Task 4.1

Analysis of the Third Countries markets

BRAZIL and MOROCCO

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Main goals of the analysis

- Make a picture of present situation and needs of the countries in term of innovation in transport and logistics sector

- Identification of existing cooperation opportunities

- SWOT analysis of strenghts and weaknesses for MOVE ESCP to «go international»

Brasil

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Framework (IdB)

- Excessive usage of road transportation in detriment of inland waterways, maritime and railways transportation
- Interference of freight transportation with urban traffic flows due to absence of road and rail beltways
- Low efficiency in ports and recurrent problems in waterside and landside accesses
- Excessive delays due to customs and sanitary inspections
- Road network weaknesses: capacity problems in certain segments, deficient maintenance conditions, needs for rehabilitation
- Distorsions in traffic flows due to local taxation
- Road piracy of freight merchandise
- Institutional strengthening requirements: data, strategy, a National Logistics Council

Infrstructural plan

Despite the recent reduction of the demand for goods transportation, the logistic sector is expected to grow significantly in the next future, mainly because of the improvement of the infrastructures level in the country. Brazil has in fact in the last years launched and started to implement **its largest logistics investment program** with an investment of about 121 US$ Billions over 30 years

The program's main goals are:

- The implementation of the current federal highway network, with 7.500 km of new concessions
- The implementation of the railway network, with about 8.000 km of new railways
- The modernization of 270 regional airports
- The remodeling of about 150 terminals inside public ports
- Incentivize the establishment of privately used terminals outside public ports
- A high speed train (TAV) from Rio de Janeiro to Campinas

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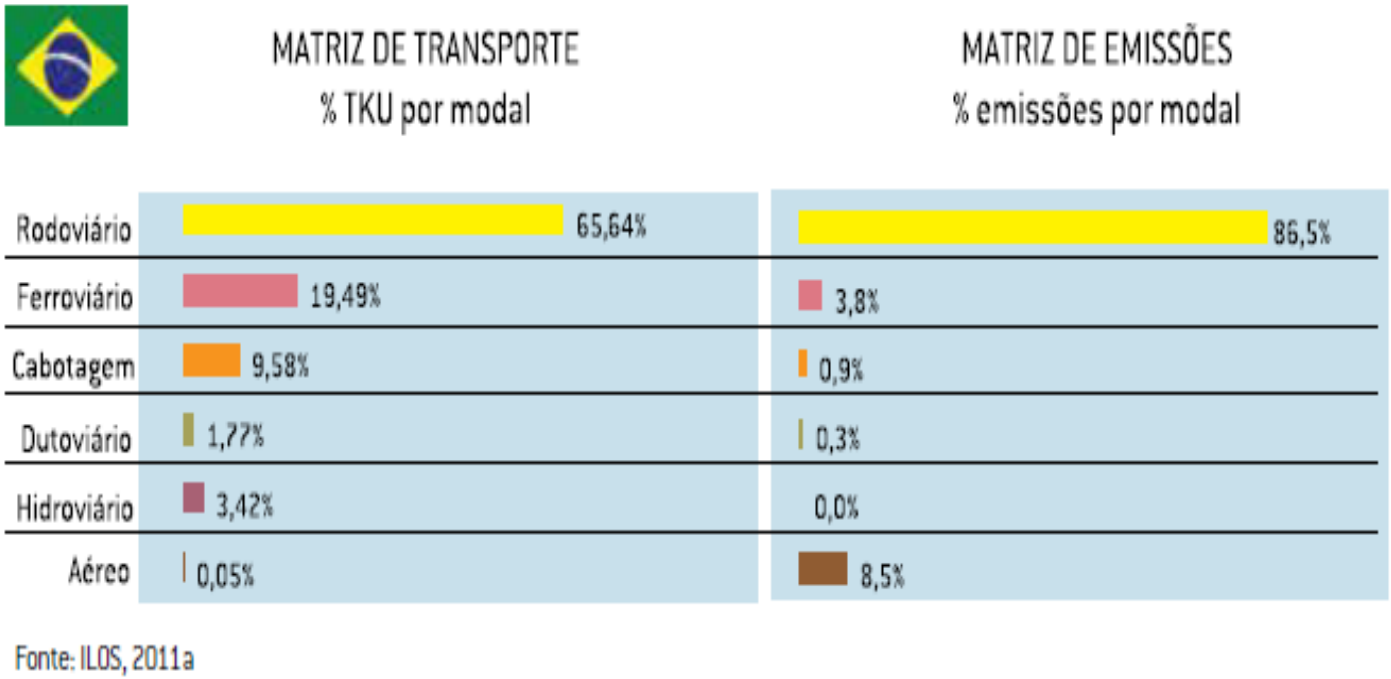
Freight transport modalities in Brazil



