.9. Air Cargo Terminal

A cargo warehouse is located on the airport territory. Facilities are operated by the airport staff. The warehouse is characterized by old soviet style infrastructure, which is in poor condition. The existing capacity is sufficient for handling current volumes, which amount 2,667 tons annually, but improvement of the building condition, as well as a possible capacity increase has to be considered in case of potential growth of freight volumes.

Figure 3.6. Air Cargo Warehouse at Chisinau International Airport

Source: TransCare

3.1.10. Connectivity to the Public Transport Network

Chisinau Airport is well connected to the city and regional road network. It is located 14 km from the Chisinau city centre. There are regular bus services and mini bus services connecting the Airport with the city. There is an absence of regular bus shuttle service between Chisinau Airport and main Moldovan cities. Taxi services at the airport are provided mainly by private drivers for different prices.There is no rail service at the airport.

3.1.11. Airport Charges

Cishinau Airport holds a monopolistic position in terms of airport charges in Moldova. Its charges are among the higest charges in Eastern Europe. The following table shows the results of the benchmark of airport charges calculated per passenger. The calculation is based on main airport charges at selected airports having direct influence on the air ticket prices. Landing and take-off fees are also calculated per passenger, by example of the A320 aircraft with 70% capacity utilization (118 seats).

Table 3.1. Benchmark of the Main Airport Charges per Passenger in Euro, 2011

Airports	Arrival / Departure	Landing / Take-off per each t MTOW	Passenger service	Security charge	Airport Modernization Fee	TOTAL
Chisinau	Arrival	2.28	6.2	-	-	**28.46**
	Departure	2.28	6.2	2.5	9	

Bucharest	Arrival	2.77	-	-	-	**27.04**
	Departure	2.77	14	7.5		
Kiev / Borispol	Arrival	3.43	-	-	-	**23.86**
	Departure	3.43	13	4	-	
Budapest	Arrival	2.77	-	-	-	**22.94**
	Departure	2.77	17.4	-	-	
Timosara	Arrival	2.28	-	-	-	**22.56**
	Departure	2.28	8	10	-	
Zagreb	Arrival	3.69	-	-	-	**22.38**
	Departure	3.69	15	-	-	
Moscow / Domodedov	Arrival	2.06	5	-	-	**18.02**
	Departure	2.06	5	3.9	-	
Vienna	Arrival	3.22	-	-	-	**29.57**
	Departure	3.22	15.13	8	-	

Source: The Consultant, Chisinau International Airport

The comparative analysis of the charges of Chisinau Airport and East European airports shows that Chisinau Airport has relatively low landing and security charges. The passenger service charge (12.4 EUR per arrival and departure passenger) is comparatively high. The main component that affects the total airport charge is **9 EUR Airport Modernization Fee** per departure passenger. According to the information of Chisinau Airport, the Modernization Fee is transferred on a special bank account, which will be used exclusively for the repayment of the EBRD and EIB loan within the framework of the Modernization Project II.

Table 3.2 provides a comparison of air ticket prices from Chisinau and Bucuresti airports to the same destinations. Fares in Chisinau are up to 160% higher than in Bucuresti. While the higher airport charges mentioned above contribute to the higher prices in Chisinau, other factors also play a role. One of the most important factors is the lack of competition and the monopoly prices on air tickets of certain airlines operating in Chisinau Airport. The upcoming liberalization of the aviation market and the entrance of new Airlines (among other low cost airlines) into the Moldovan aviation market will significantly influence the reduction of air ticket prices by increased competition between the airlines.

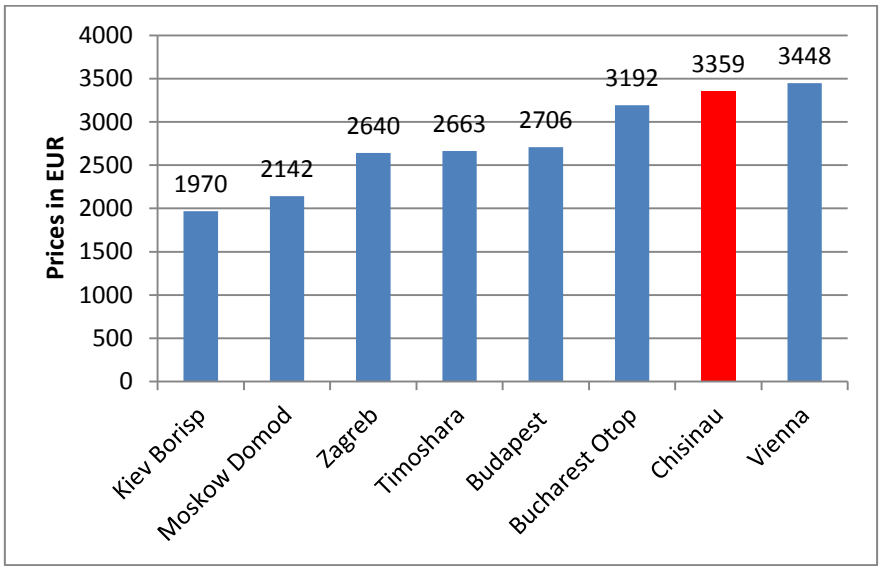
Table 3.2. Comparison of Air Ticket Prices for the Period 07.05-11.05.2012

Destination	Cheapest Price from Chisinau	Cheapest Price from Bucharest	Price Difference in %
Berlin	258.29 €	183.14 €	41%
London	337.52 €	128.98 €	162%
Paris	306.08 €	123.98 €	147%
Frankfurt	328.72 €	174.93 €	88%
Rome	203.66 €	53.98 €	277%
Lisbon	380.92 €	247.07 €	54%
Vienna	446.00 €	100.95 €	342%
Budapest	321.00 €	116.60 €	175%
Nice	463.00 €	217.40 €	113%

Source: The Consultant

The next figure shows the comparison of the airport charges calculated per aircraft (based on A320 with 70% capacity utilization). The calculation includes the main airport charges indicated in Table 3.1.

Figure 3.7. Comparison of Airport Charges for A320 with 70% Utilization



Source: Chisinau International Airport

Airport tariffs in Chisinau are ca. 71% higher than in Kiev (Borispol), 57% higher than in Moscow (Domodedovo) and 24% higher than in Budapest (see Figure 3.7). Due to the high airline ticket prices, a part of Moldovan air transport demand is diverted to airports in the neighbouring countries Romania and Ukraine. According to the information of stakeholders, ca. 100,000 passengers per year travel to Bucharest (Otopeni and Baneasa) for flights to Spain, Portugal, Italy, Ireland etc. and Odessa (Ukraine) for flights mainly to Turkey (Istanbul). In the airports of Bucharest, there are several low cost airlines which offering good services at affordable rates.

3.1.12. Ground Handling Operators and Catering Services

Ground services at Chisinau Airport are provided by the Moldovan State Company “Aeroport Handling” and “Moldovan Airlines Ground Handling”. The catering service is provided by the state company “Aeroport Catering”.

Aeroport Handling was founded in 2002 by Chisinau Airport (60%) and Air Moldova (40%). Later the shares were transferred to the MoTRI. In 2007 “Aeroport Handling” became a member of IATA Ground Handling Council (IGHC). Aeroport Handling Company offers a wide range of ground services at Chisinau Airport. It serves all three terminals: Airport main terminal, VIP and Delegation terminals.

Moldavian Airlines Ground Handling Department started its activity in September 2000. At Chisinau Airport the company offers all necessary services to its customers including refuelling. The main customers are Turkish Airlines, S7 Airline, Carpatair, and Air Baltic.

Aeroport Catering was founded in 1994. The company has implemented an Integrated Management System for Quality, Environment, Health and Occupational and Food Safety in line

with SR EN ISO 9001:2008; SR EN ISO 14001:2005; SR OHSAS 18001:2008 and ISO 22000:2005 standards.

3.2. Balti International Airport

Balti International Airport was built in 1988. It is located circa 13 km from the second largest Moldovan city Balti with approximately 144,000 inhabitants, circa 25 km from Marculesti International Airport and circa 110 km from Chisinau. The total area of the airport is 144 ha. The airport is under operation of the state owned company S.E. Moldaeroservice.

After the collapse of the Soviet Union, the number of passengers travelling from Balti airport fell dramatically. The airport provided its last regular operations between November 2000 and March 2001. During this period 38 flights (AN-24, IL-18) to Istanbul were operated. The total number of passengers amounted to 3,449. There are no scheduled flights and regular charter flights operated at the airport since 2011.

3.2.1. Runway and ATC

The runway is 2,240 m in length and 42 m in width. Its strength (PCN) is 16/R/A/W/T. The runway has a concrete surface. It was designed to receive the soviet type aircrafts with a maximum take-off weight of 160 t. At the moment the runway is in very poor condition and requires immediate repair and reconstruction. Due to its pavement structure the runway is not able to serve western type (e.g. B-737, A-320) aircrafts.

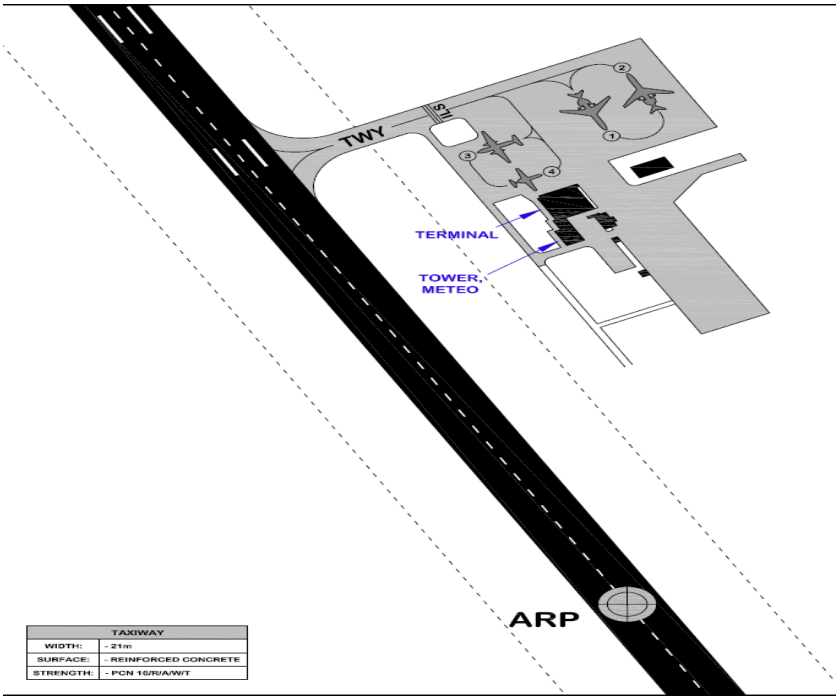
Figure 3.8. Runway of Balti International Airport

Source: The Consultant

3.2.2. Taxiways and Apron

The airport has only one taxiway which is 21 m wide. The taxiway strength (PCN) is 16/R/A/W/T, with a concrete surface. The apron of the airport is in very bad condition. Its dimension is limited. It includes parking space almost for two aircrafts. The pavement strength is not suitable for parking western type aircrafts.

Figure 3.9. Airport Layout



Source: Balti International Airport

The airport is equipped with ILS and ATM. However the system is outdated and does not meet western standards.

Figure 3.10. Airport Taxiway

Source: The Consultant

Figure 3.11. Airport Apron

Source: The Consultant

3.2.3. Passenger Terminal

The passenger terminal is in very poor condition. The capacity is very limited. It can take only 50 passengers per hour. All equipment and infrastructure in the building is outdated and requires capital repair and extension.

Figure 3.12. Passenger Terminal at Balti International Airport

Source: The Consultant

Figure 3.13. Departure Room and Customs Section

Source: The Consultant

3.3. Marculesti International Airport

Marculesti Airport is located 28 km north of Balti International Airport and 150 km north of Chisinau. It was built as a military airport in 1957. Its total area amounts to 265 ha. The territory has a direct access to the railway. The rail line at the airport is 240 m long. In 2001 the military airport was reorganized into the state enterprise “Marculesti International Airport”. The company is currently under the control of the Ministry of Defence. In 2007 the Airport was certified as an international airport.

Nowadays, the airport is rather focused on charter flights and other special services like parking service for military aircrafts, maintenance of certain types of aircrafts, special trainings for pilots, etc. The airport has no regular operations at the moment. In 2010 only 30 aircrafts were operated. Until November 2011, only 10 aircrafts were operated.

Since 2007, the airport management has invested nearly 3 million USD (ca. 2.3 million EUR) in improving the airport infrastructure and purchasing handling and other equipment. The company's income is generated from operation of the company's own Mi-type helicopters and An-type freight aircrafts which are operating mainly in the conflict regions in Africa and Afghanistan.

In 2008, the Moldovan government approved the plan for creation of the Free International Airport Marculesti (named "Free Airport"). Free Airport was established for 25 years. A status of free airport offers several tax benefits for companies:

- All goods and services delivered in the Free Airport zone are exempt from VAT.
- The following goods are exempt from the excise tax: 1) The goods which are delivered from other customs zones of the country; 2) The goods which are delivered between the residents inside of Free Airport or between the residents of Free Airport and the residents of Giurgiulesti International Free Port.

3.3.1. Runway and ATC

The last repair of the runway of Marculesti Airport has been completed in 2005. The runway is 2,500 m in length and 40 m in width, which is sufficient for receiving almost all types of Russian aircrafts. The runway has strength of PCN 80/R/B/W/U. The Airport does not have an approach lighting system, so operations at night are not possible. At the airport air navigation services are provided but are poorly rendered and need to be upgraded.

Figure 3.14. Airport Runway

Figure 3.15. ATC Tower

Source: The Consultant

3.3.2. Taxiways and Apron

The airport has five taxiways. These were designed mainly for military aircrafts with a limited width and low PCN. To meet ICAO requirements, the taxiways should be extended. These have been repaired in 2005. The following table shows the main physical characteristics of the taxiways:

Taxiway	Width	Shoulder width	PCN	Surface
A	18 m	-	PCN 40/R/B/X/U	N/A
B	12 m	-	PCN 40/R/B/X/U	N/A

Taxiway	Width	Shoulder width	PCN	Surface
C	12 m	-	PCN 40/R/B/X/U	N/A
D	14 m	-	PCN 40/R/B/X/U	N/A
E	14 m	-	PCN 40/R/B/X/U	N/A

Source: Marculesti International Airport

The apron of Marculesti Airport is in a satisfactory condition. The total area of the apron is 32,000 sqm (400 m x 80 m) and has the strength of PCN 40/R/X/U. It was built in 1984 and repaired in 2005.

Figure 3.16. Airport Apron

Source: The Consultant

3.3.3. Passenger and Cargo Terminals

The passenger terminal of Marculesti Airport is in a good condition and meets all requirements for operations at the initial stage. At the terminal all the necessary services are provided: passport control, customs clearance etc. The terminal does not have a baggage belt system. The airport has several hangars which could be easily used for air cargo operations. These hangars are located inside the airport and have a very good connection to the taxiway and runway.

Figure 3.17. Hangar for Air Cargo Terminal

Source: Marculesti Airport

3.3.4. Maintenance, Training Center and Aircraft Fleet

Marculesti airport has its own maintenance centre, which provides regular maintenance services for its own aircraft and helicopter fleet and for other costumers as well. Airport staff provides also training courses for pilots, which is a rather unique service in the region. The airport management intends to expand maintenance, aircraft parking and training services and attract interregional costumers.

Figure 3.18. Maintenance Facility

Figure 3.19. Training Centre

Source: Marculesti Airport

Marculesti International Airport has a number of freighters and helicopters:

Flying machine	Type	Number
Helicopter	Mi-8	6
Helicopter	Mi-2	1
Helicopter	Robinson	1
Freighter	An-72	2
Freighter	An-26	1
Freighter	Yak-18	1
Aircraft	BEECH 95B55	2

Source: Marculesti Airport

The existing fleet is operating in Africa, Afghanistan and other countries, taking participation in humanitarian missions.

3.4. Cahul International Airport

3.4.1. Description of Cahul International Airport

Cahul International Airport is located ca. 130 km west of Chisinau and 8 km south-east of the Cahul city centre. In 1996, the airport was transferred to the ownership of Cahul Municipality, which reorganized the airport into the municipal enterprise “International Airport Cahul”. In 2003, a German private investor acquired 49% of the airport shares. In the same year, the investor carried out some basic repair of the runway. In spite of this, the airport was not certified by the State Administration of Civil Aviation due to the absence of necessary safety norms.

Figure 3.20. Passenger Terminal of Airport Cahul

Source: Internet

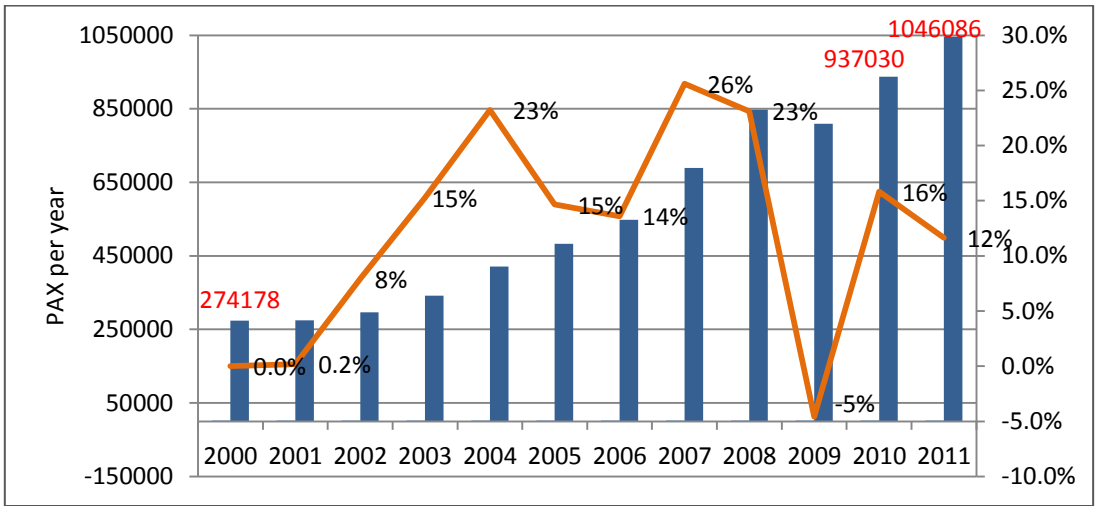
The total area of the airport is about 100 ha. The runway is 1,700 m (with the possibility to extend to 2,400 m) in length and 35 m in width. The runway strength is PCN 20/F/C/Y/T. The airport has one taxiway 16 m in width (PCN 20/F/C/Y/T) which does not meet ICAO standards. The total apron area is ca. 4,400 sqm (PCN 25/F/C/Y/T). The airport has a small passenger terminal with a capacity of 35 passengers per hour. Cahul airport is currently out of operation. Both runway and terminal do not meet international standards and require capital repair works.

4. AIR TRAFFIC ANALYSIS

Air transportation is focused on the Moldovan capital Chisinau, which is the main industrial centre and largest consumer market in Moldova. Nowadays, Chisinau Airport is the only active airport in Moldova. For this reason, the provided air traffic analysis includes Chisinau Airport and does not cover regional airports.

With an annual growth rate of about 13%, passenger transportation has tripled in the last ten years. 2011 was a record-breaker for Chisinau Airport. The passenger number in Chisinau Airport reached 1,046,086, an increase of 11.6% over the last year. The peak months were June with 121,993 PAX, August with 131,653 and September with 115,335 PAX. In 2011, aircraft movements at the airport amounted to 13,065.

Figure 4.1. Air Passenger Traffic in Chisinau Airport



Source: Chisinau International Airport

Russia and Turkey are the major destinations for Moldovan travellers. Russia represented more than 29% of total passenger revenue in 2011, followed by Turkey (21%), Italy (14%), Germany (10%) and Romania (8%). Russia, Italy and Germany are the fastest growing destinations for Moldova. The project Consultants assume that this growth resulted particularly from the growing number of Moldovan citizens working abroad who regularly visit their families in Moldova and from tourism.

Table 4.1. Passenger Flow in Chisinau Airport, 2011

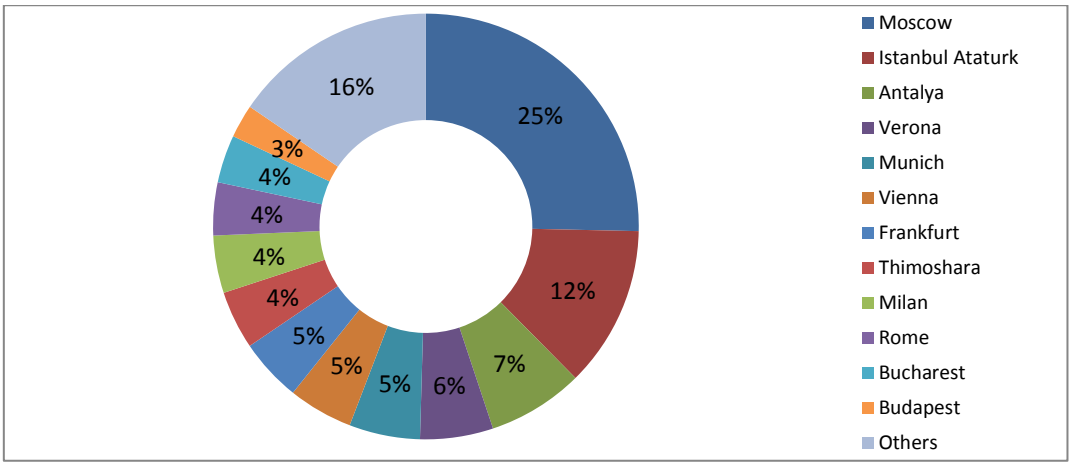
Routes	Country	Inbound	Outbound	Total Passenger	Aircraft Movements
Moscow	RUS	140,692	122,043	262,735	2,199
Istanbul Ataturk	TR	63,899	63,137	127,036	1,405
Antalya	TR	37,664	37,961	75,625	476
Verona	IT	28,825	28,674	57,499	444
Munich	GER	25,708	30,138	55,846	722
Vienna	AUS	26,080	24,809	50,889	916
Frankfurt	GER	21,679	27,872	49,551	500
Timisoara	RO	21,895	24,076	45,971	705
Milan	IT	21,807	23,449	45,256	397

Routes	Country	Inbound	Outbound	Total Passenger	Aircraft Movements
Rome	IT	20,315	21,335	41,650	330
Bucharest	RO	19,528	18,115	37,643	1,616
Budapest	HU	12,726	13,515	26,241	799
St. Petersburg	RUS	14,192	12,004	26,196	256
Tel-Aviv	ISR	10,837	10,144	20,981	160
Kiev	UKR	8,590	8,547	17,137	690
Athens	GR	8,479	3,954	12,433	204
Lisbon	POR	7,334	4,887	12,221	131
Riga	LVA	5,907	5,949	11,856	286
London	UK	6,043	3,448	9,491	130
Bodrum	TR	4,003	4,035	8,038	79
Istanbul Shabiha	TR	3,473	3,981	7,454	274
Surgut	RUS	3,883	3,395	7,278	90
Larnaka	GR	1,613	5,416	7,029	32
Sochi	RUS	3,769	3,220	6,989	122
Paris	FR	0	3,921	3,921	19
Madrid	ES	155	2,945	3,100	1
Varna	BG	1,246	1,255	2,501	26
Sharm El Sheikh	EG	1,320	1,098	2,418	28
Thessaloniki	GR	346	399	745	12
Heraklion	GR	283	322	605	12
Sofia	BG	138	114	252	4

Source: Chisinau International Airport

The major destination cities are Chisinau-Moscow with 262,735 PAX followed by Chisinau-Istanbul with 127,036 PAX and Antalya with 75,625 PAX. In the EU, the most popular destinations are Verona (57,499 PAX) followed by Munich (55,846 PAX), Vienna (50,889 PAX) and Frankfurt (49,551 PAX). The most important EU passenger hubs of Moldova are Frankfurt (through Air Moldova), Munich (through Lufthansa) and Vienna (through Air Moldova and Austrian Airlines).

Figure 4.2. Major Destinations



Source: The Consultant

4.1. Air Passenger Forecast

The development of the number of passengers in Moldova is estimated based on the general forecast for economic development.

The input parameter is GDP, which best describes the passenger volumes according to the analysis. The forecast period is 20 years from 2012 to 2032.

The air passenger volumes have been forecast in three scenarios – low, central and high. An overview of the GDP forecast for every scenario is shown in the table below.

Figure 4.3. GDP Forecast in bln. LEI p.a.

Low Scenario

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
10,391	10,765	11,153	11,554	12,016	12,468	12,947	13,434	13,939	14,431	14,906

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
15,363	15,798	16,209	16,623	17,040	17,460	17,883	18,308	18,734	19,162

Central Scenario

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
10,481	10,953	11,446	11,961	12,559	13,149	13,780	14,428	15,106	15,772	16,422

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
17,051	17,655	18,229	18,811	19,401	19,999	20,604	21,215	21,833	22,457

High Scenario

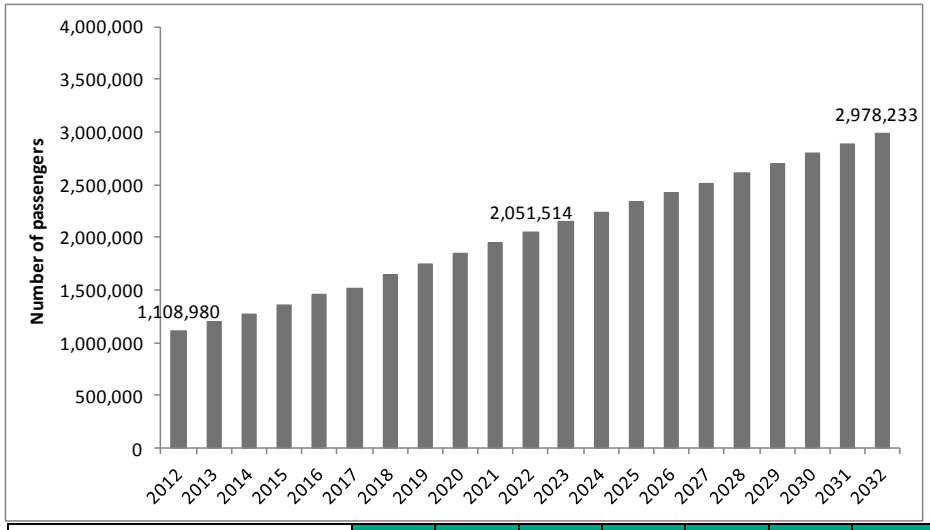
2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
10,572	11,142	11,744	12,378	13,121	13,861	14,659	15,486	16,360	17,225	18,077

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
18,908	19,711	20,480	21,265	22,065	22,881	23,712	24,557	25,415	26,286

Source: IMF and the Consultant

Moldovan air passenger volumes have been estimated up to 2032 by means of regression analysis. In the low scenario, the air passenger volume amounts to about 2 million in 2022 (an increase of 85%) and about 3 million in 2032 (an increase of about 170%). A table and a diagram summarizing the results are shown below.