Fonte: ILOS, 2011a

Road transports: destinations and fleets

Origin	Companies	Fleet consistency
BRASILEIRAS	664	49.547
ESTRANGEIRAS	1.265	49.247

BRASILIAN COMPANIES

Country of destination	Companies	Fleet consistency
ARGENTINA	446	35.533
BOLÍVIA	112	8.289
CHILE	286	24.773
PARAGUAI	245	22.831
PERU	58	2.971
URUGUAI	277	23.972
VENEZUELA	11	1.514

NOT-BRASILIAN COMPANIES

Country of destination	Companies	Fleet consistency
ARGENTINA	506	18.746
BOLÍVIA	159	5.580
CHILE	229	5.981
PARAGUAI	175	13.439
PERU	19	1.462
URUGUAI	175	4.014
VENEZUELA	2	25

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Road transport

International transports

Origin	Companies	Fleet consistency
Brasilian	664	**49.547**
Foreigners	1.265	**49.247**

National transports

Type of operator	Number of operators	Number of vehicles	Vehicles/operator
Autonomous operator	645.733	804.049	1,3
Enterprise	159.670	1.156.413	7,2
Cooperative	344	21.444	62,3
Total	**805.747**	**1.981.906**	2,5

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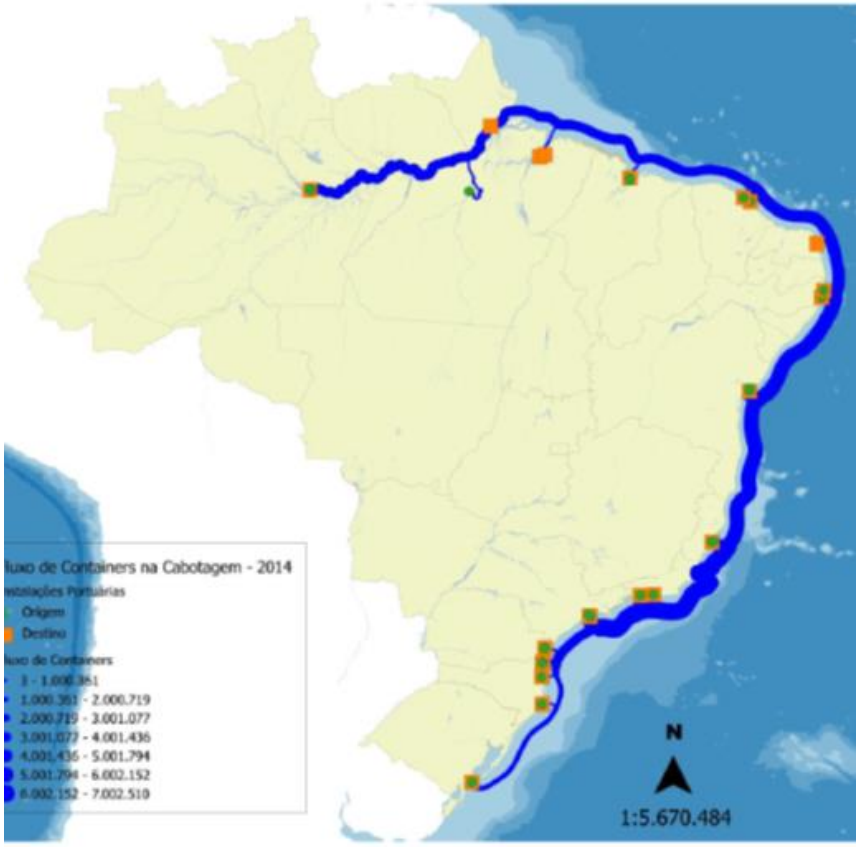
Cabotage

Brazilian maritime **national transportation** of goods exploits both the existing internal waterways than the coastal maritime routes (cabotage navigation).

Regarding instead Brazilian maritime **international transports**, 95% of the volume of internationally commercialized goods in 2012 has passed through the **34 public harbours** and **102 private use terminals**.



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Inner waters and fleets

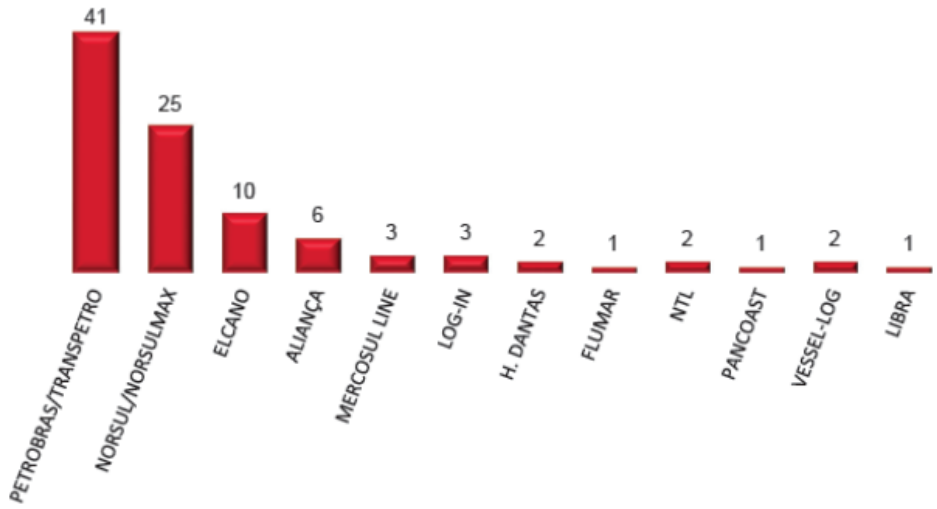
Permits for navigation are granted by ANTAQ to four modes:

a) long distance;

b) cabotage;

c) offshore support;

d) fluvial and lacustrine port support



Number of ships owned by the main shipping companies

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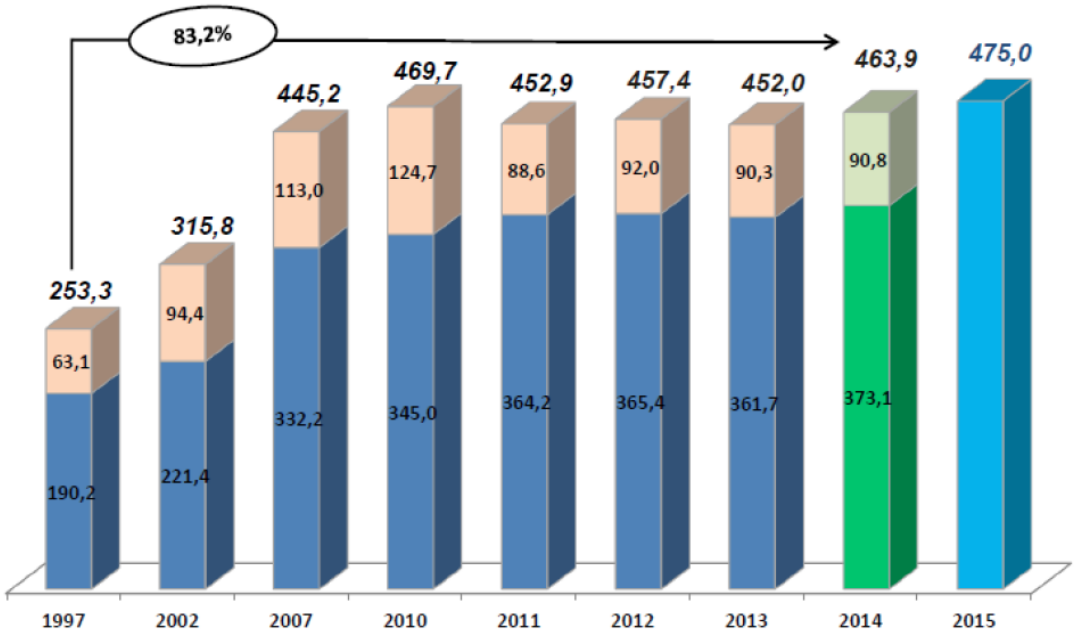
Railway