Figure 4.4. Estimation of Moldovan Air Passenger Volumes up to 2032 – Low Scenario



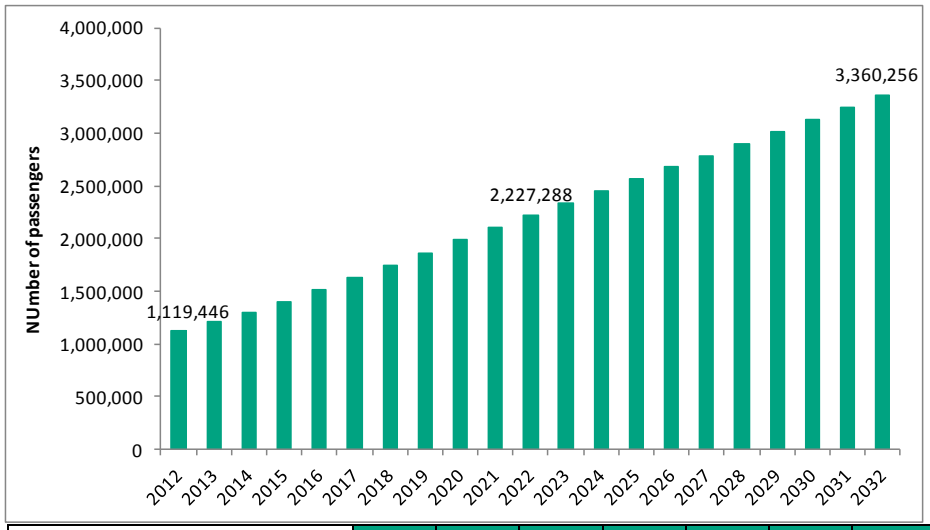
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of passengers - Low scenario	1,108,980	1,195,679	1,269,687	1,359,566	1,456,479	1,521,053	1,651,032	1,750,802	1,852,694	1,953,039	2,051,514

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2,147,797	2,241,569	2,332,521	2,423,865	2,515,569	2,607,598	2,699,916	2,792,487	2,885,273	2,978,233

Source: the Consultant

In the central scenario, the number of Moldovan air passengers is forecast to be 2.23 million in 2022 and 3.36 million in 2032. This is equivalent to about 1 trip by air per person per year in 2032, about the same trip rate observed in countries such as Bulgaria, Hungary and Estonia in 2010. This is also about the same level forecast in the Chisinau Airport Master Plan[i] and is therefore considered to be reasonable. The detailed figures are given below.

Figure 4.5. Estimation of Moldovan Air Passenger Volumes up to 2032 – Central Scenario



	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of passengers - Central scenario	1,119,446	1,217,460	1,303,682	1,406,728	1,519,397	1,631,164	1,747,672	1,866,095	1,988,048	2,108,617	2,227,288

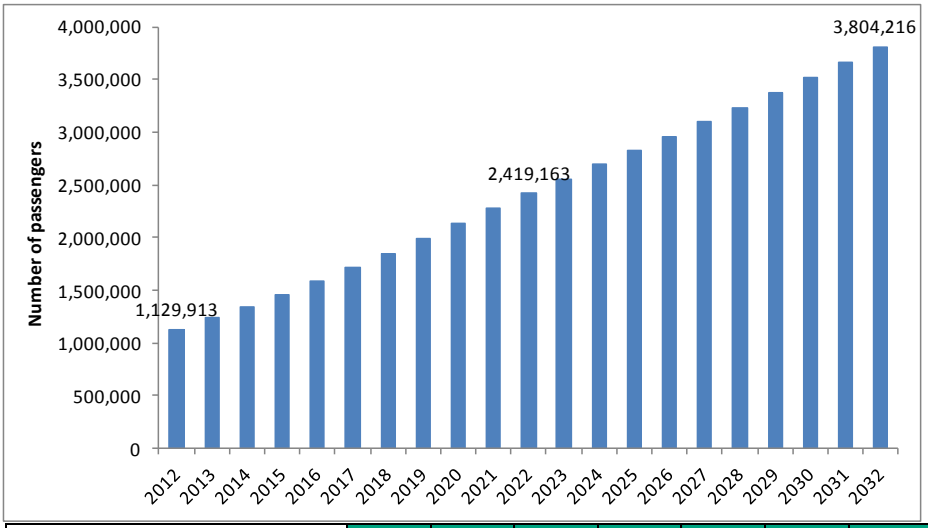
2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2,343,542	2,456,856	2,566,711	2,677,539	2,789,296	2,901,935	3,015,405	3,129,653	3,244,623	3,360,256

Source: the Consultant

[i] Hochtief (2010) Chisinau Airport Master Plan

Finally, the high scenario predicts a passenger volume increase of 114% up to 2.42 mln. in 2022 and of 237% up to 3.80 mln. in 2032. The detailed results in this scenario are as follows:

Figure 4.6. Estimation of the Moldovan Air Passenger Volumes up to 2032 – High Scenario



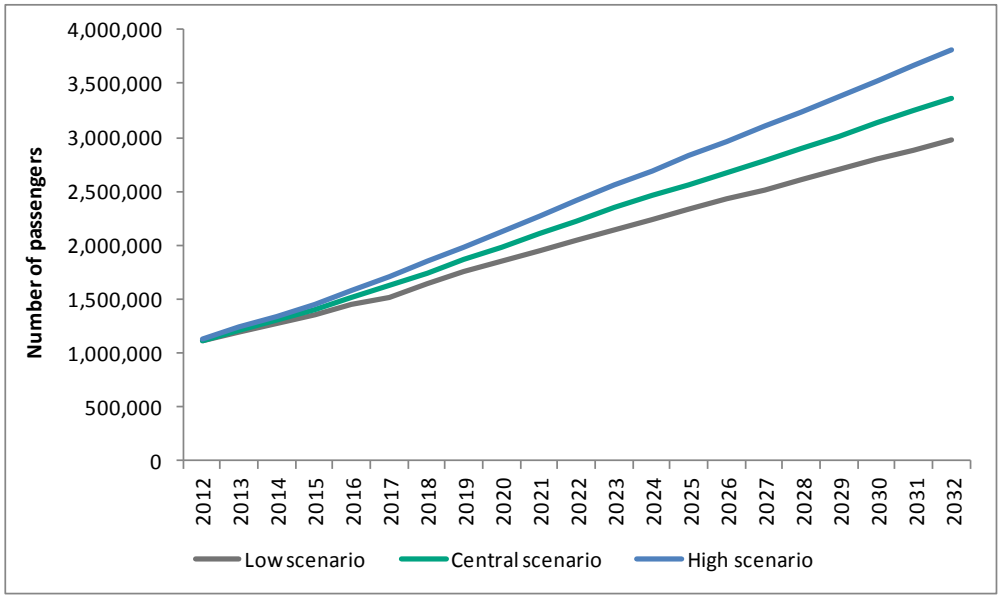
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of passengers - High scenario	1,129,913	1,239,430	1,338,267	1,455,126	1,584,566	1,713,697	1,849,595	1,988,786	2,133,384	2,277,093	2,419,163

2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
2,558,821	2,695,277	2,827,736	2,962,069	3,098,224	3,236,148	3,375,779	3,517,050	3,659,889	3,804,216

Source: the Consultant

The following figure summarizes the forecast number of air passengers for the three scenarios.

Figure 4.7. Development of Future Air Travel Demand by Different Scenarios



Source: the Consultant

4.2. Potential for the Development of Passenger Transit

There have been several discussions about the development of Chisinau Airport as an international hub for passenger transit. With its advantageous geographical location, Chisinau has the chance to become an air transit hub for several CIS countries (e.g. Central Asian countries, particularly Kazakhstan) and esspecially for some Russian regions (Northern cities) to Western Europe. In addition, Moldova will be in the most advantageous position using benefits from Common Aviation Area Agreement for providing air services to several EU destinations.

Based on the information provided by Air Moldova and Moldavian Airlines, the most perspective transit routes for Chisinau Airport are:

- Moscow/St. Petersburg ⟶ Chisinau ⟶ Milano
- Moscow/St. Petersburg ⟶ Chisinau ⟶ Paris
- Kiev ⟶ Chisinau ⟶ Milano
- Kiev ⟶ Chisinau ⟶ Paris

Since 2001, Air Moldova has been intensively working to attract transit of business passenger traffic via Chisinau. Between January and April 2012, Air Moldova carried over 2,000 passengers through Chisinau International Airport. The volume is insignificant, but it can be potentially expanded. There is a business lounge at the Chisinau Airport launched which is also available for transit passengers. The business lounge is operated by Aerolux Handling LLC.

The Moldovan Government should promote and support transit trough Chisinau Airport by facilitating and encouraging private investments in the transit infrastructure and rising awareness of its economic and social benefits.

4.3. Impact of Entrance of Low-cost Carriers

The planned liberalization of air services in Moldova should bring significant changes in terms of entrance of new carriers and rising competition. There are two major low-cost carriers (LCC) interested in the Moldovan market: Blue Air and WizAir. In May 2012, Blue Air has signed a Partnership Agreement on the operation of low-cost flights 50 European destinations with Air Moldova. Reducing air ticket prices will contribute to the economic development of the country. An impact of the entrance of LCC in Moldova is seen especially in the increasing passenger growth through reduced fares by LCC and flag carriers, tourist influx and attracting business to the region.

One of the main strategies of LCC is to operate from secondary and regional airports which can guarantee lower charges and better services, which ensures quick turnaround of aircraft. Taking these requirements into account, the existing passenger terminal in Chisinau Airport would not be able to offer attractive conditions in terms of low charges to the interested LCC. On the other hand, the regional airports in Moldova (Balti, Marculesti and Cahul) require a significant amount of investment in the infrastructure to meet the required conditions. Based on that fact, these airports cannot guarantee profitability and attract the investments required for rehabilitation (see Figures 6.6 - 6.10).

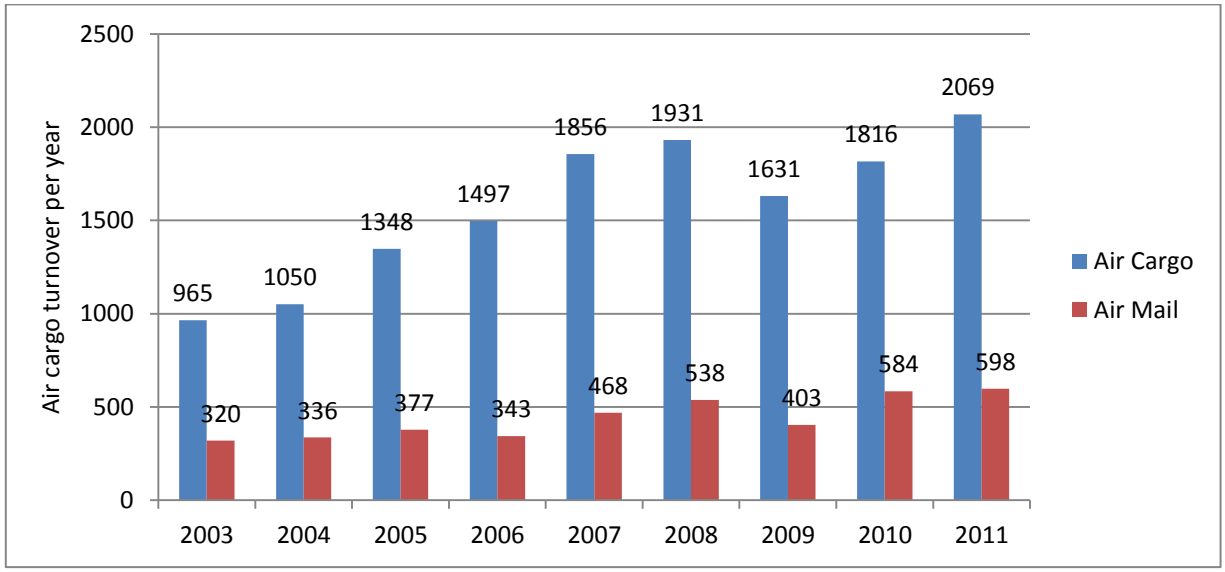
International experience shows that an integration of low cost terminals in central airports could be a very effective way to attract LCC. The recommendation of the Consultant is focusing all scheduled operations in Chisinau Airport and integrating the new low cost terminal in the airport

services in response to the emerging trend of low cost airlines (See chapter 6.4). Landing charges will remain unchanged. The airlines handled in the LC terminal will pay reduced airport and passenger fees as they accept reduced passenger services and terminal comfort.

4.4. Air Cargo

Air cargo transport in Moldova is underdeveloped. Chisinau is the only airport in the country which currently provides air cargo handling on a regular basis.

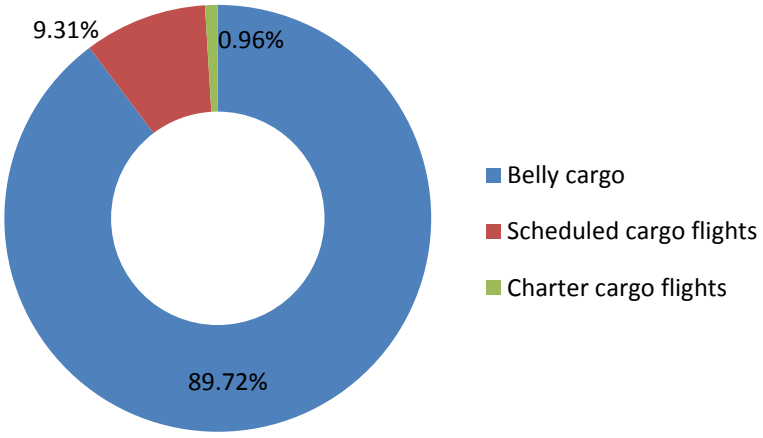
Figure 4.8. Air Cargo Handling (tones) in Chisinau International Airport



Source: Chisinau International Airport

In 2011, the total air cargo volume has grown by 14% over the previous year, reaching 2,665 t (598 t from this was air mail). The main part of this was belly freight. More than 90% of the total handled cargo in Chisinau is domestic. 82% of total air cargo revenue is outbound cargo.