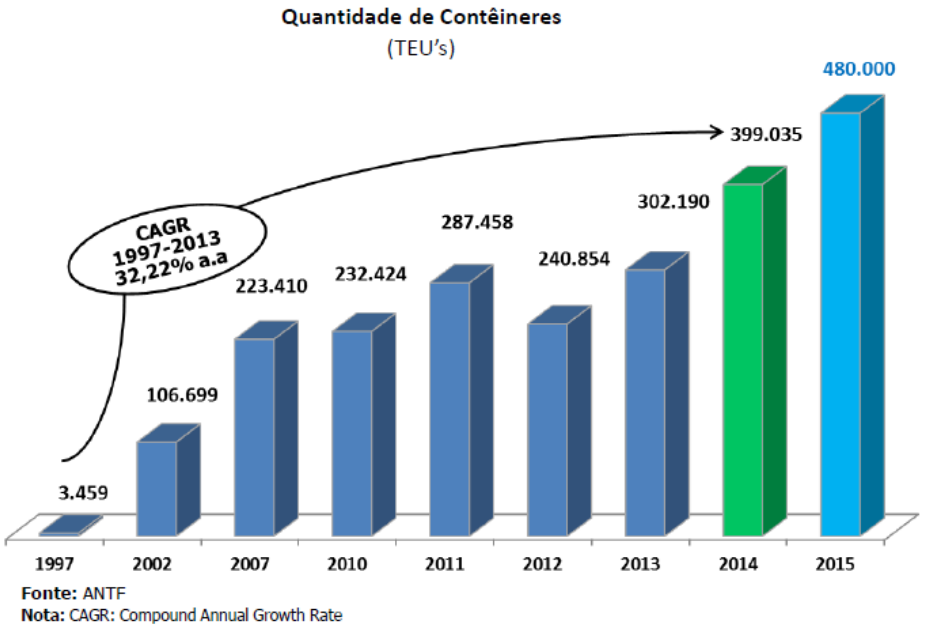
Railway transportation of goods
The railway network have been privatized from 1996 to 1998, with 11 concessions released to 7 companies that are actuall represented by the Nationa Association of Railway Transport companies.
Transport of goods by railways shows a positive trend, with almost 500 milions of tonnes in 2014.



Railway transports

Particularly significant is the increasing of the use of railways for intermodal transports, with an increasing of about 32% of number of containers transported in 2014 compared to 2013. 13

The fleets of railway transport companies have started to be renewed in the last years, with 25 years of age/vagon, expected to decrease to 18 years/vagon by 2020.



Fonte: ANTF
Nota: CAGR: Compound Annual Growth Rate

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Urban mobility

Today's urban population of over 160 million, with the rate of urbanization standing at 84.4%,

the automobile industry delivers about 200.000 vehicles to the market every month. Need to find solutions for sustainable mobility that are compatible with the extending urban space.

Brazil **in 2014** has invested huge resources to support urban mobility solutions; **Belo Horizonte, São Paulo, and Rio de Janeiro have been the co-winners of the 2015 Sustainable Transport Award**,

Brazil run in the implementation of innovative solutions for urban mobility, such as the BRT (Bus Rapid Transport), with exclusive corridors and boarding stations that reduce waiting times for commuters, integrated with **TOD** (**Transit-Oriented Development**) areas, that combines walking, cycling and public transport spaces with compact, well-serviced, population centers. Nevertheless, the BRT systems, which can use sustainable fuels like biodiesel or electric power, still need infrastructure work to guarantee large-scale viability

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Clean Fuels and EVs

Brazil is **one of the countries with the largest potential for electric transportation**, (hydroelectric and the growth of eolic turbines deployments) presently, **electric cars still represents only 0.04% of the national fleet**, In 2014, 855 new vehicles were licensed in the country, almost 50% more than the previous year.

One of the main reasons for the delay in the development of the electric car industry is the fact that the Federal government is currently **focusing on ethanol production**. Ethanol production rised of 64% in the past decade , 90% of new vehicles use fuel flex technology (gasoline+ethanol)

Thus, electric mobility is a complement and not a substitute for the current model.

Identified needs (drivers for innovation)

- Demand for a **greener and more efficient** logistic
- Very GHG and **carbon intensive** transport system
- **Traditional fossil fuels** (diesel) used in trucks sector
- Congestion of **traffic in big urban centers**, due both to people and freight transportation (possibility to develop ITS integrating ICT and green technologies)
- Great potential and availability of sources for **renewable electricity** generation (wind, hydro)

SWOT Analysis

STRENGHTS	WEAKNESSES
- Know how and cross sectoral competences available in MOVE ESCP - Lot of opportunities for internationalization through clusters, business support agencies, European institutional networks (EEN) - Advanced level of research of European automotive and transport sector on technological improvement of engines and solutions for sustainable mobility (EV, smart cities policies)	- No former cooperation initiatives with Brazil by the members of the consortium