Figure 4.9. Structure of Air Cargo in Chisinau International Airport



Source: Chisinau International Airport

Table 4.2. Air Cargo Market Share in Chisinau International Airport, 2010

Company Name	2008				2009				2010			
	cargo		mail		cargo		mail		cargo		mail	
	tones	%	tones	%	tones	%	tones	%	tones	%	tones	%
Air Moldova	581.5	30.1	193.2	35.9	526	32.3	208.1	51.7	708.7	49.3	294	50.3
Turkish Airlines	856.3	44.3	300.2	55.8	661.1	40.5	133.2	33.1	480.4	33.4	241	41.3
Siberia Airlines	53.7	2.8	21.5	4.0	73.3	4.5	15.4	3.8	22.1	1.5	0.8	0.13
Carpat Air	70.8	3.7	1.5	0.3	46.6	2.9	0.6	0.1	35.8	2.5	0	0.0
Austrian Airlines	47.5	2.5	5.0	0.9	50.2	3.1	5.4	1.4	57.8	4	3.9	0.7

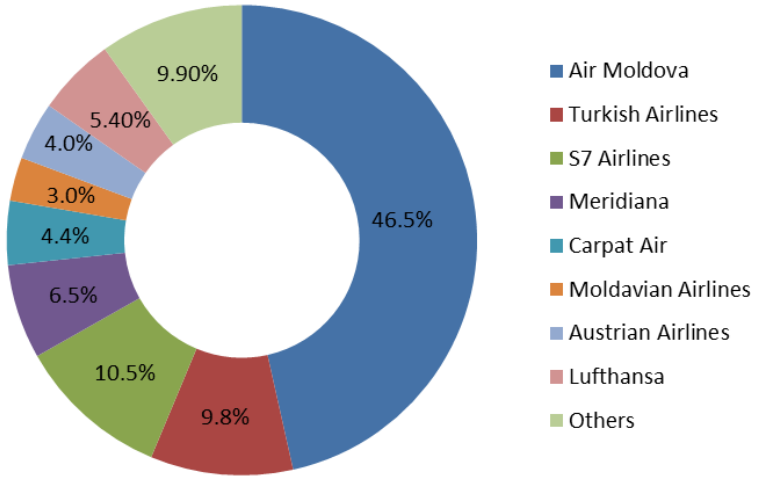
Source: Chisinau International Airport

In 2011, the international logistics providers DHL, UPS and TNT have established a joint cooperation, which includes an operation of five regular freight flights per week from Bucharest to Chisinau. Cargo capacity per flight is 1.5 tons at the moment.

4.5. Air Carriers

In terms of airline passenger numbers, 51% in Moldova is carried by national carriers. The total number of passengers carried by national airlines amounted to 541,225. The market share of the national carrier Air Moldova was reduced from 49% to 47%. Foreign airlines Lufthansa (+3%) and Russian S7 (+2%) were characterized by growth.

Figure 4.10. Air Transportation Market Share in Moldova, 2011

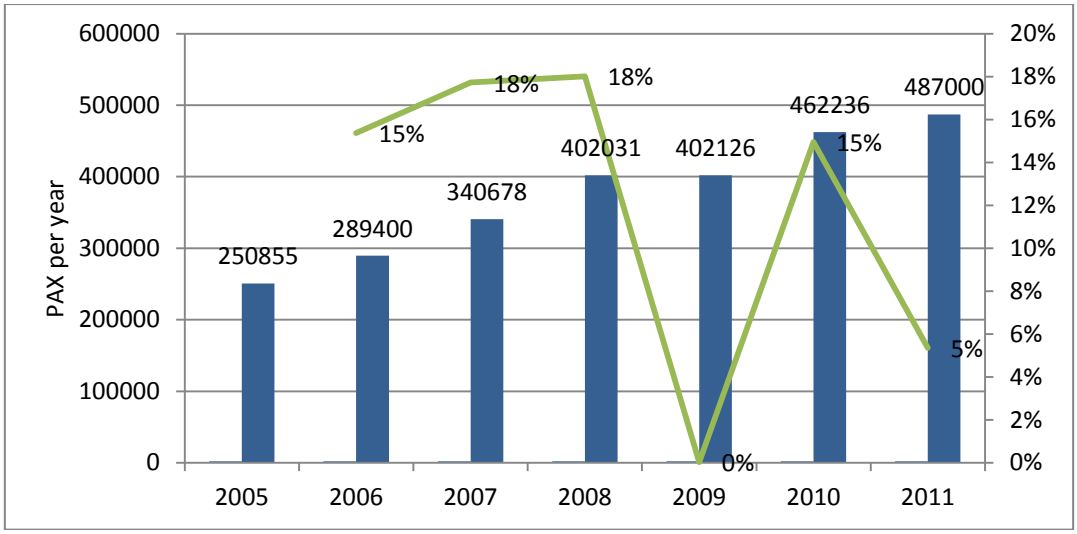


Source: The Consultant

4.5.1. Air Moldova

Air Moldova as a national flag carrier is the largest Moldovan airline operating direct flights to 20 destinations (Surgut, Frankfurt, Bucharest, Istanbul, Lisbon, Madrid, London, Athens, Larnaca, Rome, Milan, Verona, Paris, Moscow, St. Petersburg, Varna, Kiev, Sochi, Antalya, as well as flights to Amsterdam and Prague via Vienna). Air Moldova is a 100% state owned company and is under the responsibility of the Ministry of Transport and Road Infrastructure of Moldova. In 2011, passenger transportation grew by 5%, reaching 487,000 passengers. In 2012, the number of passengers is expected to reach 500,000.

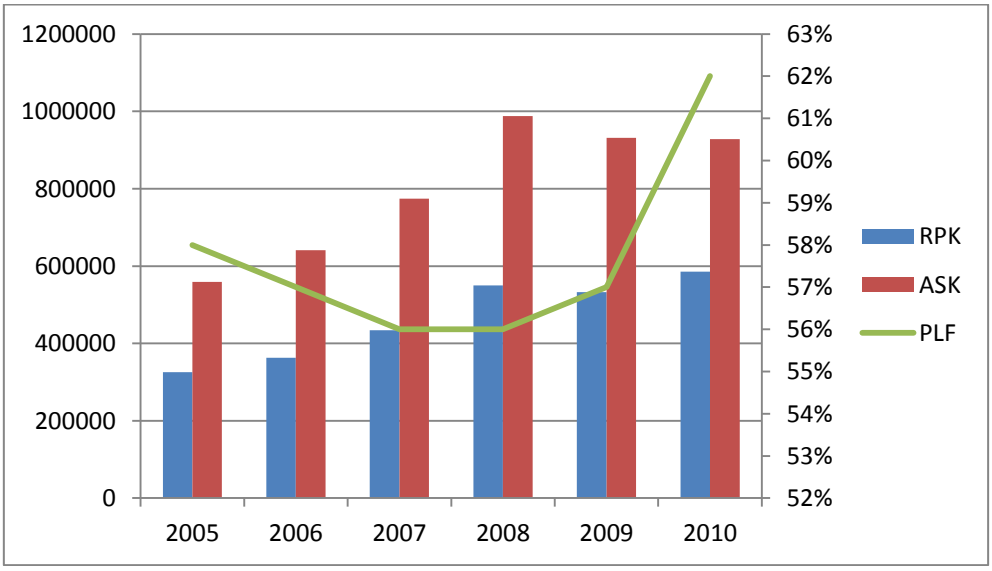
Figure 4.11. Passenger Transportation Air Moldova



Source: Air Moldova

The fastest growing destinations in 2012 were Chisinau-Kiev (94%), Chisinau-Vienna (89%), Chisinau-London (84%) and Chisinau-Paris (34%). The following figure shows the development of Revenue Passenger Kilometres (RPK), Available Seat Kilometres (ASK) and Passenger Load Factor (PLF):

Figure 4.12. Key Indicators of Passenger Transportation of Air Moldova



Source: Air Moldova

Air Moldova has builtup its monopolistic postition in the Moldovan air transportation market, which is based on the bilateral agreements with other countries. This state monopoly in air transportation has a negative influence on competition, which finally results in high prices on the airline services in the country.

Since 2004, Air Moldova is a member of the International Association of Air Transport (IATA). In 2008, the company was registered by IATA Operational Safety Audit (IOSA). Its quality system meets stringent JAR-OPS and Civil Aviation Authority requirements. Air Moldova has now 80 bilateral agreements with leading air carriers: Lufthansa, Delta Airlines, United Airlines, Aeroflot, Alitalia, El Al Israel Airlines, TAP Air Portugal etc.

Over the past few years, the company has expanded its network by winning general sales agents in different countries. Air Moldova is a member of BSPs (Billing and Settlement Plan) of 11 countries (France, Germany, Great Britain, Greece, Ireland, Italy, Portugal, Romania, Spain, Turkey and Canada). Air Moldova operates five aircraft right now:

#	Aircraft Type	Number of Aircrafts	Number of Seats
1	A320	3	170
2	Embraer 190	1	114
3	Embraer 120	1	30

Source: Air Moldova

4.5.2. Carpat Air Group

Moldavian Airlines is a private owned Swiss-Moldovan joint venture. The company actively cooperates with its Romanian subsidary Carpatair, which has built up its hub in Timisoara. Both companies are members of Carpatair Group.

Moldavian Airlines currently operates regular flights from Chisinau to Romania, Italy (Rome, Venice) and Turkey. Charter flights are operated to destinations such as: Antalya, Bucharest, Debrecen and Lisbon. The current market share of the company in Moldova is about 3%. In 2011, Moldavian Airlines carried about 31,500 passengers from Chisinau Airport. In 1999, Moldavian Airlines became a member of IATA. The company currently operates two Saab 2000 (with a capacity of 50 seats) and one Fokker 100 (capacity 105 seats).

Moldavian Airlines sees the planned liberalization of the Moldovan civil aviation market as a chance for its strategical positioning in Moldova. Moldavian Airlines is interested to enter the low cost segment in Moldova. In cooperation with its subsidary Carpatair and Alitalia, Moldavian Airlines has already started an operation of direct low cost flights from Chisinau to the Italian cities Milan (Bergamo), Venice and Rome.

Carpatair is a Romanian based company which is operating over 70 flights per day to 70 destinations. Carpatair is a member of IATA, ERA (European Regions Airline Association), MITA (Multilateral Interline Traffic Agreement), and ICH (IATA Clearing House). The aircraft fleet of the company includes three Fokker 100 (capacity 105 seats), two Fokker 100 (capacity 80 seats), and nine Saab 2000 (capacity 50 seats). The market share of Carpatair in Moldova is 4%. In 2011, the company carried about 42,000 passengers (-1% over 2010).

4.5.3. Tandem Aero

Tandem Aero was established in Moldova in 1998. The company currently operates only charter flights to Tel Aviv. The market share of Tandem Aero in Moldova is less than 2%. In 2011, the carrier transported about 20,000 passengers.

5. LIBERALIZATION OF THE AVIATION MARKET IN MOLDOVA

The Moldovan government actively promotes the liberalization of the aviation market in the country. The negotiation process with the EU on the European Common Aviation Area Agreement (ECAA) was started in 2010. The ECAA was signed between the EU and Moldova on the 26th of June 2012.

The ECAA includes opening of the market, freedom of establishment, equal conditions of competition and common rules in the areas of aviation safety, security, air traffic management, social conditions and environmental protection. The ECAA was expressly designed as an open framework accessible for European countries which wish to fully integrate into the European aviation family and to fit into the Neighbourhood Policy of the Commission. The main target of ECAA is a full market opening in terms of access, capacity, fares and freedom of establishment without nationality clauses (on a reciprocal basis) and alignment with Community legislation on issues such as safety, security and air traffic.

In June 2006, the EU and its member states signed the ECAA with the Western Balkan countries. This was followed by the signature of the first Euro-Mediterranean Aviation Agreement with Morocco in December 2006. In December 2010, Common Aviation Area agreements were signed with Georgia and in March 2012 with Israel. There are ongoing nagotiations with Jordan, Ukraine, Lebanon and Tunisia.

The implementation of the ECAA provides the following benefits for the country:

1. Promotion of high-level European aviation standards which supports improved aviation safety and security.
2. Creation of new market opportunities for local carriers to reach an aviation market with 35 countries and more than 500 million people.
3. Elimination of market access restrictions on flights between the EU and Moldova, creating a level playing field between carriers.
4. Liberalization of the aviation market in Moldova, which enables an increase in competitiveness, airline service improvements and the reduction of air ticket prices.
5. Improvement of inter-regional relationships and force further European integration.
6. Implementation of the European Neighbourhood Policy by facilitating the development of an integrated aviation market and the creation of better transport links between all countries involved.
7. Active cooperation between the responsible governmental bodies on aviation safety and security.
8. Future development of the overall European aviation industry by providing a coherent regulatory framework for an enlarged market place.
9. Exploring new business and investment opportunities in the Moldovan aviation sector and strengthening of the attractiveness of the country as a regional aviation hub.

On the other hand, the signing of the ECAA obligates Moldova to adopt EU aviation safety and security standards and service quality in the aviation sector. Besides this, the Moldovan Government has to promote the liberalization of services in the aviation sector.

6. STRATEGIC OBJECTIVES AND RECOMMENDATIONS

6.1. Institutional Structure

Adaption of the organizational structure of civil aviation in Moldova to the EU standards is important in order to ensure an improvement of aviation standards and the development of aviation safety and security. Two major issues are essential for Moldova while reorganizing the aviation sector:

1. **Ensuring the independence of CAA** from Government in the decision making process;
2. **Economic regulation of airports** which will be first of all an effective instrument **to avoid a monopoly** of Chisinau International Airport or to prevent a monopoly in case of its privatization.