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SWOT Analysis

OPPORTUNITIES	THREATS
- Reduction/exemption of IPI for automotive industries established in the country (Inovar-Auto program) - Existing cooperation projects EU-Brazil on urban mobility - **Fast growth rates** in transport and logistic sector, with new needs for mobility in the mid-term period - Sustainable transport **policies for urban centers** (modal shift to BRT and Metro, traffic management measures) - Logistic and infrastructure investment program - Opportunities to improve efficiency and environmental impact of logistic services (use of biogas and biomethane) - Increasing demand and commitment of national companies for a green logistic - Big **potential for electric transportation** in the long term period - High potential for research and technology transfer in the sector - **Modal shift in transport** identified as an opportunity with high potential of emission reductions and low marginal abatement costs - Existing national policies in Brazil for logistics improvement and sustainable urban mobility - **Sectoral Plan for Transport and Urban Mobility** for the Mitigation of Climate Change (PSTM)	- High logistic costs - High level of **taxation on import** (pro-national business laws) - Transportation dependency on highways and roads - Transport not identified as one of the priority sectors for the implementation of GHG reduction measures (LCBA) - **Biofuels and gasoline are leading the market** as transportation fuels - Emissions reduction in transport sector is generally capital intensive, the business potential is generally for public and big transportation companies

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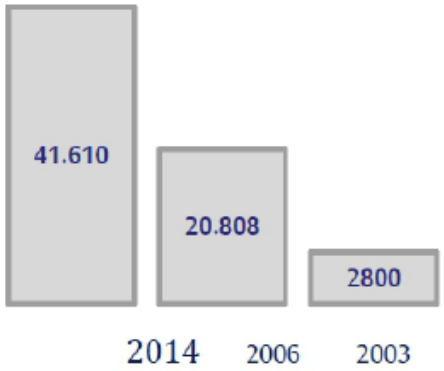
International cooperation initiatives

Name	Description	Website
B.Bice+	B.BICE+ is an International Cooperation (INCO) project funded by the European Commission whose aim is to enhance bilateral cooperation and to support political dialogue in Science, Technology and Innovation among the European Commission, EU Member States, Associated Countries and Brazil.	http://www.b-bice-plus.eu/about-us/the-project/
Connect	CONNECT is targeted at European new entrepreneurs starting up businesses with the potential to grow internationally.	http://www.eubrazilconnect.com/
ELAN programme	The ELAN PROGRAMME (European and Latin American Business Services and Innovation) is a European Union (EU) initiative that seeks to increase and diversify the EU economic presence in Latin America, by meeting the Latin American demand for knowledge and innovative technology.	http://www.elannetwork.org/
land2land	Land2land is a support platform for the internationalization of innovative companies that want to locate in innovation habitats, such as technology parks and business incubators in Brazil or any other country.	http://land2land.com.br/
Program for International Cooperation of the National Council for Scientific and Technological Development	Program aimed to stimulate international exchange and encourage partnerships in the process of absorbing and disseminating knowledge and technology. The program supports bilateral and multilateral initiatives involving developed and developing countries	http://www.cnpq.br/web/guest/apresentacao-cooperacao-internacional/
LCBA – Low Carbon Business Action in Brazil	The Project Low Carbon Business Action is a European Union-funded initiative that aims to contribute to sustainable development and greening of Brazilian industries through the adoption of low emission technology, through a matchmaking action leading to bankable projects	http://www.lowcarbonbrazil.com/

Morocco: territorial framework

Road transport

About 75% of goods in Morocco are moved by road transport



Source: Ministry of Equipment and Transport (September 2014)

Motor Vehicles	0	1	2	3 à 5	6 à 10	11 à 20	+ 20	Total
Number of companies	3.396	27.743	6.234	2.864	867	388	118	41.610
Percentage of companies	8%	67%	14%	7%	2%	1.72%	0.28%	100%

Source: Ministry of Equipment and Transport (March 2014)

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Maritime transport

More than 300 operators, mainly concentrated in Casablanca and Tanger regions

Kind of transit in national harbours (2009)	Tons (million)
Containers	7,2
Roll on / Roll off	3,5
Divers (conventional shipment)	4,9
Vracs	43,9

Port	Tonnage (tonnes)
Nador	2 153 344
Tanger	5 064 658
Kenitra	227 301
Mohammedia	9 979 735
Casablanca	19 998 975
Jorf Lasfar	13 957 220
Safi	3 919 858
Agadir	3 038 315
Tan Tan	118 945
Laayoune	2 183 054
Dakhla	260 332
TOTAL	59 736 238

Total transits in national harbours (2009)

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Railway transports

The market is dominated by ONCF, national public operator, with more than 100 locomotives and around 6000 wagons.