6.1.1. Case Analysis for Organizational Structure in Civil Aviation

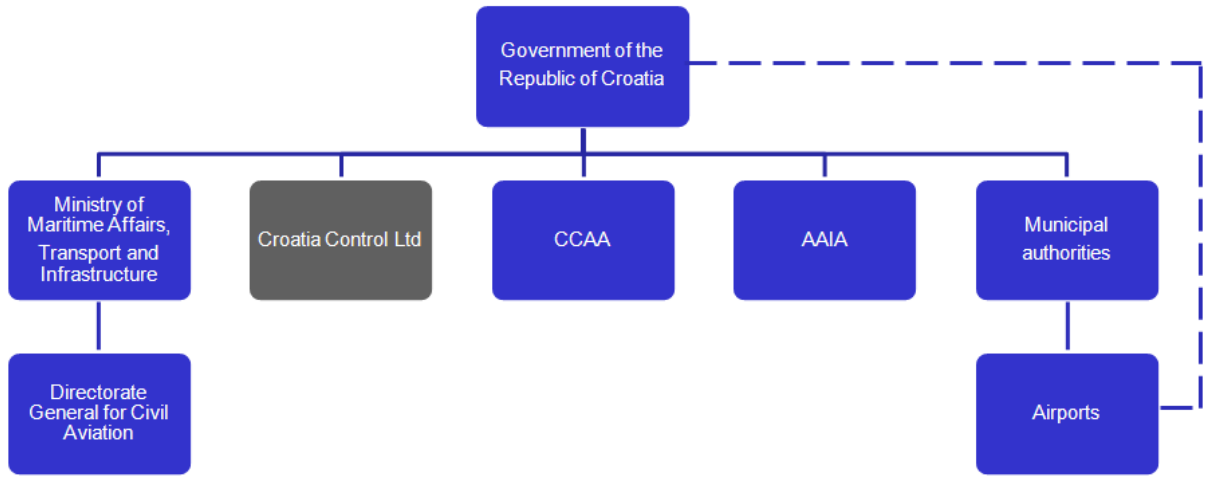
The Consultant analysed different models of the organizational structure of civil aviation in the EU countries. Concerning increasing independence of CAA, the Croatian Case has been identified. With 4.2 million inhabitants, the Republic of Croatia is one of the non EU countries experiencing good progress in harmonization of civil aviation requirements to EU standards. In 2009, the Croatian Civil Aviation Agency (CCAA) has been established by the Ministry of Transport as an independent body.

The following stakeholders are involved in Croatian aviation sector:

- The Ministry of Maritime Affairs, Transport and Infrastructure / The Directorate General for Civil Aviation (DGCA)
- The Croatian Civil Aviation Agency (CCAA)
- Croatia Control Ltd
- Aircraft Accident and Incident Investigation Agency (AAIA)
- Airports

The following Figure shows a general organizational structure of the civil aviation sector in Croatia:

Figure 6.1. Organizational Structure of Civil Aviation Sector in Republic of Croatia



Source: The Consultant

The Ministry of Maritime Affairs, Transport and Infrastructure

The Ministry of Maritime Affairs, Transport and Infrastructure is responsible for the overall civil aviation policy of the Republic of Croatia. The main activities of the ministry are the following:

- Establishment of the national strategy on aviation development;
- Representation of the Republic of Croatia at international civil aviation organizations and organizations in the framework of the ECAA Agreement;
- Implementation of international aviation agreements concluded by the Republic of Croatia;
- Matters relating to the establishment and operation of scheduled air services ensuing from bilateral and multilateral aviation agreements;
- Adoption of secondary legislation as set out in the Air Traffic Act and the international agreements binding on the Republic of Croatia;
- Preparation of draft proposals for laws in the field of civil aviation;
- Administrative monitoring of Agency for investigation;
- High level decisions on Air Navigation matters except safety;
- Conduct of proceedings on concession arrangements for aerodromes in accordance with the Act on Concessions and international agreements binding on the Republic of Croatia;
- Decision making on the status of the airports and to appoint if necessary the independent slot allocation coordinator;

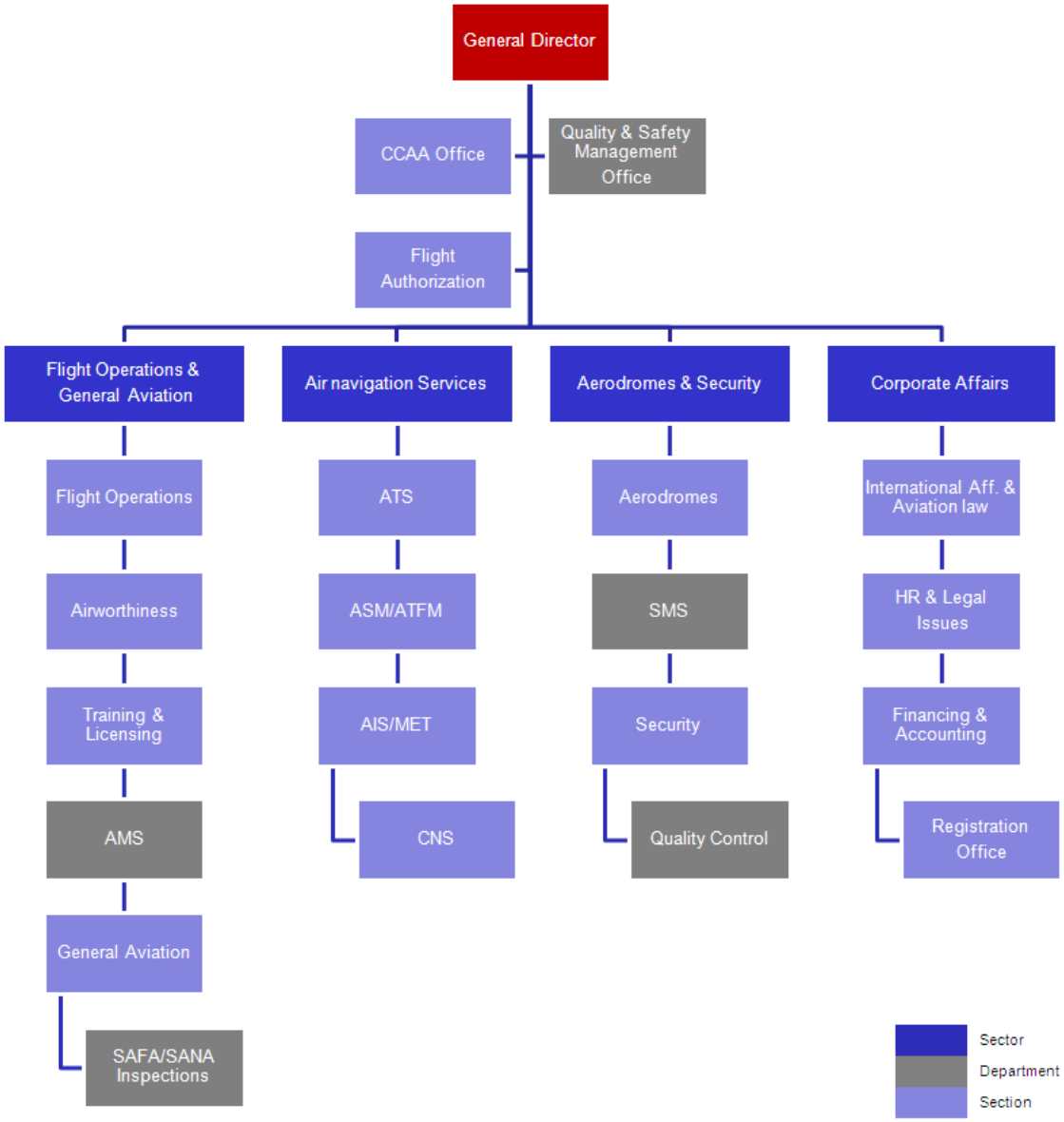
The Directorate General for Civil Aviation (DGCA) is a public service of the above-mentioned ministry, organized as an internal administrative organization of the Ministry. DGCA is managed by a Director General. DGCA is organizational unit competent of the Ministry of Maritime Affairs, Transport and Infrastructure responsible for civil aviation. The main functions of DGCA are legal affairs, international affairs and economic regulation.

CCAA

CCAA is an independent organization reporting to the Government of the Republic of Croatia, not being the organizational part of Ministry of Maritime Affairs, Transport and Infrastructure. Its main task is safety regulation and oversight in the national civil aviation sector. The Agency has its independent budget financed primarily by the aviation industry.

CCAA is managed by Board of Directors composed of the CCAA General Director and 5 independent members. The Board members are proposed by the Minister and appointed by the Government for a period of four years with the possibility of being reappointed. CCAA consists of four sections: 1) Flight Operations, Airworthiness, Training and Licensing and General Aviation; 2) Air Navigation Services; 3) Aerodromes & Security; 4) Corporate Affairs.

Figure 6.2. Organizational Chart of CCAA



Source: CCAA

CCAA is in particular responsible for the following main activities:

- Preparation of draft proposals for secondary legislation relating to the Agency's activities, adopted by the Minister on the basis of Air Traffic Act;
- Monitoring of implementation of State Aviation Safety Program;
- Certification and issuing licenses to air carriers;
- Certification of aircrafts, licensing and rating of civil aeronautical personnel, certification of civil aerodromes;
- Oversight of the technical and operational conditions and economic fitness of the aviation industry of the Republic of Croatia;
- Oversight of security in civil aviation;
- Matters relating to environment protection concerning air traffic;
- Oversight and inspection of the air traffic safety.

CCAA actively cooperates with the Ministry of Maritime Affairs, Transport and Infrastructure on the international matters, including international agreements, meetings with ICAO and other international organisations and institutions in civil aviation. It actively participates in the working of the professional bodies of international organizations and working groups, and co-operates with international bodies responsible for air traffic.

Croatia Control Ltd

Croatia Control Ltd is a state owned independently operated enterprise. The core business of the company is the provision of air navigation services. Croatia Control consists of five divisions: Air Traffic Management, Technical Division; Aeronautical Meteorology; Military Operations; HR Management, Legal and Financial Affairs. The company operates seven regional ATC centres providing air traffic control, technical support, meteorological and administrative services.

AAIA

AAIA has been established as a functionally and organizationally independent agency from other state bodies involved in the civil aviation sector. The main reason for this organizational set up was to avoid possible conflicts of interest with other organizations involved in the sector. AAIA has the following main tasks:

- Investigation of aircraft accidents and occurrences;
- Providing safety recommendations aimed at increasing air traffic safety;
- Providing expert assistance to competent investigation bodies of the Republic of Croatia;
- Co-operation with other aircraft accident investigation bodies from ICAO Member States;
- Publishing the results of the investigation while respecting the principles of confidentiality;
- Establishing a list of experts for aircraft accident investigation.

Airports

The airports in Croatia are state enterprises operating in direct ownership of the state or city municipalities. There is no centralized management (supervision authority) of the airports in Croatia. The case analysis of the Croatian organizational structure in civil aviation shows clear independence of CCAA from the Ministry of Maritime Affairs, Transport and Infrastructure, which results in its neutrality in the decision making process.

The existing structural dependency of the Moldovan Civil Aviation Authority from MoTRI, which is an owner of the state air carrier Air Moldova, leads to a conflict of interest between CAA and MoTRI. There are the following alternatives to eliminate this conflict of interest:

1. Rapid privatization of Air Moldova (see Chapter 6.3.1);
2. Separation of CAA from the MoTRI and its establishment as the independent body;
3. Transfer of Air Moldova to other Ministry.

Based on the fact that subordination of CAA to MoTRI is defined by the Law on Civil Aviation, Alternative 1 is most recommended to eliminate the conflict of interest between CAA and MoTRI. However, it is important to increase the independence of CAA even if it remains a subordinated body of MoTRI.

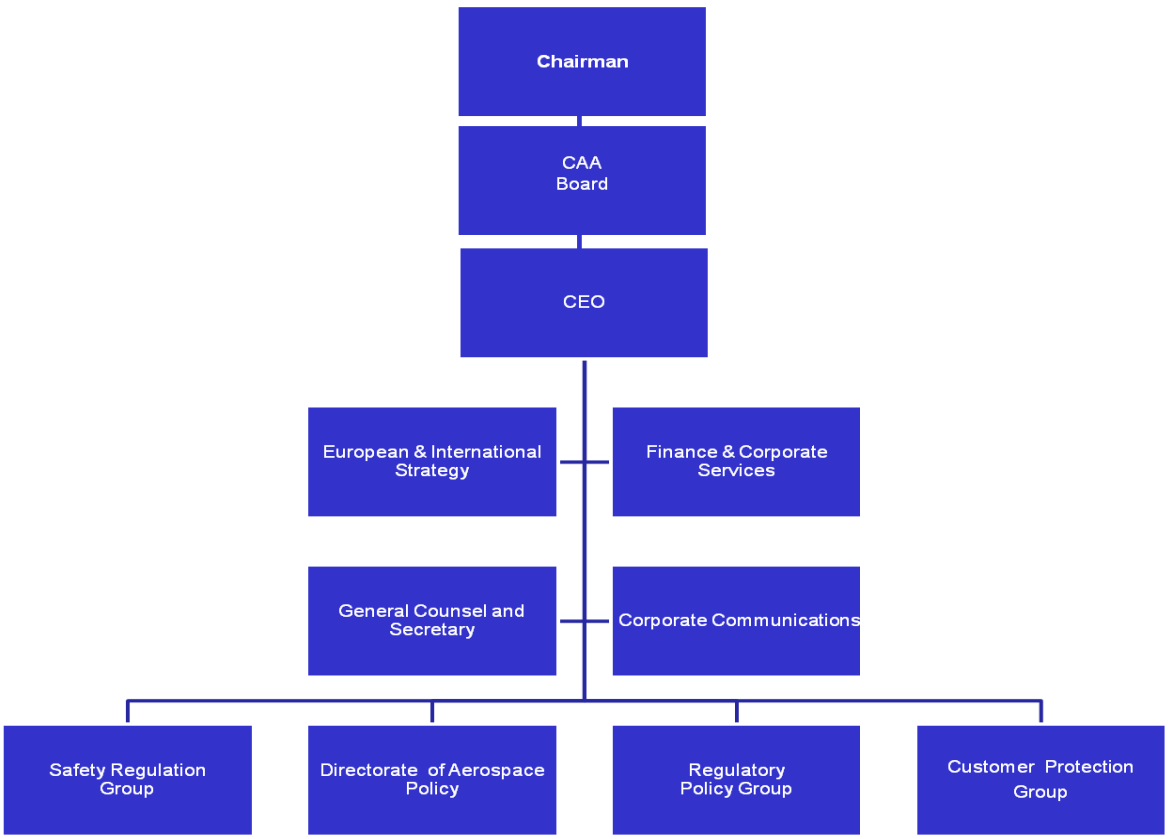
6.1.2. Case Analysis for Economic Regulation of Airports

International experience shows that one of the most important factors for a successful airport privatization and for attracting private investment in the airports is to establish a predictable and transparent regulatory system concerning pricing and capital development. The first airport privatizations have been realized by UK and Australia. Both countries established a comprehensive regulatory system, having pricing oversight of the airports, subject to prescribed guidelines. This system of regulation served as a model for numerous other countries.

The presented case study of the UK's organizational structure of the civil aviation shows a role of UK's CAA as an economic regulator for certain airports. Key findings of the case analysis are the following:

1. The Department of Transport (DOT) is a transport policy maker in UK. The role of DOT in the civil aviation sector is the development of policy (in particular on aviation environmental issues) and long-term strategy. DOT is also responsible for international negotiations in aviation sector;
2. The UK Civil Aviation Authority (UKCAA) is an independent regulatory body of the Government with its independent budget. UKCAA has the following main areas of responsibilities: Aviation safety, airspace policy, economic regulation and customer protection. The following chart presents the internal organizational structure of UKCAA (without its subsidiaries).

Figure 6.3. Organizational Structure of Civil Aviation Sector in UK



Source: UKCAA

Safety Regulation Group is responsible for setting up of standards in civil aviation sector:

- The role of the **Regulatory Policy Group** is the **economic regulation** of three designated privatized airports (Heathrow, Gatwick and Stansted). The Group ensures that the airports do not exploit their position as **monopoly service** providers. CAA uses its role as a regulator through legislation and consultation to control the airport charges. Other responsibilities of the group include providing expert policy and economic advice and analysis across CAA to the government and others on airports, airlines and air traffic services, collecting and analysing aviation statistics and survey responses;
- The **Directorate of Airspace Policy** is responsible for planning and regulation of all UK airspace including the navigation and communications infrastructure to support safe and efficient operations;
- The **Consumer Protection Group** regulates the finances and fitness of travel organizers, licenses UK airlines and enforces European Council requirements, enforces other legal requirements and codes of practice for protection of airlines' customers.

6.2. Privatization

Privatization creates significant opportunities for the Moldovan Government to improve efficiency in the aviation sector and to reduce public spending. In the past few decades, the trend toward privatization of airports has been strengthened worldwide. The airports have been privatized in attempts to make them more efficient and to raise additional capital for the government. The key findings from airport privatizations are:

- More efficient management and good governance are the key factors for a successful privatization;
- Independent and effective economic regulation is necessary to prevent private monopolies and to create incentives for efficiency improvements;
- Development of policy instruments in order to incentivize cost efficiency and continuous improvements;
- Development of the contractual framework (service level agreements) to ensure maintenance and improvement of service quality standards and cost effectiveness of service.

6.2.1. Chisinau International Airport

The Moldovan aviation sector is characterized by constant growth in the recent years. Chisinau Airport is seen as the major tourism and trading gateway of the country. In the course of the market liberalization in Moldova, entry of low cost carriers is expected to cause an increase in air traffic by eliminating the existing price premium.

Air passenger transportation in Moldova is projected to grow at an annual rate of over 8.5%, reaching 2.4 million in 2022.

This development will cause major capacity constraints in Chisinau Airport which require capital investment to meet domestic and international market demand. According to the Airport Master Plan, the estimated total investment until 2030 amounts to 199 million EUR.

Table 6.1. Necessary Investments in the Chisinau International Airport

	Phase 1	Phase 2	Phase 3
Airfield	€ 28.5 mil	€ 13 mil	€ 14.5 mil
Passenger Terminal	€ 5 mil	€ 49 mil	€ 30 mil
Secondary Facilities / Utilities	€ 14 mil	€ 20.5 mil	€ 7.5 mil
Contingency (app.10%)	€ 4.5 mil	€ 7.5 mil	€ 5 mil
Total	**€ 52 mil**	**€ 90 mil**	**€ 57 mil**

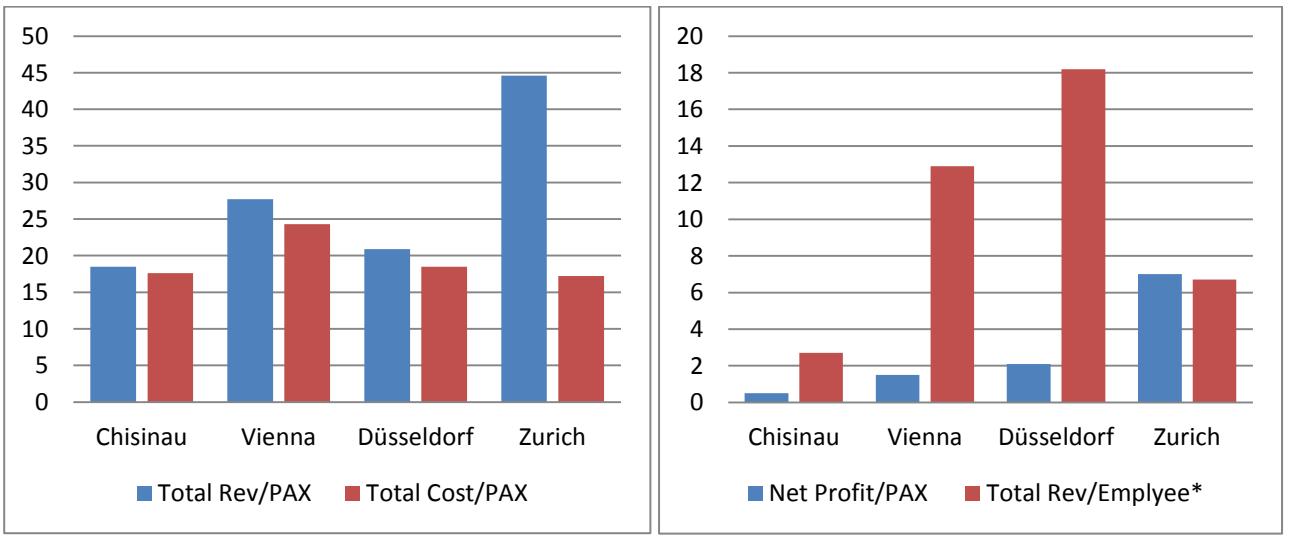
Source: Chisinau International Airport Modernization Plan

Currently the Moldovan state (as many other CIS countries) faces lack of financial resources and increasing financial obligations in all sectors of public services. Due to the necessity of investing in airport infrastructure to avoid infrastructural bottlenecks and to maintain a high level of services in the national aviation sector, the Moldovan Government considers the privatization (concession) of Moldovan airports in order to increase efficiency and to avoid the burden of investing at the same time. If airport development can be done through commercial means, state funds can be redirected to other public financial obligations.

There are different opinions the Consultant heard from stakeholders (Government officials, airlines etc.) about privatization of Chisinau International Airport. Critics argue that private operators would try to gain a monopoly on airport charges. On the other hand, several stakeholders of the aviation sector complain about the low efficiency and poor management of Chisinau International Airport.

For the comparative analysis of efficiencies, a brief benchmarking of airport Key Performance Indicators (KPI) is carried out. For this reason, the Consultant analysed the current annual reports of privatized or publicly listed airports and compared them to Chisinau International Airport. The KPI have been worked out based on the following parameters: Revenue, Net Profit, Expenditures, Number of Passengers, and Number of Employees.

Figure 6.4. Key Performance Indicators (KPI) Analysis of the Airports



Source: The Consultant

The Key Performance Indicators analysis shows the following:

a) Despite relatively high airport charges, Chisinau Airport has a **significantly lower revenue** per passenger, which is also caused by dependence on aeronautical income and the low level of development of non-aeronautical revenue;
b) **Net profit** per passenger is **considerably lower** than in other airports;
c) **The cost per passenger is higher** than in Düsseldorf and Zurich due to heavy financing costs caused by high interest rates and highly inefficient spending of funds;
d) **Total revenue per employee is much lower** relative to others. The main reason for that is a large number of employees and **low labour productivity**.

Based on investment needs and on the necessity to increase the efficiency in Chisinau Airport, privatization of the Airport will be recommended as an effective way to **improve the performance** of the airport without burdening the state budget. From a public sector perspective, airport privatization in Moldova has the following benefits:

1. **Reduction of public spending:** Shifting the burden of financing and operation of the airport to the private sector and redirection of public funding to other state priorities.
2. **Increasing efficiency:** Reorganizing airport operation into a private enterprise which creates a financial incentive for the private enterprise to deliver the best possible services and to manage costs efficiently.
3. **Contribution to economic development:** Based on financial incentives of a private operator it is expected that more travellers will be attracted in Moldova through effective marketing and effective and appropriate service delivery.

The major risks of the privatization are:

1. **Monopolistic prices:** An investor focused on the performance increase and high ROI will try to establish a monopoly, which can have a negative effect on long term competitiveness;
2. **Safety and security** may suffer when profit is the main objective;
3. **Poor Service:** Cost cutting and pricing pressures of a contractor may result in decline of service quality and finally weak productivity.

6.2.2. Alternative Models for Airport Privatization

There are several factors which make the Moldovan aviation market attractive for investors:

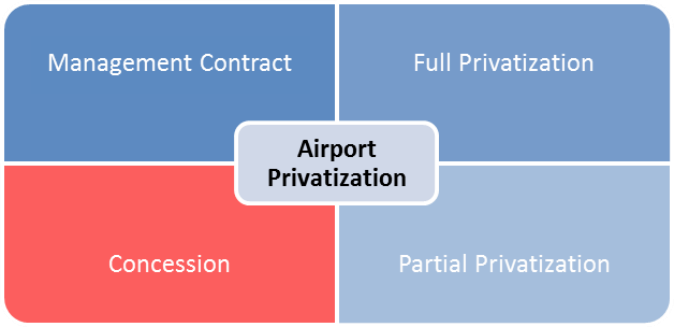
- Continuous growth of air traffic over the last decades and an optimistic traffic forecast;
- Growth in passenger traffic leading to improved profit margins resulting from economies of scale;
- Strong commercial opportunities that still remain to be exploited in this business.

The target groups of investors for the airport privatization in Moldova can be segmented in the following categories:

- Global airport operators which undertake the responsibility for managing the whole airport operations;
- Airport development groups that offer project financing services and the ability to manage and provide facilities for major airport developments, which single airports do not typically have;
- Investment groups and equity funds focusing on the airports and transportation facility development;
- Specialist operators which focus on management of specific sectors such as ground handling, parking etc.

There are the following main alternatives of airport privatization:

Figure 6.5. Alternative Models for Airport Privatization in Moldova



Source: The Consultant

1. A **Management contract** is usually a relatively short term contract (5-10 years) which includes a transfer of operational management of the airport facilities to the private management companies. It is often used in areas of high risk or where other privatization models are not possible. When signing a management contract, the state keeps ownership and control of airport assets. The state also keeps responsibility for the overall long-term strategy, sets aeronautical charges etc. The private operator is in charge only for short term tactical decisions in the private sector. Management contracts are not connected with expensive capital investments. They are based on effective management of a facility in the airport for a particular period.

2. **Long term leasing** is the most appropriate and common model of airport privatization in EU and East European countries. It includes the transfer of capital, management, operational and construction/modernization rights to the private company for a certain period. After this period, these rights are transferred back to the state. The Private Contractor is also responsible for planning and design of the facility. Several alternatives are possible such as BOOT (Build-Own-Operate-Transfer), DBOT (Design-Build-Operate-Transfer), DBOM (Design-Build-Operate-Maintain), BOO (Build-Own-Operate) etc. Concession contracts are usually concluded for a period of 20-50 years. In this context, it is important that the state keeps the land ownership in this period. BOT is an appropriate model in developed countries where the local governments are lacking liquidity.

3. **Full or partial Privatization** includes full or partial transfer of the assets and strategic control to the private company. The main advantages of these models from the government's position include the perspective for acquisition of additional capital, improving efficiency, cost reduction, customer service orientation and increasing competition among carriers to provide choice and reduction of air ticket prices. In addition, the state can generate revenue from the sale of its assets and collect taxes from the new private entity.

Table 6.2. Strengths and Weaknesses Analysis (from a Public Perspective)

Privatization Model	Strengths	Weakness and Risks
Management contract	- Ownership and control of airport assets; - Definition of overall long-term strategy; - Possible control of aeronautical charges.	- Capital investments in the airport infrastructure; - Short term orientation and cost minimization incentives of contractor which can result in decline of service quality and week competitiveness.