Transport of containers is very limited, due to the deficits of facilities in harbours and actual logistic platforms.

Benefits will come from the logistic improvement plan of the national government, including the extension and modernization of the existing railway network

Identified needs (drivers for innovation)

- **Deficit in logistic** services (direct transport by producers is very relevant, with small size and old vehicles)
- Reduction in **costs of logistics** (20% of GDP at national level)
- Logistic solutions to **improve the sustainability of the supply chain** (digitalized solutions for border transit operations, tools for environmental management of logistic platforms, ITS for smart cities)
- **Modernization of fleets**, in particular for urban logistics
- **Safety** in transportation

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SWOT Analysis

STRENGHTS	WEAKNESSES
- Know how and cross sectoral competences available in MOVE ESCP - Lot of opportunities for internationalization through clusters, business support agencies, European institutional networks (EEN) - Advanced level of research of European automotive and transport sector on technological improvement of engines and solutions for sustainable mobility (EV, smart cities policies) - **Existing cooperation agreements** to strenghten connectivity between Canary Islands and Morocco - Possibility to capitalize and build on the **former experiences of the partnership** (Logipole SMD, IntraRegio project, …)	

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SWOT Analysis

OPPORTUNITIES	THREATS
- National **policies for logistics development** and improvement of competitiveness (MET/AMDL) - National **program for sustainable logistic** sector (Moroccan Green Logistics) - Private programs of investment in sustainable and electric mobility - Automotive cluster established, including over 200 companies - Existing cooperation projects EU-Morocco on urban mobility - International **networking activities** by AMDL - National programs for modernization of fleets and improvement of safety conditions in transport sector - Existing **policies for urban logistics** - Renewable and energy efficiency sector is on the top of the agenda for the development of the country in next years	- Difficulty in the identification of national partners at company level (few operators in transport and logistic) - Deficit in logistics - Weak link between external and internal logistics networks

International cooperation initiatives

Name	Description	Website
Agreement **AMDL-CIMALSA**	Jointly organization and conduction of training seminars on the planning and development of logistic platforms in Morocco and Spain for the benefit of AMDL executives	http://www.amdl.gov.ma/amdl/cooperation-2/bilateral-cooperation/
Cooperation agreement with **Languedoc-Roussillon region** (France)	The agreement aims to promote the rapprochement between Moroccan and Languedocian actors in the logistics sector, streamline logistic flows between the Languedoc-Roussillon region and Morocco and make logistics a competitive level for territories	http://www.amdl.gov.ma/amdl/cooperation-2/bilateral-cooperation/
Program of measures to strenghten connectivity between the **Canary Islands** and Morocco	The project aims to improve connectivity in maritime and air transport between the two regions to strenghten logistics and promote trade between the Canary Islands and Morocco	http://www.amdl.gov.ma/amdl/cooperation-2/bilateral-cooperation/
Cooperation agreement with the **International Finance Corporation**	The agreement relates to the provision of technical assistance for the development of the Human Resources section of the Moroccan Logistics Competitiveness Observatory (OMCL). The project will enable OMCL to design and implement indicators related to training and employment of the logistics sector in Morocco, the aim being to improve the employability of youth by matching their skills with the real needs of companies.	http://www.amdl.gov.ma/amdl/cooperation-2/multilateral-cooperation/
Cooperation with the **World Bank** in the field of urban logistics	In partnership with European institutions, the World Bank commits to contributing to the follow-through of a study centered on the structuring of urban logistics in Morocco, which is conducted by the Moroccan Agency for Logistics Development.	http://www.cnpq.br/web/guest/apresentacao-cooperacao-internacional/
European Logistics Association	ELA fosters the exchange of experiences, good practices, and information among the members. It also annually awards a prize to the best European logistics project. It supports fundamental and applied research projects in logistics and contributes to the implementation and promotion of standards in the area of evaluation and certification of highly-qualified competencies in logistics.	http://www.amdl.gov.ma/amdl/cooperation-2/adherence-of-morocco-to-renowned-international-networks/