Concession	- Shifting the burden of financing and operation of an airport to the private sector; - Increased ability to diversify funds; - Access to international expertise; - Risk sharing between government and contractor.	- Loss of state control over enterprises and its strategy; - Orientation on company's performance and shareholder wealth maximization which can have a negative effect on long term competitiveness.
Full or partial Privatization	- Raising additional capital; - Improvement of efficiency and productivity; - Revenues from the sale of assets; - Enhance competition among air companies to provide choice and cost reduction for passengers.	- All risks are shifted to the private sector; - Waiver of revenue from the airport operation; - Possible restrictions on the development of competitive airports in a country, which has the potential to reduce passenger traffic.

Source: The Consultant

Taking into account the expected benefits and risks associated with the alternatives of airport privatization, the Consultant recommends the **concession as the best way to privatize Chisinau Airport.** To reduce or eliminate risks related with the concession contract, an effective regulatory framework should be designed which would ensure:

1. **Guaranteed standards of performance and quality**: The contractor should not be allowed to set its own standards of performance. The contractor should be obligated to hold on to governmentally defined aeronautical standards and also to guarantee pre-defined standards of performance and quality of service, which should be evaluated on the basis of pre-defined KPI;
2. **Prevent monopolistic prices: The c**ontractor should not set prices in the marketplace. Through an effective mechanism, the contractor should be compelled to limit its level of airport charges. (See examples in Chapter 6.1.1, Economic regulation of UKCAA);
3. **Ensuring competition:** The contractor must not be allowed to restrict access of operators to its services. The airport must be open to all qualified operators which meet all the necessary criteria;
4. **Transparency:** The Moldovan Government should require the contractor to report transparent cost, revenue and investment data.

6.2.3. Privatization of the Regional Airports in Moldova

Privatization of the regional airports in Moldova is actively discussed among the stakeholders. From a public perspective, it could be reasonable in terms of attracting investment in development of regional airports, with expected social and economic benefits. From the private sector perspective, privatization can be considered only in the case of commercial incentives.

The Consultant has prepared an analysis of the business case to assess the commercial feasibility of privatization of regional airports in Moldova. It is based on a ten year projection and provides a rough estimation of needed investment and revenues associated with the operation of the regional airports. The case analysis is based on the estimations of passenger numbers in the regional airports (which is the same in all three airports) provided by airlines operating in Moldova (see next figure).

Figure 6.6. Estimation of the Moldovan Air Passenger Volumes in the Regional Airports

Average Number of passengers per aircraft			
A320 / B737	135	Interest rate	6,0%
others		Tax rate	15,0%

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Number of passengers	50 000	100 000	140 000	175 000	210 000	241 500	265 650	292 215	306 826	322 167
Increase [%]	-	100%	40%	25%	20%	15%	10%	10%	5%	5%
Number of aircrafts per year	371	741	1 038	1 297	1 556	1 789	1 968	2 165	2 273	2 387

Source: The Consultant

An estimation of investments required for the development of the regional airports is based on the investment calculation for the modernization of an airport with a similar capacity in a developing country. The following figure provides a rough estimation of these investments:

Table 6.3. Rough Estimation of Initial Investments in the Regional Airports in million EUR

Airports	Balti	Cahul	Marculesti
Runway	7.5	7.5	7.5
Taxiway(s)	1.5	1.5	1.5
Apron and Aircraft Parking	2.5	2.5	2.5
ILS & ATM	7.5	7.5	7.5
Passenger Terminal	10	8	8
Handling Equipment & fire protection	8	8	8
Car parking & surrounding infrastructure	1.5	1.5	1.5
Total Investment	**38.5**	**36.5**	**36.5**

Source: The Consultant

The following income statements include operating (aeronautical services) and non-operating items. The movement of aircraft has been estimated based on A320 and B737 type aircrafts with 80% utilization. The estimate is based on the reconstruction / rehabilitation of an airport of similar size based on current standards and technology.

Figure 6.7. Income Statement of Balti International Airport

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Handling price (€/aircraft											
Airbus 320/Boeing 737 per aircraft	2 250,00 €	834 750,00 €	1 667 250,00 €	2 335 500,00 €	2 918 250,00 €	3 501 000,00 €	4 025 250,00 €	4 428 000,00 €	4 871 250,00 €	5 114 250,00 €	5 370 750,00 €
Non operational income		50 000,00 €	100 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €
Total revenues		884 750,00 €	1 767 250,00 €	2 535 500,00 €	3 118 250,00 €	3 701 000,00 €	4 225 250,00 €	4 628 000,00 €	5 071 250,00 €	5 314 250,00 €	5 570 750,00 €
Gross profit		884 750,00 €	1 767 250,00 €	2 535 500,00 €	3 118 250,00 €	3 701 000,00 €	4 225 250,00 €	4 628 000,00 €	5 071 250,00 €	5 314 250,00 €	5 570 750,00 €
% Consumption (Energy)		300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €
% Maintenance		632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €	632 500,00 €
% Personal		313 040,00 €	396 720,00 €	626 400,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €
% Overhead	5,00%	46 707,75 €	66 461,00 €	77 945,00 €	81 265,00 €	81 265,00 €	81 265,00 €	81 265,00 €	81 265,00 €	81 265,00 €	81 265,00 €
Operating profit (EBITDA)		**-407 497,75 €**	**371 569,00 €**	**898 655,00 €**	**1 411 685,00 €**	**1 994 435,00 €**	**2 518 685,00 €**	**2 921 435,00 €**	**3 364 685,00 €**	**3 607 685,00 €**	**3 864 185,00 €**
% Depreciation		2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €	2 700 000,00 €
% Interest expenses / + income		2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €	2 310 000,00 €
% Corporate tax			0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €
Net profit (loss)		-5 417 497,75 €	-4 638 431,00 €	-4 111 345,00 €	-3 598 315,00 €	-3 015 565,00 €	-2 491 315,00 €	-2 088 565,00 €	-1 645 315,00 €	-1 402 315,00 €	-1 145 815,00 €

Source: The Consultant

Figure 6.8. Income Statement of Cahul and Marculesti International Airports

		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Handling price (€/aircraft											
Airbus 320/Boeing 737 per aircraft	2 250,00 €	828 000,00 €	1 656 000,00 €	2 317 500,00 €	2 895 750,00 €	3 476 250,00 €	3 996 000,00 €	4 396 500,00 €	4 835 250,00 €	5 078 250,00 €	5 330 250,00 €
Non operational income		50 000,00 €	100 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €	200 000,00 €
Total revenues		878 000,00 €	1 756 000,00 €	2 517 500,00 €	3 095 750,00 €	3 676 250,00 €	4 196 000,00 €	4 596 500,00 €	5 035 250,00 €	5 278 250,00 €	5 530 250,00 €
Gross profit		878 000,00 €	1 756 000,00 €	2 517 500,00 €	3 095 750,00 €	3 676 250,00 €	4 196 000,00 €	4 596 500,00 €	5 035 250,00 €	5 278 250,00 €	5 530 250,00 €
% Consumption (Energy)		300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €	300 000,00 €
% Maintenance		592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €	592 500,00 €
% Personal		313 040,00 €	396 720,00 €	626 400,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €	692 800,00 €
% Overhead	5,00%	45 207,75 €	64 461,00 €	75 945,00 €	79 265,00 €	79 265,00 €	79 265,00 €	79 265,00 €	79 265,00 €	79 265,00 €	79 265,00 €
Operating profit (EBITDA)		-372 747,75 €	**402 319,00 €**	**922 655,00 €**	**1 431 185,00 €**	**2 011 685,00 €**	**2 531 435,00 €**	**2 931 935,00 €**	**3 370 685,00 €**	**3 613 685,00 €**	**3 865 685,00 €**
% Depreciation		2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €	2 600 000,00 €
% Interest expenses / + income		2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €	2 190 000,00 €
% Corporate tax			0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €	0,00 €
Net profit (loss)		-5 162 747,75 €	-4 387 681,00 €	-3 867 345,00 €	-3 358 815,00 €	-2 778 315,00 €	-2 258 565,00 €	-1 858 065,00 €	-1 419 315,00 €	-1 176 315,00 €	-924 315,00 €

Source: The Consultant

The case analysis of all three airports has shown a negative Return on Investment (ROI), which indicates that an investment in the development of the regional airports is highly unprofitable (loss). The table below shows key financial ratios of the airports.

Figure 6.9. Key Financial Ratios of Balti International Airport

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Profitability ratios										
Net income margin	-612%	-262%	-162%	-115%	-81%	-59%	-45%	-32%	-26%	-21%
Operating profit margin	-46%	21%	35%	45%	54%	60%	63%	66%	68%	69%
Return on investment	-14%	-12%	-11%	-9%	-8%	-6%	-5%	-4%	-4%	-3%

Figure 6.10. Key Financial Ratios of Cahul and Marculesti International Airports

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Profitability ratios										
Net income margin	-588%	-250%	-154%	-108%	-76%	-54%	-40%	-28%	-22%	-17%
Operating profit margin	-42%	23%	37%	46%	55%	60%	64%	67%	68%	70%
Return on investment	-14%	-12%	-11%	-9%	-8%	-6%	-5%	-4%	-3%	-3%

Source: The Consultant

The business case analysis has shown that the costs of the development of infrastructure outweigh the benefits that will be produced by the airports. That means that without public investment as commitment in the regional airports, it would be hardly possible to attract private investors. Based on the weak economic and financial situation of the Moldovan state, it is unreasonable to invest public funds in the development of the regional airports. It is recommended to focus on the development of Chisinau International Airport, which will strengthen the country's overall position on the regional market. However, in case of concrete interest of private investors in investing in the regional airports, the Moldovan Government should support them and facilitate the procedures for privatization (concession).

6.3. Privatization of other State Companies in the Moldovan Civil Aviation Sector

6.3.1. Air Moldova

Liberalization of Moldovan market brings opportunities as well as risks for the national flag carrier Air Moldova. Market liberalization enables Air Moldova to open new flights without any restrictions to all member countries of the ECAA. On the other hand, new airline companies will enter the Moldovan market, which will cause the rise of competition.

To be in a position to compete with international air carriers interested in the Moldovan market, Air Moldova has to expand its aircraft fleet and destinations, which requires significant investment. Besides this, Air Moldova has to optimize costs and maintain a high service level.

Analysis of the financial situation of Air Moldova has identified that the company is facing an extremely difficult financial situation. It is heavily indebted and can no longer meet its financial commitments. Since 2007, the operating revenue of Air Moldova has grown by 32%. In the same time, net profit shrank to 70%. The company's debt has grown by 126%. The following financial rations show this difficult financial situation of Air Moldova:

- Debt to net asset ratio: 2
- Profit margin: 0.8%
- Gross profit margin: 0.06.

Based on the limited funds of the Moldovan Government available for expansion of Air Moldova, privatization of the national airline would be an attractive solution to the problem. Privatization of Air Moldova has the following benefits:

- Attraction of private investment for the development of company;
- Shifting the burden of financing and operation of an airport to the private sector;
- Improving financial performance and operating efficiency;
- Increasing competition among air carriers on the national market;
- Dismantling the monopoly on air ticket prices.

6.3.2. Aeroport Handling and Aeroport Catering

Monopolies on services at airports, such as catering and ground-handling, lead to inefficiency and high charges. Despite the relatively stable financial situation of Aeroport Handling and Aeroport Catering, privatizing both companies in parallel to Chisinau Airport is recommended. From the privatization the following benefits are expected:

- Improved service quality and customer satisfaction;
- Improved operations and better profitability;
- Increased competition and lower service prices.

6.3.3. Focusing on Development of Chisinau Airport

The case analysis of the development of regional airports in Moldova has shown negative results which means that without public investment the projects are not feasible.

Based on the advantageous position of Chisinau Airport in the middle of the country and the importance of Chisinau as Moldova's main industrial and consumer centre, the Consultant recommends focusing all regular flight operations on Chisinau Airport. Concentration on the development of Chisinau Airport has the following major benefits:

- Avoiding or reducing of public spending necessary for the development of regional airports and surrounding road connections by concentrating on the development of one major international airport;
- Development of Chisinau Airport as a regional hub to EU destinations;
- Ensure successful concession[ii] of Chisinau Airport in order to improve efficiency and continuous improvements of service level.

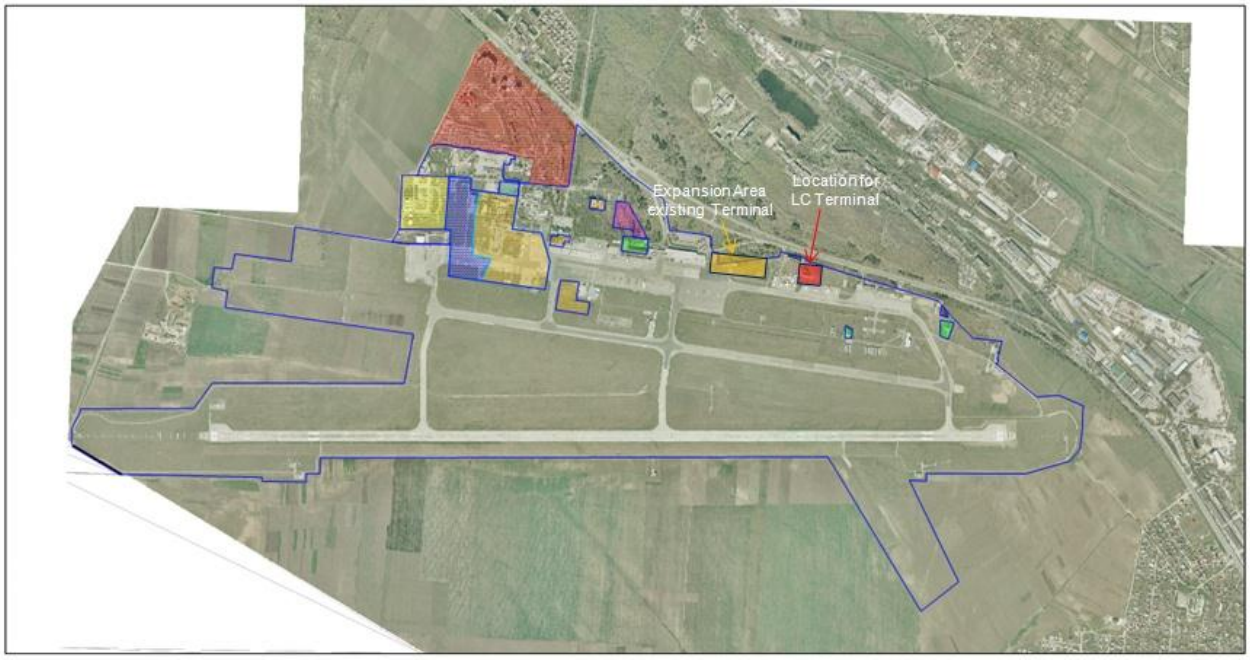
6.4. Integration of Low Cost Terminal in Chisinau Airport

The planned liberalization of air services in Moldova should bring significant changes in terms of entrance of new carriers and rising competition. International experience shows that integration of low cost terminals in central airports can be a very effective way to attract LCC.

In the recent past, MoTRI and the Government supported LLC entrance on the Moldovan aviation market. The two factors that can foster LCC operation in Moldova is the implementation of ECAA and concession of Airport Chisinau.

When concession happens, the Government should support the operator of the airport to develop the LCC model. If demand is being identified, then the operator should consider building a LCC terminal, which would respond to the emerging trend of low cost airlines.

Figure 6.11. Recommended Location for Low Cost Terminal in Chisinau Airport



Source: The Consultant

[ii] International experience of airport concessions shows that the limitation of development of additional international airports within radius of 150-200km is secured by the contract between the governments and concessioner.

Capacity requirements

Under the assumption that the total LCC market share in Chisinau Airport will be between 20% and 25% of the total passenger volume, the target volume of the low cost terminal in 2022 will be about 0.445 million passengers and 0.670 million passengers in 2032. This estimation is based on European LCC terminal cases (see Table 6.4). Based on the estimated number of peak LC passengers, the facility space requirements of the passenger terminal are as follows:

Table 6.4. Required Space for Several Functional Areas

Area requirement	Formula	Area in sqm
Landside Departure Hall	640 PAX*(30/60) h*1.5 sqm	480 sqm
Check-In Area	640 PAX*(30/60) h*1.2 sqm	384 sqm
Customs control outbound	640 PAX*(5/60) h*0.8 sqm	43 sqm
Passport control outbound	640 PAX*(20/60) h*0.8 sqm	171 sqm
Airside Departures Area	640 PAX*(45/60) h*1.5 sqm	720 sqm
Passport Control Inbound	640 PAX*(30/60) h*0.8 sqm	256 sqm
Baggage Reclaim Hall	640 PAX*(20/60) h*1.4 sqm	299 sqm
Customs control inbound	640 PAX*(5/60) h*0.8 sqm	43 sqm
Landside Arrival Hall-Meeters & Passengers	320 Greeters *(30/60) h*1.5 sqm + 640 PAX*(5/60) h*1.5 sqm	320 sqm
TOTAL		**2,716 sqm**

Source: The Consultant

The total terminal area will have to allow for further areas such as circulation, technical and offices in addition to the areas for the specific functions defined above. For the terminal building as a whole including the above described functional areas, the Federal Aviation Administration (FAA) recommends a space of 14 sqm per peak hour passenger for the gross floor area of a terminal. Therefore the terminal gross floor area demand is approximately 4,000 sqm.

Terminal layout, service portfolio and pricing strategy

The airlines handled in the budget terminal will pay reduced airport and passenger fees as they receive reduced passenger services and terminal comfort. The operating costs at the budget terminal have to be kept low to meet the needs and operating models of the LCCs. Therefore a single-storey terminal with no elevators, escalators, air-conditions systems, decorations and aerobridges has to be realized.

The roof of the terminal should allow the main terminal spaces to operate without artificial light during the day which is a significant environmental and cost benefit. There should be no transport services at the budget terminal, so passengers have to walk to the aircraft. Baggage handling is made directly at the aircraft (Pick up and drop off), so no luggage conveyer belts are needed. Additional optional services will be carried out on request, e.g.:

- Use of check-in counters instead of online-check in;
- Cleaning services;
- Fire protection during refuelling;
- Transport of passenger and crew loading steps along with accessories to and from the aircraft;

- Transport of loading and unloading equipment and vehicles to and from the aircraft;
- Unloading of luggage, cargo and mail from the aircraft;
- Transportation of luggage from the aircraft to the transfer point of the central infrastructure facilities;
- Provision of ground power supply units during ground-stop time;
- Loading of the aircraft with luggage and cargo.

The recommended case for Chisinau Airport would be three different airports in France which established LLC terminals, directly located next to the main passenger terminals.

Table 6.5. LLC Terminals in France

	Airport Bordeaux	Airport Marseille	Airport Lyon
Terminal Size	4,000 sqm	9,000 sqm	7,000 sqm
Capacity [passengers p.a.]	2 Million	3.5 Million	5 Million
Investment	€ 5.5 Million	• € 16.4 Million (Reconstruction of an existing cargo terminal) • Subsidy € 7.577 Million from the European Commission	€ 34.2 Million
Number of passengers	**0.978 Million**	**1.65 Million**	**1.8 Million**
Share of total passenger volume	**23.76%**	**22.45 %**	**21.0%**
Services	• Manual boarding systems • Passengers have to carry luggage to a central collection point • No air bridges • Shops and Food	• No push back • No air bridges • Some shops and food on a second level	• Simplified services • No air bridges • Shops and Food
Charges (comparison with main terminal)	• Passenger fees (**34% lower**): ○ € 6.20 (international), ○ € 3.59 (EU Non Schengen), ○ € 3.35 (National and EU Schengen) • The landing and parking fees are the same	• Passenger charge in the low-cost facility **70% lower** • The landing and parking fees are the same	• Passenger fees (**40% lower**): ○ € 8.26 (international), ○ € 6.47 (EU Non Schengen), ○ € 5.16 (National and EU Schengen) • The landing and parking fees are the same
Operator	• Bordeaux Mérignac Airport Société Anonyme (ADBM SA) with capital divided up between the State, the CCIB (Bordeaux Chamber of Commerce and Industry) and local authorities	• State Chamber of Commerce and Industry	• Aéroports de Lyon - Public limited company

Source: The Consultant

Based on European experience, the Consultant recommends reducing the passenger service fee in Chisinau Airport up to 40% (about 4 EUR per passenger). Landing and take-off charges (7 EUR per ton take-off weight) and parking fees should remain the same. The Airport Modernization Fee of 9 EUR should be completely eliminated.

Needed investment and operation

A rough estimate of the investment for a 4,000 sqm low cost terminal in Chisinau Airport would amount to 5.3 mln EUR. The cost of the terminal building is 4.8 mln EUR. An estimated investment for access road and parking is 0.5 mln EUR.

Based on common experience, the LLC terminals are financed and operated by the same airport operators (also the state owned companies). However, in case of a possible concession of Chisinau Airport, the responsibility for financing and operation of budget terminal can be shifted to the concessioner.

6.5. Construction of New Air Cargo Terminal in Chisinau Airport

Year over year air cargo grew, from 2010 to 2011 it increased by 14%. Applying a conservative 10% growth rate, over the next ten years, air cargo will result in over 6,000 t in 2022. Although the projected volume will almost triple, its relatively small volume and its modal split share stays below 0.1%. Domestic freight will continue to dominate air cargo movement in Moldova. Significant development of transit cargo is unrealistic at the moment.

However, Chisinau Airport needs an infrastructure that meets even the minimum international standards to increase efficiency and to attract international operators through an improved service level. Due to an inefficient building structure of the existing terminal, the Consultant recommends demolishing the existing facility and replacing it with a new terminal at low cost.

An air cargo terminal with a total area of 1,500 sqm would be sufficient to handle the projected air cargo at Chisinau Airport until 2022. The cargo terminal should include a 1,200 sqm storage area and 300 sqm of integrated office space. In case of future development, the storage area can be expanded modularly. The air cargo terminal should include the following areas:

- Inbound and outbound area;
- Express cargo area;
- Customs control zone;
- Temperature controlled storage for perishable goods.

An estimated investment for 1,500 sqm air cargo terminal ammounts to 2 million EUR. The construction time is 10 months maximum. During the construction period, the operation of air cargo has to be temporarily relocated to another building.

The typical service portfolio of the air cargo terminal should include the following services:

- Cargo and mail handling and storage;
- Temperature controlled storage;
- Special cargo handling;
- Document handling;
- Customs control;
- Door to door service for domestic inbound goods.

7. IDENTIFICATION OF NEEDED INVESTMENT PROJECTS

Project Title	EXPANSION OF THE MAIN PASSENGER TERMINAL IN CHISINAU AIRPORT
Situation	The number of air passengers in Chisinau Airport is projected to grow at an annual rate of over 8.5%, reaching 2.4 million in 2022. This trend will cause capacity constraints for the main passenger terminal in Chisinau Airport, which requires expansion of the terminal to meet domestic and international market demand.
Main goals of the project	Expansion of the Airport capacity to meet the market demand, improve safety and security, rise standards and level of service.
Scope of work	The project consists of two phases: Phase I (2014-2022) includes extension of passenger terminal for 5,000sqm. Phase II (2022-2032) further expansion to 15,000 sqm. The project also includes the construction of a parking facility with the appropriate capacity.
Business structure	No special business units should be set up.
Functional units	Responsible unit of the operator company of Chisinau International Airport.
Pre-conditions of realization	No specific pre-conditions.
Implementation period	Phase I- 16 months Phase II- 24 months
Implementation location	Chisinau International Airport.
Estimated investment value for the IFI	The estimated investment amounts: Phase I- 13.5 mil EUR. Phase II- 39.5 mil EUR.

Project Title	CONSTRUCTION OF LLC TERMINAL IN CHISINAU AIRPORT
Situation	LCC interested in the Moldovan market require significantly lower charges and better services at Chisinau International Airport. An existing passenger terminal in Chisinau Airport is not able to offer attractive conditions in terms of low charges to the interested LCC. It is recommended to construct a budget terminal at Chisinau Airport.
Main goals of the project	Major objective of the project is to attract LCC in Chisinau Airport through reducing terminal and handling charges.
Scope of work	Construction of a completely new terminal facility; purchasing of necessary handling equipment.
Business structure	No special business units should be set up.
Functional	Responsible unit of the operator company of Chisinau International Airport or

units	independent operator of LC terminal.
Pre-conditions of realization	No specific pre-conditions.
Implementation period	12 months.
Implementation location	Recommendation of Consultant is building a LLC terminal on the east site of the existing passenger terminal at Chisinau International Airport.
Estimated investment value for the IFI	The estimated total investment of the terminal construction, access road and parking is 5.3 mln EUR.

Project Title	**CONSTRUCTION OF NEW AIR CARGO TERMINAL AT CHISINAU AIRPORT**
Situation	According to the Consultant's estimation, air cargo volume will be tripled until 2022, reaching 6,000 tones. To accelerate the growth, international air cargo carriers should be attracted which require air cargo infrastructure to western standards. The existing air cargo terminal at Chisinau Airport does not meet these standards. The infrastructure is amortized. The services are not directed at meeting requirements of international operators.
Main goals of the project	The main objective of the project is to improve the existing service level and development of new services in the field of air cargo through the creation of air cargo infrastructure to minimum western standards.
Scope of work	Demolition of old terminal facility and construction of a new air cargo terminal including a storage facility for perishable cargo.
Business structure	The new air cargo terminal can be operated by the Chisinau Airport. However, transfer of the operation to a qualified international air cargo operator ensuring high level of efficiency and growth of air cargo volume is recommended.
Functional units	The project development has to be undertaken by the operator of Chisinau International Airport.
Pre-conditions of realization	No specific pre-conditions.
Implementation period	10 months.
Implementation location	Location of existing air cargo terminal on the territory of Chisinau Airport.
Estimated investment value for the IFI	The estimated investment for the construction of the air cargo terminal including cold storage facility and heading equipment amounts to 2 million EUR.

APPENDIX I

Meetings / Interviews Conducted with Stakeholders

Appendix I. Meetings / interviews conducted with stakeholders

#	Organization / Company	Name	Position
1	Ministry of Transport and Road Infrastructure	Mr. Valentin Dogotari	Head of Air Transport Division
2	The Public Property Agency	Mr. Tudor Copaci	General Director
3	Prime Minister's office	Mr. Radu Bezniuc	Air Transport Consultant of the Prime-minister of Republic of Moldova
4	Civil Aviation Authority	Mr. Vladimir Cebotari	General Director
5	Civil Aviation Authority	Mr. Iurie Zidu	Senior Deputy General Director
6	Civil Aviation Authority	Mr. Eugen Dvornic	Deputy General Director
7	Chisinau International Airport	Mr. Alexandr Ciutac	Director of Financial and Administrative Department
8	Chisinau International Airport	Mrs. Galina Telpiz	Head of Marketing Division
9	Chisinau International Airport	Mrs. Alla Tubari	Head of Economic Analysis Division
10	S.E. Moldaeroservice Balti International Airport	Mr. Sorin Stati	General Manager
11	Marculesti International Airport	Mr. Sergiu Cioban	General Manager
12	Air Moldova	Mr. Iulian Scorpan	General Director
13	Air Moldova	Mr. Andrei Turcanu	Commercial Director
14	Moldavian Airlines	Mr. Ion Caliman	Vice President
15	European Bank for Reconstruction and Development (EBRD)	Mr. Octavian Costas	Senior Banker